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Moab UMTRA Project
Groundwater and Surface Water Monitoring Report
July through December 2024

Revision 0

April 2025

U.S. Department of Energy

Office of Environmental Management

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Moab UMTRA Project
Groundwater and Surface Water Monitoring Report July through December 2024

Revision 0

Review and Approval

4/3/2025

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Revision History

Revision	Date	Reason for Revision
0	April 2025	Initial issue.

Contents

Figures

Tables

Appendices

Acronyms and Abbreviations

bgs	below ground surface
CF	configuration
CFR	Code of Federal Regulations
cm	centimeter
COC	chain-of-custody
DOE	U.S. Department of Energy
EDD	electronic data deliverable
EPA	U.S. Environmental Protection Agency
ft	feet or foot
IDL	instrument detection limit
MB	method blank
MDL	method detection limit
MESa	Moab Environmental Sampling Database
mg/L	milligrams per liter
MS	matrix spike
MSD	matrix spike duplicate
RIN	report identification number
RL	reporting limit
RPD	relative percent difference
SDG	sample data group
UMTRA	Uranium Mill Tailings Remedial Action
yr	year

1.0 Introduction

1.1 Purpose

The purpose of this semi-annual report is to present the results and provide interpretation of the data associated with groundwater and surface water samples collected from the U.S. Department of Energy (DOE) Moab Uranium Mill Tailings Remedial Action (UMTRA) Project site during the second half of calendar year 2024. The results of the data validation process are also presented.

Groundwater samples were collected in October 2024 from the Interim Action Well Field Configuration (CF) 4 monitoring wells and from the CF5 groundwater extraction wells. These locations are shown in Figure 1. Samples were also collected from Crescent Junction monitoring wells 0202 and 0205 in August and again in November 2024 (Figure 2).

1.2 Scope

This report presents a summary of sampling events and data assessments, including a summary of the anomalous data generated by the validation process and results for these events. Sampling and analyses were conducted in accordance with the *Moab UMTRA Project Surface Water/Groundwater Sampling and Analysis Plan* (DOE-EM/GJRAC1830). All data validation follows criteria in the *Moab UMTRA Project Standard Practice for Validation of Laboratory Data* (DOE-EM/GJRAC1855). The CF4 and 5 and Crescent Junction sampling events were validated to Level 2.

Appendix A includes the Water Sampling Field Activities Verification, Water Quality Data, Minimums and Maximums Report, Static Water Level Data, and the trip report associated with the CF4 and CF5 and sampling events. Appendix B provides similar documentation for the Crescent Junction sampling events.

The Minimums and Maximums analyses were generated by the Moab Environmental Sampling (MESa) database to determine if the applicable data were within a normal statistical range. The new data set was compared to the historical data to determine if the new data fall outside the historical range. The results are not considered anomalous if: (1) identified low concentrations are the result of low detection limits, (2) the concentration detected is less or more than 50 percent of historical minimum or maximum values, or (3) there were fewer than five historical samples for comparison. Anomalous results are provided in tables in the “Data Assessment” section for each sampling event.

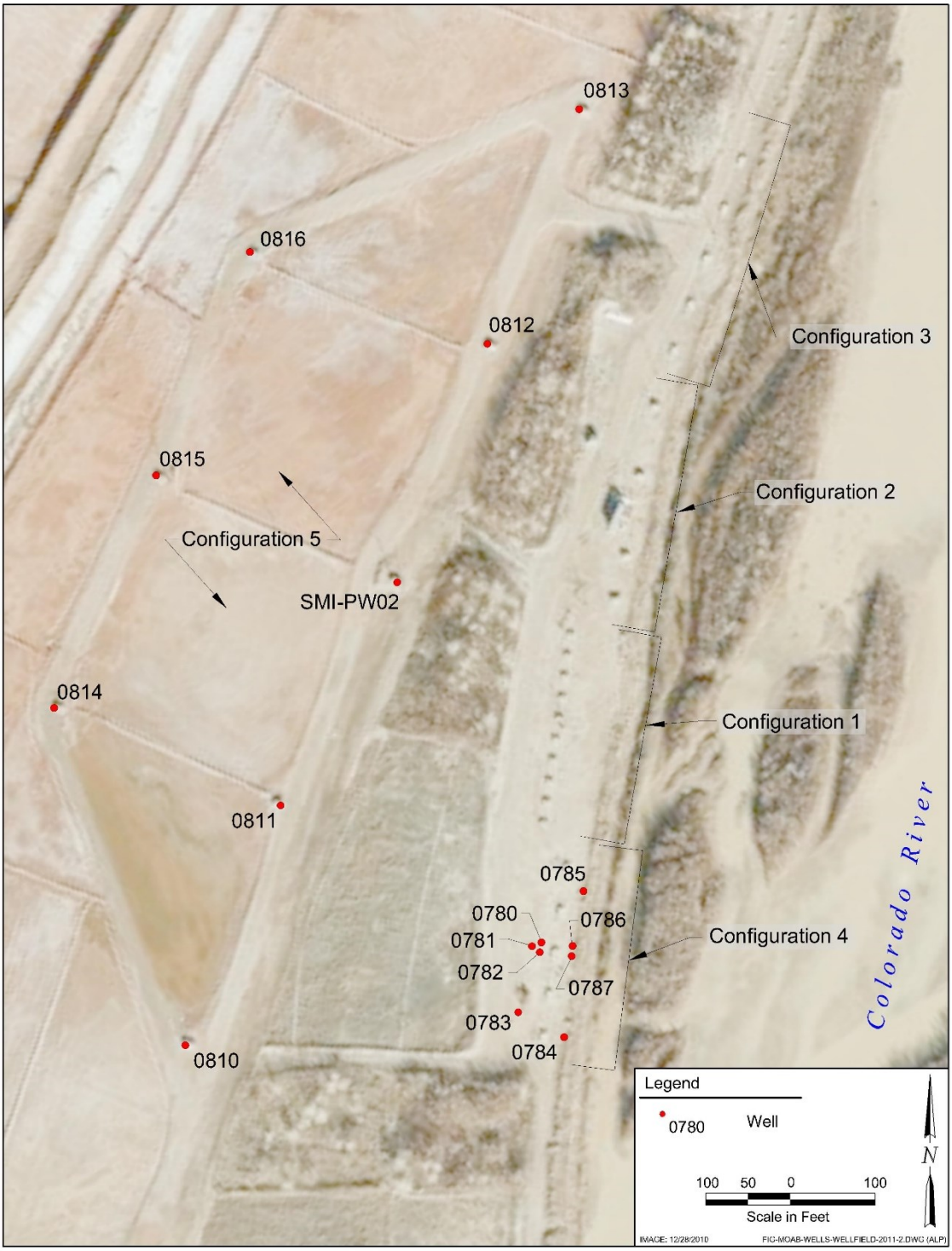

Figure 1. October 2024 CF4 and CF5 Groundwater Sampling Locations

Figure 2. Crescent Junction Sampling Locations (0202 and 0205)

1.3 Data Validation Definitions

The following definitions are associated with the data validation process. Data validation details are provided in the following sections of this report for the individual sampling events.

Method and Calibration Blanks
Method blanks (MBs) are analyzed to assess any contamination that may have occurred during sample preparation. Both initial calibration blanks and continuing calibration blanks are analyzed to assess instrument contamination before and during sample analysis. Depending on method requirements, detected sample results greater than the method detection limit (MDL) or instrument detection limit (IDL) are qualified "J" when the detections are less than five times the blank concentration. Non-detects are not qualified.

Matrix Spike and Replicate Analysis
Matrix Spike (MS) sample analysis, performed at a frequency of one per 20 samples unless otherwise noted, is a measure of the ability to recover analytes in a particular matrix. The MS sample results are required to be within the recovery limits.

Laboratory Replicate Analysis
The laboratory replicated results demonstrate acceptable laboratory precision. The relative percent difference (RPD) values for the reported matrix spike duplicate (MSD) results for all other analytes should be less than 20 percent for results greater than five times the reporting limit (RL).

Field Duplicate Analysis
Field duplicate samples are collected and analyzed as an indication of the overall precision of the measurement process. The precision observed includes both field and laboratory precision and has more variability than laboratory replicates, which measure only laboratory performance. The duplicate results must meet the U.S. Environmental Protection Agency (EPA)-recommended laboratory duplicate criteria of less than 20 RPD for results that are greater than five times the reporting limit (RL).

