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#### 2021 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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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 (2021) and documents compliance with the U.S. Environmental Protection Agency Coal Combustion Residual Rule. I certify that the 2021 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 2021 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 (2021) 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, 2021), 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, 2021), 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 2021.



#### 1.1.3.2 40 CFR § 257.90(e)(6)(iii)(b)

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

An assessment monitoring program was initiated on 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 2021.

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

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

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

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

No statistically significant levels were identified above the groundwater protection standard for those constituents listed in appendix IV to this part in 2021 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 2021 for this unit. The FAL remained in assessment monitoring during 2021.

#### 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 2021; therefore, a public meeting was not held.

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

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

No assessment of corrective measures was required to be initiated in 2021 for this unit. The FAL remained in assessment monitoring during 2021.

#### 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 2021.



#### 2. 40 CFR § 257.90 Applicability

#### 2.1 40 CFR § 257.90(a)

All CCR landfills, CCR surface impoundments, and lateral expansions of CCR units are subject to the groundwater monitoring and corrective action requirements under §§ 257.90 through 257.99, except as provided in paragraph (g) [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 2021.

#### 2.2.1 Status of the Groundwater Monitoring Program

The FAL remained in the assessment monitoring program during 2021.

#### 2.2.2 Key Actions Completed

The 2020 Annual Groundwater Monitoring and Corrective Action Report was completed in January 2021. Statistical evaluation was completed in January 2021 on analytical data from the September 2020 semi-annual assessment monitoring sampling event.



A semi-annual assessment monitoring sampling event was completed in March 2021 for detected appendix IV constituents identified from the June 2020 annual assessment monitoring sampling event. Statistical evaluation was completed in July 2021 on analytical data from the March 2021 semi-annual assessment monitoring sampling event.

An annual assessment monitoring sampling event was completed in June 2021 to identify detected appendix IV constituents for subsequent semi-annual sampling events in September 2021 and planned for March 2022. Semi-annual assessment monitoring sampling was completed in September 2021 for detected appendix IV constituents identified during the June 2021 annual monitoring event. Statistical evaluation of the results from the September 2021 semi-annual assessment monitoring sampling event are due to be completed in January 2022 and will be reported in the next annual report.

#### 2.2.3 Problems Encountered

One problem encountered during groundwater monitoring activities in 2021 consisted of a potential erroneous analytical result that required the laboratory to reanalyze select analytical results. Arsenic was reanalyzed for monitoring well MW-FAA-6, and its corresponding duplicate sample, in the March 2021 semi-annual assessment monitoring sampling event. Well MW-FAA-6 was resampled in April 2021 to confirm the March 2021 result. The analytical result was revised accordingly. This was the only issue that needed to be addressed at the FAL in 2021.

#### 2.2.4 Actions to Resolve Problems

The resolution to problems encountered in 2021 included additional laboratory analyses and resampling event as described above. The analytical result was revised accordingly. No other problems were encountered at the FAL in 2021; therefore, no actions to resolve problems were required.

#### 2.2.5 Project Key Activities for Upcoming Year

Key activities planned for 2022 include the completion of the 2021 Annual Groundwater Monitoring and Corrective Action Report, statistical evaluation of semi-annual assessment monitoring analytical data collected in September 2021, semi-annual assessment monitoring and subsequent statistical evaluations, and annual assessment monitoring.

#### 2.3 40 CFR § 257.90(e) – INFORMATION

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



#### 2.3.1 40 CFR § 257.90(e)(1)

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 2021.

#### 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 2021. 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 2021 are provided in Figures 2 through 4.

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

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

The assessment monitoring program was initiated on 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 2021.

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

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

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



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

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

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

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

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

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

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

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



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

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

Include the recorded concentrations required by paragraph (d)(1) of this section, identify the background concentrations established under § 257.94(b), and identify the groundwater protection standards established under paragraph (d)(2) of this section in the annual groundwater monitoring and corrective action report required by § 257.90(e).

An assessment monitoring program has been implemented at the CCR unit since July 17, 2018. Three rounds of assessment monitoring sampling were completed in 2021. Analytical results for both downgradient and upgradient wells are provided in Table I. The background concentrations (upper tolerance limits) and groundwater protection standards established for detected appendix IV constituents for the 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 2021 for September 2020 and March 2021 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 2021. The FAL remained in assessment monitoring during 2021.

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

Within 90 days of finding that any constituent listed in appendix IV to this part has been detected at a statistically significant level exceeding the groundwater protection standard defined under § 257.95(h), or immediately upon detection of a release from a CCR unit, the owner or operator must initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected area to original conditions. The



assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority attesting that the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for no longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

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



TABLES

# TABLE ISUMMARY OF ANALYTICAL RESULTS - 2021 ASSESSMENT MONITORINGEVERGY KANSAS CENTRAL, INC.JEFFREY ENERGY CENTERFLY ASH LANDFILLST. MARYS, KANSAS

Leasting	Upgradient MW-FAA-5			Downgradient					
Location				MW-FAA-3		MW-FAA-4			
Measure Point (TOC)		1250.80			1165.66			1213.81	
Sample Name	FAA-5-030421	FAA-5-06/09/21	FAA-5-091421	FAA-3-030421	FAA-3-06/09/21	FAA-3-091421	FAA-4-030421	FAA-4-06/09/21	FAA-4-091421
Sample Date	3/4/2021	06/09/2021	9/14/2021	3/4/2021	06/09/2021	9/14/2021	3/4/2021	06/09/2021	9/14/2021
Final Lab Report Date	3/17/2021	6/18/2021	12/1/2021	3/17/2021	6/18/2021	12/2/2021	3/17/2021	6/18/2021	12/2/2021
Final Lab Report Revision Date	3/23/2021	NA	N/A	3/23/2021	NA	N/A	3/23/2021	NA	N/A
Final Radiation Lab Report Date	3/30/2021	7/7/2021	12/1/2021	3/30/2021	7/7/2021	12/2/2021	3/30/2021	7/7/2021	12/2/2021
Final Radiation Lab Report Revision Date	N/A	NA	N/A	N/A	NA	N/A	N/A	NA	N/A
Lab Data Reviewed and Validated	4/16/2021	8/2/2021	12/10/2021	4/16/2021	8/2/2021	12/10/2021	4/16/2021	8/2/2021	12/10/2021
Depth to Water (ft btoc)	87.05	87.05	87.11	13.60	12.60	16.33	57.59	55.63	58.40
Temperature (Deg C)	14.62	16.91	16.80	15.04	16.79	17.14	13.74	17.38	16.37
Conductivity, Field (μS/cm)	3530	3480	3180	2420	1700	1610	2680	1610	1710
Turbidity, Field (NTU)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
pH, Field (su)	6.86	6.64	6.84	7.29	6.90	7.44	7.38	6.96	7.74
Boron, Total (mg/L)	1.7	-	1.8	0.53	-	0.55	0.71	-	0.73
Calcium, Total (mg/L)	537	-	539	195	-	191	195	-	190
Chloride (mg/L)	89.9	-	80.8	84.2	-	78.2	77.9	-	83.8
Fluoride (mg/L)	1.1	-	0.71	< 0.20	-	0.35	< 0.20	-	0.38
Sulfate, Total (mg/L)	2200	-	1980	556	-	408	536	-	488
pH (su)	6.9	-	7.3	7.10	-	7.4	6.9	-	7.4
TDS (mg/L)	3640	-	3580	1130	-	1080	1140	-	1220
Antimony, Total (mg/L)	-	< 0.0010	< 0.005	-	< 0.0010	-	-	< 0.0010	=
Arsenic, Total (mg/L)	< 0.0010	< 0.0010	< 0.0050	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Barium, Total (mg/L)	< 0.0050	< 0.0050	< 0.0050	0.029	0.031	0.032	0.051	0.046	0.046
Beryllium, Total (mg/L)	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	-	< 0.0010	< 0.0010	-
Cadmium, Total (mg/L)	-	< 0.00050	< 0.0025	-	< 0.00050	-	-	< 0.00050	-
Chromium, Total (mg/L)	-	< 0.0050	< 0.0050	-	< 0.0050	-	-	< 0.0050	-
Cobalt, Total (mg/L)	0.0031	0.0028	< 0.0050	< 0.0010	< 0.0010	< 0.0010	0.0021	0.0027	0.0022
Lead, Total (mg/L)	-	< 0.010	< 0.010	-	< 0.010	-	-	< 0.010	-
Lithium, Total (mg/L)	0.14	0.13	0.15	0.023	< 0.010	0.012	0.021	0.011	0.017
Molybdenum, Total (mg/L)	0.029	0.026	0.023	0.0082	0.0062	0.0090	0.0073	0.0094	0.0084
Selenium, Total (mg/L)	< 0.0010	< 0.0010	< 0.0050	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Thallium, Total (mg/L)	-	< 0.0010	< 0.0050	-	< 0.0010	-	-	< 0.0010	-
Mercury, Total (mg/L)	-	< 0.00020	< 0.00020	-	< 0.00020	-	-	< 0.00020	-
Fluoride (mg/L)	1.1	0.55	0.71	< 0.20	0.28	0.35	< 0.20	< 0.20	0.38
Radium-226 & 228 (pCi/L)	1.43 ± 0.646 (0.735)	1.35 ± 0.822 (0.985)	1.79 ± 1.14 (1.82)	0.482 ± 0.587 (0.905)	1.07 ± 0.617 (0.931)	0.000 ± 0.791 (1.96)	1.14 ± 0.709 (0.922)	0.220 ± 0.594 (0.981)	0.731 ± 0.979 (1.95)

# TABLE ISUMMARY OF ANALYTICAL RESULTS - 2021 ASSESSMENT MONITORINGEVERGY KANSAS CENTRAL, INC.JEFFREY ENERGY CENTERFLY ASH LANDFILLST. MARYS, KANSAS

Location	Downgradient								
	MW-FAA-6								
Measure Point (TOC)				1162.76					
Sample Name	FAA-6-030421	FAL-DUP-030421	FAA-6-040121*	FAA-6-06/09/21	FAA-DUP-06/09/21	FAA-6-091421	JEC-FAA-DUP-091421		
Sample Date	3/4/2021	3/4/2021	4/1/2021	06/09/2021	06/09/2021	9/14/2021	9/14/2021		
Final Lab Report Date	3/17/2021	3/17/2021	4/5/2021	6/18/2021	6/18/2021	12/2/2021	12/2/2021		
Final Lab Report Revision Date	3/23/2021	3/23/2021	N/A	NA	NA	N/A	N/A		
Final Radiation Lab Report Date	3/30/2021	3/30/2021	N/A	7/7/2021	7/7/2021	12/2/2021	12/2/2021		
Final Radiation Lab Report Revision Date	N/A	N/A	N/A	NA	NA	N/A	N/A		
Lab Data Reviewed and Validated	4/16/2021	4/16/2021	4/16/2021	8/2/2021	8/2/2021	12/10/2021	12/10/2021		
Depth to Water (ft btoc)	14.62	-	14.62	14.37	-	19.17	-		
Temperature (Deg C)	16.27	-	13.81	18.48	-	17.28	-		
Conductivity, Field (μS/cm)	4910	-	1920	1760	-	1860	-		
Turbidity, Field (NTU)	0.0	-	0.0	0.0	-	0.0	-		
pH, Field (su)	8.00	-	7.19	6.71	-	7.45	-		
Boron, Total (mg/L)	4.2	4.1	-	-	-	2.0	2.7		
Calcium, Total (mg/L)	101	99.1	-	-	-	134	135		
Chloride (mg/L)	74.4	75.0	-	-	-	74.3	75.0		
Fluoride (mg/L)	1.1	1.1	-	-	-	0.67	0.77		
Sulfate, Total (mg/L)	1470	1460	-	-	-	932	979		
pH (su)	7.8	7.9	-	-	-	7.2	7.4		
TDS (mg/L)	2280	2440	-	-	-	1770	1750		
Antimony, Total (mg/L)	-	-	-	< 0.0010	< 0.0010	-	-		
Arsenic, Total (mg/L)	0.011	0.011	0.0043	0.0055	0.0063	0.0052	0.0065		
Barium, Total (mg/L)	0.024	0.023	-	0.035	0.034	0.033	0.032		
Beryllium, Total (mg/L)	< 0.0010	< 0.0010	-	< 0.0010	< 0.0010	-	-		
Cadmium, Total (mg/L)	-	-	-	< 0.00050	< 0.00050	-	-		
Chromium, Total (mg/L)	-	-	-	< 0.0050	< 0.0050	-	-		
Cobalt, Total (mg/L)	0.0013	0.0013	-	0.0017	0.0016	0.0017	0.0015		
Lead, Total (mg/L)	-	-	-	< 0.010	< 0.010	-	-		
Lithium, Total (mg/L)	< 0.010	< 0.010	-	< 0.010	< 0.010	0.012	< 0.010		
Molybdenum, Total (mg/L)	0.49	0.48	-	0.34	0.38	0.26	0.30		
Selenium, Total (mg/L)	< 0.0010	< 0.0010	-	0.0018	0.0018	< 0.0010	< 0.0010		
Thallium, Total (mg/L)	-	-	-	< 0.0010	< 0.0010	-	-		
Mercury, Total (mg/L)	-	-	-	< 0.00020	< 0.00020	-	-		
Fluoride (mg/L)	1.1	1.1	-	0.66	0.68	0.67	0.77		
Radium-226 & 228 (pCi/L)	0.538 ± 0.514 (0.878)	0.709 ± 0.532 (0.794)	-	0.495 ± 0.590 (0.871)	0.661 ± 0.562 (0.843)	0.570 ± 0.965 (1.98)	0.866 ± 1.04 (2.03)		

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 2020 SAMPLING EVENTJEFFREY ENERGY CENTER

FLY ASH LANDFILL

CCR Appendix-IV Arsenic, Total (mg/L)	)
0.0035	NA
	0.010
	0.010
	0.010
CCR Appendix-IV Barium, Total (mg/L)	1
0.013	NA
	2
	2
	2
	L)
0.0018 <sup>3</sup>	NA
	0.004
	0.004
	0.004
CCR Appendix-IV Cobalt, Total (mg/L)	
0.00521	NA
	0.006
	0.006
	0.006
CCR Appendix-IV Fluoride, Total (mg/L	)
1.430	NA
	4.0
	4.0
	4.0
0.171	NA
	0.171
	0.171
	0.171
0.0652	NA
	0.100
	0.100
	0.929
R Appendix-IV Radium-226 & 228 Combined	d (pCi/L)
2.342	NA
	5
	5
	5
	-
0.00370	NA
	0.05
	0.05
	0.013 0.013 CCR Appendix-IV: Beryllium, Total (mg/ 0.0018 <sup>3</sup> CCR Appendix-IV Cobalt, Total (mg/L) 0.00521 CCR Appendix-IV Fluoride, Total (mg/L) 0.00521 CCR Appendix-IV Fluoride, Total (mg/L) 0.171 CCR Appendix-IV Lithium, Total (mg/L) 0.171 0.171 0.171 0.0652 0.0652 0.0929 <sup>2</sup> R Appendix-IV Radium-226 & 228 Combinet

#### Notes and Abbreviations:

<sup>1</sup> Interwell background data collected from 08/19/2016 through 03/04/2020, unless otherwise noted.

 $^{2}\,$  Intrawell background data collected from 08/19/2016 through 06/23/2019.

 $^{\rm 3}$  Interwell background data collected from 08/19/2016 through 09/14/2020.

CCR = Coal Combustion Residuals

GWPS = Groundwater Protection Standard

mg/L = milligrams per Liter

NA = Not Applicable

pCi/L = picoCuries per Liter



## TABLE III ASSESSMENT GROUNDWATER MONITORING - DETECTED APPENDIX IV GWPS MARCH 2021 SAMPLING EVENT JEFFREY ENERGY CENTER

FLY ASH LANDFILL

Well Number	Background Value <sup>1,2</sup>	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/L)	
MW-FAA-5 (upgradient)	0.013	NA
MW-FAA-3		2
MW-FAA-4		2
MW-FAA-6		2
	CCR Appendix-IV Beryllium, Total (mg/L)	
MW-FAA-5 (upgradient)	0.0018 <sup>3</sup>	NA
MW-FAA-3		0.004
MW-FAA-4		0.004
MW-FAA-6		0.004
	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 (mg/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/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	0.901 <sup>2</sup>	0.901
CC	Appendix-IV Radium-226 & 228 Combined	(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 (mg/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:

<sup>1</sup> Interwell background data collected from 08/19/2016 through 03/04/2020, unless otherwise noted.

 $^{2}\,$  Intrawell background data collected from 08/19/2016 through 09/14/2020.

<sup>3</sup> Interwell background data collected from 08/19/2016 through 09/14/2020.

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



**FIGURES** 







MONITORING WELL

PIEZOMETER OBSERVATION ONLY

FLY ASH LANDFILL

#### NOTES

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

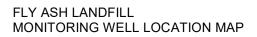


400

800

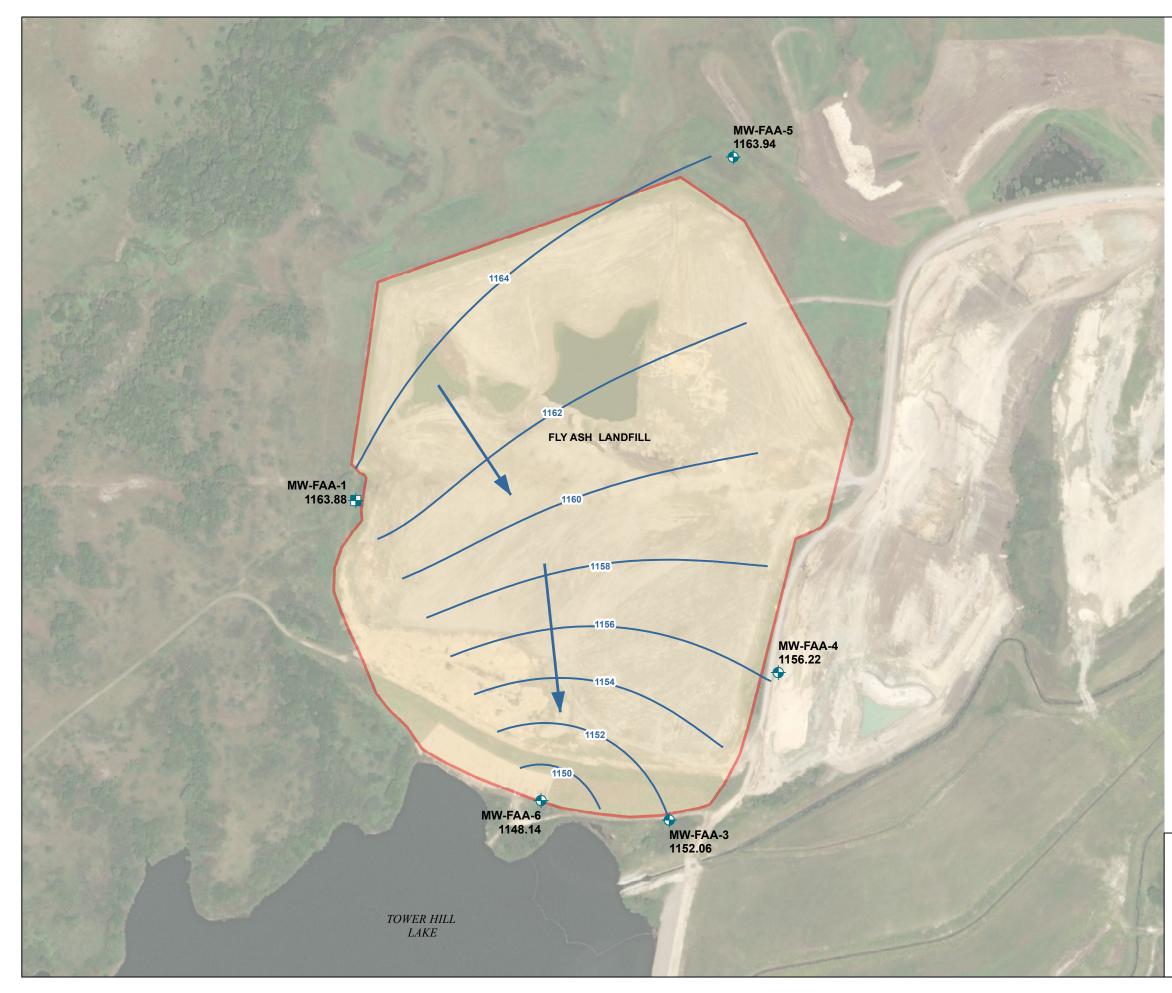
SCALE IN FEET

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



Severgy JANUARY 2022

FIGURE 1



LEGEND	
MW-FAA-4 1167.47	WELL NAME WITH GROUNDWATER ELEVATION, (FT AMSL) MARCH 2021
	PIEZOMETER OBSERVATION ONLY
<b>•</b>	MONITORING WELL
	ESTIMATED 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 04 MARCH 2021.

3. AMSL = ABOVE MEAN SEA LEVEL

4. AERIAL IMAGERY SOURCE: ESRI, 3 SEPTEMBER 2019



400

SCALE IN FEET

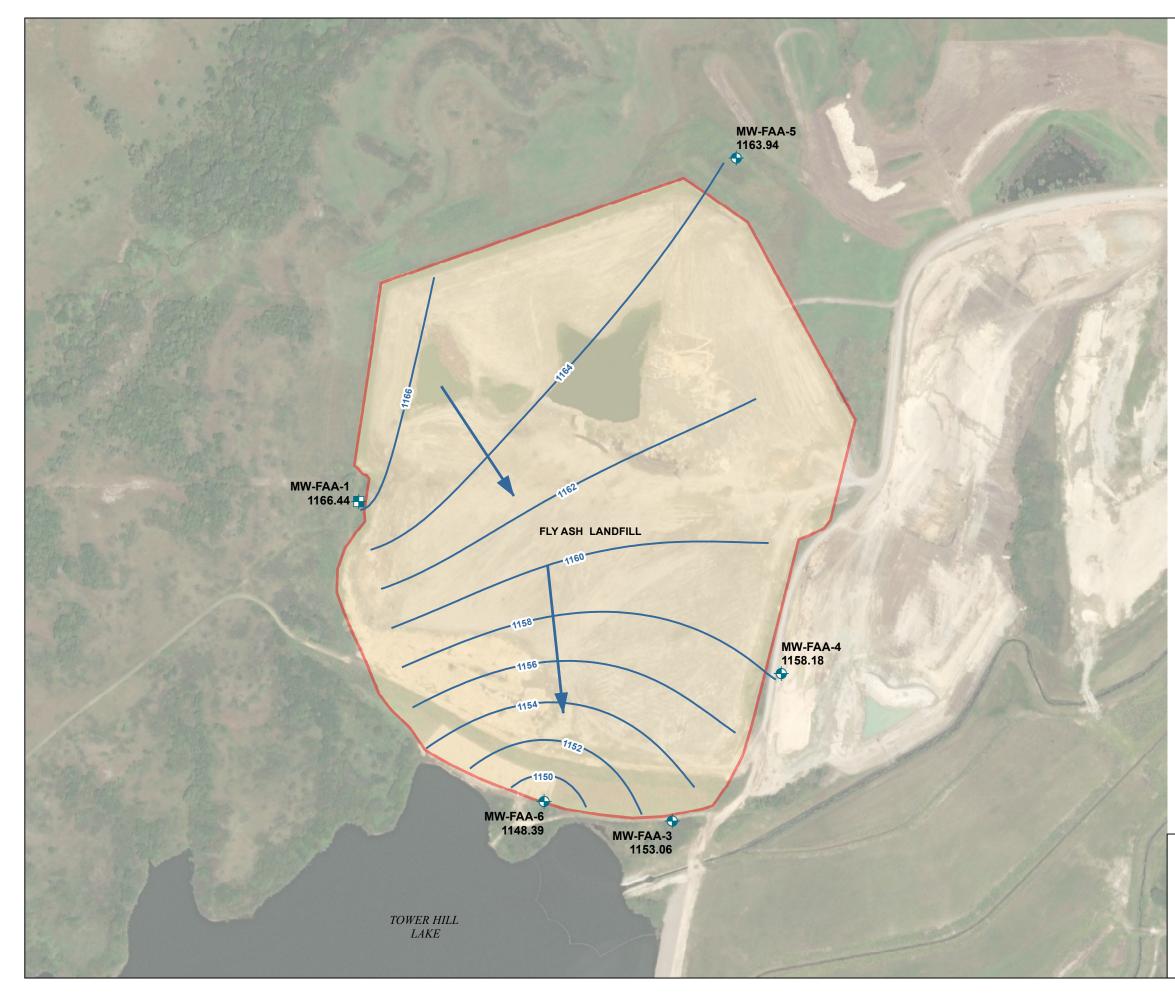
**HALEY ALDRICH** EVERGY KANSAS CENTRAL, INC. JEFFREY ENERGY CENTER ST. MARY'S, KANSAS

FLY ASH LANDFILL GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP MARCH 4, 2021

800

Severgy JANUARY 2022

FIGURE 2



LEGEND	
MW-FAA-4 1167.47	WELL NAME WITH GROUNDWATER ELEVATION, (FT AMSL) JUNE 2021
+	PIEZOMETER OBSERVATION ONLY
•	MONITORING WELL
	ESTIMATED 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 09 JUNE 2021.

3. AMSL = ABOVE MEAN SEA LEVEL

4. AERIAL IMAGERY SOURCE: ESRI, 3 SEPTEMBER 2019



400

SCALE IN FEET

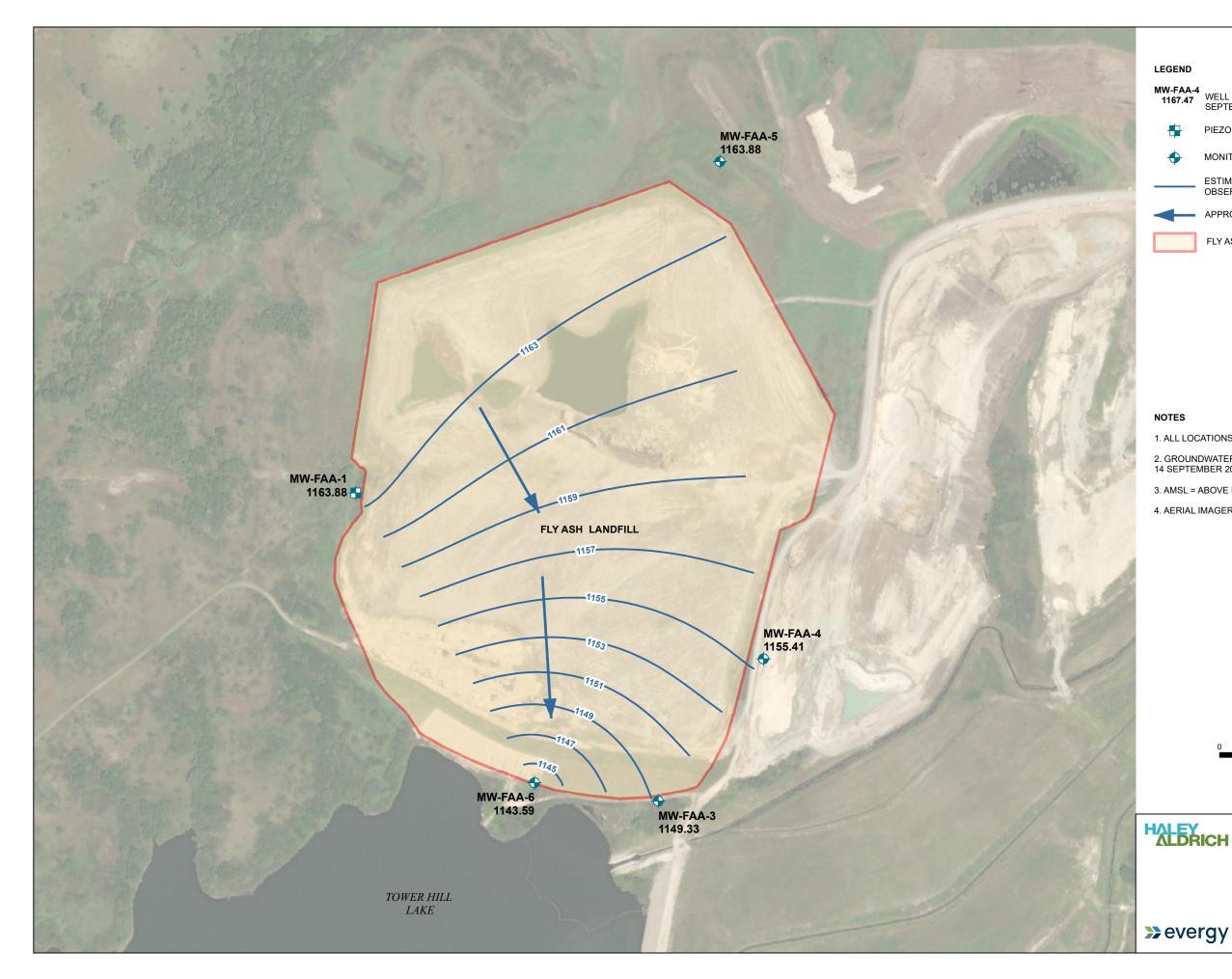
**HALEY ALDRICH** EVERGY KANSAS CENTRAL, INC. JEFFREY ENERGY CENTER ST. MARY'S, KANSAS

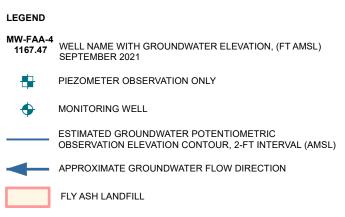
FLY ASH LANDFILL GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP JUNE 09, 2021

Severgy JANUARY 2022

FIGURE 3

800





#### NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 14 SEPTEMBER 2021.

3. AMSL = ABOVE MEAN SEA LEVEL

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, 2021

JANUARY 2022

FIGURE 4



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:	2021 Annual Groundwater Monitoring and Corrective Action Report Addendum
	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 2021 for the FAL was completed and placed in the facility's operating record on January 28, 2022, 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 2021 sampling events are included in Attachment 1, and a discussion of the applicable statistical analyses completed in 2021 are included in Attachment 2 of this addendum. The 2021 GWMCA Report does include a "Groundwater Potentiometric Elevation Contour Map" for each of the 2021 sampling events as Figures 2, 3, and 4. In

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

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 2021 are provided.
  - An additional sample for arsenic was collected in April 2021 for monitoring well MW-FAA-6 due to a suspected erroneous calcium reading during the March 2021 semi-annual assessment monitoring sampling event. The result was revised accordingly.
- 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 2021. Statistical analyses completed in 2021 included:
  - Overview of the January 2021 statistical analyses for data obtained in the September 2020 sampling event; and
  - Overview of the July 2021 statistical analyses for data obtained in the March 2021 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 2021 are provided.



**ATTACHMENT 1** Laboratory Analytical Reports ATTACHMENT 1-1 March 2021 Sampling Event Laboratory Analytical Report



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

March 23, 2021

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

RE: Project: JEC FAL CCR Pace Project No.: 60362963

Dear Melissa Michels:

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

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

Revised Report REV\_1

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

Sincerely,

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

Enclosures

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





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

#### CERTIFICATIONS

Project: JEC FAL CCR Pace Project No.: 60362963

#### **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.: 60362963

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60362963001	FAA-3-030421	Water	03/04/21 16:49	03/05/21 17:00
60362963002	FAA-4-030421	Water	03/04/21 17:55	03/05/21 17:00
60362963003	FAA-5-030421	Water	03/04/21 14:45	03/05/21 17:00
60362963004	FAA-6-030421	Water	03/04/21 15:05	03/05/21 17:00
60362963005	FAL-DUP-030421	Water	03/04/21 15:05	03/05/21 17:00



#### SAMPLE ANALYTE COUNT

Project: JEC FAL CCR Pace Project No.: 60362963

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60362963001	FAA-3-030421	EPA 200.7	TDS	4	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	4	PASI-K
		SM 2540C	AJS	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	AJS, MJK	3	PASI-K
60362963002	FAA-4-030421	EPA 200.7	TDS	4	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	4	PASI-K
		SM 2540C	AJS	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	AJS, MJK	3	PASI-K
60362963003	FAA-5-030421	EPA 200.7	TDS	4	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	4	PASI-K
		SM 2540C	AJS	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	AJS, MJK	3	PASI-K
60362963004	FAA-6-030421	EPA 200.7	TDS	4	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	4	PASI-K
		SM 2540C	AJS	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	AJS, MJK	3	PASI-K
60362963005	FAL-DUP-030421	EPA 200.7	TDS	4	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	4	PASI-K
		SM 2540C	AJS	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	AJS, MJK	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City



Project:JEC FAL CCRPace Project No.:60362963

Date: March 23, 2021

Amended report revised to include arsenic rerun results for samples FAA-6-030421 (60362963004) and FAL-DUP-030421 (60362963005).



Project: JEC FAL CCR

Pace Project No.: 60362963

#### Method: EPA 200.7

Description:200.7 Metals, TotalClient:Evergy Kansas Central, Inc.Date:March 23, 2021

#### **General Information:**

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

#### Hold Time:

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

#### Sample Preparation:

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

#### Initial Calibrations (including MS Tune as applicable):

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

#### **Continuing Calibration:**

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

#### Method Blank:

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

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

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

#### QC Batch: 707827

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

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

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

#### Additional Comments:



Project: JEC FAL CCR

Pace Project No.: 60362963

#### Method: EPA 6010

Description:6010 MET ICPClient:Evergy Kansas Central, Inc.Date:March 23, 2021

#### **General Information:**

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

#### Hold Time:

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

#### Sample Preparation:

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

#### Initial Calibrations (including MS Tune as applicable):

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

#### **Continuing Calibration:**

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

#### Method Blank:

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

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

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

#### Additional Comments:



Project: JEC FAL CCR

Pace Project No.: 60362963

#### Method: EPA 200.8

Description:200.8 MET ICPMSClient:Evergy Kansas Central, Inc.Date:March 23, 2021

#### **General Information:**

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

#### Hold Time:

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

#### Sample Preparation:

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

#### Initial Calibrations (including MS Tune as applicable):

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

#### **Continuing Calibration:**

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

#### Internal Standards:

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

#### Method Blank:

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

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

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

Additional Comments:



Project: JEC FAL CCR

#### Pace Project No.: 60362963

#### Method: SM 2540C

Description:2540C Total Dissolved SolidsClient:Evergy Kansas Central, Inc.Date:March 23, 2021

#### **General Information:**

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

#### Hold Time:

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

#### Method Blank:

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

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

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

#### **Duplicate Sample:**

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

#### **Additional Comments:**



Project: JEC FAL CCR

# Pace Project No.: 60362963

## Method: SM 4500-H+B

Description:4500H+ pH, ElectrometricClient:Evergy Kansas Central, Inc.Date:March 23, 2021

## **General Information:**

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

## Hold Time:

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

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

- FAA-3-030421 (Lab ID: 60362963001)
- FAA-4-030421 (Lab ID: 60362963002)
- FAA-5-030421 (Lab ID: 60362963003)
- FAA-6-030421 (Lab ID: 60362963004)
- FAL-DUP-030421 (Lab ID: 60362963005)

#### 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.

QC Batch: 708292

- D6: The precision between the sample and sample duplicate exceeded laboratory control limits.
  - DUP (Lab ID: 2852391)
    - pH at 25 Degrees C

#### Additional Comments:



Project: JEC FAL CCR Pace Project No.: 60362963

#### ,

Method:EPA 300.0Description:300.0 IC Anions 28 DaysClient:Evergy Kansas Central, Inc.Date:March 23, 2021

## **General Information:**

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

#### Hold Time:

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

#### Method Blank:

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

## Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

## Matrix Spikes:

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

## Additional Comments:

Analyte Comments:

#### QC Batch: 707523

- E: Analyte concentration exceeded the calibration range. The reported result is estimated.
  - MS (Lab ID: 2849682)
    - Sulfate
  - MSD (Lab ID: 2849683)
    - Sulfate

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



Project: JEC FAL CCR

Pace Project No.: 60362963

Sample: FAA-3-030421	Lab ID: 603	62963001	Collected: 03/04	21 16:4	9 Received: 03	3/05/21 17:00 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Met	hod: EPA 20	0.7 Preparation Me	ethod: El	PA 200.7			
	Pace Analytic	al Services -	Kansas City					
Barium, Total Recoverable	0.029	mg/L	0.0050	1	03/10/21 12:01	03/15/21 23:34	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.0010	1	03/10/21 12:01	03/15/21 23:34	7440-41-7	
Boron, Total Recoverable	0.53	mg/L	0.10	1	03/10/21 12:01	03/15/21 23:34	7440-42-8	
Calcium, Total Recoverable	195	mg/L	0.20	1	03/10/21 12:01	03/15/21 23:34	7440-70-2	
6010 MET ICP	Analytical Met	hod: EPA 60	010 Preparation Me	thod: EF	PA 3010			
	Pace Analytic	al Services -	Kansas City					
Lithium, Total Recoverable	0.023	mg/L	0.010	1	03/11/21 10:57	03/15/21 20:41	7439-93-2	
200.8 MET ICPMS	Analytical Met	hod: EPA 20	0.8 Preparation Me	ethod: El	PA 200.8			
	Pace Analytic							
Arsenic, Total Recoverable	<0.0010	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:12	7440-38-2	
Cobalt, Total Recoverable	<0.0010	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:12	7440-48-4	
Molybdenum, Total Recoverable	0.0082	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:12	7439-98-7	
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:12	7782-49-2	
2540C Total Dissolved Solids	Analytical Met	hod: SM 254	40C					
	Pace Analytic	al Services -	Kansas City					
Total Dissolved Solids	1130	mg/L	13.3	1		03/11/21 13:28		
4500H+ pH, Electrometric	Analytical Met	hod: SM 450	00-H+B					
•	Pace Analytic	al Services -	Kansas City					
pH at 25 Degrees C	7.1	Std. Units	0.10	1		03/12/21 11:10		H6
300.0 IC Anions 28 Days	Analytical Met	hod: EPA 30	0.0					
	Pace Analytic	al Services -	Kansas City					
Chloride	84.2	mg/L	20.0	20		03/10/21 00:30	16887-00-6	
Fluoride	<0.20	mg/L	0.20	1		03/09/21 23:47	16984-48-8	
Sulfate	556	mg/L	50.0	50		03/10/21 21:17	14808-79-8	



Project: JEC FAL CCR

Pace Project No.: 60362963

Sample: FAA-4-030421	Lab ID: 603	62963002	Collected: 03/04/2	21 17:5	5 Received: 03	3/05/21 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	0.7 Preparation Me	thod: El	PA 200.7			
	Pace Analytic	al Services -	Kansas City					
Barium, Total Recoverable	0.051	mg/L	0.0050	1	03/10/21 12:01	03/15/21 23:36	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.0010	1	03/10/21 12:01	03/15/21 23:36	7440-41-7	
Boron, Total Recoverable	0.71	mg/L	0.10	1		03/15/21 23:36		
Calcium, Total Recoverable	195	mg/L	0.20	1	03/10/21 12:01	03/15/21 23:36	7440-70-2	
6010 MET ICP	Analytical Met	hod: EPA 60	10 Preparation Met	hod: EF	PA 3010			
	Pace Analytic	al Services -	Kansas City					
Lithium, Total Recoverable	0.021	mg/L	0.010	1	03/11/21 10:57	03/15/21 20:44	7439-93-2	
200.8 MET ICPMS	Analytical Met	hod: EPA 20	0.8 Preparation Me	thod: El	PA 200.8			
	Pace Analytic							
Arsenic, Total Recoverable	<0.0010	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:14	7440-38-2	
Cobalt, Total Recoverable	0.0021	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:14	7440-48-4	
Molybdenum, Total Recoverable	0.0073	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:14	7439-98-7	
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:14	7782-49-2	
2540C Total Dissolved Solids	Analytical Met	hod: SM 254	40C					
	Pace Analytic	al Services -	Kansas City					
Total Dissolved Solids	1140	mg/L	13.3	1		03/11/21 13:28		
4500H+ pH, Electrometric	Analytical Met	hod: SM 450	00-H+B					
<b>F F F F F F F F F F</b>	Pace Analytic							
pH at 25 Degrees C	6.9	Std. Units	0.10	1		03/12/21 12:14		H6
300.0 IC Anions 28 Days	Analytical Met	hod: EPA 30	0.0					
	Pace Analytic	al Services -	Kansas City					
Chloride	77.9	mg/L	20.0	20		03/10/21 00:58	16887-00-6	
Fluoride	<0.20	mg/L	0.20	1		03/10/21 00:44	16984-48-8	
Sulfate	536	mg/L	50.0	50		03/10/21 21:31	14808-79-8	