2.0 2024 CF4 and CF5 Sampling Events

2.1 Summary

Groundwater samples were collected from six of the eight CF5 extraction wells to determine mass removal calculations for ammonia and uranium concentrations and to assess well field performance. Extraction wells 0815 and 0816 were not sampled due to submersible pump issues.

Groundwater samples were also collected from the eight CF4 monitoring wells to determine how the freshwater injection system impacts shallow zone ammonia concentrations, particularly downgradient of the CF4 injection wells.

2.2 2024 CF4 and CF5 Data Assessment

2.2.1 Laboratory Performance Assessment

This validation was performed according to *Standard Practice for Validation of Laboratory Data*. The procedure was applied at Level 2, Data Deliverables Examination. All analyses were successfully completed.

General Information and Validation Results

RIN	2410151
Laboratory:	GEL Laboratories, Charleston, South Carolina
SDG Number:	690488
Analysis:	Metals and Inorganics
Validator:	James Ritchey
Review Date:	March 2025

The samples were prepared and analyzed using accepted procedures as shown in Table 1.

Table 1. 2024 CF4 and CF5 Sampling Event, Analytes and Methods

Analyte	Preparation Method	Analytical Method
Ammonia as N, NH_3-N	N/A	EPA 350.1
Uranium	SW-846 3005A	SW-846 3005A/6020B

Data Qualifier Summary
Analytical results were qualified as listed in Table 2. Refer to Table 3 for an explanation of the data qualifiers applied.

Table 2. 2024 CF4 and CF5 Sampling Event, Data Qualifiers

Sample Number	Location	Analyte	Flag	Reason
SDG 690488-001 thru -030	All in SDG 690488	Uranium	J	MS-1, MSD-1
SDG 690488-001 thru -030	All	Ammonia	J	FD-1

Notes: "J" indicates results are estimated; it becomes "UJ" for analytical results lower than the detection limit.

Table 3. 2024 CF4 and CF5 Sampling Event, Reason Codes for Data Flags

Reason Code	Qualifier (Detects)	Qualifier (Non-detects)	Explanation
MS-1	J	UJ	The MS sample chosen was from another client.
MSD-1	J	UJ	No MSD data was included in the narrative.
FD-1	J	UJ	Analyte was detected in method blank

Notes: "J" indicates results are estimated; it becomes "UJ" for analytical results lower than the detection limit. U indicates the result is below the detection limit.

Sample Shipping/Receiving

GEL Laboratories in Charleston, South Carolina received a total of 30 samples from 14 locations for report identification number (RIN) 2410151 in one shipment that arrived October 16, 2024 (tracking number 1ZE243120191400400).

The sample data group (SDG) was accompanied by a Chain of Custody (COC) form. The COC form was checked to confirm that all the samples were listed on the form with sample collection dates and times, and that signatures and dates were present indicating sample relinquishment and receipt.

Preservation and Holding Times

The samples were received intact on October 16, 2024, with a temperature of 4°C. All samples were received in the correct container types and all samples were analyzed within the applicable holding times.

Case Narratives

The case narratives were reviewed, and all detects were found to be within quality-control procedures except for the following:

Field Duplicate Analysis

Field duplicate samples are collected and analyzed as an indication of overall precision of the measurement process. The precision observed includes both field and laboratory precision and has more variability than laboratory replicates, which measure only laboratory performance. One field duplicate was collected from 0810 (Lab IDs 690488017 through 690488020). The U.S. Environmental Protection Agency (EPA) has a recommended laboratory duplicate criterion of less than 20 percent relative difference (RPD) for results that are greater than 5 times the RL. The duplicate did not meet this criterion, and data were flagged "J" for reason FD-1.

Matrix Spike and Replicate Analysis

For the uranium analyses in SDG 690488, the laboratory performed a Laboratory Control Sample Duplicate (LCSD) was used. As a result, there was not an MSD or an SD sample analysis. Therefore, all uranium data in SDG 690488 are flagged "J" for reasons MS-1, MSD-1. Per the case narrative:

An LCSD was used in place of matrix QC. 1205897596 (LCSD).

Method and Calibration Blanks
Method blanks (MBs) are analyzed to assess any contamination that may have occurred during sample preparation. Both initial calibration blanks (ICB) and continuing calibration blanks (CCBs) are analyzed to assess instrument contamination prior to and during sample analysis. Detected sample results associated with blanks results greater than the MDL or IDL (depending on method requirements) would be "J" qualified when the detections were less than five times the blank concentration. Non-detects were not qualified.

Completeness
Results were reported in the correct units for all analytes requested using contract-required laboratory qualifiers.

Electronic Data Deliverable Files
The Electronic Data Deliverable (EDD) file for SDG 690488 was received on November 13, 2024. The contents of the EDD were manually examined to ensure all and only the requested data were delivered in compliance with requirements and that the sample results accurately reflected the data contained in the sample data package.

2.2.2 Minimums and Maximums Report and Anomalous Data Review
Based on the Minimums and Maximums Report for this sampling event (Appendix A), there are no anomalous data associated with this sampling event.

2.3 October 2024 CF4 and CF5 Sampling Results

CF4 Sampling
The injection operations were intermittent following the 2024 spring runoff peak flow, with the system primarily operational during the week due to system repairs and limited ability to divert water from the river to the freshwater pond. However, the injection system was operational for the previous two months prior to the sampling event.

Ammonia concentrations from October 2024 are presented in Table 4. For comparison purposes, and to determine if the system effectively decreases ammonia concentrations in the shallow groundwater system, baseline concentrations are also provided in Table 4. These baseline concentrations were measured in April 2024, after only a limited volume (less than 600,000 gal) was injected through the CF4 wells between November 2023 and April 2024.

Compared to the April 2024 concentrations, the October 2024 results indicate the system is effective in reducing the ammonia concentrations, especially downgradient between 15 and 35 feet (ft) below ground surface (bgs), which is the zone in which the CF4 wells inject fresh water into the subsurface.

Table 4. CF4 Monitoring Well Ammonia Concentrations, October 2024

Location	Sample Depth (ft bgs)	Upgradient or Downgradient of Injection Wells	Baseline Ammonia Concentration* (mg/L)	October 10, 2024 Ammonia Concentration (mg/L)
0780	28	Upgradient	289	82.1
0781	46	Upgradient	983	581
0782	33	Upgradient	869	351
0783	18	Upgradient	67.3	55.6
0784	18	Downgradient	0.08	0.84
0785	18	Downgradient	182	7.21
0786	28	Downgradient	668	254
0787	36	Downgradient	1,430	815

Notes: * = Concentrations measured in April 2024, when injection system operations were limited between November 2023 and April 2024.

Figure 3 displays the ammonia concentrations in samples collected down gradient from a depth of 18 ft bgs (wells 0784 and 0785) since 2016, along with the CF4 weekly injected volume. As the plot displays, the injection of approximately 1.1 mil gal into the CF4 wells prior to the October 2024 sampling event significantly decreased the downgradient ammonia concentrations in the sample collected from well 0785. Concentrations decreased from 182 to 7.2 mg/L at this location between April and October 2024.