Project: JEC FAL CCR

Pace Project No.: 60362963

Sample: FAA-5-030421	Lab ID: 603	862963003	Collected: 03/04/2	1 14:4	5 Received: 03	3/05/21 17:00 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Met	hod: EPA 20	0.7 Preparation Met	hod: El	PA 200.7			
	Pace Analytic	al Services -	Kansas City					
Barium, Total Recoverable	<0.0050	mg/L	0.0050	1	03/10/21 12:01	03/15/21 23:39	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.0010	1	03/10/21 12:01	03/15/21 23:39	7440-41-7	
Boron, Total Recoverable	1.7	mg/L	0.10	1		03/15/21 23:39		
Calcium, Total Recoverable	537	mg/L	0.20	1	03/10/21 12:01	03/15/21 23:39	7440-70-2	M1
6010 MET ICP	Analytical Met	hod: EPA 60	10 Preparation Meth	nod: EP	A 3010			
	Pace Analytic	al Services -	Kansas City					
Lithium, Total Recoverable	0.14	mg/L	0.010	1	03/11/21 10:57	03/15/21 20:53	7439-93-2	
200.8 MET ICPMS	Analytical Met	hod: EPA 20	0.8 Preparation Met	hod: El	PA 200.8			
	Pace Analytic							
Arsenic, Total Recoverable	<0.0010	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:16	7440-38-2	
Cobalt, Total Recoverable	0.0031	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:16	7440-48-4	
Molybdenum, Total Recoverable	0.029	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:16	7439-98-7	
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:16	7782-49-2	
2540C Total Dissolved Solids	Analytical Met	hod: SM 254	0C					
	Pace Analytic	al Services -	Kansas City					
Total Dissolved Solids	3640	mg/L	66.7	1		03/11/21 13:28		
4500H+ pH, Electrometric	Analytical Met	hod: SM 450	0-H+B					
• *	Pace Analytic	al Services -	Kansas City					
pH at 25 Degrees C	6.9	Std. Units	0.10	1		03/12/21 10:56		H6
300.0 IC Anions 28 Days	Analytical Met	hod: EPA 30	0.0					
······································	Pace Analytic							
Chloride	89.9	mg/L	20.0	20		03/10/21 01:27	16887-00-6	
Fluoride	1.1	mg/L	0.20	1		03/10/21 01:13	16984-48-8	
Sulfate	2200	mg/L	200	200		03/10/21 21:45	14808-79-8	



Project: JEC FAL CCR

Pace Project No.: 60362963

Sample: FAA-6-030421	Lab ID: 603	62963004	Collected: 03/04/	21 15:0	5 Received: 03	3/05/21 17:00 N	Aatrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Met	hod: EPA 20	0.7 Preparation Me	ethod: El	PA 200.7			
	Pace Analytica	al Services -	Kansas City					
Barium, Total Recoverable	0.024	mg/L	0.0050	1	03/10/21 12:01	03/15/21 23:51	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.0010	1	03/10/21 12:01	03/15/21 23:51	7440-41-7	
Boron, Total Recoverable	4.2	mg/L	0.10	1	03/10/21 12:01	03/15/21 23:51	7440-42-8	
Calcium, Total Recoverable	101	mg/L	0.20	1	03/10/21 12:01	03/15/21 23:51	7440-70-2	
6010 MET ICP	Analytical Met	hod: EPA 60	10 Preparation Me	thod: EF	PA 3010			
	Pace Analytica	al Services -	Kansas City					
Lithium, Total Recoverable	<0.010	mg/L	0.010	1	03/11/21 10:57	03/15/21 20:56	7439-93-2	
200.8 MET ICPMS	Analytical Met	hod: EPA 20	0.8 Preparation Me	ethod: El	PA 200.8			
	Pace Analytica	al Services -	Kansas City					
Arsenic, Total Recoverable	0.011	mg/L	0.0010	1	03/18/21 13:35	03/23/21 12:33	7440-38-2	
Cobalt, Total Recoverable	0.0013	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:19	7440-48-4	
Molybdenum, Total Recoverable	0.49	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:19	7439-98-7	
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:19	7782-49-2	
2540C Total Dissolved Solids	Analytical Met	hod: SM 254	40C					
	Pace Analytica	al Services -	Kansas City					
Total Dissolved Solids	2280	mg/L	40.0	1		03/11/21 13:30		
4500H+ pH, Electrometric	Analytical Met	hod: SM 450	00-H+B					
• *	Pace Analytica	al Services -	Kansas City					
pH at 25 Degrees C	7.8	Std. Units	0.10	1		03/12/21 10:58		H6
300.0 IC Anions 28 Days	Analytical Met	hod: EPA 30	0.0					
-	Pace Analytica	al Services -	Kansas City					
Chloride	74.4	mg/L	20.0	20		03/10/21 01:56	16887-00-6	
Fluoride	1.1	mg/L	0.20			03/10/21 01:41	16984-48-8	
Sulfate	1470	mg/L	100	100		03/10/21 22:00	14808-79-8	



Project: JEC FAL CCR

Pace Project No.: 60362963

Parameters								
	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Met	hod: EPA 20	0.7 Preparation Met	hod: El	PA 200.7			
	Pace Analytica	al Services -	Kansas City					
Barium, Total Recoverable	0.023	mg/L	0.0050	1	03/10/21 12:01	03/15/21 23:54	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.0010	1	03/10/21 12:01	03/15/21 23:54	7440-41-7	
Boron, Total Recoverable	4.1	mg/L	0.10	1	03/10/21 12:01	03/15/21 23:54	7440-42-8	
Calcium, Total Recoverable	99.1	mg/L	0.20	1	03/10/21 12:01	03/15/21 23:54	7440-70-2	
6010 MET ICP	Analytical Metl	hod: EPA 60	10 Preparation Met	nod: EP	PA 3010			
	Pace Analytica							
Lithium, Total Recoverable	<0.010	mg/L	0.010	1	03/11/21 10:57	03/15/21 20:58	7439-93-2	
200.8 MET ICPMS	Analytical Metl	hod: EPA 20	0.8 Preparation Met	hod: El	PA 200.8			
	Pace Analytica							
Arsenic, Total Recoverable	0.011	mg/L	0.0010	1	03/18/21 13:35	03/23/21 12:42	7440-38-2	
Cobalt, Total Recoverable	0.0013	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:21	7440-48-4	
Molybdenum, Total Recoverable	0.48	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:21	7439-98-7	
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1	03/11/21 10:57	03/15/21 17:21	7782-49-2	
2540C Total Dissolved Solids	Analytical Metl	hod: SM 254	10C					
	Pace Analytica	al Services -	Kansas City					
Total Dissolved Solids	2440	mg/L	40.0	1		03/11/21 13:30		
4500H+ pH, Electrometric	Analytical Met	hod: SM 450	)0-H+B					
<b>••••</b>	Pace Analytica							
pH at 25 Degrees C	7.9	Std. Units	0.10	1		03/12/21 11:00		H6
300.0 IC Anions 28 Days	Analytical Met	hod: EPA 30	0.0					
	Pace Analytica							
Chloride	75.0	mg/L	20.0	20		03/10/21 02:24	16887-00-6	
Fluoride	1.1	mg/L	0.20	1		03/10/21 02:10	16984-48-8	
Sulfate	1460	mg/L	100	100		03/10/21 22:14	14808-79-8	



Project: Pace Project No.:	JEC F/ 60362	AL CCR 963											
QC Batch:	7078	27		Analy	ysis Metho	d: E	EPA 200.7						
QC Batch Method:	EPA	200.7		Anal	ysis Descri	ption: 2	200.7 Metal	s, Total					
					ratory:	•	Pace Analyt		es - Kansa	s Citv			
Associated Lab Sa	mples:	603629630	01, 6036296300		,					,			
METHOD BLANK:	28505	95			Matrix: W	/ater							
Associated Lab Sa	mples:	603629630	01, 6036296300	2, 6036296	3003, 603	62963004, 6	6036296300	05					
				Blai	nk	Reporting							
Para	meter		Units	Res		Limit	Analy	zed	Qualifier	s			
Barium			mg/L	<	0.0050	0.0050	03/15/2	22:34					
Beryllium			mg/L		0.0010	0.0010							
Boron			mg/L		<0.10	0.10	03/15/2	22:34					
Calcium			mg/L		<0.20	0.20	03/15/21	22:34					
LABORATORY CC	ONTROL	SAMPLE:	2850596 Units	Spike Conc.	LC	CS sult	LCS % Rec	% R Lim		Qualifiers			
	lilletei									Quaimers	_		
Barium			mg/L		1	0.98	98		85-115				
Beryllium Boron			mg/L		1 1	0.98 0.96	98 96		85-115 85-115				
Calcium			mg/L mg/L		0	10.90	102		85-115				
Caloran								-					
MATRIX SPIKE &	MATRIX	SPIKE DUPL	ICATE: 2850			2850598							
			60362960004	MS Spike	MSD Spille	MS	MSD	MS	MSD	% Rec		May	
Paramete	er	Units	Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	Max RPD	Qual
Barium		mg/L	0.057	1	1	1.0	1.0	97	97	70-130	0	20	
Beryllium		mg/L	<0.0010	1	1	0.95	0.95	95	95	70-130	0	20	
Boron		mg/L	0.40	1	1	1.4	1.4	96		70-130	0		
Calcium		mg/L	355	10	10	352	351	-28	-39	70-130	0	20	M1
MATRIX SPIKE SA	AMPLE:		2850599										
				60362	963003	Spike	MS		MS	% Rec			
Para	meter		Units	Re	sult	Conc.	Result	9	% Rec	Limits		Quali	fiers
Barium			mg/L		<0.0050	1		1.0	99	70-	130		
Beryllium			mg/L		<0.0010	1	(	).95	95	70-	130		
Boron			mg/L		1.7	1		2.7	96	70 <sup>.</sup>	130		
Calcium			mg/L		537	10		555	179	70 <sup>.</sup>	130 M	1	

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# **REPORT OF LABORATORY ANALYSIS**

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Project: JEC FA Pace Project No.: 603629												
QC Batch: 70805	56		Anal	ysis Metho	d: E	EPA 200.8						
QC Batch Method: EPA 2	200.8		Anal	ysis Descri	iption: 2	200.8 MET						
				pratory:			ical Serv	vices - Kansa	as Citv			
Associated Lab Samples:	6036296300	1,6036296300										
METHOD BLANK: 285145	0			Matrix: W	/ater							
Associated Lab Samples:	6036296300	1,6036296300	2.6036296	63003, 603	62963004.6	603629630	05					
	0000200000	1, 0000200000	Bla		Reporting	000020000						
Parameter		Units	Res		Limit	Analy	/zed	Qualifie	rs			
Arsenic		mg/L		0.0010	0.0010							
Cobalt		mg/L		0.0010	0.0010							
Molybdenum		mg/L		0.0010	0.0010							
Selenium		mg/L	<	:0.0010	0.0010	) 03/15/2 <sup>,</sup>	1 16:43					
LABORATORY CONTROL S	SAMPLE: 28	351451										
			Spike	LC	CS	LCS	%	Rec				
Parameter		Units	Conc.	Re	sult	% Rec	Li	mits	Qualifiers			
Arsenic		mg/L	0.0	04	0.041	102	2	85-115				
Cobalt		mg/L	0.0		0.040	100		85-115				
Molybdenum		mg/L	0.0		0.040	100		85-115				
Selenium		mg/L	0.0	04	0.042	10	5	85-115				
MATRIX SPIKE & MATRIX S			450		2054452							
MATRIA SPIKE & MATRIA S		CATE: 2851	452 MS	MSD	2851453							
	G	0362962002		Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Spike	Conc.	Result	Result	% Rec		<sup>3</sup> Kec	RPD	RPD	Qual
			Conc.									Qual
Arsenic	mg/L	<0.0021	0.04	0.04	0.040	0.038		98 94		4		
Cobalt	mg/L	<0.0017	0.04	0.04	0.040	0.039		9 97		2		
Molybdenum	mg/L	<0.0017	0.04	0.04	0.041	0.040	10			1		
Selenium	mg/L	<0.0036	0.04	0.04	0.032	0.034	7	78 82	2 70-130	6	20	
MATRIX SPIKE SAMPLE:	28	351454										
	_			2965003	Spike	MS		MS	% Rec		0!'	lorc
Parameter		Units	K	esult	Conc.	Result		% Rec	Limits		Qualif	IEIS
Arsenic		mg/L		<0.0010	0.04		045	110		-130		
Cobalt		mg/L		<0.0010	0.04		044	108		-130		
Molybdenum		mg/L		0.0027	0.04	0.	050	117	70	-130		
Selenium		mg/L		<0.0010	0.04		041	101		-130		

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# **REPORT OF LABORATORY ANALYSIS**

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Project: Pace Project No.:	JEC FAL CCR 60362963											
QC Batch:	709462		Analy	sis Metho	od: I	EPA 200.8						
QC Batch Method:	EPA 200.8			sis Desci		200.8 MET						
				ratory:	•	Pace Analyt	ical Service	es - Kansas	s Citv			
Associated Lab Sar	nples: 60362963	004, 6036296300		,		,						
METHOD BLANK:	2856575			Matrix: V	Vater							
Associated Lab Sar	nples: 60362963	004, 6036296300	5									
			Blar	nk	Reporting							
Parar	neter	Units	Res	ult	Limit	Analy	zed	Qualifiers	5			
Arsenic		mg/L	<	0.0010	0.001	0 03/23/21	12:30					
LABORATORY CO	NTROL SAMPLE:	2856576										
			Spike	L	CS	LCS	% Re	ЭC				
Parar	neter	Units	Conc.	Re	sult	% Rec	Limit	ts (	Qualifiers			
Arsenic		mg/L	0.0	4	0.040	100		35-115				
MATRIX SPIKE & N	IATRIX SPIKE DUP	LICATE: 2856	577		2856578							
			MS	MSD								
Demonstra		60362963004	Spike	Spike	MS	MSD	MS	MSD	% Rec	000	Max	0
Paramete	r Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	mg/L	0.011	0.04	0.04	0.049	0.049	95	96	70-130	1	20	

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



Project: JEC FAL CC	R									
Pace Project No.: 60362963										
QC Batch: 708058		Analysis	Method:	EPA 6010						
QC Batch Method: EPA 3010		Analysis	Description:	6010 MET						
		Laborato	ry:	Pace Analy	tical Servic	es - Kansa	s City			
Associated Lab Samples: 6036	2963001, 6036296300	02, 6036296300	3, 603629630	04, 603629630	05					
METHOD BLANK: 2851455		Ма	trix: Water							
Associated Lab Samples: 6036	2963001, 6036296300	02, 6036296300	3, 603629630	04, 603629630	05					
		Blank	Reporti	ng						
Parameter	Units	Result	Limit	Anal	yzed	Qualifier	S			
Lithium	mg/L	<0.0	10 0	0.010 03/15/2	1 20:07					
LABORATORY CONTROL SAMP	LE: 2851456									
	2001400	Spike	LCS	LCS	% R	ec				
Parameter	Units	Conc.	Result	% Rec	Lim	its	Qualifiers			
Lithium	mg/L	1	0.95	9	5	80-120				
MATRIX SPIKE & MATRIX SPIKE	DUPLICATE: 2851	457	2851	458						
		-	SD				a. <b>B</b>			
Parameter	60362961001 Units Result	Spike Sp	SD bike MS bnc. Resul	MSD t 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.:	60362963							
QC Batch:	707980		Analysis Me	ethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis De	escription:	2540C Total Di	ssolved Solids		
			Laboratory:		Pace Analytica	Services - Ka	nsas City	/
Associated Lab Sar	nples: 6036296	3001, 603629630	02, 60362963003					
METHOD BLANK:	2851179		Matrix	: Water				
Associated Lab Sar	nples: 6036296	3001, 603629630	02, 60362963003					
			Blank	Reporting				
Parar	neter	Units	Result	Limit	Analyze	d Quali	fiers	
Total Dissolved Soli	ds	mg/L	<5.0	5	.0 03/11/21 13	3:24		
LABORATORY CO	NTROL SAMPLE:	2851180						
			Spike	LCS	LCS	% Rec		
Parar	neter	Units	Conc.	Result	% Rec	Limits	Quali	fiers
Total Dissolved Soli	ds	mg/L	1000	1010	101	80-120		
SAMPLE DUPLICA	TE: 2851181							
_			60362782001	Dup		Max		o
Parar	neter	Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Soli	ds	mg/L	12500	1340	00	7	10	
SAMPLE DUPLICA	TE: 2851182							
-			60362961001	Dup		Max		
Parar	neter	Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Soli	ds	mg/L	1710	172	20	0	10	

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



Project:	JEC FAL CCR							
Pace Project No.:	60362963							
QC Batch:	707981		Analysis Mo	ethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis De	escription: 2	2540C Total Di	solved Solids		
			Laboratory	: 1	Pace Analytical	Services - Kar	nsas C	City
Associated Lab Sam	ples: 60362963	004, 60362963005						
METHOD BLANK:	2851183		Matrix	k: Water				
Associated Lab Sam	ples: 60362963	004, 60362963005						
			Blank	Reporting				
Param	eter	Units	Result	Limit	Analyze	d Quali	fiers	_
Total Dissolved Solid	ls	mg/L	6.5	5 5.	0 03/11/21 13	3:29		
LABORATORY CON	ITROL SAMPLE:	2851184						
			Spike	LCS	LCS	% Rec		
Param	eter	Units	Conc.	Result	% Rec	Limits	Qu	alifiers
Total Dissolved Solid	ls	mg/L	1000	1000	100	80-120		
SAMPLE DUPLICAT	E: 2851185			5				
Param	otor	Units	60362963004 Result	Dup Result	RPD	Max RPD		Qualifiers
Total Dissolved Solid	IS	mg/L	2280	) 224	U	2	10	
SAMPLE DUPLICAT	E: 2851186							
			60362965004	Dup		Max		
Param	eter	Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Solid	ls	mg/L	1280	129	0	1	10	

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



Project:	JEC FAL CCR							
Pace Project No.:	60362963							
QC Batch:	708291		Analysis Meth	nod:	SM 4500-H+B			
QC Batch Method:	SM 4500-H+B		Analysis Desc	cription:	4500H+B pH			
			Laboratory:		Pace Analytical	Services - Kar	nsas City	
Associated Lab Sar	mples: 60362963	001, 6036296300	3, 60362963004, 60	362963005				
SAMPLE DUPLICA	TE: 2852390							
			60362961004	Dup		Max		
Parar	neter	Units	Result	Result	RPD	RPD	Qualifiers	
pH at 25 Degrees C	;	Std. Units	7.4	7.	.3	1	5 H6	

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

# **REPORT OF LABORATORY ANALYSIS**

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Project: Pace Project No.:	JEC FAL CCR 60362963								
QC Batch:	708292		Analysis Meth	od:	SM 4500-H+B				
QC Batch Method:	SM 4500-H+B		Analysis Desc	ription:	4500H+B pH				
			Laboratory:		Pace Analytica	al Servic	es - Kan	sas City	
Associated Lab Sar	mples: 603629630	02							
SAMPLE DUPLICA	TE: 2852391								
			60362623002	Dup			Max		
Parar	neter	Units	Result	Result	RPD		RPD	Qualifiers	
pH at 25 Degrees C	;	Std. Units	6.4	(	6.8	6		5 D6,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:	JEC FAL CCR											
Pace Project No.:	60362963											
QC Batch:	707523		Analy	sis Metho	d: I	EPA 300.0						
QC Batch Method:	EPA 300.0		•	sis Descri		300.0 IC Ani	ons					
			Labo	ratory:	Í	Pace Analyti	cal Service	es - Kansa	s City			
Associated Lab Sar	mples: 60362963	001, 6036296300	2, 6036296	3003, 603					·			
METHOD BLANK:	2849680			Matrix: W	ater							
Associated Lab Sar	mples: 60362963	001, 6036296300	2, 6036296	3003, 603	62963004,	6036296300	)5					
_			Blan		Reporting							
Parar	neter	Units	Resu	ult	Limit	Analy	zed	Qualifier	'S			
Chloride		mg/L		<1.0	1.							
Fluoride		mg/L		<0.20	0.2							
Sulfate		mg/L		<1.0	1.	0 03/09/21	12:26					
METHOD BLANK:	2850717			Matrix: W	ater							
Associated Lab Sar	mples: 60362963	001, 6036296300	2, 6036296	3003, 603	62963004,	6036296300	)5					
			Blan	nk	Reporting							
Parar	neter	Units	Resu	ult	Limit	Analy	zed	Qualifier	S			
Chloride		mg/L		<1.0	1.	0 03/10/21	16:30					
Fluoride		mg/L		<0.20	0.2	0 03/10/21	16:30					
Sulfate		mg/L		<1.0	1.	0 03/10/21	16:30					
LABORATORY CO	NTROL SAMPLE:	2849681										
LABORATORY CO	NTROL SAMPLE:		Spike	LC	S	LCS	% R(					
LABORATORY CO Parar		2849681 Units	Spike Conc.	LC Res		LCS % Rec	% Re Limi		Qualifiers			
			Conc.				Limi		Qualifiers			
Parar Chloride Fluoride		Units mg/L mg/L	Conc. 2.	Res 5 5	ult 4.9 2.4	% Rec 97 98	Limi	ts 90-110 90-110	Qualifiers	_		
Parar		Units mg/L	Conc. 2.		ult	% Rec 97	Limi	ts 90-110	Qualifiers			
Parar Chloride Fluoride	neter	Units mg/L mg/L	Conc. 2.	Res 5 5	ult 4.9 2.4	% Rec 97 98	Limi	ts 90-110 90-110	Qualifiers	_		
Parar Chloride Fluoride Sulfate	neter	Units mg/L mg/L mg/L	Conc. 2.	Res 5 5	4.9 2.4 4.9	% Rec 97 98	Limi	ts 90-110 90-110 90-110	Qualifiers			
Parar Chloride Fluoride Sulfate	neter	Units mg/L mg/L mg/L	Conc. 2.	Res 5 5 5 5	sult 4.9 2.4 4.9	% Rec 97 98 98	Limi	ts 90-110 90-110 90-110 90-110	Qualifiers	_		
Parar Chloride Fluoride Sulfate LABORATORY CO	neter	Units mg/L mg/L mg/L 2850718	Conc.	Res 5 5 5 LC	sult 4.9 2.4 4.9	% Rec 97 98 98 LCS	Limi	ts 90-110 90-110 90-110 90-110		_		
Parar Chloride Fluoride Sulfate LABORATORY CO Parar	neter	Units mg/L mg/L mg/L 2850718 Units	Conc.		sult	% Rec 97 98 98 98 98 98 98 98 98	Limi	ts 30-110 30-110 30-110 90-110 ec ts				
Parar Chloride Fluoride Sulfate LABORATORY CO Parar Chloride Fluoride	neter	Units mg/L mg/L mg/L 2850718 Units mg/L	Conc. 2. Spike Conc. 2.		sult 4.9 2.4 4.9 S S sult 4.8	% Rec 97 98 98 98 98 98 98 97 97	Limi	ts		_		
Parar Chloride Fluoride Sulfate LABORATORY CO Parar Chloride Fluoride Sulfate	neter NTROL SAMPLE: neter	Units mg/L mg/L 2850718 Units mg/L mg/L mg/L			sult 4.9 2.4 4.9 S S sult 4.8 2.5	% Rec 97 98 98 98 LCS % Rec 97 100 98	Limi	ts				
Parar Chloride Fluoride Sulfate LABORATORY CO Parar Chloride	neter NTROL SAMPLE: neter	Units mg/L mg/L 2850718 Units mg/L mg/L mg/L			sult 4.9 2.4 4.9 SS sult 4.8 2.5 4.9	% Rec 97 98 98 98 LCS % Rec 97 100 98	Limi	ts	Qualifiers			
Parar Chloride Fluoride Sulfate LABORATORY CO Parar Chloride Fluoride Sulfate MATRIX SPIKE & M	neter NTROL SAMPLE: neter	Units mg/L mg/L 2850718 Units mg/L mg/L mg/L PLICATE: 2849 60362867002	Conc. 2. Spike Conc. 2. 682 MS Spike	Res 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	sult 4.9 2.4 4.9 S sult 4.8 2.5 4.9 2849683 MS	% Rec 97 98 98 100 97 100 98 MSD	Limi	ts	Qualifiers % Rec	_	Max	
Parar Chloride Fluoride Sulfate LABORATORY CO Parar Chloride Fluoride Sulfate	neter NTROL SAMPLE: neter	Units mg/L mg/L 2850718 Units mg/L mg/L mg/L PLICATE: 2849 60362867002	Conc. 2. Spike Conc. 2. 682 MS		sult     4.9       2.4     4.9       3.5     5       sult	% Rec 97 98 98 LCS % Rec 97 100 98	Limi	ts	Qualifiers	RPD	Max RPD	Qual
Parar Chloride Fluoride Sulfate LABORATORY CO Parar Chloride Fluoride Sulfate MATRIX SPIKE & M Paramete	neter NTROL SAMPLE: neter	Units mg/L mg/L 2850718 Units mg/L mg/L mg/L cLICATE: 2849 60362867002 Result	Conc. 2. Spike Conc. 2. 682 MS Spike	Res 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	sult 4.9 2.4 4.9 S sult 4.8 2.5 4.9 2849683 MS	% Rec 97 98 98 100 97 100 98 MSD	Limi	ts	Qualifiers % Rec Limits 80-120		RPD	Qual
Parar Chloride Fluoride Sulfate LABORATORY CO Parar Chloride Fluoride Sulfate MATRIX SPIKE & M	neter NTROL SAMPLE: neter //ATRIX SPIKE DUF	Units mg/L mg/L 2850718 Units mg/L mg/L mg/L cliCATE: 2849 60362867002 Result 12.0	Conc. 2. Spike Conc. 2. 682 MS Spike Conc.	Res 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	sult 4.9 2.4 4.9 3S sult 4.8 2.5 4.9 2849683 MS Result	% Rec 97 98 98 LCS % Rec 97 100 98 MSD Result	Limi	ts 30-110 30-110 30-110 30-110 30-110 30-110 30-110 30-110 MSD % Rec	Qualifiers % Rec Limits 80-120 80-120		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

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Project: JEC FAL CCR Pace Project No.: 60362963

MATRIX SPIKE SAMPLE:	2849684						
		60362961002	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L	111	100	222	111	80-120	
Fluoride	mg/L	<0.20	2.5	2.8	114	80-120	
Sulfate	mg/L	608	250	886	111	80-120	

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# **REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: JEC FAL CCR Pace Project No.: 60362963

## 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

- D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
- E Analyte concentration exceeded the calibration range. The reported result is estimated.
- H6 Analysis initiated outside of the 15 minute EPA required holding time.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.



# QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	JEC FAL CCR
Pace Project No .:	60362963

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60362963001	FAA-3-030421	EPA 200.7	707827	EPA 200.7	707926
60362963002	FAA-4-030421	EPA 200.7	707827	EPA 200.7	707926
60362963003	FAA-5-030421	EPA 200.7	707827	EPA 200.7	707926
60362963004	FAA-6-030421	EPA 200.7	707827	EPA 200.7	707926
60362963005	FAL-DUP-030421	EPA 200.7	707827	EPA 200.7	707926
60362963001	FAA-3-030421	EPA 3010	708058	EPA 6010	708168
60362963002	FAA-4-030421	EPA 3010	708058	EPA 6010	708168
60362963003	FAA-5-030421	EPA 3010	708058	EPA 6010	708168
60362963004	FAA-6-030421	EPA 3010	708058	EPA 6010	708168
60362963005	FAL-DUP-030421	EPA 3010	708058	EPA 6010	708168
60362963001	FAA-3-030421	EPA 200.8	708056	EPA 200.8	708167
60362963002	FAA-4-030421	EPA 200.8	708056	EPA 200.8	708167
60362963003	FAA-5-030421	EPA 200.8	708056	EPA 200.8	708167
60362963004	FAA-6-030421	EPA 200.8	708056	EPA 200.8	708167
60362963004	FAA-6-030421	EPA 200.8	709462	EPA 200.8	709545
60362963005	FAL-DUP-030421	EPA 200.8	708056	EPA 200.8	708167
60362963005	FAL-DUP-030421	EPA 200.8	709462	EPA 200.8	709545
60362963001	FAA-3-030421	SM 2540C	707980		
60362963002	FAA-4-030421	SM 2540C	707980		
60362963003	FAA-5-030421	SM 2540C	707980		
60362963004	FAA-6-030421	SM 2540C	707981		
60362963005	FAL-DUP-030421	SM 2540C	707981		
60362963001	FAA-3-030421	SM 4500-H+B	708291		
60362963002	FAA-4-030421	SM 4500-H+B	708292		
60362963003	FAA-5-030421	SM 4500-H+B	708291		
60362963004	FAA-6-030421	SM 4500-H+B	708291		
60362963005	FAL-DUP-030421	SM 4500-H+B	708291		
60362963001	FAA-3-030421	EPA 300.0	707523		
60362963002	FAA-4-030421	EPA 300.0	707523		
60362963003	FAA-5-030421	EPA 300.0	707523		
60362963004	FAA-6-030421	EPA 300.0	707523		
60362963005	FAL-DUP-030421	EPA 300.0	707523		

1	0
P	Pace Analytical
1	www.pacerabs.com

Sample Condition Upon Receipt

# WO#:60362963

Client Name: Evergy KS central	2 
Courier:         FedEx         UPS         VIA         Clay         PEX         ECI	Pace 🗆 Xroads 🗆 Client 🗋 Other 🗆
Tracking #: Pace Shipping Label Use	ed? Yes 🗆 No 🗹
Custody Seal on Cooler/Box Present: Yes D No Seals intact: Yes	No Z
Packing Material: Bubble Wrap  Bubble Bags  Foam	Nong 🗅 Other 🗆
Thermometer Used: <u>T-298</u> Type of Ice: Wet Blue N	
Cooler Temperature (°C): As-read <u>2.3</u> Corr. Factor <u>0.6</u> Correct	
Temperature should be above freezing to 6°C	pv3/5/21
Chain of Custody present:	§
Chain of Custody relinquished:	
Samples arrived within holding time:	
Short Hold Time analyses (<72hr):	1
Rush Turn Around Time requested:	
Sufficient volume:	
Correct containers used:	
Pace containers used:	
Containers intact:	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	
Filtered volume received for dissolved tests?	
Sample labels match COC: Date / time / ID / analyses	
Samples contain multiple phases? Matrix: WT DYes ZINO DN/A	
Containers requiring pH preservation in compliance? (HNO₃, H₂SO₄, HCI<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:	
Lead acetate strip turns dark? (Record only) □Yes □No Potassium iodide test strip turns blue/purple? (Preserve) □Yes □No	
Trip Blank present:	
Headspace in VOA vials ( >6mm):	
Samples from USDA Regulated Area: State:   Yes No N/A	
Additional labels attached to 5035A / TX1005 vials in the field?  Yes No VA	
Client Notification/ Resolution: Copy COC to Client? Y / N	Field Data Required? Y / N
Person Contacted: Date/Time: Comments/ Resolution:	
X	

Project Manager Review:

Date:



# CHAIN-OF-CUSTODY / Analytical Request Document

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

Section		Section B								Sec	tion	с																					-	_
Compan	d Client Information: EVERGY KANSAS CENTRAL, INC.	Required P				0	K.			Invoi	ice Inf	_	-				_											LP	age:	1	of	1		
Address	ETEROTIVITORO DENTIVAL, INC.						na Kaney,									yable																		
Auguress.	comol Energy conter (seco)						nphrey, La				ipany	Nam	e E	VEF	RGY	KAN	ISAS	CE	NTR	AL,	INC	RE	GUL	ATO	RY	AGE	NC	Y						
	818 Kansas Ave, Topeka, KS 66612		_		gel, Bran	ndon Wil	l, Sarah H	azelwoo	d	Addr	'ess:	į.	See	Sect	ion /	A						Г	NF	DES	5	G	ROL	JND V	WATI	ER _	DRIN	KING \	VATER	
Email To		Purchase O	order I	No.							Quote	9								_		Γ	US	т		R				Γ.	OTHE	R		
	785-575-8113 Fax:	Project Nam	ne:	JEC	FAL CC	R				Pace Mana	Projec	ct	Jasn	nine	Ame	erin, s	913-	563-	140	3		Sit	te Lo	catio	on	_								
Request	ed Due Date/TAT: 7 day	Project Num	nber:								Profile	e #:	9657	' <sub>e</sub> 1	_				_				s	TAT	E:	_	KS	6						
										-		_		-			Т		Reg	uest	ted /	٩nal	_	s Filt	_	(Y/	N)							
	Section D Valid Matrix C		left)	(d					Т	T	Т						TN X		T	Γ				Т	Т	Ť	Ť	Г						
	Required Client Information MATRIX DRINKING WATER	CODE DW	codes to left)	C=COMP)	-	COLL	ECTED		z		L	F	Prese	ervat	ives		12	N	N	N	Ν	Ν	Ν		_	_								
	WATER WASTE WATER PRODUCT	WT WW P			COMP		COMPO ÉND/GI	SITE	ECTION	1								Е	1															
	SOIL/SOLID	P SL OL	(see valid	(G=GRAB	STA	IK I	END/GI	RAB	COLLE									<u>م</u> * ا	*.										Residual Chlorine (Y/N)					
	SAMPLE ID WIPE AIR	WP		9					AT CC	# OF CONTAINERS							Test	200.7 Total Metals	200.8 Total Metals		8		*						ue (					1
	(A-Z, 0-9 / ,-) OTHER Sample IDs MUST BE UNIQUE TISSUE	OT TS	CODE	TYPE					TEMP #	I	g							ĮΞ	1	E		ം	≛						틷					
#			×	L ⊒					111	No.	Ş				പ്പ	ē	, si	۳ ۲	Tota	8 1 1 1	ц,	입	ota											
ITEM			MATRIX	SAMPLE -					SAMPLI	L L	Unpreserved	H <sub>2</sub> SO <sub>4</sub>	ş	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol	L Analvsis		8	4500 H+B	ວ່	2540C TDS	6010 Total Li***						sidu	60	3620	26	3	
			Σ	ŝ	DATE	TIME	DATE	TIME	Ϋ́ς	¥	5	Ŧ	N I	ź 🖉	2 Z	Meth	5 <b>  -</b>	No No	20	45(	300:	252	<u>8</u>						Re		e Projec			D.
1	FAA-3-030421		WΤ	G		. ÷.	03/04/21	16:49		3	2		1					×	x	x	x	x	x	1:	Z	2.P/	V			BPI	U		0	01
2	FAA-4-030421		wт	G	*		03/04/21	17:55		3	2		1					×	X	х	x	x	x	_						<u> </u>				or
3	FAA-5-030421		WT	G	100		03/04/21	14:45		3	2		1					×	X	X	x	x	x										0	50
4	FAA-6-030421		WΤ	G	14	. <u>14</u> 1	03/04/21	15:05		3	2		1		$\square$		4	×	X	х	x	x	x										6	104
5	FAL-DUP-030421		WT	G	•		03/04/21	15:05		3	2		1		$\square$		4	×	X	х	x	X	x		ł					V				005
6									-	_	$\vdash$		_	-	$\square$	_		⊢	-			_	4	_	-									
7			_							-	$\left  \right $		_	+	$\vdash$	_	-	F				_	_		-								_	
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Pace Analytical Services, LLC 9608 Loiret Blvd. Lenexa, KS 66219 (913)599-5665

March 30, 2021

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

RE: Project: JEC FAL CCR Pace Project No.: 60363223

Dear Melissa Michels:

Enclosed are the analytical results for sample(s) received by the laboratory on March 09, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network: • Pace Analytical Services - 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.
Danielle Oberbroeckling, Haley & Aldrich
Melanie Satanek, Haley & Aldrich, Inc.
JD Schlegel, Evergy, Inc.