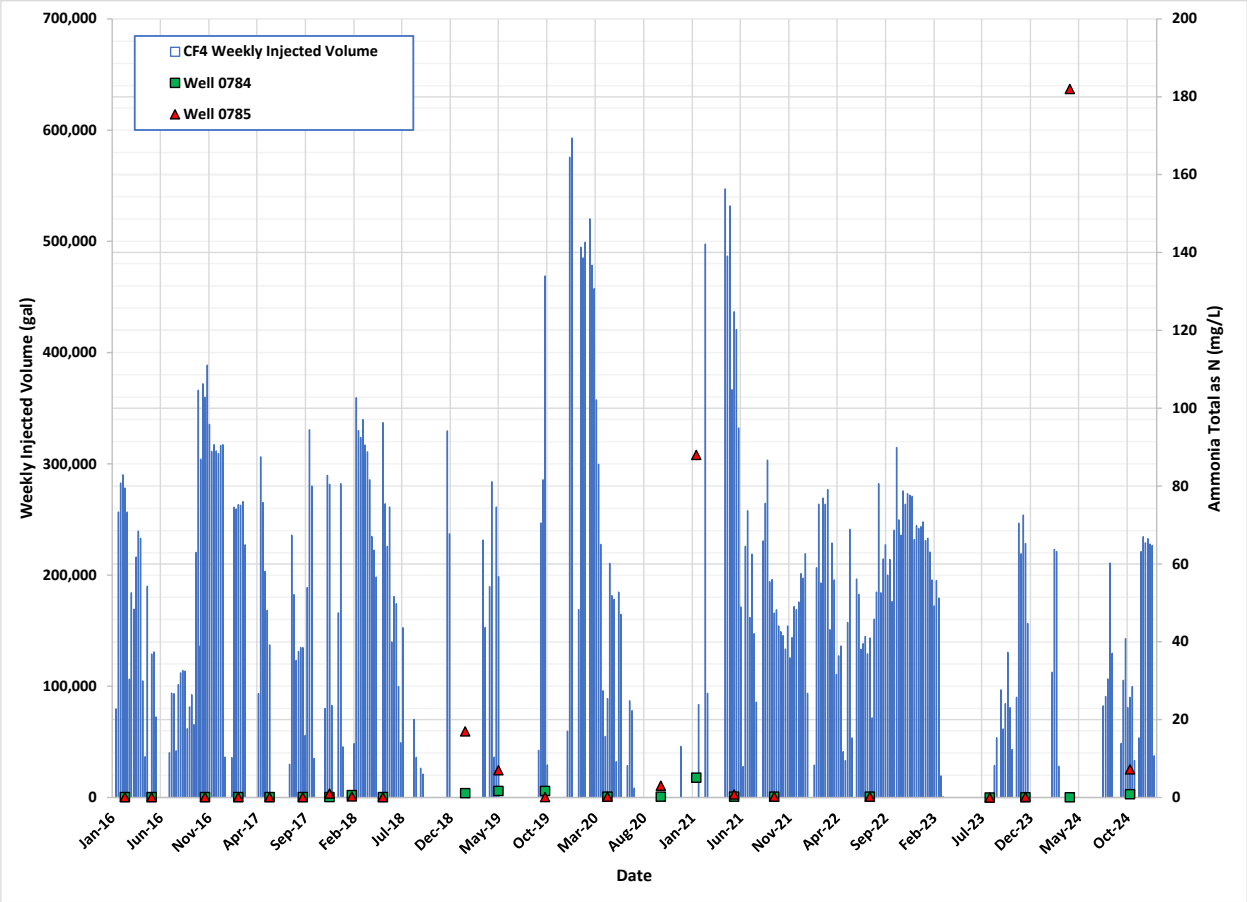

Figure 3. January 2016 through December 2024 CF4 Shallow Zone Ammonia Groundwater Concentrations in Response to Freshwater Injection

CF5 Sampling

Groundwater samples were also collected from the CF5 extraction wells (locations shown on Figure 1) in October 2024. The system had been consistently extracting groundwater from the shallow aquifer since late March 2024, with more than 4.8 mil gal of groundwater removed from the groundwater system. CF5 extraction well ammonia and uranium concentrations associated with this sampling event are presented in Table 5.

Time versus concentration plots (Figures 4 through 7) were also generated to display the CF5 extraction well ammonia and uranium concentrations measured since July 2010. This nearly covers the timeframe these wells have been utilized to extract groundwater (they were brought online starting in April 2010). Trend lines are also included in these plots.

Table 5. 2024 CF5 Extraction Well Analytical Results

Location	Sample Date	Ammonia (mg/L)	Uranium (mg/L)
0810	10/10/2024	249	2.74
0811		295	2.49
0812		300	2.10
0813		245	1.69
0814		139	2.79
PW02		327	2.71

Table 6 provides the geometric mean, standard deviation, 95% confidence interval, and the change in ammonia concentration based on the linear trend line for the CF5 extraction wells since 2010. The trend lines indicate that on average the ammonia concentrations are decreasing at a rate ranging from 2.6 to 20.2 mg/L/yr. As of 2024, the CF5 extraction well geometric mean ammonia concentrations range from 167 to 443 mg/L. Based on the ammonia analytical results since 2010, the CF5 extraction well concentrations decrease on average 10.9 mg/L/yr.

Table 6. Statistical Data for CF5 Extraction Well Ammonia Data, 2010 through 2024

Ammonia Concentrations (2010 – 2024)	CF5 Extraction Well							
	0810	0811	0812	0813	0814	0815	0816	PW02
Geometric Mean (mg/L)	311.9	379.5	403.2	322.1	183.1	196.2	166.8	443.3
Standard Deviation (mg/L)	42.2	68.5	71.2	93.7	53.7	86.4	44.4	74.9
95% Confidence Interval (mg/L)	15.9	26.8	26.9	35.3	21.5	33.9	18.1	27.7
Change in Concentration (mg/L/yr)	-6.8	-13.6	-8.7	-2.6	-11.2	-20.2	-8.5	-15.7

Statistical data for the uranium results since 2010 are presented in Table 7. Trend lines applied to the uranium results over the past 14 years indicate uranium concentrations in four of the CF5 wells (0810, 0811, 0815, and PW02) on average are decreasing 0.02 mg/L/yr, while the concentrations in the wells 0813, 0814, and 0816 are increasing an average of 0.02 mg/L/yr. Well 0812 concentrations indicate no significant changes. Concentrations are affected by the periodic influx of oxygenated water that impacts the subsurface geochemistry.

Table 7. Statistical Data for CF5 Extraction Well Uranium Data, 2010 through 2024

Uranium Concentrations (2010 – 2024)	CF5 Extraction Well							
	0810	0811	0812	0813	0814	0815	0816	PW02
Geometric Mean (mg/L)	2.96	2.60	2.07	1.54	2.75	3.10	2.48	3.08
Standard Deviation (mg/L)	0.45	0.41	0.28	0.39	0.22	0.27	0.22	0.49
95% Confidence Interval (mg/L)	0.17	0.16	0.11	0.15	0.09	0.10	0.09	0.18
Change in Concentration (mg/L/yr)	-0.03	-0.01	0.00	0.04	0.01	-0.01	0.01	-0.04

Figure 4 is the time versus ammonia concentration plot for extraction wells 0810 through 0813 and SMI-PW02, all of which are located along the CF5 southeastern boundary. Figure 5 displays a time versus uranium concentration plot for the same set of wells. Figures 6 and 7 are the time versus ammonia and uranium concentration plots, respectively, for CF5 wells 0814 through 0816 (which are located closer to the base of the tailings pile).

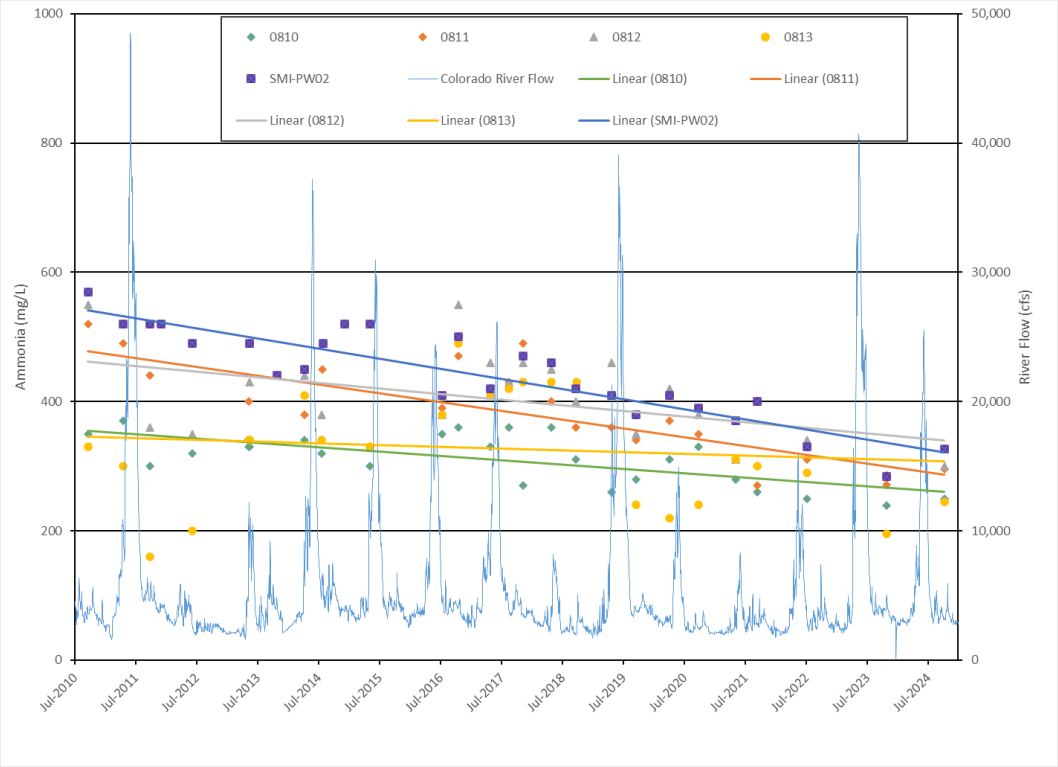

Figure 4. CF5 Extraction Wells 0810, 0811, 0812, 0813, and SMI-PW02 Time versus Ammonia Concentration Plot

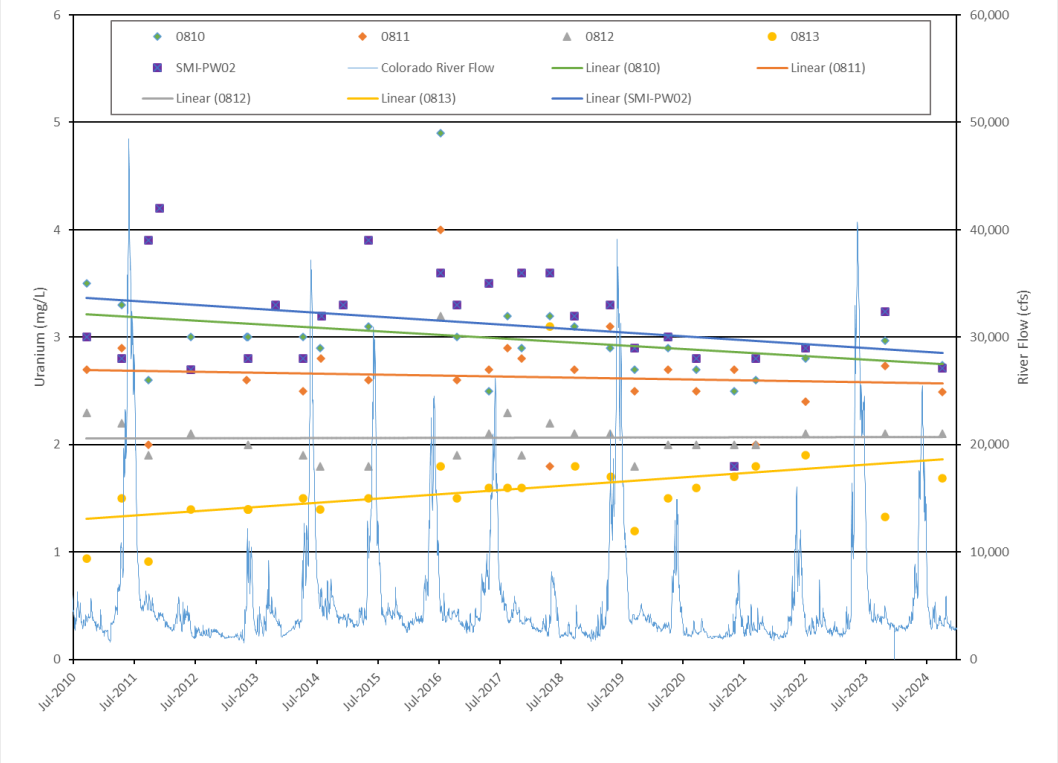

Figure 5. CF5 Extraction Wells 0810, 0811, 0812, 0813, and SMI-PW02 Time versus Uranium Concentration Plot

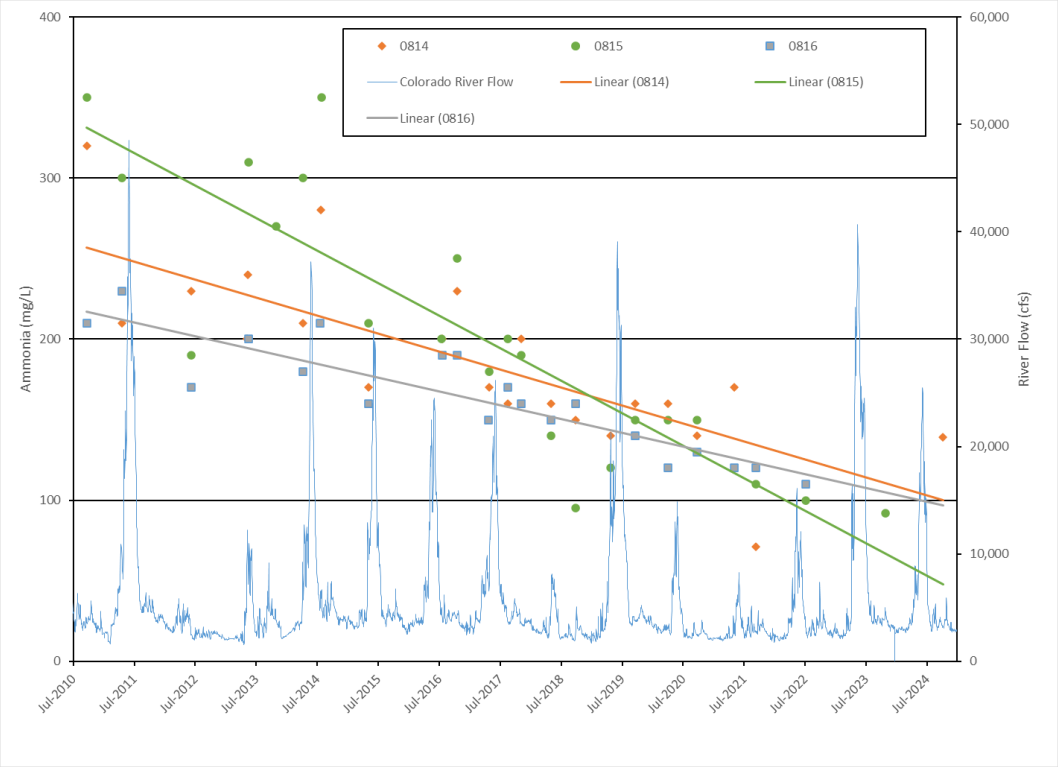

Figure 6. CF5 Extraction Wells 0814, 0815, and 0816
Time versus Ammonia Concentration Plot

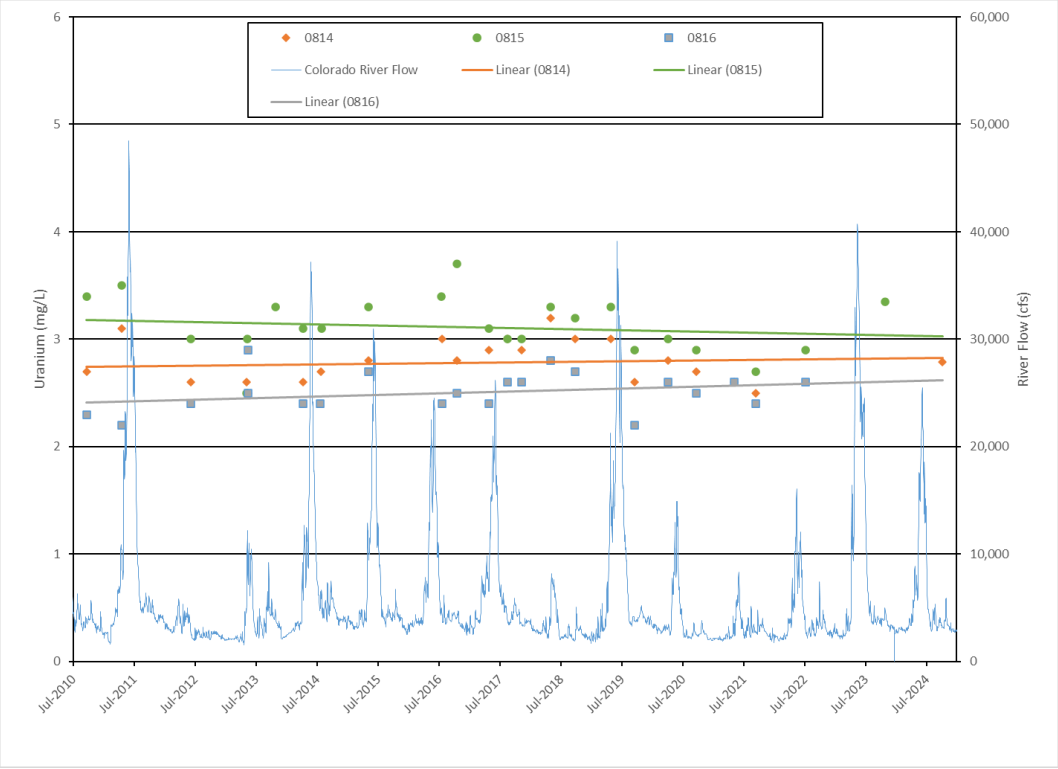

Figure 7. CF5 Extraction Wells 0814, 0815, and 0816
Time versus Uranium Concentration Plot

3.0 2024 Crescent Junction Sampling Events

3.1 Summary

Groundwater samples were collected from wells 0202 and 0205 at Crescent Junction as part of the quarterly monitoring at the Crescent Junction Site in August and November 2024. If water is present in any of the four monitoring wells during a monitoring event, a sample may be collected. Similar to previous events, these samples collected were analyzed for metals, and inorganics. Samples were also analyzed for radium isotopes and tritium.