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

## CERTIFICATIONS

Project: JEC FAL CCR Pace Project No.: 60363223

#### 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.: 60363223

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60363223001	FAA-3-03/04/21	Water	03/04/21 16:49	03/09/21 11:15
60363223002	FAA-4-03/04/21	Water	03/04/21 17:55	03/09/21 11:15
60363223003	FAA-5-03/04/21	Water	03/04/21 14:45	03/09/21 11:15
60363223004	FAA-6-03/04/21	Water	03/04/21 15:05	03/09/21 11:15
60363223005	FAL-DUP-03/04/21	Water	03/04/21 15:05	03/09/21 11:15



# SAMPLE ANALYTE COUNT

Project:JEC FAL CCRPace Project No.:60363223

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60363223001	FAA-3-03/04/21	EPA 903.1		1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60363223002	FAA-4-03/04/21	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60363223003	FAA-5-03/04/21	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60363223004	FAA-6-03/04/21	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60363223005	FAL-DUP-03/04/21	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: JEC FAL CCR

Pace Project No.: 60363223

#### Method: EPA 903.1

Description:903.1 Radium 226Client:Evergy Kansas Central, Inc.Date:March 30, 2021

## **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.: 60363223

## Method: EPA 904.0

Description:904.0 Radium 228Client:Evergy Kansas Central, Inc.Date:March 30, 2021

#### **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.: 60363223

#### Method: Total Radium Calculation

Description:Total Radium 228+226Client:Evergy Kansas Central, Inc.Date:March 30, 2021

## **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.: 60363223

Sample: FAA-3-03/04/21 PWS:	Lab ID: 6036322 Site ID:	<b>3001</b> Collected: 03/04/21 16:49 Sample Type:	Received:	03/09/21 11:15	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Ser	vices - Greensburg			_	
Radium-226	EPA 903.1	-0.0571 ± 0.433 (0.905) C:NA T:88%	pCi/L	03/24/21 12:02	2 13982-63-3	
	Pace Analytical Ser	vices - Greensburg				
Radium-228	EPA 904.0	0.482 ± 0.396 (0.796) C:83% T:82%	pCi/L	03/24/21 16:41	15262-20-1	
	Pace Analytical Ser	vices - Greensburg				
Total Radium	Total Radium Calculation	0.482 ± 0.587 (0.905)	pCi/L	03/27/21 10:16	6 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60363223

Sample: FAA-4-03/04/21 PWS:	Lab ID: 603632 Site ID:	23002 Collected: 03/04/21 17:55 Sample Type:	Received:	03/09/21 11:15	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Se	ervices - Greensburg			_	
Radium-226	EPA 903.1	0.368 ± 0.540 (0.922) C:NA T:82%	pCi/L	03/24/21 12:02	2 13982-63-3	
	Pace Analytical Se	ervices - Greensburg				
Radium-228	EPA 904.0	0.775 ± 0.459 (0.859) C:82% T:78%	pCi/L	03/24/21 16:41	15262-20-1	
	Pace Analytical Se	ervices - Greensburg				
Total Radium	Total Radium Calculation	1.14 ± 0.709 (0.922)	pCi/L	03/27/21 10:16	6 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60363223

Sample: FAA-5-03/04/21 PWS:	Lab ID: 6036322 Site ID:	23003 Collected: 03/04/21 14:45 Sample Type:	Received:	03/09/21 11:15	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Se	rvices - Greensburg				
Radium-226	EPA 903.1	0.728 ± 0.510 (0.672) C:NA T:96%	pCi/L	03/24/21 12:18	3 13982-63-3	
	Pace Analytical Se	rvices - Greensburg				
Radium-228	EPA 904.0	0.698 ± 0.396 (0.735) C:84% T:91%	pCi/L	03/24/21 16:47	1 15262-20-1	
	Pace Analytical Se	rvices - Greensburg				
Total Radium	Total Radium Calculation	1.43 ± 0.646 (0.735)	pCi/L	03/27/21 10:10	6 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60363223

Sample: FAA-6-03/04/21 PWS:	Lab ID: 6036322 Site ID:	<b>3004</b> Collected: 03/04/21 15:05 Sample Type:	Received:	03/09/21 11:15	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Ser	vices - Greensburg				
Radium-226	EPA 903.1	0.000 ± 0.272 (0.609) C:NA T:91%	pCi/L	03/24/21 12:18	3 13982-63-3	
	Pace Analytical Ser	vices - Greensburg				
Radium-228	EPA 904.0	0.538 ± 0.436 (0.878) C:80% T:82%	pCi/L	03/24/21 16:47	1 15262-20-1	
	Pace Analytical Ser	vices - Greensburg				
Total Radium	Total Radium Calculation	0.538 ± 0.514 (0.878)	pCi/L	03/27/21 10:16	6 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60363223

Sample: FAL-DUP-03/04/21 PWS:	Lab ID: 6036322 Site ID:	23005 Collected: 03/04/21 15:05 Sample Type:	Received:	03/09/21 11:15	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Ser	rvices - Greensburg				
Radium-226	EPA 903.1	-0.0548 ± 0.322 (0.718) C:NA T:93%	pCi/L	03/24/21 12:18	3 13982-63-3	
	Pace Analytical Ser	rvices - Greensburg				
Radium-228	EPA 904.0	0.709 ± 0.424 (0.794) C:85% T:84%	pCi/L	03/24/21 16:47	1 15262-20-1	
	Pace Analytical Ser	rvices - Greensburg				
Total Radium	Total Radium Calculation	0.709 ± 0.532 (0.794)	pCi/L	03/27/21 10:16	6 7440-14-4	



# **QUALITY CONTROL - RADIOCHEMISTRY**

Project:	JEC FAL CCR						
Pace Project No .:	60363223						
QC Batch:	438162	Analysis Method:	EPA 903.1				
QC Batch Method:	lethod: EPA 903.1 Analysis Description: 903.1 Radium-226						
		Laboratory:	Pace Analytical S	ervices - Greensburg	9		
Associated Lab Sa	mples: 6036322300	1, 60363223002, 60363223003, 60363223004	4, 60363223005				
METHOD BLANK:	2115331	Matrix: Water					
Associated Lab Samples: 60363223001, 60363223002, 60363223003, 60363223004, 60363223005							
Para	meter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers		
Radium-226	-0	.174 ± 0.270 (0.652) C:NA T:95%	pCi/L	03/24/21 12:02			

Results presented on 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.:	60363223						
QC Batch:	438163	Analysis Method:	EPA 904.0				
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 22	28			
		Laboratory:	Pace Analytical S	Services - Greensbur	g		
Associated Lab Sa	mples: 60363223001, 60363223	002, 60363223003, 6036322300	4, 60363223005				
METHOD BLANK: 2115332 Matrix: Water							
Associated Lab Sa	mples: 60363223001, 60363223	002, 60363223003, 6036322300	4, 60363223005				
Para	meter Act -	LUnc (MDC) Carr Trac	Units	Analyzed	Qualifiers		
Radium-228	0.925 ± 0.371	(0.584) C:85% T:89%	pCi/L	03/24/21 13:19			

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



## QUALIFIERS

Project: JEC FAL CCR Pace Project No.: 60363223

## 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 .:	60363223

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60363223001	FAA-3-03/04/21	EPA 903.1	438162		
60363223002	FAA-4-03/04/21	EPA 903.1	438162		
60363223003	FAA-5-03/04/21	EPA 903.1	438162		
60363223004	FAA-6-03/04/21	EPA 903.1	438162		
60363223005	FAL-DUP-03/04/21	EPA 903.1	438162		
60363223001	FAA-3-03/04/21	EPA 904.0	438163		
60363223002	FAA-4-03/04/21	EPA 904.0	438163		
60363223003	FAA-5-03/04/21	EPA 904.0	438163		
60363223004	FAA-6-03/04/21	EPA 904.0	438163		
60363223005	FAL-DUP-03/04/21	EPA 904.0	438163		
60363223001	FAA-3-03/04/21	Total Radium Calculation	440751		
60363223002	FAA-4-03/04/21	Total Radium Calculation	440751		
60363223003	FAA-5-03/04/21	Total Radium Calculation	440751		
60363223004	FAA-6-03/04/21	Total Radium Calculation	440751		
60363223005	FAL-DUP-03/04/21	Total Radium Calculation	440751		



# CHAIN-OF-CUSTODY / Analytical Request Document

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

Section Required		Section E Required F		ormation:						Section C Invoice Information:									F	Page:	1	of	1					
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Email To:	melissa.michels@evergy.com	Purchase (	Order No.:						Pace ( Refere																			
Phone:	(785) 575-8113 Fax:	Project Nar	ne: JE	C FAL CC	R				Pace F Manag	Project	Jas	mine	Ame	'in, 9'	13-56	3-14	403		Site	Loca	tion				1			
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ITEM #	(A-Z, 0-9 /,-) OTHER Sample IDs MUST BE UNIQUE TISSUE	AR OT TS	MATRIX CODE SAMPLE TYPE	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved H <sub>5</sub> SO <sub>4</sub>	HNO3	HCI NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Other	<b>#</b> Analysis Test	Radium-226	Radium-228	Total Radium							Residual Chiorine (Y/N)	Pace	Project N	lo./ Lab i.D.
1	FAA-3-03/04/21		WT G	-	÷	03/04/21	16:49		2		2						x	x										
2	FAA-4-03/04/21		WT G	-	-	03/04/21	17:55		2		2					х	x	x										
3	FAA-5-03/04/21		WT G		-	03/04/21	14:45		2		2					x	x	x		_								
4	FAA-6-03/04/21		WT G		<u> </u>	03/04/21	15:05		2		2	_	<u>   </u>	_		×	×	×	44	_								
5	FAL-DUP-03/04/21		WT G	· ·	<u> </u>	03/04/21	15:05	<u> </u>	2		2		<u> </u>			х	x	x				_						
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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.

Pittsburgh Lab	Sample Cond	ition	Upo	n Re	eceipt					
10 8 altarea Analytical C	lient Name:	21	'lr	94	Kan	2015	Project	:#		
Courier: Fed Ex UP Tracking #: 308 4	s 🗆 usps 🗇 clier テヨ 9472	nt 🗆	Comm	nercial	Pace	Other _		LIM	Label S Login	
Custody Seal on Cooler/Bo	x Present: ves	Z	- по	Seal	s intact:	ves	no	<u> </u>		
Thermometer Used	NIA	Туре	of Ice	: We	t Blue 🔨	lone	_			
Cooler Temperature Ob	served Temp		۰c		rection Fac		°C <sub>Fi</sub>	nal Ten		۰c
Temp should be above freezing	to 6°C		-				· · ·		·P· <u>·</u>	
					pH paper L			und Initia ents:i	ls of person	examining
Comments:		Yes	No	N/A	10011	<u>)   </u>		<u>03</u>	09/21	AF
Chain of Custody Present:		1	ļ		1.				•	
Chain of Custody Filled Out:	·····				2.					
Chain of Custody Relinquishe	ed:	/			3.					
Sampler Name & Signature of	on COC:				4.					
Sample Labels match COC:					5.					
-Includes date/time/ID	Matrix:	Un								
Samples Arrived within Hold	Time:	1			6.					
Short Hold Time Analysis (<	<72hr remaining):		/		7.					
Rush Turn Around Time Re	quested:			Τ	8.					
Sufficient Volume:		/			9.					
Correct Containers Used:		1		Τ	10.					
-Pace Containers Used:		$\square$			1					
Containers Intact:					11.					
Orthophosphate field filtered				/	12.					
Hex Cr Aqueous sample field	filtered				13.					
Organic Samples checked	for dechlorination:			$\overline{}$	14.					
Filtered volume received for D					15.					
All containers have been checked	for preservation.	1		1	16.					
exceptions: VOA, coliform, T Non-aqueous matrix		Radon	<u>ار</u>	.I	P	$hL^2$				
All containers meet method pi requirements.	reservation	/			Initial when completed	AF	Date/time of preservation			
•				<u>.</u>	Lot # of adde	ed	proot/tale			
Headspace in VOA Vials ( >6	ոտ)։				17.					
Trip Blank Present:			/		18,					
Trip Blank Custody Seals Pres				/						
Rad Samples Screened < 0.	5 mrem/hr	/			Initial when completed:	AF	Date 3 9	'ai	Survey Met	a 2 2
Client Notification/ Resolution	on:								1	
Person Contacted:		·		Date/	Time:		Cor	ntacted E	3 <u>y:</u>	
Comments/ Resolution:										
·			·····							
·			<u> </u>							
			<u></u>	<u> </u>						

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers) \*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

# **Quality Control Sample Performance Assessment**

Analyst Must Manually Enter All Fields Highlighted in Yellow.

44 BB BOOR

www.probabs.com Test:	Ra-226				
Analyst:	MK1		Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Date:	3/19/2020		Sample Collection Date:	3/11/2020	
Batch ID: Matrix:	52968 DW		Sample I.D. Sample MS I.D.	35537099001 35537099001MS	
Method Blank Assessment		-	Sample MSD I.D.	Trible entendad.	
			Spike I.D.:	18-039	
MB Sample ID	1882461		MS/MSD Decay Corrected Spike Concentration (pCi/mL):	31.432	
MB concentration:	-0.106		Spike Volume Used in MS (mL):	0.20	
M/B Counting Uncertainty:	0.343		Spike Volume Used in MSD (mL):		
MB MDC:	0.763		MS Aliquot (L, g, F):	0.649	
MB Numerical Performance Indicator:	-0.61		MS Target Conc.(pCi/L, g, F):	9.691	
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):	0.455	
aboratory Control Sample Assessment	LCSD (Y or N)?	Ν	MSD Spike Uncertainty (calculated):		
	LCS52968	LCSD52968	Sample Result:	0.234	
Count Date:	3/23/2020		Sample Result Counting Uncertainty (pCi/L, g, F);	0,313	
Spike I.D.:	18-039		Sample Matrix Spike Result:	11.932	
Spike Concentration (pCi/mL):	31.432		Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	1.652	
Volume Used (mL):	0.10		Sample Matrix Spike Duplicate Result:		
Aliquot Volume (L, g, F):	0.658		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Target Conc. (pCi/L, g, F):	4.777		MS Numerical Performance Indicator:	2.259	
Uncertainty (Calculated):	0.225		MSD Numerical Performance Indicator:		
Result (pCi/L, g, F):	3.610		MS Percent Recovery:	120.72%	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.026		MSD Percent Recovery:		
Numerical Performance Indicator:	-2.18		MS Status vs Numerical Indicator:	N/A	
Percent Recovery:	75.56%		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:	136%	
Lower % Recovery Limits:	73%		MS/MSD Lower % Recovery Limits:	71%	
hualiante Camela Associat					
Duplicate Sample Assessment			Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:	35536552004	Enter Duplicate	Sample I.D.		

Duplicate Sample Assessment			Matrix Spike/Matrix Spike Duplicate Sample Assessment	 
Sample I.D.:	35536552004	Enter Duplicate	Sample I.D.	
Duplicate Sample I.D.	35536552004DUP	sample IDs if	Sample MS I.D.	
Sample Result (pCi/L, g, F):		other than	Sample MSD I.D.	
Sample Result Counting Uncertainty (pCi/L, g, F):		LCS/LCSD in	Sample Matrix Spike Result:	
Sample Duplicate Result (pCi/L, g, F):		the space below.	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.294		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:	1.328	35536552004	Duplicate Numerical Performance Indicator:	
Duplicate RPD:	115.25%	85536552004DUP	(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	
Duplicate Status vs Numerical Indicator:	N/A		MS/ MSD Duplicate Status vs Numerical Indicator:	
Duplicate Status vs RPD:	-Failtan		MS/ MSD Duplicate Status vs RPD:	
% RPD Limit:	22%		% RPD Limit:	

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

Comments: elsh'' \*\*\*Batch must be re-prepped due to unaccoptable precision. Ra-226 NELAC QC Printed: 3/23/2020 3:20 PM

Pace Analytical"

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# **Quality Control Sample Performance Assessment**

### Analyst Must Manually Enter All Fields Highlighted in Yellow.

www.pacelabs.com	Test	Ra-228		Analyst must manually Liner An Freids Indimonited I		
Î	Analyst:	VAL		Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
	Date:	3/19/2020		Sample Collection Date:	3/11/2020	
	Worklist:	52969		Sample I.D.	35536552004	
	Matrix:	WT		Sample NS I.D.	35536552004MS	
				Sample MSD I.D.		
Method Blank Assessment				Spike I.D.:	19-057	
	MB Sample ID	1882463		MS/MSD Decay Corrected Spike Concentration (pCi/mL):	34.883	
	MB concentration:	0.365		Spike Volume Used in MS (mL):		
	M/B 2 Sigma CSU:	0.349		Spike Volume Used in MSD (mL):	0,10	
	MB MDC:	0.714		MS Aliquot (L, g, F):	0.806	
MB Numerical P	erformance Indicator:	2.05		MS Target Conc.(pCi/L, g, F):		
	Numerical Indicator:	Warning		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)?	N	MSD Spike Uncertainty (calculated):		
		LCS52969	LCSD52969	Sample Result:	0.318	
	Count Date:	3/23/2020		Sample Result 2 Sigma CSU (pCi/L, g, F):	0.299	
	Spike I.D.:	19-057		Sample Matrix Spike Result:		
Decay Corrected Spike Co		34.745		Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
	Volume Used (mL):	0.10		Sample Matrix Spike Duplicate Result:		
Alic	uot Volume (L, g, F):	0.802		Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
	et Conc. (pCi/L, g, F):	4.335		MS Numerical Performance Indicator:		
	ertainty (Calculated):	0.312		MSD Numerical Performance Indicator:		
	Result (pCi/L, g, F):	3.540		MS Percent Recovery:	79.54%	
LCS/LCSD 2 Sign	na CSU (pCi/L, g, F):	0.858		MSD Percent Recovery:		
	erformance Indicator:	-1.71		MS Status vs Numerical Indicator:	Warning	
	Percent Recovery:	81.66%		MSD Status vs Numerical Indicator:	-	
Status vs	Numerical Indicator:	N/A		MS Status vs Recovery:	Pass	
	Status vs Recovery:	Pass		MSD Status vs Recovery:		
	r % Recovery Limits:	135%		MS/MSD Upper % Recovery Limits:	135%	
Lowe	er % Recovery Limits:	60%		MS/MSD Lower % Recovery Limits:	60%	
Duplicate Sample Assessment				Matrix Spike/Matrix Spike Duplicate Sample Assessment	1	
	Sample I.D.:	30355077001	Enter Duplicate	Sample I.D.		
1	Duplicate Sample I.D.	30355077001DUP	sample IDs if	Sample MS I.D.	1	
	e Result (pCi/L, g, F);	0.227	other than	Sample MSD I.D.		
Sample Result 2 Sign		0.328	LCS/LCSD in	Sample Matrix Spike Result:		
	e Result (pCi/L, g, F);		the space below.	Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Duplicate Result 2 Sign		0.318		Sample Matrix Spike Duplicate Result:		
Are sample and/or duplic		See Below ##		Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical P		0.106	30355077001	Duplicate Numerical Performance Indicator:		
	Duplicate RPD:		30355077001DUP	(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		
	Numerical Indicator:	Pass		MS/ MSD Duplicate Status vs Numerical Indicator:		
Dup	licate Status vs RPD:	Pass		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:

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Ra-228\_52969\_DW\_W Ra-228 (R086-8 04Sep2019).xls

3 6

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

April 05, 2021

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

RE: Project: JEC FAL CCR - AS RESAMPLE Pace Project No.: 60365249

Dear Melissa Michels:

Enclosed are the analytical results for sample(s) received by the laboratory on April 01, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

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

Sincerely,

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

Enclosures

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





# CERTIFICATIONS

Project: JEC FAL CCR - AS RESAMPLE

Pace Project No.: 60365249

### 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 - AS RESAMPLE

Pace Project No.: 60365249

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60365249001	FAA-6-040121	Water	04/01/21 12:26	04/01/21 15:33



# SAMPLE ANALYTE COUNT

Project:JEC FAL CCR - AS RESAMPLEPace Project No.:60365249

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60365249001	FAA-6-040121	EPA 200.8	JGP	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City



Project: JEC FAL CCR - AS RESAMPLE

Pace Project No.: 60365249

### Method: EPA 200.8

Description:200.8 MET ICPMSClient:Evergy Kansas Central, Inc.Date:April 05, 2021

### General Information:

1 sample was 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:

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



Project: JEC FAL CCR - AS RESAMPLE

Pace Project No.: 60365249

Sample: FAA-6-040121	Lab ID: 6030	65249001	Collected: 04/01/2	1 12:26	Received: 04	/01/21 15:33 N	Aatrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS	Analytical Meth Pace Analytica		0.8 Preparation Met Kansas City	hod: EP/	A 200.8			
Arsenic, Total Recoverable	0.0043	mg/L	0.0010	1	04/02/21 09:26	04/05/21 15:05	7440-38-2	



MATRIX SPIKE & M	IATRIX SPIKE DUP	LICATE: 2866 60365204002 Result	MS Spike	MSD Spike Conc.	2866454 MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
MATRIX SPIKE & N	ATRIX SPIKE DUP		MS	-			MS	MSD	% Rec		Max	
MATRIX SPIKE & N	ATRIX SPIKE DUP	LICATE: 2866		MSD	2866454							
Arsenic		mg/L	0.04		0.040	10 <sup>-</sup>	1 8	35-115				
Parar	meter	Units	Conc.		sult	% Rec	Limi		Qualifiers	_		
LABORATORY CO	NTROL SAMPLE:	2866452	Spike	LC	cs	LCS	% R	ec				
Arsenic		mg/L	<0.0	0010	0.0010	) 04/05/2 <sup>-</sup>	1 15:00					
Parar	meter	Units	Blank		Reporting Limit	Analy	/zed	Qualifier	s			
Associated Lab Sar	mples: 603652490	001	Disals		Denertine							
METHOD BLANK:			Ν	latrix: N	/ater							
Associated Lab Sar	mples: 603652490	001										
QC Daton Mothod.	2177200.0		Labora		•	Pace Analyt	ical Servic	es - Kansa	s City			
QC Batch Method:	EPA 200.8			is Descri		200.8 MET						
QC Batch:	712356		Analyc	is Metho	d. E	PA 200.8						
Pace Project No.:	00000210											
Project:	JEC FAL CCR - AS 60365249											

Results presented on 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 - AS RESAMPLE

Pace Project No.: 60365249

### 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 - AS RESAMPLEPace Project No.:60365249

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60365249001	FAA-6-040121	EPA 200.8	712356	EPA 200.8	712435

Pace Analytical Sample Condition	Upon Receipt	WO#:60365249
Client Name: Evergy Kansas Courier: FedEx UPS VIA Clay	ientral	
Courier: FedEx 🗆 UPS 🗆 VTA 🗆 Clay 🗆	PEX D ECI D Pace	□ Xroads □ Client  Other □
Tracking #: Pa	ace Shipping Label Used? Ye	es 🗆 No 🔽
Custody Seal on Cooler/Box Present: Yes 🕅 No 🗆	,	
Packing Material:       Bubble Wrap □       Bubble Bags         Thermometer Used:       298       Type 0	D Foam D N	lone D Other V Zpic
Cooler Temperature (°C): As-read <u>0.3</u> Corr. Fac	ctor $\underline{0, 0}$ Corrected $\underline{0}$	Bate and initials of person examining contents: 4 11 21 Sta
Temperature should be above freezing to 6°C		
Chain of Custody present:		
Chain of Custody relinquished:	Yes No N/A	
Samples arrived within holding time:	Yes No N/A	×
Short Hold Time analyses (<72hr):	□Yes No □N/A	
Rush Turn Around Time requested:	Qyes INO IN/A Z	Day
Sufficient volume:	Yes No N/A	)
Correct containers used:	Yes No N/A	
Pace containers used:	Yes INO IN/A	
Containers intact:	Yes No N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	□Yes □No N/A	÷
Filtered volume received for dissolved tests?	□Yes □No N/A	
Sample labels match COC: Date / time / ID / analyses	Yes No N/A	
Samples contain multiple phases? Matrix: WH		
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCI<2; NaOH>9 Sulfide, NaOH>10 Cyanide)	Nyes ⊡No □N/A List sa	mple IDs, volumes, lot #'s of preservative and the me added.
(Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# Cyanide water sample checks:	403173	
Lead acetate strip turns dark? (Record only)	□Yes □No	
Potassium iodide test strip turns blue/purple? (Preserve)	□Yes □No	
Trip Blank present:	□Yes □No ŊN/A	
Headspace in VOA vials ( >6mm):	□Yes □No \$ N/A	
Samples from USDA Regulated Area: State:		
Additional labels attached to 5035A / TX1005 vials in the field	]? □Yes □No ŊN/A	
Client Notification/ Resolution: Copy COC	to Client? Y / N Fi	eld Data Required? Y / N
Person Contacted: Date/	Time:	
Comments/ Resolution:		
		1999 Hillerin and Allerin and Alle
Project Manager Review:	Date:	

Pace Analytical

# 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 P		Information	n:					ction		ation:											P	age:	1	of	1
Compan	EVERGY KANSAS CENTRAL, INC.	Report To:	Melis	sa Mich	els, Samanti	na Kaney,	Danielle	Obei	Atte	ention:		Acco	unts	Paya	able				٦				<u> </u>				
Address		1	-		on, Jake Hun				Corr	npany	Name	e: E'	VER	GY	KANS	SAS C	ENTR	AL, IN	REC	GULATO	RY	AGENC	Y		_		
	818 Kansas Ave, Topeka, KS 66612		JD S	chlegel,	Brandon Wil	l, Sarah H	lazelwood			ress:	_	See		_						NPDES	_	GROU	_	WATE	R	DRINKIN	G WATER
Email To		Purchase O		55					Pace Refe	e Quote erence:	e :									UST		RCRA			<b>–</b>	OTHER	
	785-575-8113 Fax:	Project Narr	ne: ,	JEC FAL	CCR - As F	Resample			Pace	e Proje ager:		Jasm	ine /	Ame	rin, 9	13-56	3-1403	3	Sit	e Locatio	n						
Request	ted Due Date/TAT: 2-DAY RUSH	Project Num	nber:						Pace	e Profil	le #:	9657	1						1	STATE	≣:	K	s	_ [			
																	Requ	Jestec	Ana	ysis Filt	ered	(Y/N)					
	Section D Valid Matrix Required Client Information MATRIX DRINKING WATER	CODE	codes to left)	C=COMP)	COL	LECTED	_	_			F	Prese	rvati	ves		tn ix	N										
ITEM #	WATER WASTE WATER WASTE WATER WASTE WATER PRODUCT SOIUSOLID OIL WIPE AIR (A-Z, 0-9 / ,-) OTHER Sample IDs MUST BE UNIQUE	WT WW P SL OL WP	CODE (see valid	AMPLE TYPE (G=GRAB	COMPOSITE START	COMPCEND/G	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub> HCI	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol Other	LAnalysis Test	200.8 Total As							Residual Chlorine (Y/N)	V	Project N	249 No./ Lab I.D.
1	FAA-6-040121		WT	G	e 1	04/01/21	1226		1			1				Î	x									2-DAY F	
2																1 F							$\square$				
3																1 F											
4																1 F							$\square$				
5													П			1 F							Π				
6								1					$\square$			1 F							$\square$				
7																1 F								$\square$			
8																1 F							Π				
9												33				1 [											
10																											
11			_	_																							
12				_																							
2.047.0			RELIN	QUISHED	BY / AFFILIA	TION	DATE			TIME			_	_	_	_	AFFILIA	TION		DATE		TIME			SAMP	LE CONDIT	IONS
Z-DAT R	USH FOR ARSENIC RESAMPLE		$\sim$	April Thor	mpson / SCS		4/1/2	1			4	SZ2	U	de la	tus	Pa	a			4/1/2	1	533	6	3	X	N	N
			U	The	woden				19	53	3					1									*		7
				~~~	- apos c																		1		)		
																							1				
					SAMPL	ER NAME	AND SIGNA	TUR	ε		_										_		ļ	٦ (	5	oler	itact
age						PRINT Nam	te of SAMP	LER:	Apr	ril Th	omp	son											Temn in °C		ived (Y/N	d Coi	In I
Page 11 of							E of SAMP										DATE : (MM/D			4/1	/21		Tem	Leu	Recaived on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
f 1																											0

ATTACHMENT 1-2 June 2021 Sampling Event Laboratory Analytical Report



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

June 18, 2021

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

RE: Project: JEC FAL CCR Pace Project No.: 60371784

Dear Melissa Michels:

Enclosed are the analytical results for sample(s) received by the laboratory on June 09, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

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

Sincerely,

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

Enclosures

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





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

# CERTIFICATIONS

Project: JEC FAL CCR Pace Project No.: 60371784

#### **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.: 60371784

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60371784001	FAA-3-06/09/21	Water	06/09/21 12:45	06/09/21 16:30
60371784002	FAA-4-06/09/21	Water	06/09/21 11:35	06/09/21 16:30
60371784003	FAA-5-06/09/21	Water	06/09/21 10:35	06/09/21 16:30
60371784004	FAA-6-06/09/21	Water	06/09/21 12:50	06/09/21 16:30
60371784005	FAA-DUP-06/09/21	Water	06/09/21 12:50	06/09/21 16:30



# SAMPLE ANALYTE COUNT

Project: JEC FAL CCR Pace Project No.: 60371784

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60371784001	FAA-3-06/09/21	EPA 200.7	JLH	4	PASI-K
		EPA 6010	JLH	1	PASI-K
		EPA 200.8	JGP	7	PASI-K
		EPA 245.1	MRV	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K
60371784002	FAA-4-06/09/21	EPA 200.7	JLH	4	PASI-K
		EPA 6010	JLH	1	PASI-K
		EPA 200.8	JGP	7	PASI-K
		EPA 245.1	MRV	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K
60371784003	FAA-5-06/09/21	EPA 200.7	JLH	4	PASI-K
		EPA 6010	JLH	1	PASI-K
		EPA 200.8	JGP	7	PASI-K
		EPA 245.1	MRV	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K
60371784004	FAA-6-06/09/21	EPA 200.7	JLH	4	PASI-K
		EPA 6010	JLH	1	PASI-K
		EPA 200.8	JGP	7	PASI-K
		EPA 245.1	MRV	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K
60371784005	FAA-DUP-06/09/21	EPA 200.7	JLH	4	PASI-K
		EPA 6010	JLH	1	PASI-K
		EPA 200.8	JGP	7	PASI-K
		EPA 245.1	MRV	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City



Project: JEC FAL CCR

Pace Project No.: 60371784

### Method: EPA 200.7

Description:200.7 Metals, TotalClient:Evergy Kansas Central, Inc.Date:June 18, 2021

### **General Information:**

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

#### Hold Time:

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

### Sample Preparation:

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

### Initial Calibrations (including MS Tune as applicable):

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

#### **Continuing Calibration:**

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

#### Method Blank:

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

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

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

### Additional Comments:



Project: JEC FAL CCR

Pace Project No.: 60371784

### Method: EPA 6010

Description:6010 MET ICPClient:Evergy Kansas Central, Inc.Date:June 18, 2021

### **General Information:**

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

#### Hold Time:

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

### Sample Preparation:

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

### Initial Calibrations (including MS Tune as applicable):

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

#### **Continuing Calibration:**

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

#### Method Blank:

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

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

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

### Additional Comments:



Project: JEC FAL CCR

Pace Project No.: 60371784

### Method: EPA 200.8

Description:200.8 MET ICPMSClient:Evergy Kansas Central, Inc.Date:June 18, 2021

### **General Information:**

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

#### Hold Time:

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

#### Sample Preparation:

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

### Initial Calibrations (including MS Tune as applicable):

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

#### **Continuing Calibration:**

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

#### Internal Standards:

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

#### Method Blank:

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

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

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

Additional Comments:



Project: JEC FAL CCR

Pace Project No.: 60371784

### Method: EPA 245.1

Description:245.1 MercuryClient:Evergy Kansas Central, Inc.Date:June 18, 2021

### **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.: 60371784

#### Method: EPA 300.0

Description:300.0 IC Anions 28 DaysClient:Evergy Kansas Central, Inc.Date:June 18, 2021

### **General Information:**

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

#### Hold Time:

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

#### Method Blank:

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

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

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

### **Duplicate Sample:**

All duplicate sample results were within method 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.: 60371784

Sample: FAA-3-06/09/21	Lab ID: 6037	1784001	Collected: 06/09/2	1 12:4	5 Received: 06	6/09/21 16:30 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total			00.7 Preparation Met	nod: El	PA 200.7			
	Pace Analytical	Services -	Kansas City					
Barium, Total Recoverable	0.031	mg/L	0.0050	1	06/10/21 15:54	06/11/21 13:30	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.0010	1		06/11/21 13:30	-	
Chromium, Total Recoverable	<0.0050	mg/L	0.0050	1		06/11/21 13:30		
Lead, Total Recoverable	<0.010	mg/L	0.010	1	06/10/21 15:54	06/11/21 13:30	7439-92-1	
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Meth	od: EP	A 3010			
	Pace Analytical							
Lithium, Total Recoverable	<0.010	mg/L	0.010	1	06/10/21 15:54	06/11/21 14:00	7439-93-2	
200.8 MET ICPMS	Analytical Meth	od: EPA 20	0.8 Preparation Met	nod: El	PA 200.8			
	Pace Analytical	Services -	Kansas City					
Antimony, Total Recoverable	<0.0010	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:04	7440-36-0	
Arsenic, Total Recoverable	<0.0010	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:04	7440-38-2	
Cadmium, Total Recoverable	<0.00050	mg/L	0.00050	1	06/10/21 15:54	06/16/21 15:04	7440-43-9	
Cobalt, Total Recoverable	<0.0010	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:04	7440-48-4	
Molybdenum, Total Recoverable	0.0062	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:04	7439-98-7	
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1		06/16/21 15:04		
Thallium, Total Recoverable	<0.0010	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:04	7440-28-0	
245.1 Mercury	Analytical Meth	od: EPA 24	15.1 Preparation Met	nod: El	PA 245.1			
-	Pace Analytical	Services -	Kansas City					
Mercury	<0.20	ug/L	0.20	1	06/14/21 16:27	06/16/21 10:41	7439-97-6	
300.0 IC Anions 28 Days	Analytical Meth	od: EPA 30	0.0					
	Pace Analytical	Services -	Kansas City					
Fluoride	0.28	mg/L	0.20	1		06/16/21 13:04	16984-48-8	



Project: JEC FAL CCR

Pace Project No.: 60371784

Sample: FAA-4-06/09/21	Lab ID: 6037	1784002	Collected: 06/09/2	1 11:38	5 Received: 06	6/09/21 16:30 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total			00.7 Preparation Met	nod: El	PA 200.7			
	Pace Analytical	Services -	Kansas City					
Barium, Total Recoverable	0.046	mg/L	0.0050	1	06/10/21 15:54	06/11/21 13:37	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.0010	1	06/10/21 15:54	06/11/21 13:37	7440-41-7	
Chromium, Total Recoverable	<0.0050	mg/L	0.0050	1		06/11/21 13:37		
Lead, Total Recoverable	<0.010	mg/L	0.010	1	06/10/21 15:54	06/11/21 13:37	7439-92-1	
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Meth	od: EF	PA 3010			
	Pace Analytical							
Lithium, Total Recoverable	0.011	mg/L	0.010	1	06/10/21 15:54	06/11/21 14:07	7439-93-2	
200.8 MET ICPMS	Analytical Meth	od: EPA 20	0.8 Preparation Met	nod: El	PA 200.8			
	Pace Analytical	Services -	Kansas City					
Antimony, Total Recoverable	<0.0010	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:11	7440-36-0	
Arsenic, Total Recoverable	<0.0010	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:11	7440-38-2	
Cadmium, Total Recoverable	<0.00050	mg/L	0.00050	1	06/10/21 15:54	06/16/21 15:11	7440-43-9	
Cobalt, Total Recoverable	0.0027	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:11	7440-48-4	
Molybdenum, Total Recoverable	0.0094	mg/L	0.0010	1		06/16/21 15:11		
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1		06/16/21 15:11		
Thallium, Total Recoverable	<0.0010	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:11	7440-28-0	
245.1 Mercury	Analytical Meth	od: EPA 24	15.1 Preparation Met	nod: El	PA 245.1			
	Pace Analytical	Services -	Kansas City					
Mercury	<0.20	ug/L	0.20	1	06/14/21 16:27	06/16/21 10:46	7439-97-6	
300.0 IC Anions 28 Days	Analytical Meth	od: EPA 30	0.0					
	Pace Analytical	Services -	Kansas City					
Fluoride	<0.20	mg/L	0.20	1		06/16/21 13:17	16984-48-8	



Project: JEC FAL CCR

Pace Project No.: 60371784

Sample: FAA-5-06/09/21	Lab ID: 6037	1784003	Collected: 06/09/2	1 10:3	5 Received: 06	09/21 16:30 M	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total			0.7 Preparation Met	nod: El	PA 200.7			
	Pace Analytical	Services -	Kansas City					
Barium, Total Recoverable	<0.0050	mg/L	0.0050	1	06/10/21 15:54	06/11/21 13:40	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.0010	1	06/10/21 15:54	06/11/21 13:40	7440-41-7	
Chromium, Total Recoverable	<0.0050	mg/L	0.0050	1	06/10/21 15:54	06/11/21 13:40	7440-47-3	
Lead, Total Recoverable	<0.010	mg/L	0.010	1	06/10/21 15:54	06/11/21 13:40	7439-92-1	
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Meth	od: EF	PA 3010			
	Pace Analytical		•					
Lithium, Total Recoverable	0.13	mg/L	0.010	1	06/10/21 15:54	06/11/21 14:09	7439-93-2	
200.8 MET ICPMS	Analytical Meth	od: EPA 20	0.8 Preparation Met	nod: El	PA 200.8			
	Pace Analytical	Services -	Kansas City					
Antimony, Total Recoverable	<0.0010	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:13	7440-36-0	
Arsenic, Total Recoverable	<0.0010	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:13	7440-38-2	
Cadmium, Total Recoverable	<0.00050	mg/L	0.00050	1	06/10/21 15:54	06/16/21 15:13	7440-43-9	
Cobalt, Total Recoverable	0.0028	mg/L	0.0010	1		06/16/21 15:13		
Molybdenum, Total Recoverable	0.026	mg/L	0.0010	1		06/16/21 15:13		
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1		06/16/21 15:13		
Thallium, Total Recoverable	<0.0010	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:13	7440-28-0	
245.1 Mercury	Analytical Meth	od: EPA 24	15.1 Preparation Met	nod: El	PA 245.1			
	Pace Analytical	Services -	Kansas City					
Mercury	<0.20	ug/L	0.20	1	06/14/21 16:27	06/16/21 10:53	7439-97-6	
300.0 IC Anions 28 Days	Analytical Meth	od: EPA 30	0.0					
	Pace Analytical	Services -	Kansas City					
Fluoride	0.55	mg/L	0.20	1		06/16/21 13:55	16984-48-8	



Project: JEC FAL CCR

Pace Project No.: 60371784

Sample: FAA-6-06/09/21	Lab ID: 6037	1784004	Collected: 06/09/2	1 12:50	0 Received: 06	6/09/21 16:30 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total			0.7 Preparation Met	nod: El	PA 200.7			
	Pace Analytical	Services -	Kansas City					
Barium, Total Recoverable	0.035	mg/L	0.0050	1	06/10/21 15:54	06/11/21 13:42	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.0010	1		06/11/21 13:42	-	
Chromium, Total Recoverable	<0.0050	mg/L	0.0050	1		06/11/21 13:42		
Lead, Total Recoverable	<0.010	mg/L	0.010	1	06/10/21 15:54	06/11/21 13:42	7439-92-1	
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Meth	od: EF	A 3010			
	Pace Analytical							
Lithium, Total Recoverable	<0.010	mg/L	0.010	1	06/10/21 15:54	06/11/21 14:12	7439-93-2	
200.8 MET ICPMS	Analytical Meth	od: EPA 20	0.8 Preparation Met	nod: El	PA 200.8			
	Pace Analytical	Services -	Kansas City					
Antimony, Total Recoverable	<0.0010	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:15	7440-36-0	
Arsenic, Total Recoverable	0.0055	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:15	7440-38-2	
Cadmium, Total Recoverable	<0.00050	mg/L	0.00050	1	06/10/21 15:54	06/16/21 15:15	7440-43-9	
Cobalt, Total Recoverable	0.0017	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:15	7440-48-4	
Molybdenum, Total Recoverable	0.34	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:15	7439-98-7	
Selenium, Total Recoverable	0.0018	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:15	7782-49-2	
Thallium, Total Recoverable	<0.0010	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:15	7440-28-0	
245.1 Mercury	Analytical Meth	od: EPA 24	5.1 Preparation Metl	nod: El	PA 245.1			
-	Pace Analytical							
Mercury	<0.20	ug/L	0.20	1	06/14/21 16:27	06/16/21 10:55	7439-97-6	
300.0 IC Anions 28 Days	Analytical Meth	od: EPA 30	0.0					
	Pace Analytical	Services -	Kansas City					
Fluoride	0.66	mg/L	0.20	1		06/16/21 14:07	16984-48-8	



Project: JEC FAL CCR

Pace Project No.: 60371784

Sample: FAA-DUP-06/09/21	Lab ID: 603	71784005	Collected: 06/09/2	1 12:50	Received: 06	i/09/21 16:30	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Met	hod: EPA 20	0.7 Preparation Meth	nod: EP	PA 200.7			
	Pace Analytica	al Services -	Kansas City					
Barium, Total Recoverable	0.034	mg/L	0.0050	1	06/10/21 15:54	06/11/21 13:45	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.0010	1	06/10/21 15:54	06/11/21 13:45	7440-41-7	
Chromium, Total Recoverable	<0.0050	mg/L	0.0050	1	06/10/21 15:54	06/11/21 13:45	7440-47-3	
Lead, Total Recoverable	<0.010	mg/L	0.010	1	06/10/21 15:54	06/11/21 13:45	7439-92-1	
6010 MET ICP	Analytical Met	hod: EPA 60	010 Preparation Meth	od: EP/	A 3010			
	Pace Analytica	al Services -	Kansas City					
Lithium, Total Recoverable	<0.010	mg/L	0.010	1	06/10/21 15:54	06/11/21 14:15	7439-93-2	
200.8 MET ICPMS	Analytical Met	hod: EPA 20	0.8 Preparation Meth	nod: EP	PA 200.8			
	Pace Analytica	al Services -	Kansas City					
Antimony, Total Recoverable	<0.0010	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:17	7440-36-0	
Arsenic, Total Recoverable	0.0063	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:17	7440-38-2	
Cadmium, Total Recoverable	<0.00050	mg/L	0.00050	1	06/10/21 15:54	06/16/21 15:17	7440-43-9	
Cobalt, Total Recoverable	0.0016	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:17	7440-48-4	
Molybdenum, Total Recoverable	0.38	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:17	7439-98-7	
Selenium, Total Recoverable	0.0018	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:17	7782-49-2	
Thallium, Total Recoverable	<0.0010	mg/L	0.0010	1	06/10/21 15:54	06/16/21 15:17	7440-28-0	
245.1 Mercury	Analytical Met	hod: EPA 24	15.1 Preparation Meth	nod: EP	PA 245.1			
-	Pace Analytica	al Services -	Kansas City					
Mercury	<0.20	ug/L	0.20	1	06/14/21 16:27	06/16/21 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	0.68	mg/L	0.20	1		06/16/21 14:20	16984-48-8	



Project:	JEC FAL CCR											
Pace Project No.:	60371784											
QC Batch:	726129		Anal	ysis Metho	d:	EPA 245.1						
QC Batch Method:	EPA 245.1		Anal	ysis Descri	ption:	245.1 Mercu	iry					
			Labo	oratory:		Pace Analyti	cal Service	es - Kansas	s City			
Associated Lab San	nples: 60371784	4001, 6037178400	2, 6037178	34003, 603	71784004,	6037178400	)5					
METHOD BLANK:	2917880			Matrix: W	ater							
Associated Lab San	nples: 60371784	4001, 6037178400	2, 6037178	34003, 603	71784004,	6037178400	)5					
			Bla	nk	Reporting							
Paran	neter	Units	Res	ult	Limit	Analy	zed	Qualifiers	S			
Mercury		ug/L		<0.20	0.2	06/16/21	09:58					
LABORATORY CON	NTROL SAMPLE:	2917881										
_			Spike	LC	-	LCS	% Re					
Paran	neter	Units	Conc.	Res	sult	% Rec	Limi	is (	Qualifiers	_		
Mercury		ug/L		5	5.1	103	8 8	85-115				
MATRIX SPIKE & M	IATRIX SPIKE DU	PLICATE: 2917	882		291788	3						
			MS	MSD								
		60370986002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Unit	s Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury	ug/L	ND	5	5	5.1	5.2	103	104	70-130	2	20	
MATRIX SPIKE SAI	MPI E:	2917884										
		2011001	60371	784001	Spike	MS		MS	% Rec			
Paran	neter	Units		esult	Conc.	Result		Rec	Limits		Qualif	iers
Mercury		ug/L		<0.20	5		5.0	98	70	-130		

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



QC Batch: 725664		Analysis	Method:	E	PA 200.7		
QC Batch Method: EPA 200.7		Analvsis	Description	20	00.7 Metals, T	otal	
		Laborato	•			Services - Kar	usas Citv
Associated Lab Samples: 60371	784001, 6037178400		,				
METHOD BLANK: 2916063		Ма	trix: Water				
Associated Lab Samples: 60371	784001, 6037178400	02, 6037178400	3, 6037178	4004, 6	0371784005		
		Blank	Repo	rting			
Parameter	Units	Result	Lin	nit	Analyze	d Quali	fiers
Barium	mg/L	<0.00	)50	0.0050	06/11/21 13	3:27	
Beryllium	mg/L	<0.00	)10	0.0010	06/11/21 13	3:27	
Chromium	mg/L	<0.00	)50	0.0050	06/11/21 13	3:27	
Lead	mg/L	<0.0	)10	0.010	06/11/21 13	3:27	
LABORATORY CONTROL SAMPLI	E: 2916064						
		Spike	LCS		LCS	% Rec	
Parameter	Units	Conc.	Result		% Rec	Limits	Qualifiers
Barium	mg/L	1	1	.0	102	85-115	
Beryllium	mg/L	1	1	.0	103	85-115	
Chromium	mg/L	1	1	.0	102	85-115	
Lead	mg/L	1	1	.0	105	85-115	

MATRIX SPIKE & MATRIX		CATE: 2916	MS	MSD	2916066							
		60371784001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Barium	mg/L	0.031	1	1	1.0	1.0	102	101	70-130	1	20	
Beryllium	mg/L	<0.0010	1	1	1.0	1.0	103	102	70-130	1	20	
Chromium	mg/L	<0.0050	1	1	1.0	1.0	101	100	70-130	1	20	
Lead	mg/L	<0.010	1	1	1.0	0.99	100	99	70-130	1	20	

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



Project: Pace Project No.:	JEC F/ 60371	AL CCR 784											
QC Batch:	7256			Anal	ysis Metho	od: F	PA 200.8						
QC Batch Method:		200.8			ysis Desci		00.8 MET						
QC Daten Methou.		200.0			pratory:			ical Carvia	kanaa	City			
Associated Lab Sar	nples:	6037178400	01, 6037178400		-		•		es - Kansas	SORY			
METHOD BLANK:	29160	68			Matrix: V	Vater							
Associated Lab Sar	nnles:	6037178400	01, 6037178400	2 6037178	84003 60	371784004 6	037178/0	15					
Abbolated Lab Oal	npico.	0037170400	51, 0057 17 0400	Z, 0057170 Blai		-	03717040	00					
Parar	notor		Units	Res		Reporting Limit	Analyzed		Qualifiers				
	netel						·		Quaimer				
Antimony			mg/L		0.0010	0.0010							
Arsenic			mg/L		0.0010	0.0010							
Cadmium			mg/L	-	.00050	0.00050							
Cobalt			mg/L		0.0010	0.0010							
Molybdenum Selenium			mg/L		0.0010 0.0010	0.0010 0.0010							
Thallium			mg/L mg/L		0.0010	0.0010							
LABORATORY COI		SAMPLE: 2	2916069	Spike		cs	LCS	% R					
Parar	neter		Units	Conc.	Re	esult	% Rec	Lim	its (	Qualifiers	_		
Antimony			mg/L	0.0	04	0.040	99	9	85-115				
Arsenic			mg/L	0.0	04	0.040	100	)	85-115				
Cadmium			mg/L	0.0		0.041	102		85-115				
Cobalt			mg/L	0.0		0.039	98		85-115				
Molybdenum			mg/L	0.0		0.043	106		85-115				
Selenium			mg/L	0.0		0.039	99		85-115				
Thallium			mg/L	0.0	J4	0.040	99	9	85-115				
MATRIX SPIKE & M	/ATRIX	SPIKE DUPL	ICATE: 2916	070		2916071							
				MS	MSD								
_			60371784001	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	0.039	97	97	70-130	0	20	
Arsenic		mg/L	<0.0010	0.04	0.04	0.041	0.040	100	99	70-130	1	20	
O - 1 1			0 00050	0.04	0.04	0.000	0.000	05	05	70 400		00	

Cadmium mg/L < 0.00050 0.04 0.04 0.038 0.038 95 95 70-130 1 20 mg/L Cobalt < 0.0010 0.04 0.04 0.038 0.038 94 94 70-130 0 20 Molybdenum 0.0062 0.04 0.04 0.050 0.051 111 111 70-130 0 20 mg/L Selenium mg/L < 0.0010 0.04 0.04 0.039 0.038 96 95 70-130 1 20 Thallium mg/L < 0.0010 0.04 0.04 0.036 0.036 90 90 70-130 0 20

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



Project:	JEC FAL CCR											
Pace Project No .:	60371784											
QC Batch: 725667			Analy	Analysis Method:								
QC Batch Method: EPA 3010		Analysis Description:			6010 MET							
				ratory:		Pace Analyti	cal Service	es - Kansas	s City			
Associated Lab San	nples: 60371784	001, 6037178400	2, 6037178	4003, 603	71784004,	6037178400	5					
METHOD BLANK:	2916072			Matrix: W	ater							
Associated Lab San	nples: 60371784	001, 6037178400	2, 6037178	4003, 603	71784004,	6037178400	5					
			Blar	nk	Reporting							
Paran	neter	Units	Res	ult	Limit	Analy	zed	Qualifiers	6			
Lithium		mg/L		<0.010	0.01	0 06/11/21	13:57					
LABORATORY COM	NTROL SAMPLE:	2916073										
_			Spike	LC		LCS	% Re					
Paran	neter	Units	Conc.	Res	sult	% Rec	Limit	ts (	Qualifiers	_		
Lithium		mg/L		1	1.1	107	8	80-120				
MATRIX SPIKE & M	IATRIX SPIKE DUP	LICATE: 2916	074		2916075	5						
MATRIX SPIKE & M	IATRIX SPIKE DUP	LICATE: 2916	074 MS	MSD	2916075	;						
		60371784001	MS Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
MATRIX SPIKE & M Parameter		60371784001	MS	-			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.: 6	60371784							
QC Batch:	726411		Analysis N	/lethod:	EPA 300.0			
QC Batch Method:	EPA 300.0		Analysis D	Description:	300.0 IC Anion	s		
			Laborator	y:	Pace Analytica	l Services - Kar	isas City	
Associated Lab Samp	oles: 60371784	1001, 6037178400	2, 60371784003	3, 60371784004	, 60371784005			
METHOD BLANK: 2	2918617		Matr	ix: Water				
Associated Lab Samp	oles: 60371784	001, 6037178400	2, 60371784003	8, 60371784004	, 60371784005			
			Blank	Reporting				
Parame	eter	Units	Result	Limit	Analyze	d Qualif	fiers	
Fluoride		mg/L	<0.2	20 0.	20 06/16/21 1	0:51		
METHOD BLANK: 2	2921626		Matr	ix: Water				
Associated Lab Samp	oles: 60371784	1001, 6037178400	2, 60371784003	3, 60371784004	, 60371784005			
			Blank	Reporting				
Parame	eter	Units	Result	Limit	Analyze	d Qualif	iers	
Fluoride		mg/L	<0.2	20 0.	.20 06/17/21 0	8:37		
METHOD BLANK: 2	2922025		Matr	ix: Water				
		1001, 6037178400			., 60371784005			
		4001, 6037178400			-			
	bles: 60371784	1001, 6037178400 Units	2, 60371784003	8, 60371784004	-	d Qualit	ïers	
Associated Lab Samp Parame	bles: 60371784		2, 60371784003 Blank	8, 60371784004 Reporting Limit			iers	
Associated Lab Samp Parame	bles: 60371784	Units	2, 60371784003 Blank Result	8, 60371784004 Reporting Limit	Analyze		ïers	
Associated Lab Samp Parame Fluoride	oles: 60371784 eter	Units	2, 60371784003 Blank Result	8, 60371784004 Reporting Limit	Analyze		ïiers	
Associated Lab Samp Parame Fluoride	oles: 60371784 eter	Units mg/L	2, 60371784003 Blank Result	8, 60371784004 Reporting Limit	Analyze		ïers	
Associated Lab Samp	oles: 60371784 eter TROL SAMPLE:	Units mg/L	2, 60371784003 Blank 	3, 60371784004 Reporting Limit 20 0.	Analyze 20 06/18/21 0	9:15	iiers	
Associated Lab Samp Parame Fluoride LABORATORY CONT Parame	oles: 60371784 eter TROL SAMPLE:	Units mg/L 2918618	2, 60371784003 Blank Result <0.2 Spike	8, 60371784004 Reporting Limit 20 0.	Analyze 20 06/18/21 0 LCS	9:15 % Rec		
Associated Lab Samp Parame Fluoride LABORATORY CONT	oles: 60371784 eter TROL SAMPLE:	Units mg/L 2918618 Units	2, 60371784003 Blank Result <0.2 Spike Conc.	8, 60371784004 Reporting Limit 20 0. LCS Result	Analyze 20 06/18/21 0 LCS % Rec	9:15 % Rec Limits		
Associated Lab Samp Parame Fluoride LABORATORY CONT Parame	oles: 60371784 eter FROL SAMPLE: eter	Units mg/L 2918618 Units	2, 60371784003 Blank Result <0.2 Spike Conc.	8, 60371784004 Reporting Limit 20 0. LCS Result	Analyze 20 06/18/21 0 LCS % Rec	9:15 % Rec Limits		
Associated Lab Samp Parame Fluoride LABORATORY CONT Parame Fluoride	oles: 60371784 eter FROL SAMPLE: eter	Units mg/L 2918618 Units mg/L	2, 60371784003 Blank Result <0.2 Spike Conc.	8, 60371784004 Reporting Limit 20 0. LCS Result	Analyze 20 06/18/21 0 LCS % Rec	9:15 % Rec Limits		
Associated Lab Samp Parame Fluoride LABORATORY CONT Parame Fluoride	oles: 60371784 eter TROL SAMPLE: eter TROL SAMPLE:	Units mg/L 2918618 Units mg/L	2, 60371784003 Blank Result <0.2 Spike Conc. 2.5	3, 60371784004 Reporting Limit 20 0. LCS Result 2.4	Analyze 20 06/18/21 0 LCS % Rec 97	9:15 % Rec Limits 90-110		
Associated Lab Samp Parame Fluoride LABORATORY CONT Parame Fluoride LABORATORY CONT Parame	oles: 60371784 eter TROL SAMPLE: eter TROL SAMPLE:	Units mg/L 2918618 Units mg/L 2921627	2, 60371784003 Blank Result <0.2 Spike Conc. 2.5	8, 60371784004 Reporting Limit 20 0. LCS Result 2.4	Analyze 20 06/18/21 0 LCS % Rec 97 LCS	9:15 % Rec Limits 90-110 % Rec	Qualifiers	
Associated Lab Samp Parame Fluoride LABORATORY CONT Parame Fluoride LABORATORY CONT Parame	oles: 60371784 eter TROL SAMPLE: eter TROL SAMPLE:	Units mg/L 2918618 Units mg/L 2921627 Units	2, 60371784003 Blank Result <0.2 Spike Conc. 2.5 Spike Conc.	B, 60371784004 Reporting Limit 20 0. LCS Result 2.4	Analyze 20 06/18/21 0 LCS % Rec 97 LCS % Rec	9:15 % Rec Limits 90-110 % Rec Limits	Qualifiers	
Associated Lab Samp Parame Fluoride LABORATORY CONT Parame Fluoride LABORATORY CONT Parame Fluoride	oles: 60371784 eter FROL SAMPLE: eter FROL SAMPLE: eter	Units mg/L 2918618 Units mg/L 2921627 Units mg/L	2, 60371784003 Blank Result <0.2 Spike Conc. 2.5 Spike Conc.	B, 60371784004 Reporting Limit 20 0. LCS Result 2.4	Analyze 20 06/18/21 0 LCS % Rec 97 LCS % Rec	9:15 % Rec Limits 90-110 % Rec Limits	Qualifiers	
Associated Lab Samp Parame Fluoride LABORATORY CONT Parame Fluoride LABORATORY CONT Parame Fluoride	oles: 60371784 eter FROL SAMPLE: eter FROL SAMPLE: eter	Units mg/L 2918618 Units mg/L 2921627 Units mg/L	2, 60371784003 Blank Result <0.2 Spike Conc. 2.5 Spike Conc.	B, 60371784004 Reporting Limit 20 0. LCS Result 2.4	Analyze 20 06/18/21 0 LCS % Rec 97 LCS % Rec	9:15 % Rec Limits 90-110 % Rec Limits 90-110	Qualifiers	
Associated Lab Samp Parame Fluoride LABORATORY CONT Parame Fluoride	eter TROL SAMPLE: eter TROL SAMPLE: eter TROL SAMPLE:	Units mg/L 2918618 Units mg/L 2921627 Units mg/L	2, 60371784003 Blank Result <0.2 Spike Conc. 2.5 Spike Conc. 2.5	3, 60371784004 Reporting Limit 20 0. LCS Result 2.4 LCS Result 2.5	Analyze 20 06/18/21 0 LCS % Rec 97 LCS % Rec 100	9:15 % Rec Limits 90-110 % Rec Limits	Qualifiers	

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# **REPORT OF LABORATORY ANALYSIS**

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## **QUALITY CONTROL DATA**

Project: JEC FAL CCR Pace Project No.: 60371784

MATRIX SPIKE & MATRIX SP	PIKE DUPLIC	CATE: 2918	620 MS	MSD	2918621							
	6	0371261001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Fluoride	mg/L	0.33	2.5	2.5	2.9	2.9	101	101	80-120	0	15	
MATRIX SPIKE SAMPLE:	29	18622	60271	916004	Spike	MS		MS	% Rec			
Parameter		Units		esult	Conc.	Result		% Rec	Limits		Quali	iers
Fluoride		mg/L		<0.086	2.5		2.6	101	80	-120		
SAMPLE DUPLICATE: 2918	3619											
			603712	61001	Dup			Max				
Parameter		Units	Res	ult	Result	RPE	)	RPD	Qualif	iers		
Fluoride		mg/L		0.33	0.33	3	2	15	5			

Results presented on 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.: 60371784

### 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 .:	60371784

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60371784001	FAA-3-06/09/21	EPA 200.7	725664	EPA 200.7	725716
60371784002	FAA-4-06/09/21	EPA 200.7	725664	EPA 200.7	725716
60371784003	FAA-5-06/09/21	EPA 200.7	725664	EPA 200.7	725716
60371784004	FAA-6-06/09/21	EPA 200.7	725664	EPA 200.7	725716
60371784005	FAA-DUP-06/09/21	EPA 200.7	725664	EPA 200.7	725716
60371784001	FAA-3-06/09/21	EPA 3010	725667	EPA 6010	725715
60371784002	FAA-4-06/09/21	EPA 3010	725667	EPA 6010	725715
60371784003	FAA-5-06/09/21	EPA 3010	725667	EPA 6010	725715
60371784004	FAA-6-06/09/21	EPA 3010	725667	EPA 6010	725715
60371784005	FAA-DUP-06/09/21	EPA 3010	725667	EPA 6010	725715
60371784001	FAA-3-06/09/21	EPA 200.8	725666	EPA 200.8	725714
60371784002	FAA-4-06/09/21	EPA 200.8	725666	EPA 200.8	725714
60371784003	FAA-5-06/09/21	EPA 200.8	725666	EPA 200.8	725714
60371784004	FAA-6-06/09/21	EPA 200.8	725666	EPA 200.8	725714
60371784005	FAA-DUP-06/09/21	EPA 200.8	725666	EPA 200.8	725714
60371784001	FAA-3-06/09/21	EPA 245.1	726129	EPA 245.1	726391
60371784002	FAA-4-06/09/21	EPA 245.1	726129	EPA 245.1	726391
60371784003	FAA-5-06/09/21	EPA 245.1	726129	EPA 245.1	726391
60371784004	FAA-6-06/09/21	EPA 245.1	726129	EPA 245.1	726391
60371784005	FAA-DUP-06/09/21	EPA 245.1	726129	EPA 245.1	726391
60371784001	FAA-3-06/09/21	EPA 300.0	726411		
60371784002	FAA-4-06/09/21	EPA 300.0	726411		
60371784003	FAA-5-06/09/21	EPA 300.0	726411		
60371784004	FAA-6-06/09/21	EPA 300.0	726411		
60371784005	FAA-DUP-06/09/21	EPA 300.0	726411		



Sample Condition Upon Receipt



Client Name: Evergy Ka	nses Centrel	
Courier: FedEx D UPS D VIA D	Clay 🗋 🛛 PEX 🗖 🛛 ECI 🗖	Pace 🗆 Xroads 🗆 Client 🔎 Other 🗔
Tracking #:	Pace Shipping Label Use	ed? Yes 🗆 No
Custody Seal on Cooler/Box Present: Yes	sᢧ No □ Seals intact: Yes↓	
Packing Material: Bubble Wrap	Bubble Bags 🗆 🛛 Foam 🗆	None D Other Prole
Thermometer Used: T-298	Type of Ice: Whet Blue No	
Cooler Temperature (°C): As-read 5	へ Corr. Factor <i>の</i> -ゅ Correc	eted S-1 Date and initials of person examining contents: 6.10.21
Temperature should be above freezing to 6°C		
Chain of Custody present:	Yes No N/A	
Chain of Custody relinquished:	- Pes No N/A	
Samples arrived within holding time:	<b>_⊡</b> Yes □No □N/A	
Short Hold Time analyses (<72hr):		
Rush Turn Around Time requested:	🖂 Yes 🖅 No 🖾 N/A	
Sufficient volume:		
Correct containers used:		
		1211-0110-000
Pace containers used:		
Containers intact:	Pres INo IN/A	
Unpreserved 5035A / TX1005/1006 soils froz	en in 48hrs?  Yes No ANA	
Filtered volume received for dissolved tests?	🗆 Yes 🗐 No 🔎 M/A	
Sample labels match COC: Date / time / ID / a	analyses	
Samples contain multiple phases? Matr	ix: WT 🛛 Yes, 🖓 O 🗆 N/A	
Containers requiring pH preservation in comp	bliance?	List sample IDs, volumes, lot #'s of preservative and the
(HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10		date/time added.
(Exceptions: VOA, Micro, O&G, KS TPH, OK-DRC Cyanide water sample checks:	)) LOT# <b>COSCIS</b>	
Lead acetate strip turns dark? (Record only)	□Yes □No	
Potassium iodide test strip turns blue/purple?	(Preserve) 🛛 Yes 🖾 No	
Trip Blank present:		
Headspace in VOA vials ( >6mm):	□Yes □No 🖽 🕅 🖓	
Samples from USDA Regulated Area: S	State: OYes ONo	
Additional labels attached to 5035A / TX1005	vials in the field? Tyes No	
Client Notification/ Resolution:	Copy COC to Client? Y / N	Field Data Required? Y / N
Person Contacted:	Date/Time:	
Comments/ Resolution:		

Project Manager Review:

Date:



# CHAIN-OF-CUSTODY / Analytical Request Document

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

	d Client Information:		Section B Required Pr								Invoi	tion (		tion:														Γ	Par	ige:	1	of	1	
Company		NSAS CENTRAL, INC.	Report To:	Meli	ssa I	Michels,	Samanth	a Kaney, I	Danielle	Obe					ounts																			
Address	Jeffrey Energ	y Center (JEC)	Сору То:	Jare	ed Mo	orrison, J	ake Hum	iphrey, Lai	ura Hine	s	Com	ipany I	Name	E	VER	GY	KAN	SAS	6 CE	NTR	AL,	INC	REG	SULA	TO	RY A	GE	NCY					_	
	818 Kansas A	ve, Topeka, KS 66612		JD S	Schle	gel, Brar	ndon Will	, Sarah Ha	azelwoo	ł	Addr	ress:	;	See	Secti	on A	ł						Г	NPD	ES	~	GF	ROUN	D W	VATE	RГ	DRINKI	NG W	ATER
Email To	melissa.mich	els@evergy.com	Purchase Or	rder I	No.:							Quote											۲	UST		Г	RC	RA			<b>–</b>	OTHER		
Phone:	785-575-8113	Fax:	Project Nam	e:	JEC	FAL CC	R					Projec	t,	Jasn	nine /	Ame	rin, S	13-	563-	1403	3		Site	+ Loca	atio	n	_	_						
Request	ed Due Date/TAT:	7 day	Project Num	ber:								Profile	#: (	9657	, 2			_		-		-		STATE: KS			KS	кs						
											<u> </u>							Т		Req	uest	ted /	Analysis Filtered (Y/N)				1)	E						
	Section D Required Client Informati	ON MATRIX DRINKING WATER	CODE DW	codes lo (eft)	C=COMP)		COLL	ECTED					P	Prese	ervati	ves		I'N /A	N	N	N	N	N											
ITEM #	SAMPL (A-Z, 0-9 ) Sample IDs MUST	WATER WASTE WATER PRODUCT SOIL/SOLID OIL WIPE AIR AIR ,-) OTHER	WT WW P SL OL WP	MATRIX CODE (see valid code:	SAMPLE TYPE (G=GRAB C=C	COMP STA	OSITE	COMPO END/GF	SITE RAB	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol	LAnalvsis Test	200.7 Total Metals*	8 Total	6010 Total Li***	300.0: F	245.1 Hg							Residual Chlorine (Y/N)		3717 Project		
1	F	FAA-3-06/09/21		wт	G		2	06/09/21	12:45		2			1				T	X	-	x	x	x						T					
2	F	FAA-4-06/09/21		WT	G		-	06/09/21	11:35		2	1		1					X	x	x	x	x						T					
3	F	AA-5-06/09/21		WΤ	G			06/09/21	10:35		2	1		1					X	X	x	х	x											
4	F	AA-6-06/09/21		wт	G			06/09/21	12:50		2	1		1					X	X	x	x	x											
5	FA	A-DUP-06/09/21		wт	G		Z	06/09/21	12:50		2	1		1					X	x	x	x	x											
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200,7 To	tal Metals*: Ba, Be, Cr,	Pb			Jaso	n R. Frank	s / SCS		6/9/2	21		17:00	1		3ro	<u>د /د</u>	et	- 1	Pa				1	0.9.3	н	14	,36		5-1	T	V		1	N/
200.8 To	tal Metals**: Sb, As, Cd	, Co, Mo, Se, Ti																								T				T	1	4	1	4
6010 Tol	al Metals***: Li										t		+			_										t				+			1	
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<u></u>							SAMPLE	ER NAME A	ND SIGN	ATUF	RE					-	-					-			-	1		+	0	+	5	ie.	+	act
ge 2								PRINT Name	e of SAMF	LER:	Jas	or R	. Fra	anks		-	1	-	_	_		_						-	Temp in "C		Received on Ice (Y/N)	d Coo		Hes Int (/N)
Page 24 of 24								SIGNATURI			61	ar		K	2	The	m	k,		ATE MM/D					6/9/	/21			Tem		Rece	Custody Sealed Cooler (Y/N)		Samples Intact (Y/N)



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

July 07, 2021

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

RE: Project: JEC FAL CCR Pace Project No.: 60372220

Dear Melissa Michels:

Enclosed are the analytical results for sample(s) received by the laboratory on June 10, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network: • Pace Analytical Services - 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.
Danielle Oberbroeckling, Haley & Aldrich
Melanie Satanek, Haley & Aldrich, Inc.
JD Schlegel, Evergy, Inc.





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

### CERTIFICATIONS

Project: JEC FAL CCR Pace Project No.: 60372220

#### 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.: 60372220

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60372220001	FAA-3-06/09/21	Water	06/09/21 12:45	06/10/21 10:00
60372220002	FAA-4-06/09/21	Water	06/09/21 11:35	06/10/21 10:00
60372220003	FAA-5-06/09/21	Water	06/09/21 10:35	06/10/21 10:00
60372220004	FAA-6-06/09/21	Water	06/09/21 12:50	06/10/21 10:00
60372220005	FAA-DUP-06/09/21	Water	06/09/21 12:50	06/10/21 10:00



## SAMPLE ANALYTE COUNT

Project:JEC FAL CCRPace Project No.:60372220

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60372220001	FAA-3-06/09/21	EPA 903.1		1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60372220002	FAA-4-06/09/21	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60372220003	FAA-5-06/09/21	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60372220004	FAA-6-06/09/21	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60372220005	FAA-DUP-06/09/21	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg



Project: JEC FAL CCR

Pace Project No.: 60372220

#### Method: EPA 903.1

Description:903.1 Radium 226Client:Evergy Kansas Central, Inc.Date:July 07, 2021

### **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.: 60372220

### Method: EPA 904.0

Description:904.0 Radium 228Client:Evergy Kansas Central, Inc.Date:July 07, 2021

### **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.: 60372220

#### Method: Total Radium Calculation

Description:Total Radium 228+226Client:Evergy Kansas Central, Inc.Date:July 07, 2021

### **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.: 60372220

Sample: FAA-3-06/09/21 PWS:	Lab ID: 6037222 Site ID:	Collected: 06/09/21 12:45 Sample Type:	Received:	06/10/21 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	-0.213 ± 0.369 (0.931) C:NA T:88%	pCi/L	06/30/21 12:09	9 13982-63-3	
	Pace Analytical Ser	rvices - Greensburg				
Radium-228	EPA 904.0	1.07 ± 0.495 (0.851) C:74% T:89%	pCi/L	07/01/21 14:16	6 15262-20-1	
	Pace Analytical Ser	rvices - Greensburg				
Total Radium	Total Radium Calculation	1.07 ± 0.617 (0.931)	pCi/L	07/02/21 14:56	6 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60372220

Sample: FAA-4-06/09/21 PWS:	Lab ID: 603722 Site ID:	20002 Collected: 06/09/21 11:35 Sample Type:	Received:	06/10/21 10:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Se	ervices - Greensburg			_	
Radium-226	EPA 903.1	0.000 ± 0.453 (0.981) C:NA T:71%	pCi/L	06/30/21 12:09	13982-63-3	
	Pace Analytical Se	ervices - Greensburg				
Radium-228	EPA 904.0	0.220 ± 0.384 (0.838) C:72% T:93%	pCi/L	07/01/21 14:16	5 15262-20-1	
	Pace Analytical Se	ervices - Greensburg				
Total Radium	Total Radium Calculation	0.220 ± 0.594 (0.981)	pCi/L	07/02/21 14:56	6 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60372220

Sample: FAA-5-06/09/21 PWS:	Lab ID: 6037222 Site ID:	20003 Collected: 06/09/21 10:35 Sample Type:	Received:	06/10/21 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	1.18 ± 0.733 (0.985) C:NA T:93%	pCi/L	06/30/21 12:09	9 13982-63-3	
	Pace Analytical Ser	rvices - Greensburg				
Radium-228	EPA 904.0	0.174 ± 0.371 (0.819) C:74% T:90%	pCi/L	07/01/21 14:16	6 15262-20-1	
	Pace Analytical Ser	rvices - Greensburg				
Total Radium	Total Radium Calculation	1.35 ± 0.822 (0.985)	pCi/L	07/02/21 14:56	6 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60372220

Sample: FAA-6-06/09/21 PWS:	Lab ID: 60372220 Site ID:	Collected: 06/09/21 12:50 Sample Type:	Received:	06/10/21 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	0.000 ± 0.412 (0.871) C:NA T:93%	pCi/L	06/30/21 12:24	13982-63-3	
	Pace Analytical Serv	vices - Greensburg				
Radium-228	EPA 904.0	0.495 ± 0.423 (0.855) C:74% T:86%	pCi/L	07/01/21 14:16	6 15262-20-1	
	Pace Analytical Serv	vices - Greensburg				
Total Radium	Total Radium Calculation	0.495 ± 0.590 (0.871)	pCi/L	07/02/21 14:56	6 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60372220

Sample: FAA-DUP-06/09/21 PWS:	Lab ID: 60372 Site ID:	220005 Collected: 06/09/21 12:50 Sample Type:	Received:	06/10/21 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	-0.129 ± 0.357 (0.843) C:NA T:89%	pCi/L	06/30/21 12:24	4 13982-63-3	
	Pace Analytical S	ervices - Greensburg				
Radium-228	EPA 904.0	0.661 ± 0.434 (0.832) C:72% T:92%	pCi/L	07/01/21 14:16	6 15262-20-1	
	Pace Analytical S	ervices - Greensburg				
Total Radium	Total Radium Calculation	0.661 ± 0.562 (0.843)	pCi/L	07/02/21 14:56	6 7440-14-4	



### **QUALITY CONTROL - RADIOCHEMISTRY**

Project:	JEC FAL CCR					
Pace Project No.:	60372220					
QC Batch:	453683	A	nalysis Method:	EPA 904.0		
QC Batch Method:	EPA 904.0	A	nalysis Description:	904.0 Radium 2	28	
		L	aboratory:	Pace Analytical	Services - Greensbur	g
Associated Lab Sa	mples: 6037222000	1, 60372220002, 6037	2220003, 603722200	04, 60372220005		
METHOD BLANK:	2190432		Matrix: Water			
Associated Lab Sa	mples: 6037222000	1, 60372220002, 6037	2220003, 603722200	04, 60372220005		
Para	meter	Act ± Unc (MI	DC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0	111 ± 0.316 (0.711) 0	:78% T:88%	pCi/L	07/01/21 14:17	

Results presented on 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 .:	60372220					
QC Batch:	453682	Analysis Method:	EPA 903.1			
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-220	6		
		Laboratory:	Pace Analytical S	ervices - Greensburg	g	
Associated Lab Sa	mples: 60372220001, 6	60372220002, 60372220003, 6037222000	04, 60372220005			
METHOD BLANK:	2190431	Matrix: Water				
Associated Lab Sa	mples: 60372220001, 6	60372220002, 60372220003, 6037222000	04, 60372220005			
Para	meter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers	
Radium-226	-0.25	5 ± 0.307 (0.835) C:NA T:73%	pCi/L	06/30/21 12:09		

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



### QUALIFIERS

Project: JEC FAL CCR Pace Project No.: 60372220

### 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 .:	60372220

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60372220001	FAA-3-06/09/21	EPA 903.1	453682		
60372220002	FAA-4-06/09/21	EPA 903.1	453682		
60372220003	FAA-5-06/09/21	EPA 903.1	453682		
60372220004	FAA-6-06/09/21	EPA 903.1	453682		
60372220005	FAA-DUP-06/09/21	EPA 903.1	453682		
60372220001	FAA-3-06/09/21	EPA 904.0	453683		
60372220002	FAA-4-06/09/21	EPA 904.0	453683		
60372220003	FAA-5-06/09/21	EPA 904.0	453683		
60372220004	FAA-6-06/09/21	EPA 904.0	453683		
60372220005	FAA-DUP-06/09/21	EPA 904.0	453683		
60372220001	FAA-3-06/09/21	Total Radium Calculation	455016		
60372220002	FAA-4-06/09/21	Total Radium Calculation	455016		
60372220003	FAA-5-06/09/21	Total Radium Calculation	455016		
60372220004	FAA-6-06/09/21	Total Radium Calculation	455016		
60372220005	FAA-DUP-06/09/21	Total Radium Calculation	455016		

Pace Analytical Services-Pittsburgh Cooler Issue Tracking Form

gbook:		Y or N	Page 17
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	678	waiting for IRWO (list lab ID) missing COC	
.6	5 6	broken bottles incorrect bottles	
	-	(A-not in LIMS B-could not find)	
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Page 17 of 23

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Pace Analytical

# CHAIN-OF-CUSTODY / Analytical Request Document

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

Section Required	A Client Information:	Section B Required Pr	oject l	Informat	tion:						<b>tion</b> ice Inf		tion:														Page	: 1		of	1	
Company		Report To:				Samantha	a Kaney, I	Danielle (	Ober	-			Acco	unts	Pay	able										-						
Address:	Jeffrey Energy Center (JEC)	Сору То:	Jarec	d Morri	ison, Ja	ike Hum	ohrey, Lau	ura Hines		Corr	npany	Name	s: E	VER	GY	KAN	SAS	CE	NTR	AL, I		GUL	ATO	RY A	GEN	ICY						
	818 Kansas Ave, Topeka, KS 66612		JD So	chiege	el, Brano	don Will,	Sarah Ha	azelwood		Add	ress:		S	EE S	SEC	TION	A				1	NF	DES		GR	OUN	D WA	TER [	- เ	DRINKING	WATER	
Email To	melissa.michels@evergy.com	Purchase Or	der N	<b>o</b> .:				• • • •			e Quote rence:										Г	- US	зт	Γ-	RC	RA		Г	~ c	THER		_
Phone:	(785) 575-8113 Fax:	Project Nam	e: 、	JEC F.	AL CCF	२				Pace	e Proje ager:		Jasm	ine ,	Ame	erin, S	913-9	563-	140	3	s	ite Lo	ocatio	n								
Request	ed Due Date/TAT: 15 Day	Project Num	ber:									e#:	9657	, 2								S	TATE			KS						
		1								-							Т		Req	uest	ed Ana	alysi	s Filt	ered	(Y/N	)						
	Section D Valid Matrix Required Client information <u>MATRIX</u> DRINKING WATER WATER	CODE	des to teft)	C=COMP)		COLL	ECTED		N			F	Prese	ervati	ives		IN /A	N	N	N												
	WASTE WATE PRODUCT SOIL/SOLID OIL VIPE (A-Z, 0-9 / ,-) OTHER	WW P SL OL WP	(see valid	(G=GRAB	COMPC STAF		COMPOS END/GF		TEMP AT COLLECTION	AINERS	q						Test1	6	0 00	E							hlorine (Y/N)					
ITEM#	Sample IDs MUST BE UNIQUE TISSUE	TS	MATRIX CODE	SAMPLE TYPE	DATE	TIME	DATE	TIME	SAMPLE TEM	# OF CONTAINERS	Unpreserve	H <sub>2</sub> SO4	HNO <sub>3</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol	L Analvsis	Radium-226	Radium-228	Total Radium							Residual Chlorine	Pa	ace F	Project N	o./ Lab I.I	).
1	FAA-3-06/09/21		wT	G	•	-	06/09/21	12:45		2			2	_			·	: ×	<u>x</u>	x				_				01	2)			
2	FAA-4-06/09/21		wr	G	-	-	06/09/21	11:35		2			2					×	×	x								_	02			
3	FAA-5-06/09/21		wt	G	-		06/09/21	10:35		2			2					×	<u> </u>	X		ļ							<u>03</u>			
4	FAA-6-06/09/21		wτ	G	-	-	06/09/21	12:50	<u> </u>	2			2					×	: <u>  x</u>	x						┝╍╍┥			04			
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Page 18 of 23							SIGNATUR				//	<u>2.0</u>	5	2	1		6		DATE	i Sign DD/Y1	ed O:		6/9	9/21			Tem	Rece	2	Custody Sealed Cooler (Y/N)	Samples Intact	
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Pace Ar 9608 Lo Lenexa,	e Amerin halytical Kansas piret Blvd. , KS 66219 (913)599-5665		1638 Suite Gree	Analytical Pittst Roseytown Roa s 2,3, & 4 nsburg, PA 1560 e (724)850-5600	ad 01	Pres	erved Con	tainers 👔	Radium-226	Radium-228 & Total Radium				
ltem Sa	mple ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Other				Radium				LAB USE ONLY
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Cooler	Temperature on Rec	eipt <u> </u>	_°C Cu	stody Seal / \	<u>/ )or N</u>		Rece	ived on	Ice	<u>Y</u>	or ( N )	Sample	<u>s Intac</u>	ct(Y)or N

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Page 19

PM:	D#:30426098 CRF Due Date: 07 ENT: PACE_60_LEKS		1				CHAI The Chain							-																		
Secuon											tion																ſ	Page		1	of	1
Required Company:	Client Information: EVERGY KANSAS CENTRAL, INC.	-			mation: Michele	Samanth	a Kaney,	Doniollo	Obc			formatio		unts l	Davi	obte						-					l I		e.	•		1
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	Section D Valid Matrix Required Client Information MATRIX	Codes CODE	o left)	MP)		COLL	ECTED				Τ	Dr	200	rvativ	/0 Q	:		T N	N	N	N											
	DRINKING WATER WASTE WATER WASTE WATER PRODUCT SOIL/SOUD OIL OIL AIR	DW WT P SL OL WP AR	또 (see valid codes to left)	(G=GRAB	COMP ST/	OSITE	COMPO END/G	SITE RAB	SAMPLE TEMP AT COLLECTION	NERS								lest 1										vina (V/N)			*****	
ITEM #	(A-Z, O-9 /,-) OTHER Sample IDS MUST BE UNIQUE TISSUE	OT TS	MATRIX CODE	SAMPLE TYPE	DATE	TIME	DATE	TIME	SAMPLE TEMP	# OF CONTAINERS	Unpreserved	H <sub>2</sub> SO4 HNO3	HCI	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanof	Orner	4 Anaiysis I	Radium-226	Kadium-228	l otal Kadium							Residual Chlorine (Y/N)		Pace	Project I	No./ Lab I.D.
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4	FAA-6-06/09/21		W	G	-	-	06/09/21	12:50		2		2	2				_		x	×	x								_	00	4	
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Page 20 of 23							PRINT Nam SIGNATUR				1		5	7 -	1	/		1			gned		-					Temp in °C		Received an Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
of 23						L				earrow	(a)	2000	Ę	7	1	en	4	2	-(M)	n/DD.	/ <u>//):</u>			6/9	)/21						0	0

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

Pittsburgh Lab Sample Condi	tion	Upo	n Re	eceipt		
Face Analytical Client Name:		<u> </u>	r	Qy Kansall	Project #	
				77		
Courier: Fed Ex UPS USPS Clien	t 🗆	Comm	ercial	Pace Other	Label Ch	1/2
Tracking #: 5002 0648	320	19			LIMS Login	LEKS
Custody Seal on Cooler/Box Present: 🗹 yes		no	Seal	s intact: 🛛 yes 🔲	no	0#:30426098 CAF Due Date: 07 ENT: PRCE_60_LEKS
Thermometer Used	Туре	of Ice:	We	t Blue None		i O
Cooler Temperature Observed Temp		°C	Corr	ection Factor:	°C 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		Date and Initials of person examining contents:	20426
Chain of Custody Present:			19/27	1.		- <b>က</b> ਵ
Chain of Custody Filed Out:	1			2.		
Chain of Custody Relinquished:				3.		M CAF
Sampler Name & Signature on COC:	$\overline{\nabla}$			4,		
Sample Labels match COC:				5.		
-includes date/time/ID Matrix:	Le lun	<u>ا</u>	<u> </u>			
Samples Arrived within Hold Time:		1	Ī	6.		-
Short Hold Time Analysis (<72hr remaining):		ener		7.		
Rush Turn Around Time Requested:		Carman .	1	8.		
Sufficient Volume:	1			9.	······································	_
Correct Containers Used:	1			10.		
-Pace Containers Used:	- and -					
Containers Intact:	/			11.		
Orthophosphate field filtered			- And a start	12.		
Hex Cr Aqueous sample field filtered			1	13.	· · · · · · · · · · · ·	
Organic Samples checked for dechlorination:	<u> </u>			14.		
Filtered volume received for Dissolved tests			1	15.		
All containers have been checked for preservation.				16. PH<-	-1	
exceptions: VOA, coliform, TOC, O&G, Phenolics, Non-aqueous matrix	Rador	),		r H<	<b>.</b>	
All containers meet method preservation requirements.	/			Initial when completed $\mathcal{P}_{1}$	Date/time of preservation	
,				Lot # of added	P	-
	1	<u> </u>		preservative		-
Headspace in VOA Vials ( >6mm):				17.		4
Trip Blank Present:				18.		
Trip Blank Custody Seals Present Rad Samples Screened < 0.5 mrem/hr				Initial when	Survey Meter	-
	· ·			completed: RA	Date: 6 15-20SN: 1563	<u>_</u>
Client Notification/ Resolution: Person Contacted:			Dete	Time	Contacted By:	
Comments/ Resolution:			Date/	Time:	Contacted by.	
						-
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A check in this box indicates that addi	tional	infor	matio	on has been stored in	ereports.	
and the second						

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.