3.2 2024 Crescent Junction Data Assessment

3.2.1 Laboratory Performance Assessment

This validation was performed according to *Standard Practice for Validation of Laboratory Data*. The procedure was applied at Level 2, Data Deliverables Examination. All analyses were successfully completed.

General Information and Validation Results

RIN	2408150
Laboratory:	Gel Laboratories LLC, Charleston, South Carolina
SDG Numbers:	684157 and 695461
Analysis:	Inorganics, Metals, Radium Isotopes, Tritium
Validator:	James Ritchey
Review Date:	March 2025

The samples were prepared and analyzed using accepted procedures as shown in Table 8.

Table 8. 2024 Crescent Junction Sampling Event, Analytes and Methods

Analyte	Preparation Method	Analytical Method
Ammonia as N, NH3-N	EPA 350.1	EPA 350.1
Nitrate/Nitrite as N	EPA 353.2	EPA 353.2
Anions (Bromide, Chloride, Fluoride, Sulfate)	EPA 300.0 Rev 2.1	300.0 Rev 2.1
Metals (Arsenic, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Selenium, Silver, Sodium)	SW-846 3005A	SW-846 6010D
Uranium	SW-846 3005A	SW-846 6020B
Radium-226	N/A	EPA 903.1
Radium-228	EPA 904.0	SW846-9320
Tritium	N/A	EPA 906.0

Data Qualifier Summary

Analytical results were qualified as listed in Table 9. Refer to Table 10 below for an explanation of the data qualifiers applied.

Table 9. 2024 Crescent Junction Sampling Events, Data Qualifiers

Sample Number	Location	Analyte	Flag	Reason
SDG 684157	All	Cobalt	U	MB-1
SDG 684157	0202	Selenium	NJ	MB-2
SDG 684157	All	Arsenic, barium, and lead	J	MS-1
SDG 695461	All	Selenium	J	MSD-1

Table 10. 2024 Crescent Junction Sampling Events, Reason Codes for Data Flags

Reason Code	Qualifier (Detects)	Qualifier (Non-Detects)	Explanation
MB-1	U	NA	Method blank was above the MDL and results were <5x the MDL.
MB-2	NJ	NA	Method blank was a negative value, but absolute value below the PQL.
MS-1	J	UJ	Matrix spike was not within acceptable criteria.
MSD-1	J	UJ	Matrix spike duplicate was not within acceptable criteria.

Notes: J indicates results are estimated and becomes a UJ for analytical results below the detection limit.

Sample Shipping/Receiving

GEL Laboratories in Charleston, South Carolina received the two sample sets for RIN 2412144 in coolers received on September 5, 2024 (SDG 684157) and November 13, 2024 (SDG695461). The temperature of the coolers were 1°C and 2°C, respectively (UPS tracking numbers 1ZE243120195860611 and 1ZE243120192023825).

The COC forms were checked to confirm that all the samples were listed on the form with sample collection dates and times, and signatures and dates were present indicating sample relinquishment and receipt. The sample submittal documents, including the COC forms and the sample tickets, had no errors or omissions.

Preservation and Holding Times

The samples were received in the correct container types and had been preserved correctly for the requested analyses.

Case Narratives

The case narratives were reviewed, and all detects were found to be within quality-control procedures except for the following:

Method Blank

In SDG 684157, the method blank for cobalt (1.52 ug/L) was above the MDL (1.0 ug/L) and sample results (2.38 and 2.92 ug/L) were flagged “U” for being less than 5x the MDL (5.0 ug/L). Also, the method blank for selenium (-11.4 ug/L) exceeded the MDL (6.0 ug/L). Sample 684157003 (Well 0202; 175 ug/L) was flagged “NJ” for being less than 5x the PQL (300 ug/L).

In SDG 695461, method blanks 1205919915 and 1205921498 for radium-228 and radium-226 (respectively) did not meet acceptable criteria regarding required detection limits. However, blank results were low, and no flagging was required.

Matrix Spikes
In SDG 684157, matrix spikes were within acceptance criteria except for arsenic, barium, and lead as a result of possible matrix interference or sample non-homogeneity. Associated results were flagged "J" for reason MS-1. In SDG 695461, matrix spike duplicate 1205919194 did not meet acceptable recovery criteria and may be attributed to matrix interference and/or non-homogeneity. All selenium samples were flagged "J" for reason MSD-1.

Laboratory Control Samples
All laboratory control samples were within acceptable criteria.

Completeness
Results were reported in the correct units for all analytes requested using contract-required laboratory qualifiers.

Electronic Data Deliverable File
The EDD files arrived on October 14, 2024 (SDG 684157) and December 12, 2024 (SDG 695461). The contents of the EDD were manually examined to ensure all and only the requested data were delivered in compliance with requirements, and that the sample results accurately reflected the data contained in the sample data package.

3.2.2 Minimums and Maximums Report and Anomalous Data Review

There were four anomalous data points (Table 11) that were more than 50% outside of the historical concentration ranges based on the Minimums and Maximums Report in Appendix B. The samples collected from 0202 contained one chromium result below the historical minimum (August 2024), and one chromium result above the historical maximum (November 2024). In addition, the lead concentrations measured in samples from both well 0202 and 0205 in August 2024 had lead concentrations above the historic maximum. Each of these anomalous results can be attributed to detection limits.

Table 11. Anomalous Data Associated with the 2024 Crescent Junction Sampling Events

Location	Date	Analyte	Concentration (mg/L)	Historical Minimum (mg/L)	Historical Maximum (mg/L)	Disposition
Well 0202	08/28/24	Chromium	0.001 (U)	0.004	0.018 (U)	Lower detection limit used for analysis
Well 0202	11/05/24	Chromium	0.027 (B)	0.001 (U)	0.018 (U)	Result inconsistent with previous non-detects, still below the required detection limit. Will continue to monitor.
Well 0202	8/28/24	Lead	0.165 (UN)	0.0013	0.0776	Higher detection limit used for analysis
Well 0205	8/28/24	Lead	0.165 (UN)	0.00087	0.033 (U)	Higher detection limit used for analysis

(U) – Result is below the detection limit.
(B) – Result is between the IDL and CRDL.
(N) – Spike sample recover not within control limits.

3.3 2024 Crescent Junction Sampling Results

Groundwater samples were collected from Crescent Junction monitoring wells 0202 and 0205 in August and November 2024 to determine if there were any changes to the source of the water re-charging at these locations. The conceptual model for the presence of water at these locations is that surface runoff from precipitation events is the water source. To determine if precipitation impacts the water surface elevation, a plot displaying the surface elevation and the site daily precipitation since 2019 was generated (Figure 8). As the plot displays, the water elevation fluctuations are similar in both wells, and in general there is a delayed elevation increase after periods of high precipitation.