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# **Quality Control Sample Performance Assessment**

Analyst Must Manually Enter All Fields Highlighted in Yellow.

www.pacelabs.com			Analyst must manually Enter An Freids Triginighted h	I I CHOW.	
/ www.paceudos.com Test:	Ra-226				
í Analvst:	MK1		Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Date:	6/24/2021		Sample Collection Date:	6/15/2021	
Batch ID:	61329		Sample I.D.	30426662001	
Matrix:	DW		Sample MS I.D.		
			Sample MSD I.D.		
Method Blank Assessment		٦	Spike I.D.:	20-032	
MB Sample ID	2190431		MS/MSD Decay Corrected Spike Concentration (pCi/mL):	32.174	
MB concentration:			Spike Volume Used in MS (mL):	0.20	
M/B Counting Uncertainty:	0.306		Spike Volume Used in MSD (mL):		
MB MDC:	0.835		MS Aliquot (L, g, F):	0.651	
MB Numerical Performance Indicator:	-1.63		MS Target Conc.(pCi/L, g, F):	9.880	
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)?	γ	MSD Spike Uncertainty (calculated):		
	LCS61329	LCSD61329	Sample Result:		
Count Date:		6/30/2021	Sample Result Counting Uncertainty (pCi/L, g, F):		
Spike I.D.:	20-032	20-032	Sample Matrix Spike Result:		
Spike Concentration (pCi/mL):		32.173	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	1	
Volume Used (mL):		0.10	Sample Matrix Spike Duplicate Result:		
Aliquot Volume (L, g, F):		0.657	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	1.007	
Target Conc. (pCi/L, g, F):		4.897	MS Numerical Performance Indicator:	1.065	
Uncertainty (Calculated):		0.230	MSD Numerical Performance Indicator:		
Result (pCi/L, g, F):		4.456	MS Percent Recovery:	112.27%	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		1.004	MSD Percent Recovery:		
Numerical Performance Indicator:		-0.84	MS Status vs Numerical Indicator:	N/A	
Percent Recovery:		91.01%	MSD Status vs Numerical Indicator:		
Status vs Numerical Indicator:		N/A	MS Status vs Recovery: MSD Status vs Recovery:		
Status vs Recovery: Upper % Recovery Limits:		Pass 135%	MSD Status vs Recovery: MS/MSD Upper % Recovery Limits:		
Lower % Recovery Limits:		73%	MS/MSD Lower % Recovery Limits:		
Lower / Recovery Limits.	1 1070	10%	Mondo Loval A Redovery Links.	11/3	1
Duplicate Sample Assessment	1	1 1	Matrix Spike/Matrix Spike Duplicate Sample Assessment	1	1
	1				
Sample I.D.:	LCS61329	Enter Duplicate	Sample I.D.		
Duplicate Sample I.D.		sample IDs if	Sample MS I.D.		
Sample Result (pCi/L, g, F):	4.262	other than	Sample MSD I.D.		
Sample Result Counting Uncertainty (pCi/L, g, F):		LCS/LCSD in	Sample Matrix Spike Result:		
Sample Duplicate Result (pCi/L, g, F):		the space below.	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):			Sample Matrix Spike Duplicate Result:		
Are sample and/or duplicate results below PL2		1 1	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L_d_E):	1	I

Are sample and/or duplicate results below RL? NO Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance Indicator: -0.279 Duplicate Numerical Performance Indicator: (Based on the LCS/LCSD Percent Recoveries) Duplicate RPD: 5.20% (Based on the Percent Recoveries) MS/ MSD Duplicate RPD: Duplicate Status vs Numerical Indicator: N/A MS/ MSD Duplicate Status vs Numerical Indicator: MS/ MSD Duplicate Status vs RPD: Duplicate Status vs RPD: Pass % RPD Limit: 32% % RPD Limit:

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

Comments:

MW - 0 - N

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PACE Analytical Services Ra-228 Analysis

# **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 in	<u>i rellow.</u>	
Analyst:	VAL		Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Date:	6/25/2021		Sample Collection Date:	6/15/2021	
Worklist:	61330		Sample I.D.	30426662001	
Matrix:	WT		Sample MS I.D.	30426662001MS	en egente. Secondo estado estado esta
		_	Sample MSD I.D.		
Method Blank Assessment		1	Spike I.D.:	21-003	
MB Sample ID		1	MS/MSD Decay Corrected Spike Concentration (pCi/mL):	37.309	
MB concentration:			Spike Volume Used in MS (mL):	0.20	전자 이상 사망
M/B 2 Sigma CSU:			Spike Volume Used in MSD (mL):		
MB MDC:			MS Aliquot (L, g, F):	0.811	
MB Numerical Performance Indicator:			MS Target Conc.(pCi/L, g, F):	9.196	
MB Status vs Numerical Indicator:			MSD Aliquot (L, g, F):		
MB Status vs. MDC:	Pass	1	MSD Target Conc. (pCi/L, g, F):		
Laboratory Control Sample Assessment			MS Spike Uncertainty (calculated):	0.451	
Laboratory Control Sample Assessment	LCSD (Y or N)?	Y	MSD Spike Uncertainty (calculated):		
01-D1	LCS61330	LCSD61330	Sample Result:	5.235	
Count Date: Spike I.D.:		7/1/2021 21-003	Sample Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Result:	1.143 13.408	
Decay Corrected Spike Concentration (pCi/mL):		37.110	Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	2.594	
Volume Used (mL):		0.10	Sample Matrix Spike Result 2 Signa CSO (pCi/L, g, F):	2.094	
Aliquot Volume (L, g, F):		0.10	Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Target Conc. (pCi/L, g, F):		4.598	Matrix Spike Duplicate Result 2 Signa CSO (pCl/L, g, F): MS Numerical Performance Indicator:	-0.699	
Uncertainty (Calculated):		0.225	MSD Numerical Performance Indicator:	-0.033	
Result (pCi/L, q, F):		3.923	MSD Numerical Performance indicator. MS Percent Recovery:	88.87%	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.975	0.931	MSD Percent Recovery:	00.0770	
Numerical Performance Indicator:	-0.89	-1.38	MS Status vs Numerical Indicator:	Pass	
Percent Recovery:	90.05%	85.32%	MSD Status vs Numerical Indicator:		
Status vs Numerical Indicator:	N/A	N/A	MS Status vs Recovery:	Pass	
Status vs Recovery:		Pass	MSD Status vs Recovery:		
Upper % Recovery Limits:	135%	135%	MS/MSD Upper % Recovery Limits:	135%	
Lower % Recovery Limits:	60%	60%	MS/MSD Lower % Recovery Limits:	60%	l
Duplicate Sample Assessment			Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:	LCS61330	Enter Duplicate	Sample I.D.		
Duplicate Sample I.D.	LCSD61330	sample IDs if	Sample NS I.D.		
Sample Result (pCi/L, g, F):		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):	0.931		Sample Matrix Spike Duplicate Result:		
Are sample and/or duplicate results below RL?			Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		ta an	Duplicate Numerical Performance Indicator:		
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:			(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		
Duplicate Status vs Numerical Indicator:			MS/ MSD Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD:	Pass	1	MS/ MSD Duplicate Status vs RPD:		

% RPD Limit: ## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Pace Analytical

Ra-228\_61330\_DW\_W Ra-228 (R086-8 04Sep2019).xls

36%

Mertalal

% RPD Limit:

ATTACHMENT 1-3 September 2021 Sampling Event Laboratory Analytical Report



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

December 02, 2021

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

RE: Project: JEC FAL CCR Pace Project No.: 60380628

### Dear Melissa Michels:

Enclosed are the analytical results for sample(s) received by the laboratory on September 17, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services Kansas City
- Pace Analytical Services Greensburg

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

Sincerely,

alice Spiller

Alice Spiller alice.spiller@pacelabs.com (913)599-5665 PM Lab Management

Enclosures

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





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

### CERTIFICATIONS

Project: JEC FAL CCR Pace Project No.: 60380628

#### 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

#### Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219 Missouri Inorganic Drinking Water Certification #: 10090 Arkansas Drinking Water Arkansas Certification #: 20-020-0 Arkansas Drinking Water Illinois Certification #: 2000302021-3 Iowa Certification #: 118 Kansas/NELAP Certification #: E-10116 Louisiana Certification #: 03055 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

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.: 60380628

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60380628001	FAA-3-091421	Water	09/14/21 16:45	09/17/21 00:00
60380628002	FAA-4-091421	Water	09/14/21 18:00	09/17/21 00:00
60380628003	FAA-6-091421	Water	09/14/21 17:30	09/17/21 00:00
60380628004	JEC-FAA-DUP-091421	Water	09/14/21 17:30	09/17/21 00:00



# SAMPLE ANALYTE COUNT

Project: JEC FAL CCR Pace Project No.: 60380628

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60380628001	FAA-3-091421	EPA 200.7	JLH	3	PASI-K
		EPA 6010	JLH	1	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	BLA	1	PASI-K
		SM 4500-H+B	KB	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
0380628002	FAA-4-091421	EPA 200.7	JLH	3	PASI-K
		EPA 6010	JLH	1	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	BLA	1	PASI-K
		SM 4500-H+B	KB	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60380628003	FAA-6-091421	EPA 200.7	JLH	3	PASI-K
		EPA 6010	JLH	1	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	BLA	1	PASI-K
		SM 4500-H+B	KB	1	PASI-K
		EPA 300.0	ALH, LDB	3	PASI-K
0380628004	JEC-FAA-DUP-091421	EPA 200.7	JLH	3	PASI-K
		EPA 6010	JLH	1	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	BLA	1	PASI-K
		SM 4500-H+B	KB	1	PASI-K
		EPA 300.0	ALH, LDB	3	PASI-K



### SAMPLE ANALYTE COUNT

		American
Pace Project No.:	60380628	
Project:	JEC FAL CCR	

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg



Project: JEC FAL CCR

Pace Project No.: 60380628

#### Method: EPA 200.7

Description:200.7 Metals, TotalClient:Evergy Kansas Central, Inc.Date:December 02, 2021

### **General Information:**

4 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: 745486

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60380536001,60380625003

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

- MS (Lab ID: 2986093)
  - Calcium

Additional Comments:



Project: JEC FAL CCR

Pace Project No.: 60380628

### Method: EPA 6010

Description:6010 MET ICPClient:Evergy Kansas Central, Inc.Date:December 02, 2021

#### **General Information:**

4 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.: 60380628

#### Method: EPA 200.8

Description:200.8 MET ICPMSClient:Evergy Kansas Central, Inc.Date:December 02, 2021

#### **General Information:**

4 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.: 60380628

#### Method: EPA 903.1

Description:903.1 Radium 226Client:Evergy Kansas Central, Inc.Date:December 02, 2021

#### **General Information:**

4 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.: 60380628

#### Method: EPA 904.0

Description:904.0 Radium 228Client:Evergy Kansas Central, Inc.Date:December 02, 2021

#### **General Information:**

4 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.: 60380628

#### Method: Total Radium Calculation

Description:Total Radium 228+226Client:Evergy Kansas Central, Inc.Date:December 02, 2021

#### **General Information:**

4 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:



Project: JEC FAL CCR

## Pace Project No.: 60380628

#### Method: SM 2540C

Description:2540C Total Dissolved SolidsClient:Evergy Kansas Central, Inc.Date:December 02, 2021

#### **General Information:**

4 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.: 60380628

#### Method: SM 4500-H+B

Description:4500H+ pH, ElectrometricClient:Evergy Kansas Central, Inc.Date:December 02, 2021

#### **General Information:**

4 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.

- FAA-3-091421 (Lab ID: 60380628001)
- FAA-4-091421 (Lab ID: 60380628002)
- FAA-6-091421 (Lab ID: 60380628003)
- JEC-FAA-DUP-091421 (Lab ID: 60380628004)

#### 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.: 60380628

#### Method: EPA 300.0

Description:300.0 IC Anions 28 DaysClient:Evergy Kansas Central, Inc.Date:December 02, 2021

#### **General Information:**

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

#### Hold Time:

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

#### Method Blank:

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

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

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

QC Batch: 744818

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60380084003,60380536003

- M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
  - MS (Lab ID: 2983692)
    - Chloride
    - Fluoride
  - MSD (Lab ID: 2983693)
    - Chloride
    - Fluoride

#### QC Batch: 744822

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

#### 60380628002,60380631002,60380635001

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

• MS (Lab ID: 2983704)

Chloride

- R1: RPD value was outside control limits.
  - MSD (Lab ID: 2983705)
    - Chloride

#### Additional Comments:

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



Project: JEC FAL CCR

Pace Project No.: 60380628

Sample: FAA-3-091421	Lab ID: 603	380628001	Collected: 09/14/2	1 16:45	5 Received: 09	9/17/21 00:00 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total			00.7 Preparation Met	hod: EF	PA 200.7			
	Pace Analytic	al Services -	Kansas City					
Barium, Total Recoverable	0.032	mg/L	0.0050	1	09/24/21 16:00	09/28/21 13:05	7440-39-3	
Boron, Total Recoverable	0.55	mg/L	0.10	1	09/24/21 16:00	09/28/21 13:05	7440-42-8	
Calcium, Total Recoverable	191	mg/L	0.20	1	09/24/21 16:00	09/28/21 13:05	7440-70-2	
6010 MET ICP			010 Preparation Met	nod: EP	A 3010			
	Pace Analytic	al Services -	Kansas City					
Lithium, Total Recoverable	0.012	mg/L	0.010	1	09/24/21 16:00	09/28/21 13:05	7439-93-2	
200.8 MET ICPMS	Analytical Met	thod: EPA 20	0.8 Preparation Met	hod: EF	PA 200.8			
	Pace Analytic	al Services -	Kansas City					
Arsenic, Total Recoverable	<0.0010	mg/L	0.0010	1	09/24/21 16:00	09/28/21 17:23	7440-38-2	
Cobalt, Total Recoverable	<0.0010	mg/L	0.0010	1	09/24/21 16:00	09/28/21 17:23	7440-48-4	
Molybdenum, Total Recoverable	0.0090	mg/L	0.0010	1	09/24/21 16:00	09/28/21 17:23	7439-98-7	
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1	09/24/21 16:00	09/28/21 17:23	7782-49-2	
2540C Total Dissolved Solids	Analytical Met	thod: SM 254	40C					
	Pace Analytic	al Services -	Kansas City					
Total Dissolved Solids	1080	mg/L	13.3	1		09/21/21 13:52	2	
4500H+ pH, Electrometric	Analytical Met	thod: SM 450	00-H+B					
•	Pace Analytic	al Services -	Kansas City					
pH at 25 Degrees C	7.4	Std. Units	0.10	1		09/20/21 13:16	;	H6
300.0 IC Anions 28 Days	Analytical Met	thod: EPA 30	0.0					
	Pace Analytic	al Services -	Kansas City					
Chloride	78.2	mg/L	20.0	20		09/23/21 05:40	16887-00-6	
Fluoride	0.35	mg/L	0.20	1		09/23/21 05:22	16984-48-8	
Sulfate	408	mg/L	100	100		09/27/21 14:01	14808-79-8	



Project: JEC FAL CCR

Pace Project No.: 60380628

Sample: FAA-4-091421	Lab ID: 603	380628002	Collected: 09/14	/21 18:00	0 Received: 09	)/17/21 00:00 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	0.046	mg/L	0.0050	1	09/24/21 16:00	09/28/21 13:07	7440-39-3	
Boron, Total Recoverable	0.73	mg/L	0.10	1	09/24/21 16:00	09/28/21 13:07	7440-42-8	
Calcium, Total Recoverable	190	mg/L	0.20	1	09/24/21 16:00	09/28/21 13:07	7440-70-2	
6010 MET ICP	Analytical Me	thod: EPA 60	10 Preparation Me	thod: EF	PA 3010			
	Pace Analytic	al Services -	Kansas City					
Lithium, Total Recoverable	0.017	mg/L	0.010	1	09/24/21 16:00	09/28/21 13:07	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	0.0010	1	09/24/21 16:00	09/28/21 17:27	7440-38-2	
Cobalt, Total Recoverable	0.0022	mg/L	0.0010	1	09/24/21 16:00	09/28/21 17:27	7440-48-4	
Molybdenum, Total Recoverable	0.0084	mg/L	0.0010			09/28/21 17:27		
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1	09/24/21 16:00	09/28/21 17:27	7782-49-2	
2540C Total Dissolved Solids	Analytical Me	thod: SM 254	40C					
	Pace Analytic	al Services -	Kansas City					
Total Dissolved Solids	1220	mg/L	13.3	1		09/21/21 13:52		
4500H+ pH, Electrometric	Analytical Me	thod: SM 450	00-H+B					
	Pace Analytic	al Services -	Kansas City					
pH at 25 Degrees C	7.4	Std. Units	0.10	1		09/20/21 13:33		H6
300.0 IC Anions 28 Days	Analytical Me	thod: EPA 30	0.0					
-	Pace Analytic	al Services -	Kansas City					
Chloride	83.8	mg/L	20.0	20		09/22/21 13:21	16887-00-6	M1,R1
Fluoride	0.38	mg/L	0.20	1		09/22/21 12:26	16984-48-8	
Sulfate	488	mg/L	100	100		09/27/21 14:13	14808-79-8	



Project: JEC FAL CCR

Pace Project No.: 60380628

Sample: FAA-6-091421	Lab ID: 603	380628003	Collected: 09/14/2	1 17:30	Received: 09	0/17/21 00:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total			0.7 Preparation Met	hod: EF	PA 200.7			
	Pace Analytic	al Services -	Kansas City					
Barium, Total Recoverable	0.033	mg/L	0.0050	1	09/24/21 16:00	09/28/21 13:10	7440-39-3	
Boron, Total Recoverable	2.0	mg/L	0.10	1	09/24/21 16:00	09/28/21 13:10	7440-42-8	
Calcium, Total Recoverable	134	mg/L	0.20	1	09/24/21 16:00	09/28/21 13:10	0 7440-70-2	
6010 MET ICP	Analytical Me	thod: EPA 60	010 Preparation Meth	od: EP	A 3010			
	Pace Analytic	al Services -	Kansas City					
Lithium, Total Recoverable	0.012	mg/L	0.010	1	09/24/21 16:00	09/28/21 00:57	1 7439-93-2	
200.8 MET ICPMS	Analytical Me	thod: EPA 20	0.8 Preparation Met	hod: EF	PA 200.8			
	Pace Analytic	al Services -	Kansas City					
Arsenic, Total Recoverable	0.0052	mg/L	0.0010	1	09/24/21 16:00	09/28/21 17:30	7440-38-2	
Cobalt, Total Recoverable	0.0017	mg/L	0.0010	1	09/24/21 16:00	09/28/21 17:30	7440-48-4	
Molybdenum, Total Recoverable	0.26	mg/L	0.0010	1	09/24/21 16:00	09/28/21 17:30	7439-98-7	
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1	09/24/21 16:00	09/28/21 17:30	) 7782-49-2	
2540C Total Dissolved Solids	Analytical Me	thod: SM 25	40C					
	Pace Analytic	al Services -	Kansas City					
Total Dissolved Solids	1770	mg/L	20.0	1		09/21/21 13:52	2	
4500H+ pH, Electrometric	Analytical Me	thod: SM 45	00-H+B					
	Pace Analytic	al Services -	Kansas City					
pH at 25 Degrees C	7.2	Std. Units	0.10	1		09/20/21 13:23	3	H6
300.0 IC Anions 28 Days	Analytical Me	thod: EPA 30	0.0					
	Pace Analytic	al Services -	Kansas City					
Chloride	74.3	mg/L	20.0	20		09/22/21 14:34	16887-00-6	
Fluoride	0.67	mg/L	0.20	1		09/22/21 14:10		
Sulfate	932	mg/L	200	200		09/23/21 20:22	2 14808-79-8	



Project: JEC FAL CCR

Pace Project No.: 60380628

Sample: JEC-FAA-DUP-091421	Lab ID: 603	80628004	Collected: 09/14/2	1 17:30	) Received: 09	0/17/21 00:00 N	Aatrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Met	hod: EPA 20	0.7 Preparation Met	nod: EF	PA 200.7			
	Pace Analytica	al Services -	Kansas City					
Barium, Total Recoverable	0.032	mg/L	0.0050	1	09/24/21 16:00	09/28/21 13:13	7440-39-3	
Boron, Total Recoverable	2.7	mg/L	0.10	1	09/24/21 16:00	09/28/21 13:13	7440-42-8	
Calcium, Total Recoverable	135	mg/L	0.20	1	09/24/21 16:00	09/28/21 13:13	7440-70-2	
6010 MET ICP	Analytical Met	hod: EPA 60	10 Preparation Meth	od: EP	A 3010			
	Pace Analytica	al Services -	Kansas City					
Lithium, Total Recoverable	<0.010	mg/L	0.010	1	09/24/21 16:00	09/28/21 00:54	7439-93-2	
200.8 MET ICPMS	Analytical Met	hod: EPA 20	0.8 Preparation Met	nod: EF	PA 200.8			
	Pace Analytica	al Services -	Kansas City					
Arsenic, Total Recoverable	0.0065	mg/L	0.0010	1	09/24/21 16:00	09/28/21 17:33	7440-38-2	
Cobalt, Total Recoverable	0.0015	mg/L	0.0010	1	09/24/21 16:00	09/28/21 17:33	7440-48-4	
Molybdenum, Total Recoverable	0.30	mg/L	0.0010	1		09/28/21 17:33		
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1	09/24/21 16:00	09/28/21 17:33	7782-49-2	
2540C Total Dissolved Solids	Analytical Met	hod: SM 254	40C					
	Pace Analytica	al Services -	Kansas City					
Total Dissolved Solids	1750	mg/L	20.0	1		09/21/21 13:52		
4500H+ pH, Electrometric	Analytical Met	hod: SM 450	00-H+B					
-	Pace Analytica	al Services -	Kansas City					
pH at 25 Degrees C	7.4	Std. Units	0.10	1		09/20/21 13:26		H6
300.0 IC Anions 28 Days	Analytical Met	hod: EPA 30	0.0					
-	Pace Analytica	al Services -	Kansas City					
Chloride	75.0	mg/L	20.0	20		09/22/21 15:47	16887-00-6	
Fluoride	0.77	mg/L	0.20	1		09/22/21 15:29	16984-48-8	
Sulfate	979	mg/L	100	100		09/23/21 20:33	14808-79-8	



Project:	JEC FAL CCR											
Pace Project No.:	60380628											
QC Batch:	745486		Anal	ysis Method	4· F	EPA 200.7						
QC Batch Method:	EPA 200.7			ysis Metrio ysis Descrij		200.7 Metals	s Total					
QC Batch Method.	LI A 200.7			pratory:		Pace Analyti		oe - Kanea	c itv			
Associated Lab Sam	ples: 60380628	001, 6038062800		•		ace Analyti		es - Kalisa:	SCity			
METHOD BLANK:	2086080			Matrix: W	ator							
Associated Lab Sam		001, 6038062800	12 603806									
	00300020	001,0030002000	Bla		Reporting							
Param	eter	Units	Res		Limit	Analy	zed	Qualifiers	5			
								Qualifier				
Barium Boron		mg/L mg/L	<	0.0050 <0.10	0.0050 0.10							
Calcium		mg/L		<0.10	0.10							
Caloran				10.20	0.20	00/21/21	20.11					
LABORATORY CON	TROL SAMPLE:	2986090										
			Spike	LC	S	LCS	% R	ec				
Param	eter	Units	Conc.	Res	ult	% Rec	Limi	ts (	Qualifiers			
Barium		mg/L		1	0.95	95	5 8	85-115		_		
Boron		mg/L		1	0.90	90	) (	85-115				
Calcium		mg/L	,	10	9.6	96	6 8	85-115				
MATRIX SPIKE & M	ATRIX SPIKE DUF	PLICATE: 2986			2986092							
		60380536001	MS Spiko	MSD Spike	MS	MSD	MS	MSD	% Rec		Мах	
Parameter	Units		Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	% Rec	RPD	RPD	Qua
												Quu
Barium Boron	mg/L mg/L		1 1	1 1	1.1 1.2	1.1 1.2	98 93	99 88	70-130 70-130	1 4		
Calcium	mg/L		10	10	1.2	1.2	93 119	00 114	70-130	4	-	
Calcium	iiig/L	. 147	10	10	155	150	115	114	70-130	0	20	
MATRIX SPIKE SAM	1PLE:	2986093										
			60380	625003	Spike	MS		MS	% Rec			
Param	eter	Units	Re	esult	Conc.	Result	%	Rec	Limits		Qualit	fiers
		mg/L		0.019	1	C	0.96	95	70	-130		
Barium		iiig/ 🗆										
Barium Boron		mg/L		0.30	1		1.3	96	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



Project:JEC FAPace Project No.:603806												
QC Batch: 74548	3		Anal	ysis Metho	d:	EPA 200.8						
QC Batch Method: EPA 2	00.8		Anal	ysis Descri	ption:	200.8 MET						
			Labo	oratory:		Pace Analyt	ical Serv	ices - Kansa	s City			
Associated Lab Samples:	6038062800	1, 6038062800				,			,			
METHOD BLANK: 298607	1			Matrix: W	ater							
Associated Lab Samples:	6038062800	1,6038062800	2, 6038062	28003, 603	80628004							
			Bla	nk	Reporting							
Parameter		Units	Res	ult	Limit	Analy	zed	Qualifier	s			
Arsenic		mg/L	<	0.0010	0.001	0 09/28/2	1 16:43					
Cobalt		mg/L		0.0010	0.001							
Molybdenum		mg/L		0.0010	0.001							
Selenium		mg/L		0.0010	0.001	0 09/28/2	16:43					
LABORATORY CONTROL S	SAMPLE: 29	986072										
			Spike	LC	s	LCS	%	Rec				
Parameter		Units	Conc.	Re	sult	% Rec	Lir	nits	Qualifiers			
Arsenic		mg/L	0.0	)4	0.041	103	3	85-115				
Cobalt		mg/L	0.0	)4	0.041	103	3	85-115				
Molybdenum		mg/L	0.0	)4	0.042	104	1	85-115				
Selenium		mg/L	0.0	)4	0.041	10 <sup>-</sup>	I	85-115				
MATRIX SPIKE & MATRIX S		CATE: 2986	073		2986074							
		2000	MS	MSD	200000							
	e	0380536002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua
Arsenic	mg/L	0.0045	0.04	0.04	0.046	0.046	10	4 104	70-130	0	20	
Cobalt	mg/L	< 0.0010	0.04	0.04	0.038	0.039	.0			2		
Molybdenum	mg/L	< 0.0010	0.04	0.04	0.043	0.044	10			2		
Selenium	mg/L		0.04	0.04	0.039	0.040	9			2		
MATRIX SPIKE SAMPLE:	29	986075										
	-		60380	625004	Spike	MS		MS	% Rec			
Parameter		Units		sult	Conc.	Result		% Rec	Limits		Qualif	iers
Arsenic		mg/L		<0.0010	0.04	0.	040	101	70	-130		
Cobalt		mg/L		<0.0010	0.04	0.	038	95	70	-130		
Molybdenum		mg/L		0.0018	0.04	0.	045	109	70	-130		
				<0.0010				98	70			

Results presented on 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.: 6	60380628											
QC Batch:	745480		Analy	sis Metho	od:	EPA 6010						
QC Batch Method:	EPA 3010		Analy	sis Descr	iption:	6010 MET						
			Labo	ratory:		Pace Analyt	ical Servic	es - Kansa	s City			
Associated Lab Samp	ples: 603806280	01, 6038062800	2, 6038062	8003, 603	880628004							
METHOD BLANK: 2	2986054			Matrix: W	/ater							
Associated Lab Samp	ples: 603806280	01, 6038062800	2, 6038062	8003, 603	80628004							
			Blar	nk	Reporting							
Parame	eter	Units	Res	ult	Limit	Analy	/zed	Qualifier	s			
Lithium		mg/L		<0.010	0.0	10 09/27/2	1 23:47					
LABORATORY CON	TROL SAMPLE:	2986055										
LABORATORY CON	TROL SAMPLE:	2986055	Spike	LC	cs	LCS	% R	ec				
LABORATORY CON		2986055 Units	Spike Conc.		CS sult	LCS % Rec	% R Limi		Qualifiers			
			Conc.				Limi		Qualifiers			
Parame	eter	Units mg/L	Conc.	Re	sult 0.95	% Rec 9	Limi	ts (	Qualifiers			
Parame	eter	Units mg/L	Conc.	Re 1	sult	% Rec 9	Limi	ts (	Qualifiers			
Parame	eter	Units mg/L LICATE: 2986	Conc.	T Re MSD	298605	% Rec 99	Limi	ts 0 30-120			Мах	
Parame	eter	Units mg/L	Conc.	Re 1	sult 0.95	% Rec 9	Limi	ts (	Qualifiers % 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.:	60380628									
QC Batch:	744455		Analysis Me	ethod:	SN	/ 2540C				
QC Batch Method:	SM 2540C		Analysis De	escription:	25	40C Total Dis	ssolve	d Solids		
			Laboratory:		Pa	ice Analytical	Servi	ces - Kar	nsas C	City
Associated Lab San	nples: 60380628	001, 60380628002	60380628003,	6038062800	4					
METHOD BLANK:	2982535		Matrix	: Water						
Associated Lab San	nples: 60380628	001, 60380628002	60380628003,	6038062800	4					
			Blank	Reporting	g					
Paran	neter	Units	Result	Limit		Analyze	d	Quali	fiers	_
Total Dissolved Soli	ds	mg/L	<5.0	)	5.0	09/21/21 13	3:50			
LABORATORY COM	NTROL SAMPLE:	2982536								
_			Spike	LCS		LCS	% F		_	
Paran		Units	Conc.	Result	%	% Rec	Lin	nits	Qu	alifiers
Total Dissolved Soli	ds	mg/L	1000	968		97		80-120		
SAMPLE DUPLICA	TE: 2982537			-						
Paran	notor	Units	60380469003 Result	Dup Result		RPD		Max RPD		Qualifiers
								RED		
Total Dissolved Soli	ds	mg/L	1040	0 10	070		3		10	
SAMPLE DUPLICA	TE: 2982538									
			60380625002	Dup				Max		
Paran	neter	Units	Result	Result		RPD		RPD		Qualifiers
Total Dissolved Soli	ds	mg/L	1340	1;	340		0		10	

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



Project:	JEC FAL CCR							
Pace Project No.:	60380628							
QC Batch:	744326		Analysis Metho	od:	SM 4500-H+B			
QC Batch Method:	SM 4500-H+B		Analysis Desc	ription:	4500H+B pH			
			Laboratory:	I	Pace Analytical Se	ervices - Kan	sas City	
Associated Lab Sar	mples: 603806280	01 6038062800	2, 60380628003, 60	200620001				
Associated Lab Sal	100000200	01,0030002000	2, 0030020003, 00	300020004				
	•	, 0030002000.	2, 00300020003, 00	360026004				
SAMPLE DUPLICA	•		60380628003, 60	Dup		Max		
	TE: 2982165	Units			RPD	Max RPD	Qualifiers	

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



QC Batch: 744818		Analysis	Method:	EP	A 300.0		
QC Batch Method: EPA 300.0		-	Description:	300	0.0 IC Anions	S	
		Laborato		Pa	ce Analytical	l Services - Kar	nsas City
Associated Lab Samples: 6038062	3001				2		
IETHOD BLANK: 2983681		Mat	trix: Water				
Associated Lab Samples: 6038062	3001						
Parameter	Units	Blank Result	Reportii Limit	ng	Apolyzo	d Qualit	fioro
					Analyze		
Chloride	mg/L		1.0	1.0	09/22/21 08		
Fluoride	mg/L	<0.		0.20	09/22/21 08		
Sulfate	mg/L	<1	1.0	1.0	09/22/21 08	3:22	
IETHOD BLANK: 2985966		Mat	trix: Water				
Associated Lab Samples: 6038062	3001						
		Blank	Reporti	ng			
Parameter	Units	Result	Limit		Analyze	d Quali	fiers
Chloride	mg/L	<	1.0	1.0	09/23/21 08	3:02	
Fluoride	mg/L	<0.	20	0.20	09/23/21 08	8:02	
Sulfate	mg/L	<1	1.0	1.0	09/23/21 08	3:02	
METHOD BLANK: 2988391		Mat	trix: Water				
Associated Lab Samples: 6038062	3001						
		Blank	Reporti	ng			
Parameter	Units	Result	Limit		Analyze	d Qualit	fiers
Chloride	mg/L		1.0	1.0	09/27/21 09		
Fluoride	mg/L	<0.		0.20	09/27/21 09		
Sulfate	mg/L	<1	1.0	1.0	09/27/21 09	9:57	
LABORATORY CONTROL SAMPLE:	2983682						
		Spike	LCS		LCS	% Rec	
Parameter	Units	Conc.	Result	%	6 Rec	Limits	Qualifiers
Chloride	mg/L	5	5.2		104	90-110	
Fluoride	mg/L	2.5	2.5		98	90-110	
Sulfate	mg/L	5	5.3		107	90-110	
LABORATORY CONTROL SAMPLE:	2985967						
		Spike	LCS		LCS	% Rec	
Parameter	Units	Conc.	Result	%	6 Rec	Limits	Qualifiers
Chloride	mg/L	5	4.8		96	90-110	
Fluoride	mg/L	2.5	2.6		106	90-110	
Sulfate	mg/L	5	4.9		98	90-110	

# **REPORT OF LABORATORY ANALYSIS**



Project: JEC FAL CCR Pace Project No.: 60380628

Chloride

Fluoride

Sulfate

LABORATORY CONTROL SAMPLE:	2988392	0		0	1.00	0/ 1	Dee				
Parameter	Units	Spike Conc.			LCS % Rec		Rec nits	Qualifiers			
Chloride	mg/L		5	4.7	9	95	90-110				
Fluoride	mg/L	2	2.5	2.6	1(	03	90-110				
Sulfate	mg/L		5	4.8	9	97	90-110				
MATRIX SPIKE SAMPLE:	2983685										
		60380	0536003	Spike	MS		MS	% Re	C		
Parameter	Units	Re	esult	Conc.	Resul	t	% Rec	Limite	6	Qualif	iers
Chloride	mg/L		21.2	25		45.3	96	80	)-120		
Fluoride	mg/L		0.25	2.5		2.6	96	80	)-120		
Sulfate	mg/L		418	250		675	103	80	)-120		
MATRIX SPIKE & MATRIX SPIKE DL	IPLICATE: 2983	692		2983693							
		MS	MSD								
	60380084003	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter Uni	ts Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua

25000

1250

2500

61800

1920

6150

54600

1700

5590

158

154

120

130

136

98

80-120

80-120

80-120

12

12

10

15 M1

15 M1

15

22200

ND

3150

mg/L

mg/L

mg/L

25000

1250

2500

Results presented on 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: 744	822	Analysis Me	ethod: E	PA 300.0		
QC Batch Method: EPA	300.0	Analysis De		00.0 IC Anions		
		Laboratory:		ace Analytical S	ervices - Kansas	s City
Associated Lab Samples:	60380628002, 60380628003	3, 60380628004		·		
METHOD BLANK: 2983	702	Matrix	: Water			
Associated Lab Samples:	60380628002, 60380628003	8, 60380628004				
		Blank	Reporting			
Parameter	Units	Result	Limit	Analyzed	Qualifiers	6
Chloride	mg/L	<1.0	1.0	09/22/21 08:2	6	
Fluoride	mg/L	<0.20	0.20			
Sulfate	mg/L	<1.0	1.0	09/22/21 08:2	6	
METHOD BLANK: 2985	972	Matrix	:: Water			
Associated Lab Samples:	60380628002, 60380628003	8, 60380628004				
		Blank	Reporting			
Parameter	Units	Result	Limit	Analyzed	Qualifiers	6
Chloride	mg/L	<1.0	1.0	09/23/21 08:0	2	
Fluoride	mg/L	<0.20	0.20	09/23/21 08:0	2	
Sulfate	mg/L	<1.0	1.0	09/23/21 08:0	2	
	440					
METHOD BLANK: 2988	412	Matrix	: Water			
	60380628002, 60380628003		:: Water			
Associated Lab Samples:	60380628002, 60380628003	8, 60380628004 Blank	Reporting			
		3, 60380628004		Analyzed	Qualifiers	3
Associated Lab Samples: Parameter	60380628002, 60380628003	8, 60380628004 Blank	Reporting Limit	·		6
Associated Lab Samples: Parameter Chloride	60380628002, 60380628003 Units	8, 60380628004 Blank Result	Reporting Limit	09/27/21 09:5	7 7	5
METHOD BLANK: 2988 Associated Lab Samples: Parameter Chloride Fluoride Sulfate	60380628002, 60380628003 Units mg/L	8, 60380628004 Blank Result <1.0	Reporting Limit 1.0 0.20	09/27/21 09:5 09/27/21 09:5	7 7	5
Associated Lab Samples: Parameter Chloride Fluoride	60380628002, 60380628003 Units mg/L mg/L mg/L	8, 60380628004 Blank Result <1.0 <0.20 <1.0	Reporting Limit 1.0 0.20	09/27/21 09:5 09/27/21 09:5	7 7	5
Associated Lab Samples: Parameter Chloride Fluoride Sulfate METHOD BLANK: 2988	60380628002, 60380628003 Units mg/L mg/L mg/L	8, 60380628004 Blank Result <1.0 <0.20 <1.0 Matrix	Reporting Limit 1.0 0.20 1.0	09/27/21 09:5 09/27/21 09:5	7 7	5
Associated Lab Samples: Parameter Chloride Fluoride Sulfate METHOD BLANK: 2988	60380628002, 60380628003 Units mg/L mg/L mg/L	8, 60380628004 Blank Result <1.0 <0.20 <1.0 Matrix	Reporting Limit 1.0 0.20 1.0	09/27/21 09:5 09/27/21 09:5	7 7	<u></u>
Associated Lab Samples: Parameter Chloride Fluoride Sulfate METHOD BLANK: 2988	60380628002, 60380628003 Units mg/L mg/L mg/L	8, 60380628004 Blank Result <1.0 <0.20 <1.0 Matrix 8, 60380628004	Reporting Limit 1.0 0.20 1.0	09/27/21 09:5 09/27/21 09:5	7 7	
Associated Lab Samples: Parameter Chloride Fluoride Sulfate METHOD BLANK: 2988 Associated Lab Samples: Parameter	60380628002, 60380628003 Units mg/L mg/L mg/L 943 60380628002, 60380628003	8, 60380628004 Blank Result <1.0 <0.20 <1.0 Matrix 8, 60380628004 Blank	Reporting Limit 1.0 0.20 1.0 :: Water Reporting Limit	09/27/21 09:5 09/27/21 09:5 09/27/21 09:5 09/27/21 09:5	7 7 7 Qualifiers	
Associated Lab Samples: Parameter Chloride Fluoride Sulfate METHOD BLANK: 2988 Associated Lab Samples: Parameter Chloride	60380628002, 60380628003 Units mg/L mg/L mg/L 943 60380628002, 60380628003 Units	8, 60380628004 Blank Result <1.0 <0.20 <1.0 <1.0 <1.0 <8, 60380628004 Blank Result	Reporting Limit 1.0 0.20 1.0 :: Water Reporting Limit 1.0	Analyzed	Qualifiers	
Associated Lab Samples: Parameter Chloride Fluoride Sulfate METHOD BLANK: 2988 Associated Lab Samples:	60380628002, 60380628003 Units mg/L mg/L mg/L 943 60380628002, 60380628003 Units mg/L	8, 60380628004 Blank Result <1.0 <0.20 <1.0 Matrix 8, 60380628004 Blank Result <1.0	Reporting Limit 1.0 0.20 1.0 :: Water Reporting Limit 1.0 0.20	Analyzed 09/27/21 09:5 09/27/21 09:5 09/27/21 09:5 09/27/21 09:5	Qualifiers	
Associated Lab Samples: Parameter Chloride Fluoride Sulfate METHOD BLANK: 2988 Associated Lab Samples: Parameter Chloride Fluoride	60380628002, 60380628003 Units mg/L mg/L mg/L 943 60380628002, 60380628003 Units mg/L mg/L mg/L mg/L mg/L mg/L	8, 60380628004 Blank Result <1.0 <0.20 <1.0 Matrix 8, 60380628004 Blank Result <1.0 <0.20 <1.0	Reporting Limit 1.0 0.20 1.0 :: Water Reporting Limit 1.0 0.20 1.0	Analyzed 09/27/21 09:5 09/27/21 09:5 09/27/21 09:5 09/27/21 09:5 09/28/21 10:4 09/28/21 10:4	Qualifiers	
Associated Lab Samples: Parameter Chloride Sulfate METHOD BLANK: 2988 Associated Lab Samples: Parameter Chloride Fluoride Sulfate LABORATORY CONTROI	60380628002, 60380628003 Units mg/L mg/L 943 60380628002, 60380628003 Units mg/L mg/L mg/L mg/L mg/L mg/L mg/L	8, 60380628004 Blank Result <1.0 <0.20 <1.0 Matrix 8, 60380628004 Blank Result <1.0 <0.20 <1.0 Spike	Reporting Limit 1.0 0.20 1.0 :: Water Reporting Limit 1.0 0.20 1.0	Analyzed 09/27/21 09:5 09/27/21 09:5 09/27/21 09:5 09/27/21 09:5 09/28/21 10:4 09/28/21 10:4 09/28/21 10:4 LCS	Qualifiers 3 3 % Rec	<u> </u>
Associated Lab Samples: Parameter Chloride Sulfate METHOD BLANK: 2988 Associated Lab Samples: Parameter Chloride Fluoride Sulfate	60380628002, 60380628003 Units mg/L mg/L mg/L 943 60380628002, 60380628003 Units mg/L mg/L mg/L mg/L mg/L mg/L	8, 60380628004 Blank Result <1.0 <0.20 <1.0 Matrix 8, 60380628004 Blank Result <1.0 <0.20 <1.0	Reporting Limit 1.0 0.20 1.0 :: Water Reporting Limit 1.0 0.20 1.0 1.0	Analyzed 09/27/21 09:5 09/27/21 09:5 09/27/21 09:5 09/27/21 09:5 09/28/21 10:4 09/28/21 10:4 LCS % Rec	Qualifiers 3 3 % Rec	
Associated Lab Samples: Parameter Chloride Sulfate METHOD BLANK: 2988 Associated Lab Samples: Parameter Chloride Fluoride Sulfate LABORATORY CONTROI	60380628002, 60380628003 Units mg/L mg/L 943 60380628002, 60380628003 Units mg/L mg/L mg/L mg/L mg/L mg/L mg/L	8, 60380628004 Blank Result <1.0 <0.20 <1.0 Matrix 8, 60380628004 Blank Result <1.0 <0.20 <1.0 Spike	Reporting Limit 1.0 0.20 1.0 :: Water Reporting Limit 1.0 0.20 1.0	Analyzed 09/27/21 09:5 09/27/21 09:5 09/27/21 09:5 09/27/21 09:5 09/28/21 10:4 09/28/21 10:4 09/28/21 10:4 LCS	Qualifiers 3 3 % Rec	<u> </u>