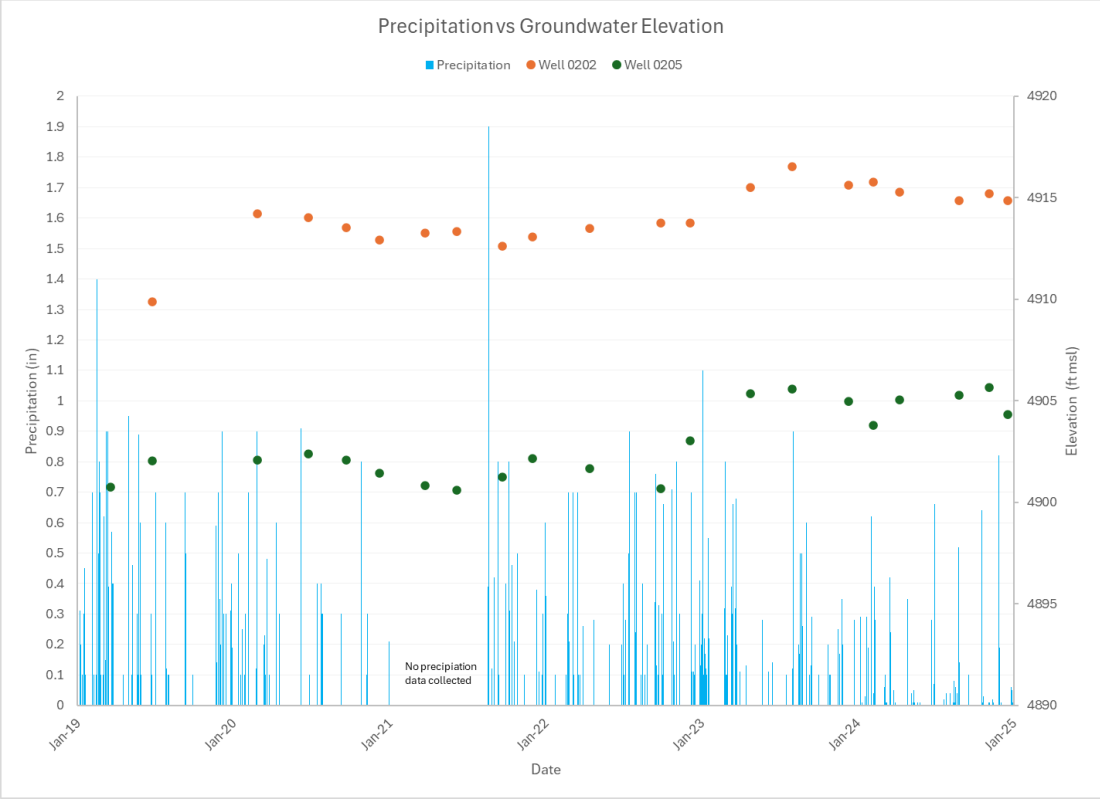

Figure 8. Crescent Junction Precipitation vs Water Elevations (2019 – 2024)
**No precipitation data 1/9/21 to 8/18/21*

Table 12 presents the August and November 2024 results.

Figures 9 through 11 show concentrations and trends for ammonia, nitrate/nitrite, and uranium in the Crescent Junction wells. As the plots display, the ammonia concentrations are trending down in samples collected from both locations. The results suggest the nitrate/nitrite concentrations have generally decreased since 2017 in well 0205. Samples collected from well 0202 since 2021 indicate the nitrate/nitrite concentrations have not significantly changed.

Table 12. 2024 Analytical Results from Crescent Junction Wells 0202 and 0205

Analyte	Date	0202	0205
Ammonia Total as N (mg/L)	8/28/24	8.56	7.99
	11/5/24	8.23	8.92
Arsenic (mg/L)	8/28/24	0.005 U	0.005 U
	11/5/24	0.05 U	0.05 U
Barium (mg/L)	8/28/24	0.05 U	0.05 U
	11/5/24	0.0121	0.01 U
Bromide (mg/L)	8/28/24	29.2	3.35 U
	11/5/24	39.2	3.35 U
Cadmium (mg/L)	8/28/24	0.001 U	0.001 U
	11/5/24	0.01 U	0.01 U
Calcium (mg/L)	8/28/24	404	416
	11/5/24	445	381
Chloride (mg/L)	8/28/24	6770	2090
	11/5/24	6110	1890
Chromium (mg/L)	8/28/24	0.001 U	0.001 U
	11/5/24	0.027	0.0317
Cobalt (mg/L)	8/28/24	0.00238	0.00292
	11/5/24	0.01 U	0.01 U
Copper (mg/L)	8/28/24	0.00799	0.012
	11/5/24	0.03 U	0.03 U
Fluoride (mg/L)	8/28/24	1.65 U	1.65 U
	11/5/24	1.65 U	1.65 U
Iron (mg/L)	8/28/24	0.03 U	0.03 U
	11/5/24	0.3 U	0.3 U
Lead (mg/L)	8/28/24	0.165 U	0.165 U
	11/5/24	0.043	0.033 U
Magnesium (mg/L)	8/28/24	1160	1410
	11/5/24	1080	1420
Manganese (mg/L)	8/28/24	0.472	0.298
	11/5/24	0.444	0.336
Molybdenum (mg/L)	8/28/24	2 U	2 U
	11/5/24	20 U	20 U
Nitrate/Nitrite as N (mg/L)	8/28/24	500	448
	11/5/24	483	636
Radium-226 (pCi/L)	11/5/24	0.535 U	3.21
Radium-228 (pCi/L)	11/5/24	2.34 U	0.817
Selenium (mg/L)	8/28/24	0.175	2.61
	11/5/24	0.228	2.83
Sodium (mg/L)	8/28/24	11600	7870
	11/5/24	11400	8010
Sulfate (mg/L)	8/28/24	20300	20700
	11/5/24	17900	17100
Tritium (pCi/L)	8/28/24	118 U	104 U
	11/5/24	-57.2 U	-23 U
Uranium (mg/L)	8/28/24	0.0285	0.042
	11/5/24	0.0242	0.0406

U – The result was below the detection limit.