# **REPORT OF LABORATORY ANALYSIS**



Project: JEC FAL CCR Pace Project No.: 60380628

LABORATORY CONTROL SAMPLE:		: 298370	3										
				Spike	LC		LCS	% Re					
	Parameter	U	nits	Conc.	Res	ult	% Rec	Limi	ts (	Qualifiers	_		
Sulfate		m	ig/L		5	5.5	110	) (	90-110				
LABORATORY CONTROL SAMPLE:		: 298597	3										
				Spike	LC	S	LCS	% Re	ec				
	Parameter	U	nits	Conc.	Res	ult	% Rec	Limi	ts (	Qualifiers			
Chloride	pride		ig/L		5	4.8	96		90-110		_		
Fluoride			ig/L	2.	.5	2.6	106	; ;	90-110				
Sulfate		m	ig/L		5	4.9	98	; <u></u>	90-110				
LABORATOF	RY CONTROL SAMPLE	298841	3										
				Spike	LC	S	LCS	% Re	ec				
	Parameter	U	nits	Conc.	Res	ult	% Rec	Limi	ts (	Qualifiers			
Chloride		m	ig/L		5	4.7	95		90-110		_		
Fluoride			ig/L		.5	2.6	103		90-110				
Sulfate			ig/L		5	4.8	97		90-110				
LABORATOF	RY CONTROL SAMPLE			Spike	LC		LCS	% R6					
	Parameter	U	nits	Conc.	Res	sult	% Rec	Limi	ts (	Qualifiers	_		
Chloride		m	ig/L		5	4.9	98		90-110		_		
Fluoride		m	ig/L	2	.5	2.5	102	9	90-110				
Cultate							100						
Sulfaté		m	g/L		5	5.0	100		90-110				
Sulfate MATRIX SPI	KE & MATRIX SPIKE [		ig/L		5	5.0 2983705			90-110				
	KE & MATRIX SPIKE [		ig/L		5 MSD				90-110				
	KE & MATRIX SPIKE [		2983	704				MS	90-110 MSD	% Rec		Max	
MATRIX SPI		UPLICATE: 603806	2983	704 MS	MSD	2983705	;			% Rec Limits	RPD	Max RPD	Qual
MATRIX SPI	ameter U	UPLICATE: 603800 hits R	2983 228002	704 MS Spike	MSD Spike	2983705 MS	MSD	MS	MSD		RPD 21	RPD	
MATRIX SPI Par Chloride	ameter U	UPLICATE: 603806	2983 2983 628002 esult	704 MS Spike Conc.	MSD Spike Conc.	2983705 MS Result	MSD Result	MS % Rec	MSD % Rec	Limits		RPD	Qual M1,R1
MATRIX SPI	rameter U m m	UPLICATE: 603806 hits Ro g/L	2983 2983 528002 esult 83.8	704 MS Spike Conc. 100	MSD Spike Conc. 100	2983705 MS Result 237	MSD Result 193	MS % Rec 153	MSD % Rec 109	Limits 80-120	21	RPD 15 15	
MATRIX SPI Par Chloride Fluoride Sulfate	rameter U m m m	OUPLICATE: 603806 hits Ri g/L g/L	g/L 2983 528002 esult 83.8 0.38 488	704 MS Spike Conc. 100 2.5	MSD Spike Conc. 100 2.5	2983705 MS Result 237 2.9	MSD Result 193 2.9	MS % Rec 153 99	MSD % Rec 109 101	Limits 80-120 80-120	21 1	RPD 15 15	
MATRIX SPI Par Chloride Fluoride Sulfate	rameter U m m m	UPLICATE: 603806 nits R g/L g/L g/L 2983700	g/L 2983 528002 esult 83.8 0.38 488	704 MS Spike Conc. 100 2.5 500 60380	MSD Spike Conc. 100 2.5	2983705 MS Result 237 2.9	MSD Result 193 2.9	MS % Rec 153 99 99	MSD % Rec 109 101	Limits 80-120 80-120	21 1 2	RPD 15 15	M1,R1
MATRIX SPI Par Chloride Fluoride Sulfate MATRIX SPI	rameter U m m m KE SAMPLE:	UPLICATE: 603806 hits R g/L g/L g/L 2983700 U	g/L 2983 628002 esult 83.8 0.38 488 6 6 nits	704 MS Spike Conc. 100 2.5 500 60380	MSD Spike Conc. 100 2.5 500 0631002 esult	2983705 MS Result 237 2.9 985 Spike Conc.	MSD Result 193 2.9 1000 MS Result	MS % Rec 153 99 99	MSD % Rec 109 101 103 MS Rec	Limits 80-120 80-120 80-120 % Rec Limits	21 1 2	RPD 15 15 15	M1,R1
MATRIX SPI Par Chloride Fluoride	rameter U m m m KE SAMPLE:	UPLICATE: 603806 hits R g/L g/L g/L 2983700 U m	g/L 2983 328002 esult 83.8 0.38 488 6	704 MS Spike Conc. 100 2.5 500 60380	MSD Spike Conc. 100 2.5 500	2983705 MS Result 237 2.9 985 Spike	MSD Result 193 2.9 1000 MS Result	MS % Rec 153 99 99	MSD % Rec 109 101 103 MS	Limits 80-120 80-120 80-120 % Rec Limits 80-	21 1 2	RPD 15 15 15	M1,R1

Results presented on 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.: 60380628

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988049 2988050														
			MS	MSD										
		60380635001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max			
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual		
Chloride	mg/L	4530	5000	5000	9270	9470	95	99	80-120	2	15			
Fluoride	mg/L	0.26	2500	2500	2460	2450	98	98	80-120	0	15			
Sulfate	mg/L	184	5000	5000	4940	4960	95	95	80-120	0	15			

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



Project: JEC FAL CCR

Pace Project No.: 60380628

<b>Sample: FAA-3-091421</b> PWS:	Lab ID: 60380 Site ID:	628001 Collected: 09/14/21 16:45 Sample Type:	Received:	09/17/21 00:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical S	Gervices - Greensburg				
Radium-226	EPA 903.1	-0.219 ± 0.430 (1.03) C:NA T:89%	pCi/L	11/08/21 12:16	6 13982-63-3	
	Pace Analytical S	Services - Greensburg				
Radium-228	EPA 904.0	-0.331 ± 0.361 (0.932) C:65% T:83%	pCi/L	11/05/21 14:18	5 15262-20-1	
	Pace Analytical S	Services - Greensburg				
Total Radium	Total Radium Calculation	0.000 ± 0.791 (1.96)	pCi/L	11/24/21 15:38	3 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60380628

<b>Sample: FAA-4-091421</b> PWS:	Lab ID: 60380 Site ID:	0628002 Collected: 09/14/21 18:00 Sample Type:	Received:	09/17/21 00:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 903.1	0.0723 ± 0.470 (0.948) C:NA T:95%	pCi/L	11/08/21 12:16	6 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 904.0	0.659 ± 0.509 (1.00) C:57% T:89%	pCi/L	11/05/21 14:15	5 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	0.731 ± 0.979 (1.95)	pCi/L	11/24/21 15:38	3 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60380628

<b>Sample: FAA-6-091421</b> PWS:	Lab ID: 60380 Site ID:	628003 Collected: 09/14/21 17:30 Sample Type:	Received:	09/17/21 00:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical S	Services - Greensburg				
Radium-226	EPA 903.1	0.000 ± 0.465 (0.967) C:NA T:97%	pCi/L	11/08/21 12:29	9 13982-63-3	
	Pace Analytical S	Services - Greensburg				
Radium-228	EPA 904.0	0.570 ± 0.500 (1.01) C:63% T:86%	pCi/L	11/05/21 14:15	5 15262-20-1	
	Pace Analytical S	Services - Greensburg				
Total Radium	Total Radium Calculation	0.570 ± 0.965 (1.98)	pCi/L	11/24/21 15:38	3 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60380628

Sample: JEC-FAA-DUP-091421 PWS:	Lab ID: 6038062 Site ID:	28004 Collected: 09/14/21 17:30 Sample Type:	Received:	09/17/21 00:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Se	rvices - Greensburg				
Radium-226	EPA 903.1	0.000 ± 0.542 (1.11) C:NA T:95%	pCi/L	11/08/21 12:29	9 13982-63-3	
	Pace Analytical Se	rvices - Greensburg				
Radium-228	EPA 904.0	0.866 ± 0.500 (0.920) C:66% T:92%	pCi/L	11/05/21 14:16	6 15262-20-1	
	Pace Analytical Se	rvices - Greensburg				
Total Radium	Total Radium Calculation	0.866 ± 1.04 (2.03)	pCi/L	11/24/21 15:38	3 7440-14-4	



## **QUALITY CONTROL - RADIOCHEMISTRY**

Project:	JEC FAL CCR										
Pace Project No.:	60380628										
QC Batch:	470650		Analysis Method:	Analysis Method: EPA 904.0							
QC Batch Method:	EPA 904.0		Analysis Description:	904.0 Radium 2							
			Laboratory:	Pace Analytical	rg						
Associated Lab Sar	mples: 60380628	001, 603806280	02, 60380628003, 603806280	04							
METHOD BLANK:	2272166		Matrix: Water								
Associated Lab Sar	mples: 60380628	001, 603806280	02, 60380628003, 603806280	04							
Parar	Parameter		Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers					
Radium-228		0.949 ± 0.482	(0.835) C:67% T:83%	pCi/L	11/05/21 14:16						

Results presented on 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.:	60380628											
QC Batch:	470649		Analysis Method:	EPA 903.1								
QC Batch Method:	EPA 903.1		Analysis Description:	alysis Description: 903.1 Radium-226								
			Laboratory:	tory: Pace Analytical Services - Greensburg								
Associated Lab Sar	mples: 60380628	8001, 603806280	02, 60380628003, 6038062800	4								
METHOD BLANK:	2272156		Matrix: Water									
Associated Lab Sar	mples: 60380628	8001, 603806280	02, 60380628003, 6038062800	4								
Parar	neter	Act ± Unc (MDC) Carr Trac		Units	Analyzed	Qualifiers						
Radium-226		0.0626 ± 0.407	(0.821) C:NA T:88%	pCi/L	11/08/21 12:16							

Results presented on 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 60380628

# Pace Project No .:

#### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

#### ANALYTE QUALIFIERS

- H6 Analysis initiated outside of the 15 minute EPA required holding time.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- R1 RPD value was outside control limits.



## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	JEC FAL CCR
Pace Project No.:	60380628

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60380628001	FAA-3-091421	EPA 200.7	745486	EPA 200.7	745595
60380628002	FAA-4-091421	EPA 200.7	745486	EPA 200.7	745595
60380628003	FAA-6-091421	EPA 200.7	745486	EPA 200.7	745595
60380628004	JEC-FAA-DUP-091421	EPA 200.7	745486	EPA 200.7	745595
60380628001	FAA-3-091421	EPA 3010	745480	EPA 6010	745596
60380628002	FAA-4-091421	EPA 3010	745480	EPA 6010	745596
60380628003	FAA-6-091421	EPA 3010	745480	EPA 6010	745596
60380628004	JEC-FAA-DUP-091421	EPA 3010	745480	EPA 6010	745596
60380628001	FAA-3-091421	EPA 200.8	745483	EPA 200.8	745597
60380628002	FAA-4-091421	EPA 200.8	745483	EPA 200.8	745597
60380628003	FAA-6-091421	EPA 200.8	745483	EPA 200.8	745597
60380628004	JEC-FAA-DUP-091421	EPA 200.8	745483	EPA 200.8	745597
60380628001	FAA-3-091421	EPA 903.1	470649		
60380628002	FAA-4-091421	EPA 903.1	470649		
60380628003	FAA-6-091421	EPA 903.1	470649		
60380628004	JEC-FAA-DUP-091421	EPA 903.1	470649		
60380628001	FAA-3-091421	EPA 904.0	470650		
60380628002	FAA-4-091421	EPA 904.0	470650		
60380628003	FAA-6-091421	EPA 904.0	470650		
60380628004	JEC-FAA-DUP-091421	EPA 904.0	470650		
60380628001	FAA-3-091421	Total Radium Calculation	474011		
60380628002	FAA-4-091421	Total Radium Calculation	474011		
60380628003	FAA-6-091421	Total Radium Calculation	474011		
60380628004	JEC-FAA-DUP-091421	Total Radium Calculation	474011		
60380628001	FAA-3-091421	SM 2540C	744455		
60380628002	FAA-4-091421	SM 2540C	744455		
60380628003	FAA-6-091421	SM 2540C	744455		
60380628004	JEC-FAA-DUP-091421	SM 2540C	744455		
60380628001	FAA-3-091421	SM 4500-H+B	744326		
60380628002	FAA-4-091421	SM 4500-H+B	744326		
60380628003	FAA-6-091421	SM 4500-H+B	744326		
60380628004	JEC-FAA-DUP-091421	SM 4500-H+B	744326		
60380628001	FAA-3-091421	EPA 300.0	744818		
60380628002	FAA-4-091421	EPA 300.0	744822		
60380628003	FAA-6-091421	EPA 300.0	744822		
	JEC-FAA-DUP-091421	EPA 300.0	744822		



Sample Condition Upon Receipt

# WO# : 60380628

Client Name: Everged		
Courier: FedEx UPS VIA Clay P	EX 🗆 ECI 🗆	Pace 🗆 Xroads 🗆 🖉lient 🗆 Other 🗆
Tracking #: Pace	e Shipping Label Use	ed? Yes □ No □
Custody Seal on Cooler/Box Present: Yes Provide No	Seals intact: Yes	🛛 No 🗆
Packing Material: Bubble Wrap  Bubble Bags	Foam 🗆	None Other
Thermometer Used: Type of	Ice Wet Blue No	
Cooler Temperature (°C): As-read <u>3.9/1.3</u> Corr. Factor Temperature should be above freezing to 6°C	or Correc	cted Date and initials of person examining contents 20 -1-15-2
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	Λ.
Short Hold Time analyses (<72hr):	□Yes 21No □N/A	
Rush Turn Around Time requested:	□Yes ₽No □N/A	
Sufficient volume:	₽Yes □No □N/A	
Correct containers used:	ØYes □No □N/A	
Pace containers used:	¶Yes □No □N/A	
Containers intact:	ØYes □No □N/A	-
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	Yes No ANA	
Filtered volume received for dissolved tests?	□Yes □No ØN/A	
Sample labels match COC: Date / time / ID / analyses	Mes No N/A	
Samples contain multiple phases? Matrix: الملك	□Yes 🗖 No □N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#	Yes DNo WA	List sample IDs, volumes, lot #'s of preservative and the date/time added. - パーズ ノ
Cyanide water sample checks: Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	Ver INO	
Trip Blank present:	Yes No N/A	
Headspace in VOA vials ( >6mm):	□Yes □No ₽N/A	
Samples from USDA Regulated Area: State:	Yes No 21/A	
Additional labels attached to 5035A / TX1005 vials in the field?		
Client Notification/ Resolution: Copy COC to Person Contacted: Date/Tir Comments/ Resolution:		Field Data Required? Y / N

Project Manager Review:

Date:



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

Þ							CHAII The Chain								-																				Page 38 of 42
Section Require	d Client Information:	Section B Required Pro	oject li	nformatic	on:						t <b>ion (</b> ce Infe	C ormat	ion:														Γ	Pa	ige:	1		of	1		Page
Compar	EVERGY KANSAS CENTRAL, INC.	Report To: N	leliss	sa Mich	hels, S	amanth	a Kaney, I	Danielle (	Ober				\cco									1													
Address	Jeffrey Energy Center (JEC)	Copy To: J	ared	Morris	ion, Ja	ke Hum	phrey, Lau	ura Hines		Comp	pany I	Name	: E	VEF	RGY	KAN	<b>ISA</b>	sc	ENT	RAL	., INC	RE	GUL	ATO	RY A	GEI	NCY								
	818 Kansas Ave, Topeka, KS 66612	J	JD Schlegel, Brandon Will, Sarah Hazelwood Address: See Section A										NPDES 🔽 GROUND WATER 🗂 DRINKING WATER																						
Email To	melissa.michels@evergy.com	Purchase Ord	der No	o_:					_	Pace Refere	Quote			_							_	UST CRCRA COTHER													
Phone:	785-575-8113 Fax:	Project Name	a: J	EC FA		2				Pace	Projec	i F	lank	Ka	pka,	913	-563	3-14	04			┢──	_	ocatio	_			_							
Reques	ted Due Date/TAT: 7 day	Project Numb	ber:							Mana Pace	ger: Profile	•#: g	9657	, 1			_	-						TAT			KS		_						
																	Т		Re	que	sted	Апа	lysi	s Filt	ered	(Y/N	1)								
	Section D Valid Matrix ( Required Client Information MATRIX	Codes CODE	to left)	(AMC)		COLL	ECTED					P	rese	ervat	tives			z	N		I N	N	N	N											
ITEM #	DRINKING WATER WATER WASTE WATER PRODUCT SOLUSOLID OIL (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE TISSUE	AR L OT L TS Q	CODE (see valid	SAMPLETYPE (G=GRAB C=COMP)	COMPOS STAR	SITE	COMPO: END/GF	SITE RAB	SAMPLE TEMP AT COLLECTION	DF CONTAINERS	Unpreserved				Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>		Tank	IVSIS LEST	Total Metals*	200.0 LOTAI METAIS	14	S	otal Li***	226/ 228					Residual Chlorine (Y/N)						
E			ž i	v D	ATE	TIME	DATE	TIME	SA	чо #	5	Ξ	ĒΙΥ	2 Z	Ra	N N	<b>ð</b> [	5			i lõ	254	õ	Ra					Re	Pace	e Pro	oject N	No./ L	ab I.C	).
1	FAA-3-091421	v	WT	G	2	4	09/14/21	16:45	8	7	3		4						x	x x	x	x	x	x							_				
2	FAA-4-091421	v	wт	G	<u> </u>		09/14/21	18:00	4	7	3	_	4						x	x x	x x	x	х	x											
3	FAA-6-091421	V	wт	G	2	•	09/14/21	17:30	×	7	3	_	4						x	x x	x	x	x	x											
4	JEC-FAA-DUP-091421	v	WT	G	×	*	09/14/21	17:30	×.	7	3		4	_					X	x x	x x	x	х	x											
5			+	_		_			_	_		_	_			_																			
6			+	_							$\square$		_				_		_					_				$\rightarrow$	$\perp$						
7			+	_							$\vdash$	_	-	+	-		-		_	_			_	_	-			4	4			_	_		
8			+	_					_	_	$\vdash$	_	-	-		_	-		-	_					_			$\rightarrow$	+						
9			+	-		_					+	_	_	+-	$\vdash$		-	┢	_	_	+		_	_	_	-	$\vdash$	4	_						
10			+	_					_		+	_		+-		_	-	┢	_	_	-		_			-	$\vdash$	+	+			_	_	_	
11 12			+			_				-	+	-	+	+-	-		-	+	+	+	+		-		-		$\vdash$	+	+		_				_
12	ADDITIONAL COMMENTS				DBY	AFFILIATI		DATE	_	<u> </u>		-		1											_		4	_							_
200_7 To	otal Metals*: B, Ca, Ba			_	R. Fra			9/16/2	-		5:00	+	0	K	)	h	EDE	SY / J	AFFI	JATIO		-	_		_	TIME	_	29	5	SAM	PLEC	ONDIT			_
200 8 To	otal Metals**: As, Co, Mo, Se			54301	111.110	IIIKƏ		5/10/2			5.00	+	TT .	C	19				-		-	-	7-	(7-2)	4-	_		1.3			+				-
6010 To	tal Metals***: Li											ļ	W															<u></u>	4		1		-		
							ER NAME A																				+	ç	+	u (	t	oler		Itact	
					[		PRINT Name	e of SAMPI	ER:	Jaso	n R.	Fra	nks															Temp in °C	.	Received on Ice (Y/N)	stod)	ealed Cooler (Y/N)		amples Intact (Y/N)	
							SIGNATURE	of SAMP	ER:	/	2	2	E	2	1	1	1		DAT	E Sig	ned			0/1/	6/21			Ter		Rece	0	Seale ()		dmp ()	

Internal Transfer Chain of Custody       Samples Pre-Logged into eCOC.       State         Workorder: 60380628       Workorder Name:       JEC FAL CCR       Own										i: [	KS Yes Date:	المستعما ا	esults Reques	w	Analytical <sup>®</sup> ww.pacelabs.com 9/28/2021
Report To Subcontract To								ļ		Requested Ana	alysis				
Hank Kapka Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665			Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600 Presen					served Con	tainers	Radium 226	Radium 228	WO#:30446904			
ltem	Sample	۱D	Sample Type	Collect Date/Time	Lab ID	Matrix	HN03			and a second	a na mining ng kanala ng kanal				AB USE ONLY
1	FAA-3-09	1421	PS	9/14/2021 16:45	60380628001	Water	2			X	X				001
2	FAA-4-09	1421	PS	9/14/2021 18:00	60380628002	Water	2			X	X				002
3	FAA-6-09		PS	9/14/2021 17:30	60380628003	Water	2			<u>  X</u>	X				003
4	JEC-FAA	-DUP-091421	PS	9/14/2021 17:30	60380628004	Water	2			X					004
5	<u> </u>														
Transfers     Released By       1     1       2     3				120/21/800 That 16-				Date/Time 			~				
Cod	Cooler Temperature on Receipt N A C Custody Seal Y or N Receiv						eived or	1 Ice	Yo	or 🚯	Samples In	tact 🕜	or N		

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pittsburgh Lab Sample Cond	lition	Upo	n .r.e	eceipt
Face Analytical Client Name:	P	716	K	ansas Project #
F				
Courier: K Fed Ex UPS USPS Clie	nt 🗌	Comm	ercial	Pace Other Label [0]-1
Tracking #: 5333 8754 6*	571	_		LIMS Login
Custody Seal on Cooler/Box Present: Xves		no	Seal	s intact: 🔲 yes 💢 no
Thermometer Used	Туре	of Ice:	We	t Blue None
Cooler Temperature Observed Temp		۰c	Corr	rection Factor: °C Final Temp: °C
Temp should be above freezing to 6°C				
	<b>1</b> 2	1	1	pro paper com Date and initiats of person examining
Comments:	Yes	No	N/A	M M
Chain of Custody Present:	+			1. 
Chain of Custody Filled Out:	$+\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!$			
Chain of Custody Relinquished:	$\rightarrow$	$\overline{\nabla}$		
Sampler Name & Signature on COC:		Þ,	<u> </u>	4.
Sample Labels match COC:		ļ		_5.
-Includes date/time/ID Matrix:		<u>}</u>	T	
Samples Arrived within Hold Time:	$+ \land$	$\overline{\nabla}$		6.
Short Hold Time Analysis (<72hr remaining):		$ \diamond$	ļ	7.
Rush Turn Around Time Requested: Sufficient Volume:	+			
Correct Containers Used:	$\Rightarrow$			9. Low volume for sample 004
-Pace Containers Used:	$\Rightarrow$			10.
	ᡰᡬ			
Containers Intact:	$+ \uparrow$		X	11.
Orthophosphate field filtered lex Cr Aqueous sample field filtered	1		$\overline{\mathbf{t}}$	12.
Drganic Samples checked for dechlorination:			H-J	
Filtered volume received for Dissolved tests			$\Rightarrow$	
Il containers have been checked for preservation.	X		-7	15.
exceptions: VOA, coliform, TOC, O&G, Phenolics	لكمستسا	 ,		16.
Non-aqueous matrix				
All containers meet method preservation equirements.	$ \mathbf{X} $			Initial when Completed WWD Date/time of preservation
				Lot # of added
			$\overline{\mathbf{N}}$	preservative
leadspace in VOA Vials ( >6mm):			$\frac{x}{\sqrt{2}}$	17.
rip Blank Present:			$\rightarrow$	18.
rip Blank Custody Seals Present Rad Samples Screened < 0.5 mrem/hr	$\left  \cdot \right $		$\Delta$	Initial when the second s
	X			completed: MM2 Date: 10 22121 SN: 1563
lient Notification/ Resolution:				······································
Person Contacted:			Date/1	Time:Contacted By:
Comments/ Resolution:				······································
				· · · · ·
<u> </u>				

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 Edlt Screen.

# **Quality Control Sample Performance Assessment**

Control 5	ample re	nonnance Assessment		
		Analyst Must Manually Enter All Fields Highlighted ir	Yellow.	
Ra-226				
		Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
				WO/WOD 2
000				
	3			
0 2272156				
			1	
			9.774	
	4		0.463	
LCSD (Y or N)?	N		0.459	
			0.157	
			0.272	
		Sample Matrix Spike Result:	8.092	
		Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	1.376	
. 0.10		Sample Matrix Spike Duplicate Result:	11.130	
		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	1.651	-
: 4.923		MS Numerical Performance Indicator:		¢
		MSD Numerical Performance Indicator:		
1028				
. 13%	<b>I</b>	MS/MSD Lower // Recovery Limits.	1170	
		Matrix Spike/Matrix Spike Duplicate Sample Assessment		
			50000070000	
		· · ·		
	uic space beittw.			
				/
	<u> </u>			
1				
	l			
	1			
	<ul> <li>Ra-226</li> <li>MK1</li> <li>11/2/2021</li> <li>63412 DW</li> <li>0.407</li> <li>0.821</li> <li>0.30</li> <li>N/A</li> <li>Pass</li> <li>LCSD (Y or N)?</li> <li>LCS63412</li> <li>11/8/2021</li> <li>20-032</li> <li>32.168</li> <li>0.10</li> <li>0.653</li> <li>4.923</li> <li>0.231</li> <li>3.451</li> <li>1.028</li> <li>2.74</li> <li>70.11%</li> <li>N/A</li> <li>Fail Low**</li> <li>135%</li> <li>73%</li> <li>See Below ##</li> </ul>	Ra-226 MK1 11/2/2021 63412 DW 2272156 0.063 0.407 0.821 0.30 N/A Pass LCSD (Y or N)? N LCS63412 LCSD63412 11/8/2021 20-032 32.168 0.10 0.653 4.923 0.231 3.451 1.028 2.74 70.11% N/A Fail Low** 135% 73% Enter Duplicate sample IDs if other than LCS/LCSD in the space below.	Ra-226       MK1         MK1       Sample Matrix Spike Control Assessment         11/2/2021       Sample Matrix Spike Control Assessment         0       2272156         0.063       Sighte Volume Used in MS (IL)         0.064       Spike Volume Used in MS (IL)         0.067       Spike Volume Used in MS (IL)         0.063       Spike Volume Used in MS (IL)         0.063       Spike Volume Used in MS (IL)         0.0821       Spike Volume Used in MS (IL)         0.083       MS/MSD Decay Corrected Spike Concentration (pC//mL);         0.063       MS/MSD Darget Conc. (pC/L, g. F);         N/A       MSD Aiquot (L, g. F);         MSD Aiquot (L, g. F);       MSD Spike Uncertainty (calculated);         MSD Spike Uncertainty (calculated);       Sample Result         0.10       Sample Result Counting Uncertainty (pC/L, g. F);         Matrix Spike Result Counting Uncertainty (pC/L, g. F);       Mstrix Spike Result Counting Uncertainty (pC/L, g. F);         Matrix Spike Duplicate Result Counting Uncertainty (pC/L, g. F);       MSD Status vs Recovery;         MSD Status vs Numerical Indicator;       MS Status vs Recovery;         MS/MSD Lower % Recovery Limits;       Sample MSD L0.         YMA       Sample MSD L0.         See Below ##       Sample ID <td>MK1         Sample Matrix Spike Control Assessment         MS/MSD 1           11/12/2021         63412         Sample Collection Date:         10/07/2021           0         2272156         Sample MS I.D.         50299678006           0         2272156         Sample MS. I.D.         50299678008           0         Spike I.D.:         20-032         Spike Volume Used in MSD (mL):         0.20           0         0.821         Spike Volume Used in MSD (mL):         0.20           0.30         MXA         MSD Target Conc. (pC/LL, g, F):         9.448           MSD Target Conc. (pC/LL, g, F):         9.448         MSD Target Conc. (pC/LL, g, F):         0.774           11///2021         MSD Target Conc. (pC/LL, g, F):         0.774         MS Spike Uncertainty (calculated):         0.463           11//2021         Sample Result Counting Uncertainty (calculated):         0.463         0.463           120-032         Sample Result Counting Uncertainty (pC/LL, g, F):         0.271         0.137           11//2021         Sample Result Counting Uncertainty (pC/LL, g, F):         0.272         0.463           122.32         0.231         0.231         0.231         0.463           11.130         Matrix Spike Result Counting Uncertainty (pC/LL, g, F):         0.275%      &lt;</td>	MK1         Sample Matrix Spike Control Assessment         MS/MSD 1           11/12/2021         63412         Sample Collection Date:         10/07/2021           0         2272156         Sample MS I.D.         50299678006           0         2272156         Sample MS. I.D.         50299678008           0         Spike I.D.:         20-032         Spike Volume Used in MSD (mL):         0.20           0         0.821         Spike Volume Used in MSD (mL):         0.20           0.30         MXA         MSD Target Conc. (pC/LL, g, F):         9.448           MSD Target Conc. (pC/LL, g, F):         9.448         MSD Target Conc. (pC/LL, g, F):         0.774           11///2021         MSD Target Conc. (pC/LL, g, F):         0.774         MS Spike Uncertainty (calculated):         0.463           11//2021         Sample Result Counting Uncertainty (calculated):         0.463         0.463           120-032         Sample Result Counting Uncertainty (pC/LL, g, F):         0.271         0.137           11//2021         Sample Result Counting Uncertainty (pC/LL, g, F):         0.272         0.463           122.32         0.231         0.231         0.231         0.463           11.130         Matrix Spike Result Counting Uncertainty (pC/LL, g, F):         0.275%      <

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

ful lot batch - NI « 3 acceptuble for LLS + RPD Comments: \*\*Batch must be re-prepped due to LCS failure. \*\*\*Batch must be re-prepped due to unacceptable precision.

1 MM

PACE Analytical Services Ra-228 Analysis

# **Quality Control Sample Performance Assessment**

#### Analyst Must Manually Enter All Fields Highlighted in Yellow.

% RPD Limit:

Quality C	Control Sa	ample Pe	rformance Assessment		
Face Analytical"			Analyst Must Manually Enter All Fields Highlighted ir	Yellow.	
www.pacelabs.com Test:	Ra-228		- maryot material any Enter rain route raging metals		
Analyst:	VAL		Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Date:	11/3/2021		Sample Collection Date:	10/8/2021	10/8/2021
Worklist:	63413		Sample I.D.	30446807001	50299678006
Matrix:	WT		Sample MS I.D.	30446807001MS	50299678007
		-	Sample MSD I.D.		50299678008
Method Blank Assessment			Spike I.D.:	21-029	21-029
MB Sample ID	2272166		MS/MSD Decay Corrected Spike Concentration (pCi/mL):	37.923	37.923
MB concentration:	0.949		Spike Volume Used in MS (mL):	0.20	0.20
M/B 2 Sigma CSU:	0.482		Spike Volume Used in MSD (mL):		0.20
MB MDC:	0.835		MS Aliquot (L, g, F):	0.819	0.808
MB Numerical Performance Indicator:	3.86		MS Target Conc.(pCi/L, g, F):	9.257	9.386
MB Status vs Numerical Indicator:	Fail*		MSD Aliquot (L, g, F):		0.806
MB Status vs. MDC:	See Comment*		MSD Target Conc. (pCi/L, g, F):	0.454	9.415
	000 04 100		MS Spike Uncertainty (calculated):	0.454	0.460
aboratory Control Sample Assessment	LCSD (Y or N)?	N	MSD Spike Uncertainty (calculated):		0.461
0	LCS63413	LCSD63413	Sample Result:	5.901	1.477
Count Date:	11/5/2021 21-029		Sample Result 2 Sigma CSU (pCi/L, g, F):	1.322	0.613 8.271
Spike I.D.:	37.573		Sample Matrix Spike Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	13.421 2.673	1.826
Decay Corrected Spike Concentration (pCi/mL): Volume Used (mL):	0.10		Sample Matrix Spike Result 2 Signa CSO (pCi/L, g, F).	2.073	10.558
Aliquot Volume (L, g, F):	0.806		Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		2.215
Target Conc. (pCi/L, g, F):	4.660		MS Numerical Performance Indicator:	-1.129	-2.565
Uncertainty (Calculated):	0.228		MSD Numerical Performance Indicator:	-1.120	-0.279
Result (pCi/L, g, F):	3.993		MSD Numerical Percent Recovery:	81.24%	72.39%
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.010		MSD Percent Recovery:	0.1.2.1.0	96.46%
Numerical Performance Indicator:	-1.26		MS Status vs Numerical Indicator:	Pass	Warning
Percent Recovery:	85.69%		MSD Status vs Numerical Indicator:		Pass
Status vs Numerical Indicator:	N/A		MS Status vs Recovery:	Pass	Pass
Status vs Recovery:	Pass		MSD Status vs Recovery:		Pass
Upper % Recovery Limits:	135%		MS/MSD Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%		MS/MSD Lower % Recovery Limits:	60%	60%
Duplicate Sample Assessment			Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:		Enter Duplicate	Sample I.D.		50299678006
Duplicate Sample I.D.		sample IDs if	Sample MS I.D.		50299678007
Sample Result (pCi/L, g, F):		other than	Sample MSD I.D.		50299678008
Sample Result 2 Sigma CSU (pCi/L, g, F):		LCS/LCSD in	Sample Matrix Spike Result:		8.271
Sample Duplicate Result (pCi/L, g, F):		the space below.	Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		1.826
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):			Sample Matrix Spike Duplicate Result:		10.558
Are sample and/or duplicate results below RL?	See Below ##		Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		2.215
Duplicate Numerical Performance Indicator:		and the second second	Duplicate Numerical Performance Indicator:		-1.561
Duplicate RPD:			(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		28.50%
Duplicate Status vs Numerical Indicator:			MS/ MSD Duplicate Status vs Numerical Indicator:		Pass
Duplicate Status vs RPD:			MS/ MSD Duplicate Status vs RPD:		Pass

% RPD Limit: ## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

#### Comments:

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

Mul/7/21

Ra-228 NELAC DW2 Printed: 11/7/2021 3:43 PM

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Ra-228\_63413\_DW\_W Ra-228\_63413\_DW\_W (version 1).xls

36%



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

December 01, 2021

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

RE: Project: MW-FAA-5 Pace Project No.: 60380633

#### Dear Melissa Michels:

Enclosed are the analytical results for sample(s) received by the laboratory on September 17, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services Kansas City
- Pace Analytical Services Greensburg

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

Sincerely,

alice Spiller

Alice Spiller alice.spiller@pacelabs.com (913)599-5665 PM Lab Management

Enclosures

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





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

### CERTIFICATIONS

Project: MW-FAA-5 Pace Project No.: 60380633

#### 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

#### Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219 Missouri Inorganic Drinking Water Certification #: 10090 Arkansas Drinking Water Arkansas Certification #: 20-020-0 Arkansas Drinking Water Illinois Certification #: 2000302021-3 Iowa Certification #: 118 Kansas/NELAP Certification #: E-10116 Louisiana Certification #: 03055 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

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: Pace Project No	MW-FAA-5 b.: 60380633			
Lab ID	Sample ID	Matrix	Date Collected	Date Received
60380633001	FAA-5-091421	Water	09/14/21 16:15	09/17/21 00:00



### SAMPLE ANALYTE COUNT

Project: Pace Project No	MW-FAA-5 .: 60380633				
Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60380633001	FAA-5-091421	EPA 200.7	JLH	6	PASI-K
		EPA 6010	JLH	1	PASI-K
		EPA 200.8	JGP	7	PASI-K
		EPA 245.1	VRB	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		SM 2540C	BLA	1	PASI-K
		SM 4500-H+B	KB	1	PASI-K
		EPA 300.0	ALH, LDB	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg



Project: MW-FAA-5 Pace Project No.: 60380633

### Method: EPA 200.7

Description:200.7 Metals, TotalClient:Evergy Kansas Central, Inc.Date:December 01, 2021

#### **General Information:**

1 sample was 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: 745494

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60380676002,60380682006

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

- MS (Lab ID: 2986121)
  - Calcium
- MSD (Lab ID: 2986120)
  - Boron
  - Calcium

#### Additional Comments:



Project: MW-FAA-5 Pace Project No.: 60380633

Method:EPA 6010Description:6010 MET ICPClient:Evergy Kansas Central, Inc.Date:December 01, 2021

#### General Information:

1 sample was 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: MW-FAA-5 Pace Project No.: 60380633

### Method: EPA 200.8

Description:200.8 MET ICPMSClient:Evergy Kansas Central, Inc.Date:December 01, 2021

#### General Information:

1 sample was 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:

Analyte Comments:

#### QC Batch: 745484

- D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
  - FAA-5-091421 (Lab ID: 60380633001)
    - Arsenic, Total Recoverable
    - Cadmium, Total Recoverable
    - Cobalt, Total Recoverable
    - Antimony, Total Recoverable
    - Selenium, Total Recoverable
    - Thallium, Total Recoverable



Project: MW-FAA-5 Pace Project No.: 60380633

Method: EPA 245.1

Description:245.1 MercuryClient:Evergy Kansas Central, Inc.Date:December 01, 2021

#### General Information:

1 sample was 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: MW-FAA-5 Pace Project No.: 60380633

### Method: EPA 903.1

Description:903.1 Radium 226Client:Evergy Kansas Central, Inc.Date:December 01, 2021

#### **General Information:**

1 sample was 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: MW-FAA-5 Pace Project No.: 60380633

### Method: EPA 904.0

Description:904.0 Radium 228Client:Evergy Kansas Central, Inc.Date:December 01, 2021

#### **General Information:**

1 sample was 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: MW-FAA-5 Pace Project No.: 60380633

#### Method: Total Radium Calculation

Description:Total Radium 228+226Client:Evergy Kansas Central, Inc.Date:December 01, 2021

#### **General Information:**

1 sample was 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:



Project: MW-FAA-5 Pace Project No.: 60380633

#### Method: SM 2540C

Description:2540C Total Dissolved SolidsClient:Evergy Kansas Central, Inc.Date:December 01, 2021

#### **General Information:**

1 sample was 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: MW-FAA-5 Pace Project No.: 60380633

#### Method: SM 4500-H+B

Description:4500H+ pH, ElectrometricClient:Evergy Kansas Central, Inc.Date:December 01, 2021

#### **General Information:**

1 sample was 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.
  - FAA-5-091421 (Lab ID: 60380633001)

#### 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: MW-FAA-5 Pace Project No.: 60380633

#### Method: EPA 300.0

Description:300.0 IC Anions 28 DaysClient:Evergy Kansas Central, Inc.Date:December 01, 2021

#### **General Information:**

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

#### Hold Time:

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

#### Method Blank:

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

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

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

#### QC Batch: 744822

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

60380628002,60380631002,60380635001

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

- MS (Lab ID: 2983704)
  - Chloride

R1: RPD value was outside control limits.

- MSD (Lab ID: 2983705)
  - Chloride

#### Additional Comments:

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



### ANALYTICAL RESULTS

Proj	ject:		MW-FAA-5

Pace Project No.: 60380633

Sample: FAA-5-091421	Lab ID: 6038	80633001	Collected: 09/14/2	1 16:15	Received: 09	0/17/21 00:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Meth	nod: EPA 20	0.7 Preparation Met	hod: EP	A 200.7			
	Pace Analytica	I Services -	Kansas City					
Barium, Total Recoverable	<0.0050	mg/L	0.0050	1	09/24/21 16:00	09/27/21 22:52	2 7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.0010	1	09/24/21 16:00			
Boron, Total Recoverable	1.8	mg/L	0.10	1	09/24/21 16:00	09/27/21 22:52	2 7440-42-8	
Calcium, Total Recoverable	539	mg/L	0.20	1	09/24/21 16:00	09/27/21 22:52	2 7440-70-2	
Chromium, Total Recoverable	<0.0050	mg/L	0.0050	1	09/24/21 16:00	09/27/21 22:52	2 7440-47-3	
Lead, Total Recoverable	<0.010	mg/L	0.010	1	09/24/21 16:00	09/27/21 22:52	2 7439-92-1	
6010 MET ICP	Analytical Meth	nod: EPA 60	010 Preparation Meth	nod: EP/	A 3010			
	Pace Analytica	I Services -	Kansas City					
Lithium, Total Recoverable	0.15	mg/L	0.010	1	09/24/21 16:00	09/27/21 22:52	2 7439-93-2	
200.8 MET ICPMS	Analytical Meth	nod: EPA 20	0.8 Preparation Met	hod: EP	A 200.8			
	Pace Analytica	I Services -	Kansas City					
Antimony, Total Recoverable	<0.0050	mg/L	0.0050	5	09/24/21 16:00	09/28/21 17:47	7 7440-36-0	D3
Arsenic, Total Recoverable	<0.0050	mg/L	0.0050	5	09/24/21 16:00			D3
Cadmium, Total Recoverable	<0.0025	mg/L	0.0025	5	09/24/21 16:00	09/28/21 17:47	7 7440-43-9	D3
Cobalt, Total Recoverable	<0.0050	mg/L	0.0050	5	09/24/21 16:00	09/28/21 17:47	7 7440-48-4	D3
Molybdenum, Total Recoverable	0.023	mg/L	0.0050	5	09/24/21 16:00	09/28/21 17:47	7439-98-7	
Selenium, Total Recoverable	<0.0050	mg/L	0.0050	5	09/24/21 16:00	09/28/21 17:47	7782-49-2	D3
Thallium, Total Recoverable	<0.0050	mg/L	0.0050	5	09/24/21 16:00	09/28/21 17:47	7440-28-0	D3
245.1 Mercury	Analytical Meth	nod: EPA 24	15.1 Preparation Met	hod: EP	A 245.1			
	Pace Analytica	I Services -	Kansas City					
Mercury	<0.00020	mg/L	0.00020	1	09/23/21 16:27	09/27/21 09:33	3 7439-97-6	
2540C Total Dissolved Solids	Analytical Meth	nod: SM 254	40C					
	Pace Analytica	I Services -	Kansas City					
Total Dissolved Solids	3580	mg/L	66.7	1		09/21/21 13:55	5	
4500H+ pH, Electrometric	Analytical Meth	nod: SM 450	00-H+B					
	Pace Analytica	I Services -	Kansas City					
pH at 25 Degrees C	7.3	Std. Units	.10	1		09/20/21 12:17	7	H6
300.0 IC Anions 28 Days	Analytical Meth	nod: EPA 30	0.0					
-	Pace Analytica	I Services -	Kansas City					
Chloride	80.8	mg/L	20.0	20		09/23/21 23:55	5 16887-00-6	
Fluoride	0.71	mg/L	0.20	20		09/23/21 23:30		
Sulfate	1980	mg/L	200	200		09/24/21 00:07		
Guilate	1300	ing/∟	200	200		00/24/21 00.01	14000-73-0	



### **QUALITY CONTROL DATA**

- <b>)</b>	W-FAA-5 )380633											
QC Batch:	745265 EPA 245.1			/sis Methoo /sis Descri		EPA 245.1 245.1 Mercu						
	-	004		ratory:		Pace Analyt	•	es - Kansa	s City			
Associated Lab Sampl	es. 60360633	5001										
METHOD BLANK: 29	985281			Matrix: W	ater							
Associated Lab Sampl	es: 60380633	001										
			Blar		Reporting							
Paramet	er	Units	Res	ult	Limit	Analy	/zed	Qualifier	S			
Mercury		mg/L	<0	.00020	0.000	20 09/27/2	1 09:14					
LABORATORY CONT	ROL SAMPLE:	2985282										
Paramet	er	Units	Spike Conc.	LC Res		LCS % Rec	% R Limi		Qualifiers			
Mercury		mg/L	0.00		0.0046	92	2	85-115				
MATRIX SPIKE & MAT	RIX SPIKE DUF	PLICATE: 2985	283		298528	4						
			MS	MSD								
Parameter	Units	60380567003 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.005	0.005	0.0044	0.0046	88	91	70-130	4	20	
MATRIX SPIKE SAMP	LE:	2985285										
Paramet	or	Units		493005 sult	Spike Conc.	MS Result		MS 6 Rec	% Rec Limits		Qualif	ioro
											Quali	1612
Mercury		mg/L		ND	0.005	0.0	046	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.



QC Batch: 745494		Analysis M	ethod:	EPA 200.7			
QC Batch Method: EPA 200.7		Analysis M Analysis D		200.7 Metals, 1	Total		
QC Batch Method. EPA 200.7		-				con City	
Associated Lab Samples: 6038063	2001	Laboratory	:	Pace Analytica	I Services - Kan	sas City	
Associated Lab Samples. 0030003	3001						
METHOD BLANK: 2986117		Matri	x: Water				
Associated Lab Samples: 6038063	3001						
		Blank	Reporting				
Parameter	Units	Result	Limit	Analyze	d Qualif	iers	
Barium	mg/L	<0.0050	0.00	50 09/27/21 2	2:44		
Beryllium	mg/L	<0.0010	0.00	10 09/27/21 2	2:44		
Boron	mg/L	<0.10					
Calcium	mg/L	<0.20					
Chromium Lead	mg/L	<0.0050 <0.010					
	mg/L	S0.010	0.0	10 00/21/21 2	<b>2</b> .77		
	g, 2	<b>10.0</b> N			2.11		
	2986118						
LABORATORY CONTROL SAMPLE:	2986118	Spike	LCS	LCS	% Rec	Qualifiere	
LABORATORY CONTROL SAMPLE: Parameter	2986118 Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers	
LABORATORY CONTROL SAMPLE: Parameter Barium	2986118 	Spike	LCS Result	LCS % Rec 96	% Rec Limits 85-115	Qualifiers	
LABORATORY CONTROL SAMPLE: Parameter Barium Beryllium	2986118 - Units - mg/L - mg/L	Spike Conc. 1 1	LCS Result 0.96 1.0	LCS % Rec 96 100	% Rec Limits 85-115 85-115	Qualifiers	
LABORATORY CONTROL SAMPLE: Parameter Barium Beryllium Boron	2986118 Units mg/L mg/L mg/L	Spike Conc. 1 1 1	LCS Result 0.96 1.0 0.92	LCS % Rec 96 100 92	% Rec Limits 85-115 85-115 85-115	Qualifiers	
LABORATORY CONTROL SAMPLE: Parameter Barium Beryllium Boron Calcium	2986118 Units mg/L mg/L mg/L mg/L	Spike Conc. 1 1	LCS Result 0.96 1.0	LCS % Rec 96 100	% Rec Limits 85-115 85-115	Qualifiers	
LABORATORY CONTROL SAMPLE:	2986118 Units mg/L mg/L mg/L	Spike Conc. 1 1 1 1 1	LCS Result 0.96 1.0 0.92 9.7	LCS % Rec 96 100 92 97	% Rec Limits 85-115 85-115 85-115 85-115	Qualifiers	
LABORATORY CONTROL SAMPLE: Parameter Barium Beryllium Boron Calcium Chromium	2986118 Units mg/L mg/L mg/L mg/L mg/L mg/L	Spike Conc. 1 1 1 1 10 10	LCS Result 0.96 1.0 0.92 9.7 1.0	LCS % Rec 96 100 92 97 104	% Rec Limits 85-115 85-115 85-115 85-115 85-115	Qualifiers	
LABORATORY CONTROL SAMPLE: Parameter Barium Beryllium Boron Calcium Chromium	2986118 Units mg/L mg/L mg/L mg/L mg/L mg/L	Spike Conc. 1 1 1 1 1 10 1 1	LCS Result 0.96 1.0 0.92 9.7 1.0 0.98 298612	LCS % Rec 96 100 92 97 104 98	% Rec Limits 85-115 85-115 85-115 85-115 85-115	Qualifiers	

Parameter	Units	60380676002 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	0.048	1	1	1.0	0.95	98	90	70-130	7	20	
Beryllium	mg/L		1	1	0.99	0.93	99	93	70-130	6	20	
Boron	mg/L	5.5	1	1	6.4	5.8	89	30	70-130	10	20	M1
Calcium	mg/L	468	10	10	477	440	90	-279	70-130	8	20	M1
Chromium	mg/L		1	1	1.0	0.93	100	93	70-130	6	20	
Lead	mg/L		1	1	0.90	0.85	90	85	70-130	6	20	

MATRIX SPIKE SAMPLE: 2986121 60380682006 Spike MS MS % Rec Parameter Units Result Conc. Result % Rec Limits Qualifiers 0.081 Barium mg/L 70-130 1 1.0 96 Beryllium mg/L 1 0.97 97 70-130 2.5 mg/L Boron 1 3.3 84 70-130 552 Calcium mg/L 10 551 -16 70-130 M1 Chromium mg/L 1 0.97 97 70-130

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### **REPORT OF LABORATORY ANALYSIS**

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Lead

70-130

88

### **QUALITY CONTROL DATA**

Project:	MW-FAA-5							
Pace Project No .:	60380633							
MATRIX SPIKE SA	MPLE:	2986121						
			60380682006	Spike	MS	MS	% Rec	
Para	meter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers

1

mg/L

0.89

Results presented on 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:

### **QUALITY CONTROL DATA**

QC Batch: 745484		Analysis Metl	hod: El	PA 200.8	
QC Batch Method: EPA 200.8		Analysis Des	cription: 20	0.8 MET	
		Laboratory:	Pa	ace Analytical Servi	ces - Kansas City
Associated Lab Samples: 60380633001					
METHOD BLANK: 2986078		Matrix:	Water		
Associated Lab Samples: 60380633001					
		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Antimony	mg/L	<0.0010	0.0010	09/28/21 17:40	
Arsenic	mg/L	<0.0010	0.0010	09/28/21 17:40	
Cadmium	mg/L	<0.00050	0.00050	09/28/21 17:40	
Cobalt	mg/L	<0.0010	0.0010	09/28/21 17:40	
Molybdenum	mg/L	<0.0010	0.0010	09/28/21 17:40	
Selenium	mg/L	<0.0010	0.0010	09/28/21 17:40	
Thallium	mg/L	<0.0010	0.0010	09/28/21 17:40	

### LABORATORY CONTROL SAMPLE: 2986079

MW-FAA-5

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.04	0.040	99	85-115	
Arsenic	mg/L	0.04	0.041	104	85-115	
Cadmium	mg/L	0.04	0.041	102	85-115	
Cobalt	mg/L	0.04	0.041	101	85-115	
Molybdenum	mg/L	0.04	0.042	105	85-115	
Selenium	mg/L	0.04	0.041	102	85-115	
Thallium	mg/L	0.04	0.039	98	85-115	

MATRIX SPIKE & MATRIX SP		LICATE: 2986	080 MS	MSD	2986081							
Parameter	Units	60380633001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qua
Antimony	mg/L	<0.0050	0.04	0.04	0.038	0.039	95	97	70-130	1	20	
Arsenic	mg/L	<0.0050	0.04	0.04	0.042	0.042	102	103	70-130	1	20	
Cadmium	mg/L	<0.0025	0.04	0.04	0.038	0.039	95	97	70-130	1	20	
Cobalt	mg/L	<0.0050	0.04	0.04	0.040	0.041	94	95	70-130	1	20	
Molybdenum	mg/L	0.023	0.04	0.04	0.065	0.066	105	106	70-130	1	20	
Selenium	mg/L	<0.0050	0.04	0.04	0.040	0.041	99	102	70-130	3	20	
Thallium	mg/L	<0.0050	0.04	0.04	0.037	0.038	92	94	70-130	2	20	
MATRIX SPIKE SAMPLE:		2986082										
			60380	682007	Spike	MS		MS	% Rec			
Parameter		Units	Re	sult	Conc.	Result	%	Rec	Limits		Qualif	iers
Antimony		mg/L		<0.0030	0.04	0.	039	97	70	-130		
Arsenic		mg/L		0.012	0.04	0.	053	103	70 <sup>.</sup>	-130		

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Project: MW-FAA-5 Pace Project No.: 60380633

MATRIX SPIKE SAMPLE:	2986082	60380682007	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Cadmium	mg/L	<0.0015	0.04	0.038	96	70-130	
Cobalt	mg/L	<0.0030	0.04	0.039	95	70-130	
Molybdenum	mg/L	0.20	0.04	0.25	115	70-130	
Selenium	mg/L	<0.0030	0.04	0.039	97	70-130	
Thallium	mg/L	<0.0030	0.04	0.038	96	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: MW-FA Pace Project No.: 603806	-											
QC Batch: 7454	81		Anal	ysis Meth	nod: E	EPA 6010						
QC Batch Method: EPA	3010			ysis Des		6010 MET						
				pratory:		Pace Analy	ical Servic	es - Kansa	s City			
Associated Lab Samples:	603806330	01		,		,			,			
METHOD BLANK: 29860	59			Matrix:	Water							
Associated Lab Samples:	603806330	01										
			Bla	nk	Reporting							
Parameter		Units	Res	sult	Limit	Anal	yzed	Qualifier	S			
Lithium		mg/L		<0.010	0.01	09/27/2	1 22:44					
LABORATORY CONTROL	SAMPLE:	2986060										
			Spike	I	LCS	LCS	% R	ес				
Parameter		Units	Conc.	R	esult	% Rec	Limi	ts	Qualifiers			
Lithium		mg/L		1	0.95	9	5 8	30-120				
MATRIX SPIKE & MATRIX	SPIKE DUPI	_ICATE: 2986	061		2986062							
			MS	MSD								
		60380676002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Lithium	mg/L	0.050	1		1 1.1	0.98	100	93	75-125	7	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.



,	/-FAA-5 80633										
QC Batch: 74	14456		Analysis M	lethod:	SN	M 2540C					
QC Batch Method: SI	VI 2540C		Analysis D	escription:	25	40C Total Di	issolved	l Solids			
			Laboratory	/:	Pa	ace Analytica	I Servic	es - Kar	nsas (	City	
Associated Lab Samples	6038063300	)1									
METHOD BLANK: 298	2539		Matr	ix: Water							
Associated Lab Samples	6038063300	)1									
			Blank	Reporti	-						
Parameter		Units	Result	Limit		Analyze	ed	Quali	fiers	_	
Total Dissolved Solids		mg/L	<5.	0	5.0	09/21/21 1	3:53				
LABORATORY CONTRO	OL SAMPLE: 2	2982540									
Parameter		Units	Spike Conc.	LCS Result		LCS % Rec	% R Lim		0	alifiers	
Total Dissolved Solids				956		96					
Total Dissolved Solids		mg/L	1000	956		96		80-120			
SAMPLE DUPLICATE:	2982541										
	2002011		60380630003	3 Dup				Max			
Parameter		Units	Result	Resul	t	RPD		RPD		Qualifiers	
Total Dissolved Solids		mg/L	306	60	3380		10		10		
SAMPLE DUPLICATE:	2982542										
			6038063200	•				Max		0 11	
Parameter		Units	Result	Resul		RPD		RPD		Qualifiers	
Total Dissolved Solids		mg/L	7440	0 7	2800		2		10		

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



Project:	MW-FAA-5							
Pace Project No.:	60380633							
QC Batch:	744237		Analysis Meth	od:	SM 4500-H+B			
QC Batch Method:	SM 4500-H+B		Analysis Desc	ription:	4500H+B pH			
			Laboratory:		Pace Analytica	al Services	- Kansa	s City
Associated Lab San	mples: 6038063300	)1						
SAMPLE DUPLICA	TE: 2981913							
			60379873001	Dup		N	lax	
Paran	neter	Units	60379873001 Result	Dup Result	RPD		lax PD	Qualifiers

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



00 D / 1							
QC Batch: 744822		Analysis Mo			A 300.0		
QC Batch Method: EPA 300.0		Analysis De			.0 IC Anions		
		Laboratory	:	Pac	e Analytical Se	ervices - Kan	isas City
Associated Lab Samples: 603806330	001						
IETHOD BLANK: 2983702		Matrix	k: Water				
Associated Lab Samples: 603806330	001						
		Blank	Reporting				
Parameter	Units	Result	Limit		Analyzed	Qualif	iers
Chloride	mg/L		) 1	1.0	09/22/21 08:20		
Fluoride	mg/L	<0.20	0.2	20	09/22/21 08:26	6	
Sulfate	mg/L	<1.0	) 1	0.1	09/22/21 08:20	3	
METHOD BLANK: 2985972		Matrix	k: Water				
	001	Watth					
Associated Lab Samples: 603806330		Blank	Poportina				
Parameter	Units	Result	Reporting Limit		Analyzed	Qualif	iers
Chloride					09/23/21 08:02		
	mg/L	<1.0			09/23/21 08:02		
Fluoride Sulfate	mg/L mg/L	<0.20 <1.0		-	09/23/21 08:02		
Junate	mg/L	<1.0	) 1	1.0	09/23/21 00.02	-	
METHOD BLANK: 2988412		Matrix	k: Water				
Associated Lab Samples: 603806330	001						
		Blank	Reporting				
Parameter	Units	Result	Limit		Analyzed	Qualif	iers
Chloride	mg/L	<1.0	) 1	1.0	09/27/21 09:57	7	
Fluoride	mg/L	<0.20	) 0.2	20	09/27/21 09:57	7	
Sulfate	mg/L	<1.0	) 1	1.0	09/27/21 09:57	7	
METHOD BLANK: 2988943		Matrix	k: Water				
Associated Lab Samples: 603806330	001						
		Blank	Reporting				
Parameter	Units	Result	Limit		Analyzed	Qualif	iers
Chloride	mg/L		) 1	1.0	09/28/21 10:43	3	
Fluoride	mg/L	<0.20			09/28/21 10:43		
Sulfate	mg/L	<1.0	) 1	1.0	09/28/21 10:43	3	
LABORATORY CONTROL SAMPLE:	2983703						
		Spike	LCS	L	CS	% Rec	
Parameter	Units	Conc.	Result	%	Rec	Limits	Qualifiers
Chloride	mg/L	5	5.4		108	90-110	
Fluoride	mg/L	2.5	2.7		107	90-110	

### **REPORT OF LABORATORY ANALYSIS**

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Project:	MW-FAA-5
Pace Proiect No.:	60380633

LABORATORY	CONTROL SAMPLE:	2983703	<b>o</b> "		~							
Pa	arameter	Units	Spike Conc.	LC Res		LCS % Rec	% Re Limit		Qualifiers			
Sulfate		mg/L		5	5.5	110	ç	00-110		_		
LABORATORY (	CONTROL SAMPLE:	2985973										
		11-2-	Spike	LC		LCS	% Re		D			
	arameter	Units	Conc.	Res		% Rec	Limi		Qualifiers	_		
Chloride		mg/L		5	4.8	96		0-110				
Fluoride		mg/L	2.		2.6	106		0-110				
Sulfate		mg/L		5	4.9	98	ξ	0-110				
LABORATORY (	CONTROL SAMPLE:	2988413										
			Spike	LC	S	LCS	% Re	ec				
Pa	arameter	Units	Conc.	Res	ult	% Rec	Limit	is C	Qualifiers			
Chloride		mg/L		 5	4.7	95	ę	0-110		-		
Fluoride		mg/L	2.		2.6	103		0-110				
Sulfate		mg/L		5	4.8	97	e e	0-110				
	CONTROL SAMPLE:		Spike	LC		LCS	% Re					
Pa	arameter	Units	Conc.	Res	ult	% Rec	Limi	is (	Qualifiers	_		
Chloride		mg/L		5	4.9	98	ç	0-110				
Fluoride		mg/L	2.	5	2.5	102	9	0-110				
Sulfate		mg/L		5	5.0	100	e e	0-110				
	& MATRIX SPIKE DU		704		2002205							
		JPLICATE: 2983	6704		2983705	)						
		JPLICATE: 298:	MS	MSD	2963705	)						
in an and the second seco		60380628002		MSD Spike	2983705 MS	MSD	MS	MSD	% Rec		Max	
Param	eter Uni	60380628002	MS				MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Param		60380628002 its Result	MS Spike Conc.	Spike Conc.	MS Result	MSD Result	% Rec	% Rec			RPD	
Param	mg.	60380628002 its Result /L 83.8	MS Spike Conc.	Spike	MS	MSD			Limits	RPD 21 1	RPD 15	Qual M1,R1
		60380628002 its Result /L 83.8 /L 0.38	MS Spike Conc.	Spike Conc. 100	MS Result 237	MSD Result 193	% Rec 153	% Rec 109	Limits 80-120	21	RPD 15 15	
Param Chloride Fluoride Sulfate	mg. mg. mg.	60380628002 its Result /L 83.8 /L 0.38 /L 488	MS Spike Conc. 100 2.5	Spike Conc. 100 2.5	MS Result 237 2.9	MSD Result 193 2.9	% Rec 153 99	% Rec 109 101	Limits 80-120 80-120	21 1	RPD 15 15	
Param Chloride Fluoride Sulfate	mg. mg. mg.	60380628002 its Result /L 83.8 /L 0.38	MS Spike Conc. 100 2.5 500	Spike Conc. 100 2.5	MS Result 237 2.9	MSD Result 193 2.9	% Rec 153 99 99	% Rec 109 101	Limits 80-120 80-120	21 1 2	RPD 15 15	
Param Chloride Fluoride Sulfate MATRIX SPIKE	mg. mg. mg.	60380628002 its Result /L 83.8 /L 0.38 /L 488	MS Spike Conc. 100 2.5 500 603800	Spike Conc. 100 2.5 500	MS Result 237 2.9 985	MSD Result 193 2.9 1000	% Rec 153 99 99	% Rec 109 101 103	Limits 80-120 80-120 80-120	21 1 2	RPD 15 15	M1,R1
Param Chloride Fluoride Sulfate MATRIX SPIKE Pa	mg, mg, mg. SAMPLE:	60380628002 its Result /L 83.8 /L 0.38 /L 488 2983706 Units	MS Spike Conc. 100 2.5 500 603800	Spike Conc. 100 2.5 500 631002 sult	MS Result 237 2.9 985 Spike Conc.	MSD Result 193 2.9 1000 MS Result	% Rec 153 99 99	% Rec 109 101 103 MS Rec	Limits 80-120 80-120 80-120 % Rec Limits	21 1 2	RPD 15 15 15	M1,R1
Param Chloride Fluoride Sulfate MATRIX SPIKE	mg, mg, mg. SAMPLE:	60380628002 its Result /L 83.8 /L 0.38 /L 488 2983706	MS Spike Conc. 100 2.5 500 603800	Spike Conc. 100 2.5 500	MS Result 237 2.9 985 Spike	MSD Result 193 2.9 1000 MS Result	% Rec 153 99 99	% Rec 109 101 103 MS	Limits 80-120 80-120 80-120 % Rec Limits 80-	21 1 2	RPD 15 15 15	M1,R1

Results presented on 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: MW-FAA-5 Pace Project No.: 60380633

MATRIX SPIKE & MATRIX SP	IKE DUPL	ICATE: 2988	049		2988050							
			MS	MSD								
		60380635001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	4530	5000	5000	9270	9470	95	99	80-120	2	15	
Fluoride	mg/L	0.26	2500	2500	2460	2450	98	98	80-120	0	15	
Sulfate	mg/L	184	5000	5000	4940	4960	95	95	80-120	0	15	

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



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MW-FAA-5

Pace Project No.: 60380633

<b>Sample: FAA-5-091421</b> PWS:	Lab ID: 6038063 Site ID:	33001 Collected: 09/14/21 16:15 Sample Type:	Received:	09/17/21 00:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Ser	rvices - Greensburg				
Radium-226	EPA 903.1	0.656 ± 0.521 (0.677) C:NA T:96%	pCi/L	11/12/21 17:21	1 13982-63-3	
	Pace Analytical Ser	rvices - Greensburg				
Radium-228	EPA 904.0	1.13 ± 0.617 (1.14) C:76% T:92%	pCi/L	11/10/21 14:34	4 15262-20-1	
	Pace Analytical Ser	rvices - Greensburg				
Total Radium	Total Radium Calculation	1.79 ± 1.14 (1.82)	pCi/L	11/18/21 14:32	2 7440-14-4	



### **QUALITY CONTROL - RADIOCHEMISTRY**

Project: MW-FAA-5				
Pace Project No.: 60380633				
QC Batch: 470986	Analysis Method:	EPA 904.0		
QC Batch Method: EPA 904.0	Analysis Description:	904.0 Radium 2	228	
	Laboratory:	Pace Analytical	Services - Greensbu	ırg
Associated Lab Samples: 6038063	33001			
METHOD BLANK: 2273576	Matrix: Water			
Associated Lab Samples: 6038063	33001			
Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.529 ± 0.325 (0.599) C:71% T:92%	pCi/L	11/10/21 11:26	

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



### **QUALITY CONTROL - RADIOCHEMISTRY**

Project: MW-FAA-5				
Pace Project No.: 60380633				
QC Batch: 470983	Analysis Method:	EPA 903.1		
QC Batch Method: EPA 903.1	Analysis Description:	903.1 Radium-2	226	
	Laboratory:	Pace Analytical	Services - Greensbu	rg
Associated Lab Samples: 6038063	3001			
METHOD BLANK: 2273570	Matrix: Water			
Associated Lab Samples: 6038063	3001			
Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.117 ± 0.363 (0.703) C:NA T:95%	pCi/L	11/12/21 16:37	

Results presented on 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:	MW-FAA-5
Pace Project No .:	60380633

#### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

#### ANALYTE QUALIFIERS

- D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
- H6 Analysis initiated outside of the 15 minute EPA required holding time.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- R1 RPD value was outside control limits.



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MW-FAA-5 Pace Project No.: 60380633

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60380633001	FAA-5-091421	EPA 200.7	745494	EPA 200.7	745593
60380633001	FAA-5-091421	EPA 3010	745481	EPA 6010	745594
60380633001	FAA-5-091421	EPA 200.8	745484	EPA 200.8	745598
60380633001	FAA-5-091421	EPA 245.1	745265	EPA 245.1	745293
60380633001	FAA-5-091421	EPA 903.1	470983		
60380633001	FAA-5-091421	EPA 904.0	470986		
60380633001	FAA-5-091421	Total Radium Calculation	473180		
60380633001	FAA-5-091421	SM 2540C	744456		
60380633001	FAA-5-091421	SM 4500-H+B	744237		
60380633001	FAA-5-091421	EPA 300.0	744822		

Sample Condition Up	on Receipt	WO#:60380633
Client Name: Everaget Courier: FedEx UPS VIA Clay Dependence		
	EX 🗆 ECI 🗆 Pace 🛛	
	Shipping Label Used? Yes	s 🗆 No 🗆
	Seals intact: Yes D No	_
Packing Material:     Bubble Wrap □     Bubble Bags □       Thermometer Used:     Type of Id	Foam □ No ce: Wet Blue None	one 🗹 Other 🗆
Cooler Temperature (°C): As-read 2. / Corr. Factor	Corrected	Date and initials of person examining contents: % /- / ゔ- z/
Temperature should be above freezing to 6°C		
Chain of Custody present:	₽Yes □No □N/A	
Chain of Custody relinquished:		
Samples arrived within holding time:		
Short Hold Time analyses (<72hr):	□Yes INO □N/A	
Rush Turn Around Time requested:		
Sufficient volume:	₽Yes □No □N/A	
Correct containers used:	XYes INO N/A	
Pace containers used:		
Containers intact:	Yes No N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	□Yes □No ₽Ń/A	
Filtered volume received for dissolved tests?	□Yes □No ØN/A	
Sample labels match COC: Date / time / ID / analyses	ØYes □No □N/A	
Samples contain multiple phases? Matrix: $\omega$ 1	DYes ZNO DN/A	
Containers requiring pH preservation in compliance? (HNO₃, H₂SO₄, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#	Inves □No □N/A List sar date/tin	nple IDs, volumes, lot #'s of preservative and the ne added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	UYes INo	
Potassium iodide test strip turns blue/purple? (Preserve)		
Trip Blank present:		
Headspace in VOA vials ( >6mm):	□Yes □No ਈN/A	
Samples from USDA Regulated Area: State:	□Yes □No 2N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	□Yes □No QN/A	
Client Notification/ Resolution: Copy COC to C	Client? Y / N Fie	ld Data Required? Y / N
Person Contacted: Date/Tim	ne:	
Comments/ Resolution:		
Project Manager Review:	Date:	

Project Manager Review:



# CHAIN-OF-CUSTODY / Analytical Request Document

F	Pace Analytical					CRA The Chai	n-of-Custod	y is a	J <b>S I</b> a LEG			/ A MEN	nai T-All	relev	cal rant fir	elds i	eq musi	t be c	st C omple	)O( eted a	<b>CUI</b> accu	me rately	nt											Page 33 of 37
Sectio		Section B							Sec	tion	с																		_			_		age
Compa	ed Client Information: Inv: EVERGY KANSAS CENTRAL, INC.	Required Pro			Samant	ha Kanav	Danielle (	Oho	Invoi	ice Inf	_			De		_				_							Pa	age:	1	c	of	1		ш.
Addres						nphrey, La									able						L						_					_		
	818 Kansas Ave, Topeka, KS 66612					II, Sarah H			Adde	ipany	Name		VER	GY	KAN	ISAS	SCE	ENT	RAL,	INC			_		AGE	ENCY	1							
Email		Purchase Ord		icyci, bia		ii, Salali n	lazelwood	8	Addr	Quote		SEE	SEC	:110	N A				_		Г	NF	DES	ſ	- G	ROU	ND W	VATER	2	DRI	NKING	G WA	TER	
-205-210	785-575-8113 Fax:	Project Name			_				Refer	Projec	5										Г	US	т		R	CRA			Γ	отн	IER	_	_	-
_	sted Due Date/TAT: 7 day	Project Numbe		V-1 //				_	Mana	iger.				oka,	913-	-563	-14(	04			Si	te Lo	cati	ол		ĸs								
					_			_	Pace	Profile	**. E	9657	, 1	_				_				_	TAT	_	_	_		- 🖉						
	Section D Valid Matrix	Cadaa		T	-			<u> </u>	<u> </u>	<b>—</b>				_	_	┶			uest	ted /	Ana	lysi	s Fill	tere	d (Y/	'N)								
	Required Client Information MATRIX		C=COMP)		COL	LECTED					Р	rese	ervat	ives		Z		NN	N	N	N	N	N	N										
	DRINKING WATER WATER WASTE WATER	DW WT			POSITE	COMPC END/G	DSITE	COLLECTION		$\square$						Г	T										Ħ							
	PRODUCT SOIL/SOLID OIL	P SL OL WP	(G=GRAB	STA	ART	END/G	RAB	ILLEO									*						*					Residual Chlorine (Y/N)						
	SAMPLE ID WIPE AIR	47	19		1		T	T CO	ERS							Test	200 7 Total Matale	Metals*		4			6010 Total Metals					це Г						
	(A-Z, 0-9 / ,-) OTHER Sample IDs MUST BE UNIQUE TISSUE		TYPE					TEMP A	CONTAINERS	g									H <sup>I</sup>	S04	S	Ł	٩ ٩	20				hlori						
#			<u> </u>					E TE	NO	Ser				ő	ē	Vsis	to L	Total	Tota	ц,	Ë	Щ.	otal					alC						
ITEM		MATRIX	SAMPLE					SAMPL	# OF 0	Unpreserved	H <sub>2</sub> SO <sub>4</sub>	ร็อ	E E	a <sub>2</sub> S <sub>2</sub>	Methanol	LAnalvsis		200.8	245.1 Total Hg	300: CI, F,	2540C TDS	4500 H+B pH	<u>[</u> ]	Ka 226/ 228				sidu						
1	FAA-5-091421			DATE	TIME	DATE	TIME	Ś	-	+-+			Ï	ž	≥lč	F	-	_		8	25	45	8	ř.	-		$\square$	<u>8</u>	Pace	e Proje	ect N	o./ La	b I.D.	
2	177-3-031421	w	T G			09/14/21	16:15	-	7	3	-+-	4	+	+	-	-	Ľ		X	Х	х	x	X	×	-		$\vdash$							
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12			-					-		+	_	+	+		+		⊢	-		_	-	$\rightarrow$	_	-	-		$\rightarrow$	$\perp$						_
	ADDITIONAL COMMENTS	RE		ISHED BY /	AFFILIAT		DATE	-	Т	IME	+				EDTC						+	_			1		ᆂ				_			
200 7 T	otal Metals*: B, Ca, Ba, Be, Cr, Pb	_						-		-	+	-	-	_	EPTE	1	7 А				-	_	ATE	+	TIM	_			SAMP	PLE CO	NDITIC	ONS	_	
200.8 T	otal Metals**: Sb, As, Cd, Co, Mo, Se, Tl	_	J	ason R. Fr	anks		9/16/21	1	1	5:00	-	-	4	4	Ûi	n	_	_		-	-	9][	7 2	4	2	4	2.	(						_
6010 To	tal Metals***: Li							_	_	_	-	_	11	l_									_					$\perp$						
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						PRINT Name			Jaso	n R.	Fran	iks	-	-	1	-	To	ATE	Ner								Temp in °C		Ice (V/N)	Custody Sealed Cooler	ίλΝ	100	samples mact (Y/N)	
						SIGNATURE	of SAMPL	ER:	-	2	X	6		4	-0			MM/D					9/16	5/21			Tei		р Б	Seal				

-

Internal Transfer C Workorder: 60380633 Wor Report To	hain c	Samples	Pre-Logged	into eCC	IC.	(	Cert. N	)f Origi leeded: Receiv	[	Yes	9/17/2021	Results	Pac Requested B	y: 9/28/2021
Hank Kapka Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665		Pace A 1638 F Suites Green	Analytical Pittsb Roseytown Roa 2,3, & 4 sburg, PA 1560 (724)850-5600	d D1	Pre	serve	d Conta	ļ	Ra 226	a 228 / Combined		 WO# :	3044	
Item Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	HN03					Rå				LAB USE ONLY
1 FAA-5-091421	PS	9/14/2021 16:15	60380633001	Water	2				X	X		1		001
2 3 4 5 Transfers Released By		Date/Time	Received	3x,				Date/Time				Con	iments	
1 hhipt (F. 2		(0/27/21		ht.	6-			12/29	2/21	iou	rO			
3 Cooler Temperature on Receip	ot NA	-°C Cure	itody Seal 🥂	() or ℕ	]		Recei	ved on	lce	<u> </u>	or (N	San	nples Intact (	For N

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pittsburgh Lab Sample Cor	ndition L	Jpor	n Re	eceipt		
Pace Analytical Client Name:		9940	: Ľ	KS	Project #	
	lient 🗌 C	omm	ercial	Pace Other	Label Ch	
Tracking #: TORN					LIMS Login Pr	
Custody Seal on Cooler/Box Present:	ves 🗌 no	0	Seals	s intact: 🛛 yes	no	
Thermometer Used	Type o	of Ice:	Wet	Blue None		
Cooler Temperature Observed Temp	e-	۰C	Corr	ection Factor:	•C Final Temp: •C	
Temp should be above freezing to 6°C						
				pH paper Lot#	Date and Initials of person examining contents: Aug 11-2-21	
Comments:	Yes	No	N/A	1003801		
Chain of Custody Present:				1.		CLIENT:
Chain of Custody Filled Out:	$- \zeta $			2.		
Chain of Custody Relinquished:	/_			3.		30448 Due D PACE_60_LEKS
Sampler Name & Signature on COC:				4.		No.
Sample Labels match COC:			L	5.		
-Includes date/time/ID Matrix:_	<u> </u>		<u> </u>			481
Samples Arrived within Hold Time:	-			6.		2 P
Short Hold Time Analysis (<72hr remaining)		/		7.		P
Rush Turn Around Time Requested:				8.		<u>11/11/2</u>
Sufficient Volume:				9.		E
Correct Containers Used:				10.		22
-Pace Containers Used:						
Containers Intact:				11.		
Orthophosphate field filtered			4	12.		
Hex Cr Aqueous sample field filtered			<u> </u>	13.		
Organic Samples checked for dechlorination	on:		Ľ	14.		
Filtered volume received for Dissolved tests All containers have been checked for preservation.			$\swarrow$	15.		
				16.		
exceptions: VOA, coliform, TOC, O&G, Pheno Non-aqueous matrix	lics, Radon,			PHZZ		
All containers meet method preservation				Initial when	Date/time of	
requirements.				Lot # of added	preservation	
				preservative		
Headspace in VOA Vials ( >6mm):			/	17.		
Trip Blank Present:				18.		
Trip Blank Custody Seals Present			1			
Rad Samples Screened < 0.5 mrem/hr				Initial when completed:	Date: 11-2 - 2 1 Survey Meter SN: 1562	
Client Notification/ Resolution:				V		
Person Contacted:			Date/	Time:	Contacted B <u>y:</u>	
Comments/ Resolution:						
A check in this box indicates that a	additional	infor	matic	on has been stored	l 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

\*PM review is documented electronically in LIMS. When the Project Manager closes the SKr 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.