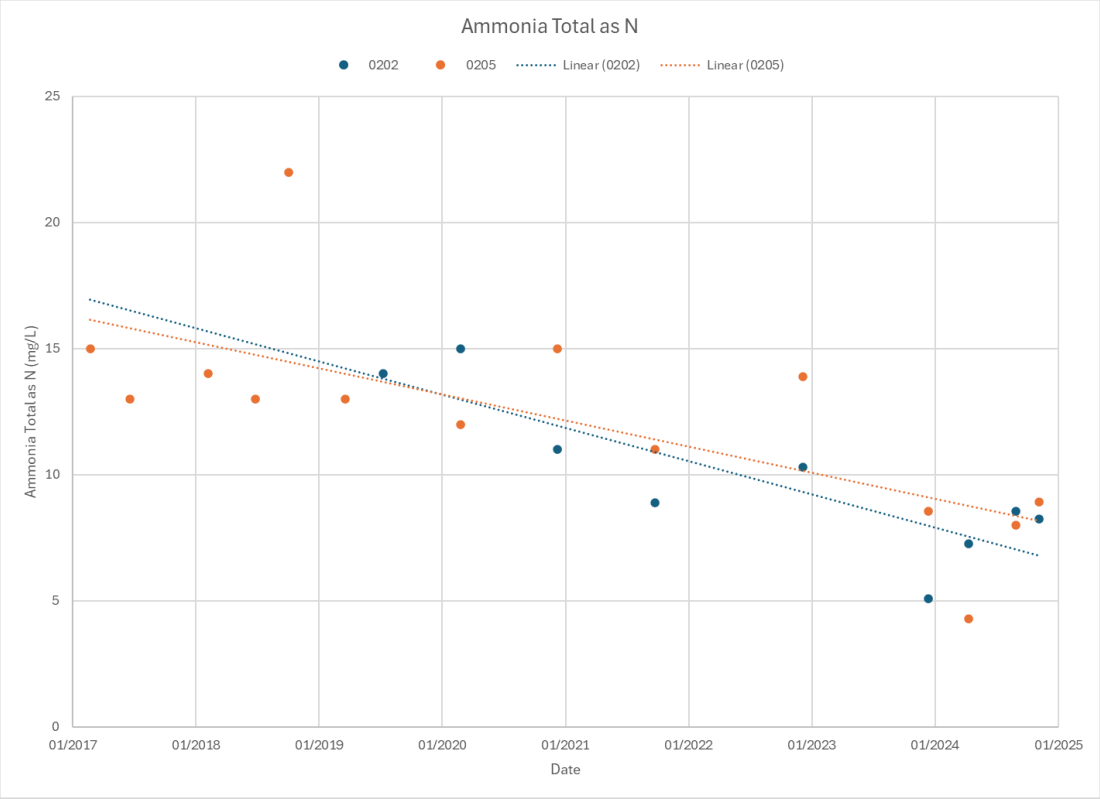

Figure 9. Ammonia Total as N Concentration in Well 0202 and Well 0205

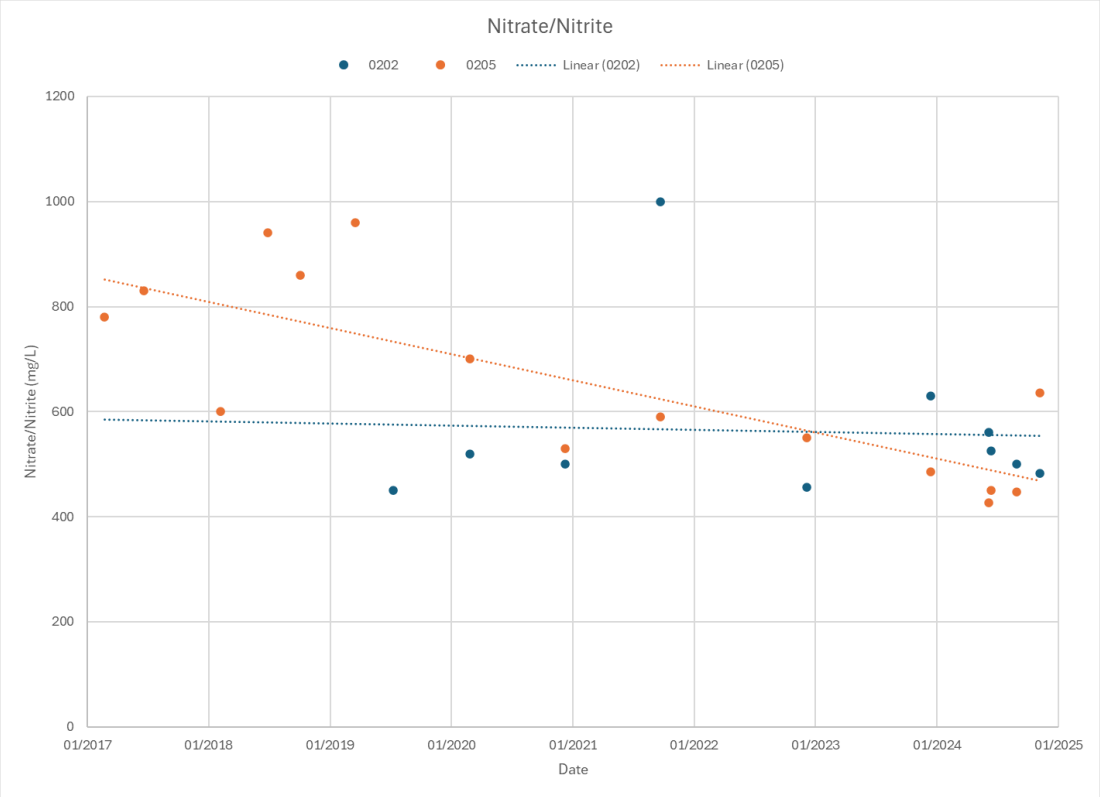

Figure 10. Nitrate/Nitrite Concentration in Well 0202 and Well 0205

Total uranium results indicate an increasing trend, though concentrations vary (Figure 11). A study completed in 2011 found that natural uranium concentrations associated with Mancos Shale seeps ranged from 0.0002 to 1.922 mg/L, with a geometric mean of 0.083 mg/L uranium (DOE 2011). These concentrations measured in these recent sampling events are lower than the data provided in this publication.

Samples were collected in 2024 for Ra226/Ra228 and tritium analyses to provide additional information regarding the water source. The Ra226/228 results were either below (location 0202), or just above the detection limit (0205). These results indicate the water has not been in contact with the tailings. Water in contact with the tailings would have detectable and significantly higher concentrations.

Tritium analysis was used to determine the relative age of the water source recharging these locations. The results (below detection) were inconclusive. However, the water elevation, recharge test, precipitation, and other chemical data confirm that the water present in these wells has not come in contact with the tailings placed in the disposal cell.

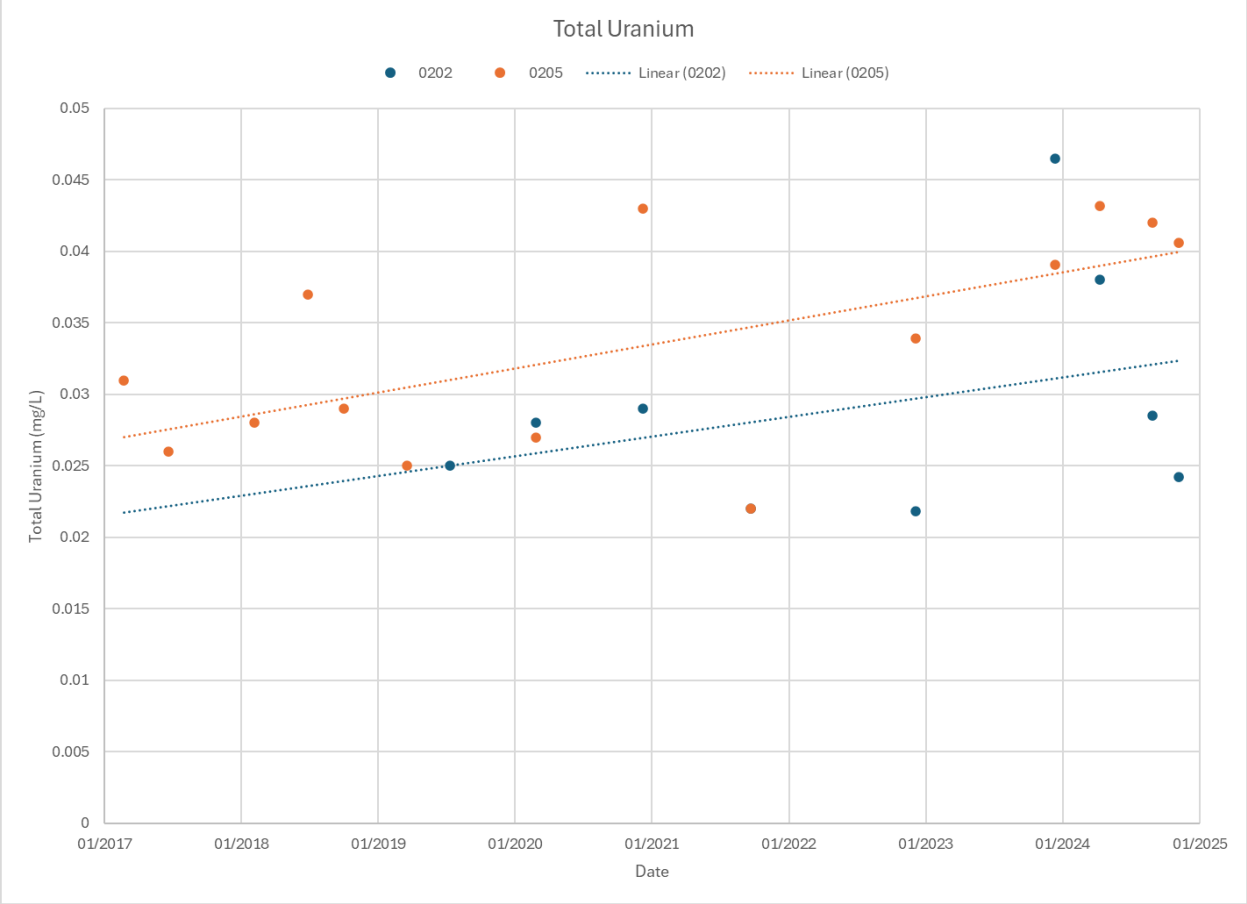

Figure 11. Total Uranium Concentration in Well 0202 and Well 0205

4.0 Conclusions

4.1 2024 CF4 and CF5 Sampling Events

Ground water samples were collected from CF4 observation wells CF5 extraction wells in October 2024. Analytical results show that the injection system is effective at decreasing the ammonia concentrations, particularly in the samples collected from the downgradient monitoring wells.

In general ammonia, concentrations continue to exhibit a decreasing trend in the CF5 extraction wells, though some recent results were higher than previous results. Uranium results express more stable trends over time.