MS/ MSD Duplicate Status vs RPD: % RPD Limit:

www.pacelabs.com Test:	Ra-226				
Analyst:	SLC		Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Date:	11/4/2021		Sample Collection Date:	and a second	
Batch ID:	63463		Sample I.D.	30447110001	
Matrix:	DW		Sample MS I.D.	30447110001MS	
			Sample MSD I.D.		
Method Blank Assessment		1	Spike I.D.:	20-032	n even de englendes nu d
MB Sample ID	2273570		MS/MSD Decay Corrected Spike Concentration (pCi/mL):	32.169	
MB concentration:			Spike Volume Used in MS (mL):	0.20	160MPACE
M/B Counting Uncertainty:			Spike Volume Used in MSD (mL):		
MB MDC:	0.703		MS Aliquot (L, g, F):	0.651	
MB Numerical Performance Indicator:			MS Target Conc.(pCi/L, g, F):	9.889	
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):	0.465	
aboratory Control Sample Assessment	LCSD (Y or N)?	Ν	MSD Spike Uncertainty (calculated):		
	LCS63463	LCSD63463	Sample Result:	1.453	
Count Date:	11/12/2021		Sample Result Counting Uncertainty (pCi/L, g, F):	0.660	
Spike I.D.:	20-032		Sample Matrix Spike Result:	11.172	
Spike Concentration (pCi/mL):	32.168		Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	1.596	
Volume Used (mL):	0.10	경영영영영	Sample Matrix Spike Duplicate Result:		
Aliquot Volume (L, g, F):	0.652		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Target Conc. (pCi/L, g, F):	4.937		MS Numerical Performance Indicator:	-0.186	
Uncertainty (Calculated):	0.232	1	MSD Numerical Performance Indicator:		
Result (pCi/L, g, F):	4.779		MS Percent Recovery:	98.28%	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.086		MSD Percent Recovery:		
Numerical Performance Indicator:	-0.28		MS Status vs Numerical Indicator:	N/A	
Percent Recovery: Status vs Numerical Indicator:	96.80% N/A		MSD Status vs Numerical Indicator:	_	
Status vs Numerical Indicator. Status vs Recovery:	Pass		MS Status vs Recovery:	Pass	
Upper % Recovery Limits:	135%		MSD Status vs Recovery: MS/MSD Upper % Recovery Limits:	100%	
Lower % Recovery Limits:	73%		MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:	136%	
	10%	I	M3/M3D LOwer % Recovery Links.	71%	
uplicate Sample Assessment			Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:	30447109001	Enter Duplicate	Samala I D		
Duplicate Sample I.D.			Sample I.D. Sample MS I.D.		
Sample Result (pCi/L, g, F):	0.367	other than	Sample MSD I.D.		
Sample Result Counting Uncertainty (pCi/L, g, F):	0.381	LCS/LCSD in	Sample Matrix Spike Result:		
Sample Duplicate Result (pCi/L, g, F):	0.427	the space below.	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.443		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:	-0.200	30447109001	Duplicate Numerical Performance Indicator:		
Duplicate RPD:		30447109001DUP	(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		
Duplicate Status vs Numerical Indicator:	N/A		MS/ MSD Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD:	Pass		MS/ MSD Duplicate Status vs Numerical indicator. MS/ MSD Duplicate Status vs RPD:		
% RPD 1 imit:	32%		WO WOD Dupicate Status vs I(I D.		

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

% RPD Limit:

32%

Comments:

Pace Analytical"

Page 36 of 37

Ra-226 NELAC QC Printed: 11/12/2021 5:42 PM

PACE Analytical Services Ra-228 Analysis

## **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 Fleids Highlighted It	1 4// QW2	•
Analyst:	JC2		Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Date:	11/5/2021		Sample Collection Date:	10/20/2021	
Worklist	63464		Sample LD.	30447195001	
Matrix:	03404		Sample I.D. Sample MS I.D.	30447195001MS	
Matrix.			Sample MSD I.D.	ae i i i i i i i i i i i i i i i	
Method Blank Assessment			Spike I.D.:	21-029	
MB Sample ID	2273576		MS/MSD Decay Corrected Spike Concentration (pCi/mL):	37.775	
MB concentration:	0.529		Spike Volume Used in MS (mL):	0.20	Contra Antonia de Contra de Con
M/B 2 Sigma CSU:	0.325		Spike Volume Used in MSD (mL):		
MB MDC:	0.599		MS Aliquot (L, g, F):	0.808	
MB Numerical Performance Indicator:	3.19		MS Target Conc. (pCi/L, g, F):	9.346	
	Fail*		MSD Aliquot (L, g, F):	0.040	
MB Status vs Numerical Indicator; MB Status vs. MDC:	Pass		MSD Airquis (E, g, F). MSD Target Conc. (pCi/L, g, F):		
MB Status vs. MDC.	Fass		MSD Parget conte, (point, g, r). MS Spike Uncertainty (calculated):	0.458	
Laboratory Control Sample Assessment	LCSD (Y or N)?	lana ang Nigaran ja	MSD Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):	0.700	
Laboratory Control Sample Assessment	LCSD (FORN)7	LCSD63464	Sample Result:	0.149	
Count Data	11/10/2021	LC3D03464	Sample Result 2 Sigma CSU (pCi/L, g, F):		
Count Date: Spike I.D.:	21-029		Sample Result 2 Signa COC (powe, g, 1).	9.315	
Decay Corrected Spike Concentration (pCi/mL):	37.513		Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	1.839	
Volume Used (mL):	0.10	gunt griftenden	Sample Matrix Spike Duplicate Result:	1.000	
	0.10		Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Aliquot Volume (L, g, F):	4.621		Maint Spike Dipacale Resdi 2 Sigina OSO (powe, g, r). MS Numerical Performance Indicator:	-0.184	
Target Conc. (pCi/L, g, F):			MSD Numerical Performance Indicator:	-0.104	1
Uncertainty (Calculated):	0.226		MSD Numerical Performance Indicator. MS Percent Recovery:	98.07%	
Result (pCi/L, g, F):	4.891 1.067		MSD Percent Recovery:	30.0770	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F): Numerical Performance Indicator:	0.48		MSD Fercent Recovery. MS Status vs Numerical Indicator:	Pass	
Percent Recovery:	105.84%		MSD Status vs Numerical Indicator:	( 200	
Status vs Numerical Indicator:	N/A		MSD Status vs Recovery:	Pass	
Status vs Numerican Indicator. 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%	
Edwor / Recovery Emma.	00,10				<b>L</b>
Duplicate Sample Assessment			Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:	30447110002	Enter Duplicate	Sample I.D.		1
Duplicate Sample I.D.	30447110002DUP	sample IDs if	Sample MS I.D.		
Sample Result (pCi/L, g, F):	1,607	other than	Sample MSD I.D.		
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.527	LCS/LCSD in	Sample Matrix Spike Result		
Sample Duplicate Result (pCi/L, g, F):	1.169	the space below.	Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		]
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.459		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:	1.229	30447110002	Duplicate Numerical Performance indicator		
Duplicate RPD:	31.57%	80447110002DUF			
Duplicate Status vs Numerical Indicator:	Pass		MS/ MSD Duplicate Status vs Numerical Indicator		
Duplicate Status vs RPD:	Pass		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.

Ra-228 NELAC DW2

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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-propped. MB activity CMB Puss-

Ra-228\_63464\_DW\_W.xis Ra-228 (R086-8 04Sep2019) xls

**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 2020 Semi-Annual Groundwater Assessment Monitoring Data Statistical Evaluation <b>Completed January 15, 2021</b> 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 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 **September 14, 2020**, with laboratory results received and validated on **October 21, 2020**.

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

# **Statistical Evaluation of Appendix IV Constituents**

The Rule provides four specific options for statistical evaluation of groundwater quality data collected at a coal combustion 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

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

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

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



#### **BACKGROUND DISTRIBUTIONS**

The groundwater analytical results for each sampling event from the background sample location (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 were evaluated to determine the method for UTL calculation. Per the document, *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance,* March 2009, background concentrations were updated based on statistical evaluation of analytical results collected through **March 2020** for **interwell evaluation**, except for beryllium, which was updated through **September 2020.** 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 **September 2020** semi-annual assessment monitoring event were compared to their respective background UTLs and GWPSs (Table I). A sample concentration greater than the background UTL is considered to represent a SSI. A sample concentration greater than the GWPS is considered to represent a SSL. 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 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 SEPTEMBER 2020 SAMPLING EVENT JEFFREY ENERGY CENTER FLY ASH LANDFILL

ST. MARYS, KANSAS

										MCL Cor	nparison						Interwo	ell Analysis	Intrawell	Analysis	Groundwater Protect	ion Standard
Location Id	Frequency of Detection	Percent Non-Detects	Range of Non-Detect	Maximum Detect	Variance	Standard Deviation	Coefficient of Variance	CCR MCL or CFR § 257.95(h)(2)*	Report Result Unit	Number of Detection Exceedances	Number of Non- Detection Exceedances	Outlier Presence	Outlier Removed	Trend	Distribution Well	September 2020 Concentration (mg/L)	Background Limits <sup>1</sup> (UTL) mg/L	SSI	Background Limits <sup>2</sup> (UTL) mg/L	SSI	GWPS (Higher of MCL/ 40 CFR § 257.95(h)(2) or UTL)	SSL
											CCR Appendix-I	V: Arsenic, T	otal (mg/L)	•					•			
MW-FAA-5 (upgradient)	10/16	38%	0.001-0.001	0.0035	7.768E-07	0.0008814	0.6099	0.010	mg/L	0	0	No	No	Stable	Non-parametric	< 0.0010	0.0035				0.010	
MW-FAA-3	3/16	81%	0.001-0.001	0.0011	1.233E-09	0.00003511	0.03513	0.010	mg/L	0	0	Yes	No	NA	Non-parametric	< 0.0010		No				No
MW-FAA-4	0/16	100%	0.0005-0.001		1.562E-08	0.000125	0.129	0.010	mg/L	0	0	NA	NA	NA	NA	< 0.0010		No				No
MW-FAA-6	16/16	0%	-	0.0086	2.139E-06	0.001463	0.2519	0.010	mg/L	0	0	No	No	Stable	Non-parametric	0.0064		No				No
									1		CCR Appendix-I											
MW-FAA-5 (upgradient)	4/16	75%	0.005-0.01	0.013	7.298E-06	0.002702	0.398	2	mg/L	0	0	No	No	NA	Non-parametric	< 0.0050	0.013				2	
MW-FAA-3	16/16	0%	-	0.047	0.00003265	0.005714	0.1779	2	mg/L	0	0	Yes	No	Decreasing	Normal	0.026		Yes				No
MW-FAA-4	16/16	0%	-	0.053	5.583E-06	0.002363	0.04738	2	mg/L	0	0	No	No	Stable	Normal	0.045		Yes				No
MW-FAA-6	16/16	0%	-	0.067	0.0003204	0.0179	0.3739	2	mg/L	0	0	No	No	Decreasing	Non-parametric	0.033		Yes				No
				П			-			1	CR Appendix-IV	: Beryllium,									-	1
MW-FAA-5 (upgradient)	4/13	69%	0.001-0.001	0.0018	7.617E-08	0.000276	0.2507	0.004	mg/L	0	0	Yes	No	NA	Non-parametric	0.0016	0.0018 <sup>3</sup>				0.004	
MW-FAA-3	1/13	92%	0.001-0.002	0.00079	8.301E-08	0.0002881	0.2716	0.004	mg/L	0	0	Yes	No	NA	Non-parametric	< 0.0010		No				No
MW-FAA-4	0/13	100%	0.001-0.002		7.692E-08	0.0002774	0.2575	0.004	mg/L	0	0	NA	NA	NA	NA	< 0.0010		No				No
MW-FAA-6	0/13	100%	0.001-0.002	I	7.692E-08	0.0002774	0.2575	0.004	mg/L	0	0	NA	NA	NA	NA	< 0.0010		No				No
			I	TT			T	I			CCR Appendix-			1	T	l						
MW-FAA-5 (upgradient)	12/16	25%	0.001-0.001	0.0056	2.349E-06	0.001533	0.665	0.006	mg/L	0	0	No	No	Increase	Normal	0.0023	0.00521				0.006	
MW-FAA-3	2/16	88%	0.001-0.001	0.00058	2.375E-08	0.0001541	0.1633	0.006	mg/L	0	0	No	No	NA	Non-parametric	< 0.0010		No				No
MW-FAA-4	3/16	81%	0.0005-0.001	0.0016	5.996E-08	0.0002449	0.2318	0.006	mg/L	0	0	Yes	No	Increase	NA	0.0016		No				No
MW-FAA-6	15/16	6%	0.001-0.001	0.0021	1.116E-07	0.000334	0.2425	0.006	mg/L	0	0	No	No	Stable	Normal	0.0015	<u> </u>	No				No
	10/17	<b>C</b> 0/		1 1 6	0.4024	0.004	0.4025	4.0			CCR Append				L N 1	0.70	4 420		-		L 40	r
MW-FAA-5 (upgradient)	16/17 16/17	6%	0.2-0.2	1.6	0.1031	0.321	0.4025	4.0	mg/L	0	0	Yes	No	Stable	Normal	0.73	1.430	N-			4.0	Nie
MW-FAA-3 MW-FAA-4	16/17	<u>6%</u> 6%	0.2-0.2	0.44	0.003569 0.003993	0.05974	0.1769	4.0 4.0	mg/L	0	0	No Yes	No No	Increase Increase	Normal Normal	0.44		No No				No No
MW-FAA-6	17/17	0%	-	1.2	0.003993	0.1811	0.2198	4.0	mg/L mg/L	0	0	No	No	Stable	Normal	0.43		No				No
NIV-I AA-0	1//1/	078	-	1.2	0.03281	0.1811	0.2158	4.0	IIIg/L	-	CCR Appendix-I	-		Stable	Normai	0.33	1	NO				
MW-FAA-5 (upgradient)	16/16	0%	-	0.16	0.0008562	0.02926	0.2481	0.040	mg/L	16		No No	No	Stable	Normal	0.13	0.171				0.171	r
MW-FAA-3	14/16	12%	0.01-0.02	0.10	0.00008362	0.02920	0.1913	0.040	mg/L	0	0	No	No	Stable	Normal	0.018	0.171	No			0.171	No
MW-FAA-4	14/16	12%	0.01-0.02	0.013	8.662E-06	0.002941	0.1791	0.040	mg/L	0	0	No	No	Increase	Normal	0.010		No				No
MW-FAA-6	12/16	25%	0.01-0.02	0.016	0.00000705	0.002655	0.2146	0.040	mg/L	0	0	Yes	No	Stable	Non-parametric	0.014		No				No
				<u> </u>			<u> </u>		0,	CCF	Appendix-IV:				<u> </u>	<u> </u>						
MW-FAA-5 (upgradient)	16/16	0%	-	0.067	0.0002514	0.01586	0.4733	0.100	mg/L	0	0	No	No	_, Stable	Normal	0.027	0.0652				0.100	1
MW-FAA-3	16/16	0%	-	0.014	0.00000692	0.002631	0.2644	0.100	mg/L	0	0	No	No	Stable	Normal	0.0089		No				No
MW-FAA-4	16/16	0%	-	0.0072	2.815E-06	0.001678	0.4006	0.100	mg/L	0	0	No	No	Increase	Increasing	0.0064		No				No
MW-FAA-6	16/16	0%	-	0.59	0.01729	0.1315	0.302	0.100	mg/L	16	0	No	No	Stable	Normal	0.40		Yes	0.929	No	0.929	No
		CCR Appendix-IV: Radium-226 & 228 (pCi/L)																				
MW-FAA-5 (upgradient)	14/16	12%	0.587-1.26	2.43	0.2731	0.5226	0.4014	5	pCi/L	0	0	No	No	Stable	Normal	1.26	2.342				5	
MW-FAA-3	12/16	25%	0.344-0.857	1.792	0.194	0.4404	0.677	5	pCi/L	0	0	Yes	No	Stable	Normal	0.578		No				No
MW-FAA-4	12/16	25%	0.335-0.929	1.54	0.1595	0.3994	0.5571	5	pCi/L	0	0	No	No	Stable	Normal	0.929		No				No
MW-FAA-6	12/16	25%	0.0926-0.58	1.43	0.1755	0.4189	0.6848	5	pCi/L	0	0	No	No	Stable	Normal	0.286		No				No
										С	CR Appendix-IV	: Selenium,	Total (mg/L)									
MW-FAA-5 (upgradient)	7/16	56%	0.0005-0.001	0.0039	1.057E-06	0.001028	0.6255	0.05	mg/L	0	0	No	No	NA	Normal	< 0.0010	0.00370				0.05	
MW-FAA-3	0/16	100%	8.6E-05-0.001		6.403E-08	0.000253	0.2776	0.05	mg/L	0	0	NA	NA	NA	NA	< 0.0010		No				No
MW-FAA-4	7/16	56%	0.001-0.001	0.0019	6.917E-08	0.000263	0.2312	0.05	mg/L	0	0	No	No	NA	Non-parametric	0.0010		No				No
MW-FAA-6	6/16	62%	0.0005-0.001	0.014	0.00001067	0.003266	1.67	0.05	mg/L	0	0	Yes	No	NA	Non-parametric	0.0033		No				No

Notes and Abbreviations:

<sup>1</sup> Based on background data collected from 08/19/2016 through 03/04/2020, unless otherwise noted.

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

<sup>3</sup> Based on background data collected from 8/19/2016 through 09/14/2020.

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

CCR = coal combustion residuals

GWPS = Groundwater Protection Standard

MCL = maximum contaminant level

mg/L = milligrams per Liter NA = not analyzed

pCi/L = picoCuries per Liter

SSI = statistically significant increase SSL = statistically significant level

UTL = upper tolerance limits

ATTACHMENT 2-2 March 2021 Statistical Analyses



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

#### TECHNICAL MEMORANDUM

November 4, 2022 File No. 129778-035

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 2021 Semi-Annual Groundwater Assessment Monitoring Data Statistical Evaluation <b>Completed July 15, 2021</b> Jeffrey Energy Center Fly Ash Landfill

Pursuant to Code of Federal Regulations Title 40 (40 CFR) §§ 257.93 and 257.95 (Rule), this memorandum summarizes the statistical evaluation of the analytical results for the **March 2021** semi-annual assessment monitoring groundwater sampling event for the Jeffrey Energy Center (JEC) Fly Ash Landfill (FAL). This semi-annual assessment monitoring groundwater sampled on April 1, 2021, to confirm the arsenic concentration collected on March 4, 2021; the result was revised. All laboratory results were received and validated on **April 16, 2021**.

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

# **Statistical Evaluation of Appendix IV Constituents**

The Rule provides four specific options for statistical evaluation of groundwater quality data collected at a coal combustion 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 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 parametric TL methods were 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 2021** 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 were evaluated to determine the method for UTL calculation. Per the document, *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance,* March 2009, background concentrations were updated based on statistical evaluation of analytical results collected through **March 2020** for **interwell evaluation**, except for beryllium, which was updated through **September 2020.** Background concentrations were updated through **September 2020** 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 2021** 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 2021, 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 2021 SAMPLING EVENT JEFFREY ENERGY CENTER

FLY ASH LANDFILL

LY ASH LANE										MCL Co	omparison	1					Interwel	ll Analysis	Intrawell	Analysis	Groundwater Protectio	on 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 2021 Concentration (mg/L)	Background Limits <sup>1</sup> (UTL) mg/L	SSI	Background Limits <sup>2</sup> (UTL) mg/L	SSI	GWPS (Higher of MCL/ 40 CFR § 257.95(h)(2) or UTL)	SSL
											CCR Appendix-	IV: Arsenic, T	otal (mg/L)						·			
MW-FAA-5	10/17	41%	0.001-0.001	0.0035	7.399E-07	0.0008602	0.6063	0.010	mg/L	0	0	No	No	Stable	Non-parametric	< 0.0010	0.0035				0.010	
MW-FAA-3	3/17	82%	0.001-0.001	0.0011	1.156E-09	0.000034	0.03402	0.010	mg/L	0	0	Yes	No	NA	Non-parametric	< 0.0010		No				No
MW-FAA-4	0/17	100%	0.0005-0.001		1.471E-08	0.0001213	0.1249	0.010	mg/L	0	0	NA	NA	NA	NA	< 0.0010		No				No
MW-FAA-6	17/17	0%	-	0.0086	0.000002139	0.001463	0.2558	0.010	mg/L	0	0	No	No	Stable	Non-parametric	0.0043		Yes				No
	4/47	7.04	0.005.0.04	0.010		0.000.51	0.0000	2	//		CCR Appendix-					0.0050						
MW-FAA-5	4/17	76%	0.005-0.01	0.013	0.00000703	0.002651	0.3968	2	mg/L	0	0	No	No	NA	Non-parametric	< 0.0050	0.013	Vaa			2	Ne
MW-FAA-3	17/17	0%	-	0.047	0.00003118	0.005584	0.1748	2	mg/L	0	0	Yes	No	Decreasing	Normal	0.029		Yes				No
MW-FAA-4	17/17 17/17	0% 0%	-	0.053	0.00005309	0.002304 0.01827	0.04614 0.3932	2	mg/L	0	0	No	No	Stable	Normal	0.051 0.024		Yes				No No
MW-FAA-6	1//1/	0%	-	0.067	0.0003339	0.01827	0.3932	Z	mg/L	0	CCR Appendix-IN	No	No Total (mg/l)	Decreasing	Non-parametric	0.024		Yes				INO
MW-FAA-5	4/14	71%	0.001-0.001	0.0018	7.104E-08	0.0002665	0.2437	0.004	mg/L	0		Yes	No	NA	Non-parametric	< 0.0010	0.0018 <sup>3</sup>				0.004	
MW-FAA-3	1/14	93%	0.001-0.001	0.00079	7.689E-08	0.0002773	0.2437	0.004	mg/L	0	0	Yes	No	NA	Non-parametric	< 0.0010	0.0018	No			0.004	No
MW-FAA-4	0/14	100%	0.001-0.002	0.00075	7.143E-08	0.0002673	0.2494	0.004	mg/L	0	0	NA	NA	NA	NA	< 0.0010		No				No
MW-FAA-6	0/14	100%	0.001-0.002		7.143E-08	0.0002673	0.2494	0.004	mg/L	0	0	NA	NA	NA	NA	< 0.0010		No				No
	-,									-	CCR Appendix-			<u> </u>								
MW-FAA-5	13/17	24%	0.001-0.001	0.0056	0.00000224	0.001497	0.6364	0.006	mg/L	0	0	No	No	Increase	Normal	0.0031	0.00521				0.006	
MW-FAA-3	2/17	88%	0.001-0.001	0.00058	2.245E-08	0.0001498	0.1582	0.006	mg/L	0	0	No	No	NA	Non-parametric	< 0.0010		No				No
MW-FAA-4	4/17	76%	0.0005-0.001	0.0021	1.203E-07	0.0003468	0.3103	0.006	mg/L	0	0	Yes	No	Increase	NA	0.0021		No				No
MW-FAA-6	16/17	6%	0.001-0.001	0.0021	1.049E-07	0.000324	0.236	0.006	mg/L	0	0	No	No	Stable	Normal	0.0013		No				No
										-	CCR Append	ix-IV: Fluoric	le (mg/L)									
MW-FAA-5	17/18	6%	0.2-0.2	1.6	0.1021	0.3195	0.3923	4	mg/L	0	0	Yes	No	Stable	Normal	1.1	1.430				4.0	
MW-FAA-3	16/18	11%	0.2-0.2	0.44	0.004412	0.06642	0.2013	4	mg/L	0	0	No	No	Increase	Normal	< 0.20		No				No
MW-FAA-4	16/18	11%	0.2-0.2	0.45	0.004999	0.0707	0.2073	4	mg/L	0	0	Yes	No	Increase	Normal	< 0.20		No				No
MW-FAA-6	18/18	0%	-	1.2	0.03511	0.1874	0.2232	4	mg/L	0	0	No	No	Stable	Normal	1.1		No				No
	47/47	00/		0.16	0.000004.0	0.02002	0.2440	0.040		47	CCR Appendix-			Cuble	Nerved	0.44	0.474				0.474	
MW-FAA-5	17/17 15/17	0%	-	0.16	0.0008313	0.02883	0.2418 0.2146	0.040	mg/L	17	0	No	No	Stable	Normal	0.14	0.171	N-			0.171	
MW-FAA-3 MW-FAA-4	15/17	12% 12%	0.01-0.02	0.023	0.00001153	0.003395	0.2146	0.040	mg/L mg/L	0	0	No No	No No	Stable	Normal Normal	0.023		No No				No No
MW-FAA-6	12/17	29%	0.01-0.02	0.021	0.000009340	0.002635	0.185	0.040	mg/L	0	0	Yes	No	Increase Stable	Non-parametric	< 0.021		No				No
WWW-I AA-0	12/17	2376	0.01-0.02	0.010	0.000000341	0.002033	0.2155	0.040	ing/L		CR Appendix-IV:				Non-parametric	< 0.010		NO				110
MW-FAA-5	17/17	0%	-	0.067	0.0002369	0.01539	0.4631	0.100	mg/L	0	0	No	No	Stable	Normal	0.029	0.0652				0.100	
MW-FAA-3	17/17	0%	-	0.014	0.000006668	0.002582	0.2622	0.100	mg/L	0	0	No	No	Stable	Normal	0.0082	0.0001	No			01200	No
MW-FAA-4	17/17	0%	-	0.0073	0.000003208	0.001791	0.4098	0.100	mg/L	0	0	No	No	Increase	Increasing	0.0073		No				No
MW-FAA-6	17/17	0%	-	0.59	0.01638	0.128	0.2918	0.100	mg/L	17	0	No	No	Stable	Normal	0.49			0.901	No	0.901	No
					•		•				CCR Appendix-IV:	Radium-226	& 228 (pCi/	L)	•							
MW-FAA-5	15/17	12%	0.587-1.26	2.43	0.257	0.507	0.3872	5	pCi/L	0	0	No	No	Stable	Normal	1.43	2.342				5	
MW-FAA-3	12/17	29%	0.344-0.857	1.792	0.1835	0.4284	0.6687	5	pCi/L	0	0	Yes	No	Stable	Normal	0.482		No				No
MW-FAA-4	13/17	24%	0.335-0.929	1.54	0.1601	0.4001	0.5394	5	pCi/L	0	0	No	No	Stable	Normal	1.14		No				No
MW-FAA-6	12/17	29%	0.0926-0.58	1.43	0.1648	0.406	0.6684	5	pCi/L	0	0	No	No	Stable	Normal	0.538		No				No
		r				1	1			1	CCR Appendix-I		1	1	1	r					· · · · ·	
MW-FAA-5	7/17	59%	0.0005-0.001	0.0039	0.000001016	0.001008	0.6275	0.05	mg/L	0	0	No	No	NA	Normal	< 0.0010	0.00370				0.05	
MW-FAA-3	0/17	100%	8.6E-05-0.001		6.049E-08	0.0002459	0.2683	0.05	mg/L	0	0	NA	NA	NA	NA	< 0.0010		No				No
MW-FAA-4	7/17	59%	0.001-0.001	0.0019	6.596E-08	0.0002568	0.2274	0.05	mg/L	0	0	Yes	No	NA	Non-parametric	< 0.0010		No				No
MW-FAA-6 Iotes and Abbrevia	6/17	65%	0.0005-0.001	0.014	0.00001005	0.003171	1.669	0.05	mg/L	0	0	Yes	No	NA	Non-parametric	< 0.0010		No				No

<sup>1</sup> Based on background data collected from 08/19/2016 through 03/04/2020, unless otherwise noted.

<sup>2</sup> Based on background data collected from 08/19/2016 through 09/14/2020.

<sup>3</sup> Based on background data collected from 08/19/2016 through 09/14/2020.

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

CCR = coal combustion residuals

GWPS = Groundwater Protection Standard

MCL = maximum contaminant level

mg/L = milligrams per Liter

NA = not analyzed

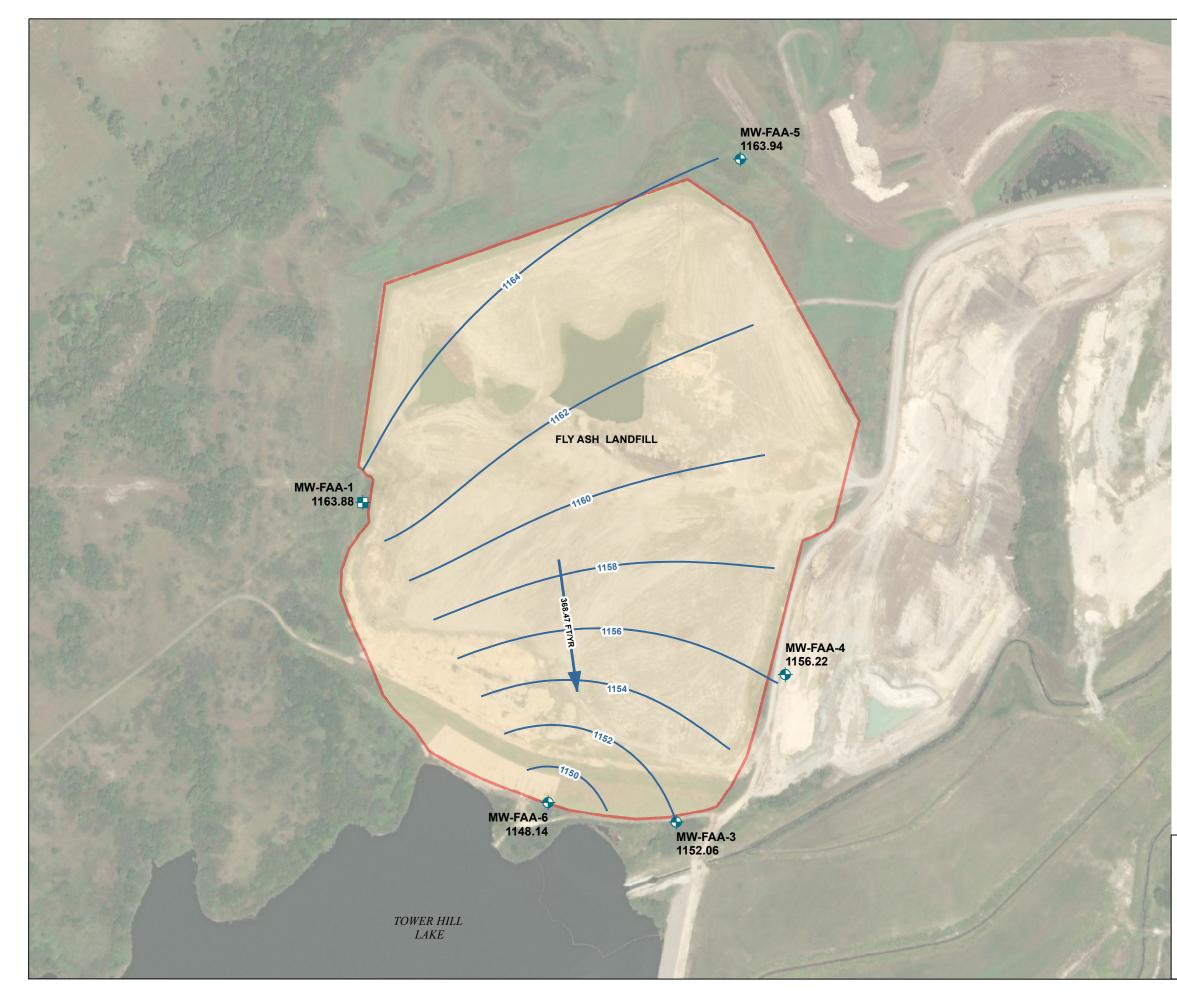
pCi/L = picoCuries per Liter

SSI = statistically significant increase SSL = statistically significant level

UTL = upper tolerance limits



ATTACHMENT 3 Revised Groundwater Potentiometric Maps



# LEGEND MW-FAA-4WELL NAME AND GROUNDWATER ELEVATION IN FEET1167.47ABOVE MEAN SEA LEVEL (AMSL), MARCH 2021 -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 04 MARCH 2021.

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

4. AERIAL IMAGERY SOURCE: ESRI, 3 SEPTEMBER 2019



800

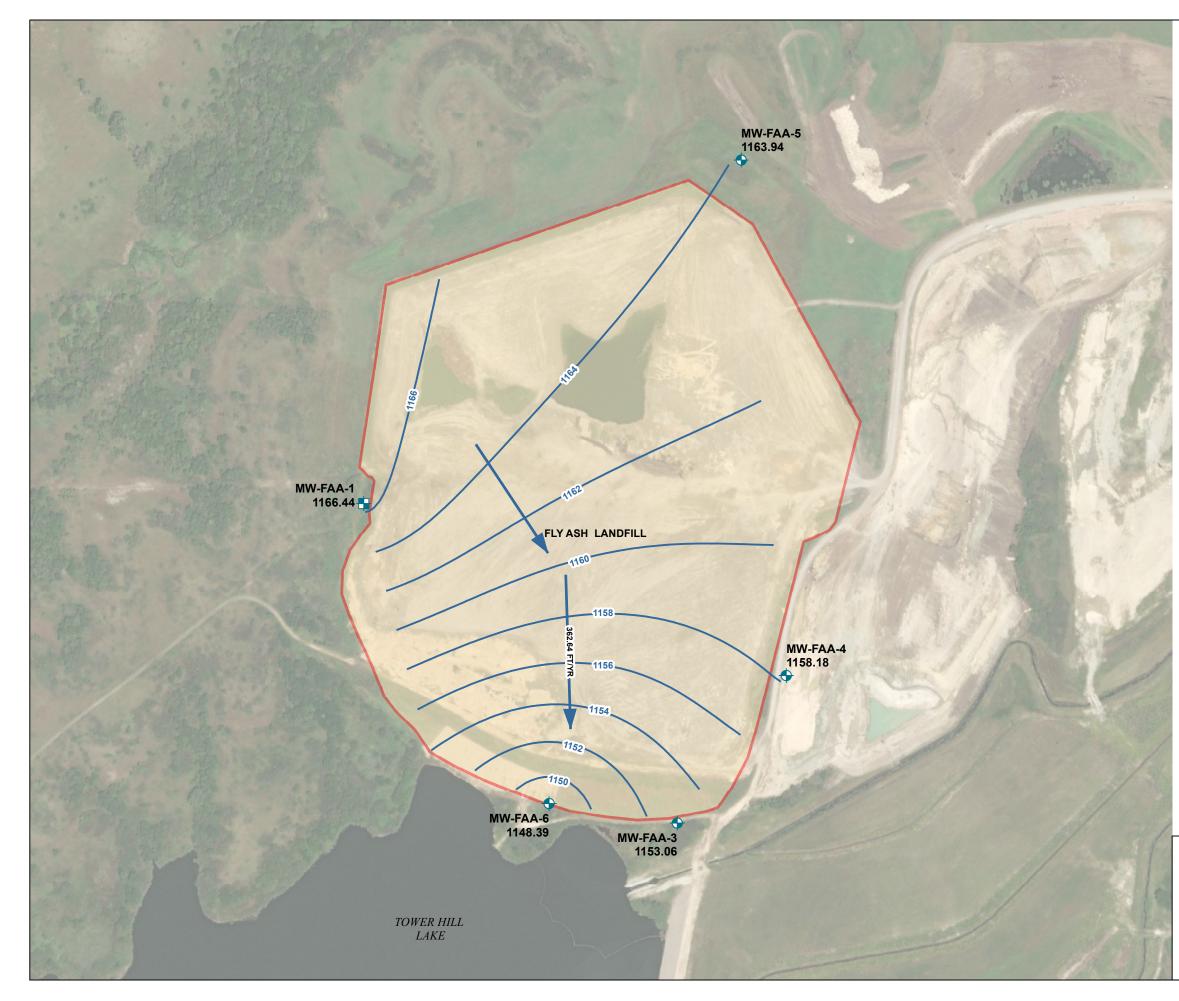
100 SCALE IN FEET

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

FLY ASH LANDFILL GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP MARCH 4, 2021



FIGURE 2



# LEGEND MW-FAA-4WELL NAME AND GROUNDWATER ELEVATION IN FEET1167.47ABOVE MEAN SEA LEVEL (AMSL), JUNE 2021 -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 09 JUNE 2021.

3. THE GROUNDWATER FLOW RATE WAS APPROXIMATED USING THE HYDRAULIC GRADIENT CALCULATED FROM GROUNDWATER POTENTIOMETRIC ELEVATIONS MEASURED 09 JUNE 2021 AND THE CONDUCTIVITY VALUES AND EFFECTIVE POROSITY VALUES OBTAINED FROM SLUG TESTS COMPLETED APRIL 2016.

4. AERIAL IMAGERY SOURCE: ESRI, 03 SEPTEMBER 2019



800

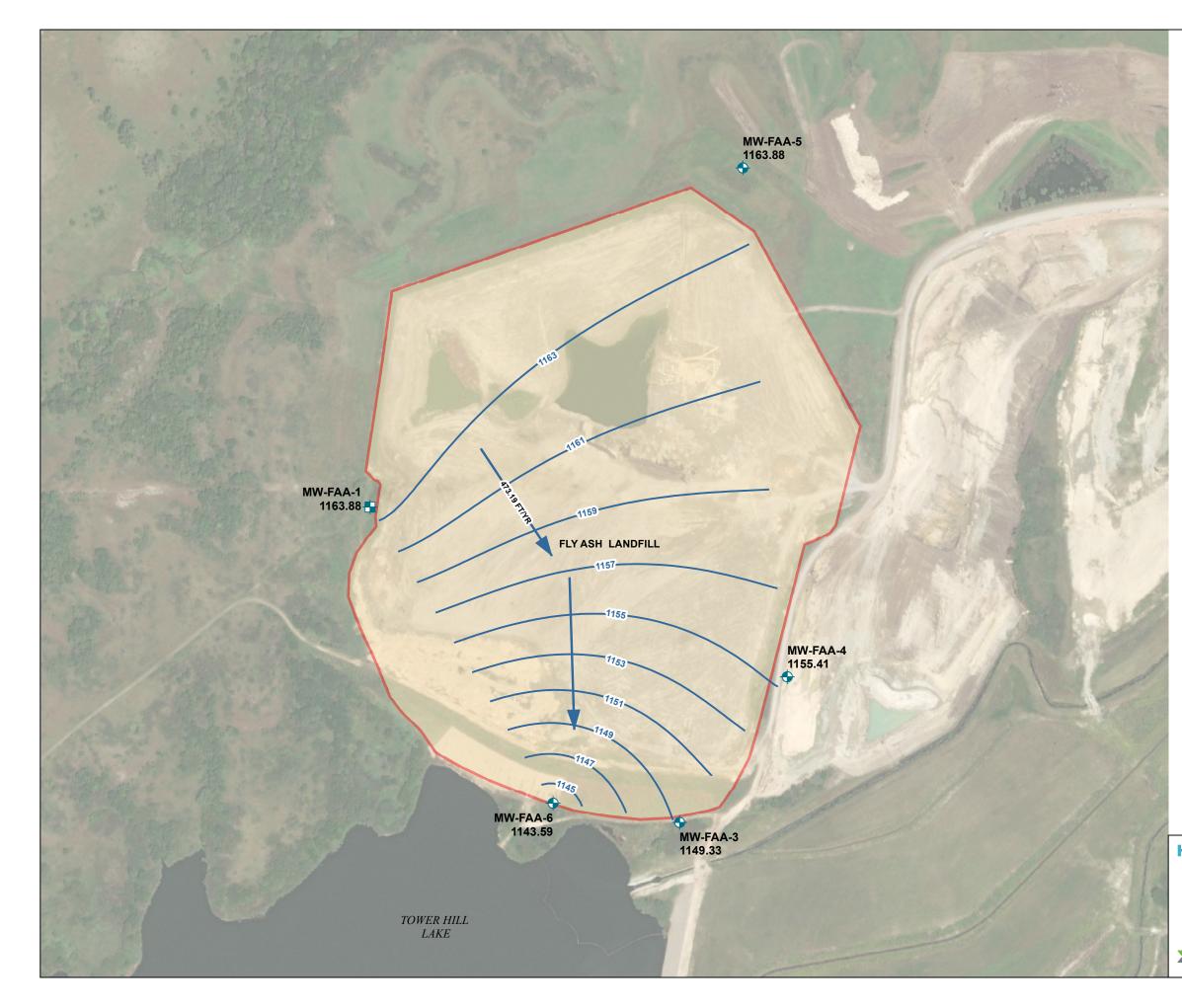
400 SCALE IN FEET

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

FLY ASH LANDFILL GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP JUNE 09, 2021

>> evergy NOVEMBER 2022

FIGURE 3



## LEGEND MW-FAA-4WELL NAME AND GROUNDWATER ELEVATION IN FEET1167.47ABOVE MEAN SEA LEVEL (AMSL), SEPTEMBER 2021 -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 14 SEPTEMBER 2021.

3. THE GROUNDWATER FLOW RATE WAS APPROXIMATED USING THE HYDRAULIC GRADIENT CALCULATED FROM GROUNDWATER POTENTIOMETRIC ELEVATIONS MEASURED 14 SEPTEMBER 2021 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, 2021



FIGURE 4