4.2 2024 Crescent Junction Sampling Events

The groundwater in wells 0202 and 0205 have a similar geochemistry and will continue to be monitored on an annual basis (at a minimum) for fluctuations in analyte concentrations. Current data indicates decreasing concentration trends in ammonia and nitrate/nitrite concentrations and an increasing concentration trend in uranium.

Chemical, recharge test, precipitation, and water elevation data analyses along with a literature review were all utilized to determine the source of groundwater present in the Crescent Junction modified core holes. Ra226/228 and tritium analytical results (along with recent U234 and U238 data) provided further evidence that the groundwater source has not been in contact with tailings contained within the Crescent Junction disposal cell.

5.0 References

40 CFR 192A (Code of Federal Regulations) Subpart A, "Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings, Standards for the Control of Residual Radioactive Materials from Inactive Uranium Processing Sites."

DOE (U.S. Department of Energy), *Characterization of Groundwater Brine Zones at the Moab Project Site (Phase 1)* (GJO-2002-333-TAR, GJO-MOA 19.1.2-3), June 2002.

DOE (U.S. Department of Energy), *Natural Contamination from the Mancos Shale* (Doc. No. S07480), April 2011.

DOE (U.S. Department of Energy), *Moab UMTRA Project Surface Water/Groundwater Sampling and Analysis Plan* (DOE-EM/GJRAC1830).

DOE (U.S. Department of Energy), *Moab UMTRA Project Standard Practice for Validation of Laboratory Data* (DOE-EM/GJRAC1855).

Appendix A.
2024 CF4 and CF5 Sampling Events

Water Sampling Field Activities Verification
Trip Report
Water Quality Data
Minimums and Maximums Report
Static Water Levels

Appendix A. October 2024 CF4 and CF5 Sampling Event
Water Sampling Field Activities Verification

Sampling Event/RIN	October 2024 CF4/CF5 Sampling Event / RIN 2410151	**Date(s) of Water Sampling**	October 10, 2024
Date(s) of Verification	3/12/2025	**Name of Verifier**	James Ritchey

	Response (Yes, No, NA)	Comments
1. Is the Sampling Analysis Plan (SAP) the primary document directing field procedures?	Yes	
List other documents, standard operating procedures, instructions.	NA	
2. Were the sampling locations specified in the planning documents sampled?	Yes	
3. Was a pre-trip calibration conducted as specified in the aforementioned documents?	Yes	
4. Was an operational check of the field equipment conducted in accordance with the SAP?	Yes	
Did the operational checks meet criteria?	Yes	
5. Were the number and types (alkalinity, temperature, electrical conductivity, pH, turbidity, oxidation reduction potential) of field measurements taken as specified?	Yes	Field measurements for temperature, pH, turbidity, oxidation reduction potential, and conductivity were collected.
6. Was the category of the well documented?	Yes	
7. Were the following conditions met when purging a Category I well: Was one pump/tubing volume purged before sampling?	Yes	
Did the water level stabilize before sampling?	Yes	
Did pH, specific conductance, and turbidity measurements stabilize before sampling?	Yes	
Was the flow rate less than 500 milliliters per minute?	Yes	
If a portable pump was used, was there a 4-hour delay between pump installation and sampling?	Yes	No portable pump was used.
8. Were the following conditions met when purging a Category II well:		
Was the flow rate less than 500 milliliters per minute?	Yes	
Was one pump/tubing volume removed before sampling?	Yes	
9. Were duplicates taken at a frequency of one per 20 samples?	Yes	One duplicate sample was collected for 14 samples (location 0810)

Appendix A. October 2024 CF4 and CF5 Sampling Event *(continued)*
Water Sampling Field Activities Verification

Sampling Event/RIN	October 2024 CF4/CF5 Sampling Event / RIN 2410151	**Date(s) of Water Sampling**	October 10, 2024
Date(s) of Verification	3/12/2025	**Name of Verifier**	James Ritchey

	Response (Yes, No, NA)	Comments
10. Were EBs taken at a frequency of one per 20 samples that were collected with non-dedicated equipment?	NA	All samples were collected using dedicated equipment.
11. Were trip blanks prepared and included with each shipment of volatile organic compound samples?	NA	
12. Were quality-control samples assigned a fictitious site identification number?	Yes	Duplicate for 0810 was given location 2000
13. Was the identity of the samples recorded on the quality assurance sample log?	Yes	
14. Were samples collected in the containers specified?	Yes	
15. Were samples filtered and preserved as specified?	Yes	
16. Were the number and types of samples collected as specified?	Yes	
17. Were COC records completed, and was sample custody maintained?	Yes	
18. Are field data sheets signed and dated by both team members?	Yes	
19. Was all other pertinent information documented on the field data sheets?	Yes	
20. Was the presence or absence of ice in the cooler documented at every sample location?	Yes	
21. Were water levels measured at the locations specified in the planning documents?	Yes	

Date: November 4, 2024
To: Ken Pill
From: James Ritchey
Subject: October 2024 Sampling Event

Site: Moab –Sampling Event – October 2024

Date of Sampling Event: October 10, 2024

Team Members: K. Pill and J. Ritchey

RIN Number Assigned: All samples were assigned to RIN 2410151.

Sample Shipment: One sample cooler was shipped overnight UPS to GEL Laboratory from Moab, Utah on October 15, 2023 (Tracking number 1ZE243120191400400).

October 2024 Configuration 4 Sampling

Number of Locations Sampled: Eight observation wells (0780, 0781, 0782, 0783, 0784, 0785, 0786, and 0787) were sampled during the October 2024 Sampling Event. Wells were sampled on October 10, 2024, while the injection system was in operation.

Locations Not Sampled: None.

Field Variance: None.

Quality Control Sample Cross Reference: None.

Location Specific Information – Observation Wells: All observation wells were sampled using micro-purge techniques with a peristaltic pump and dedicated pump-head and downhole tubing. Sample depths and water levels for each observation well are listed below. Not able to measure water level in 0784 due to presence of tree roots inside well.

Well No.	Date	Time	Depth to Water (ft btoc)	Sample Depth (ft bgs)
0780	10/10/2024	9:45	16.11	28
0781	10/10/2024	10:00	15.89	46
0782	10/10/2024	10:10	16.22	32
0783	10/10/2024	10:35	14.24	18
0784	10/10/2024	10:50	–	18
0785	10/10/2024	11:15	16.49	18
0786	10/10/2024	13:35	15.93	28
0787	10/10/2024	15:50	16.11	36

October 2024 Configuration 5 Sampling

Number of Locations Sampled: Six extraction wells (0810, 0811, 0812, 0813, 0814, and SMI-PW02) and one duplicate were sampled during the October 2024 Monthly Sampling Event.

Locations Not Sampled: Well 0815 and 0816 were not sampled due to inoperable submersible pumps.

Field Variance: None.

Quality Control Sample Cross Reference: Following are the false identifications assigned to the quality control samples:

False ID	True ID	Sample Type	Associated Matrix	Ticket Number
2000	0810	Duplicate from 10.4-40.4 ft bgs	Ground Water	OCT 010

Location Specific Information – Extraction Wells: Extraction wells were sampled using dedicated submersible pumps. Samples were filtered and collected into open containers using dedicated flexible tubing. Sample depths and water levels for each extraction well are listed below.

Well No.	Date	Time	Pump Intake Depth (ft bgs)
0810	10/10/2024	14:00	35
0811	10/10/2024	14:15	35
0812	10/10/2024	14:35	40
0813	10/10/2024	14:45	40
0814	10/10/2024	14:50	40
SMI-PW02	10/10/2024	14:20	50

*Depths to water were not collected for wells.

Site Issues: According to the USGS Cisco Gaging Station (Station No. 09180700), the mean daily Colorado River flows during this sampling event are provided below:

Date	Daily Mean Flow (cfs)
10/10/2024	3,230

Equipment Issues: None.

Corrective Action Required/Taken: None.

Appendix A. October 2024 CF4 and CF5 Sampling Event *(continued)*
Water Quality Data

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0780 <well> Configuration 4

REPORT DATE: 3/11/2025 9:29 AM

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	10/10/2024	0001	28.00	82.1		1.7	-
Oxidation Reduction Potential	mV	10/10/2024	N001	28.00	125		-	-
pH	s.u.	10/10/2024	N001	28.00	7.14		-	-
Specific Conductance	umhos/cm	10/10/2024	N001	28.00	6742		-	-
Temperature	C	10/10/2024	N001	28.00	16.80		-	-
Turbidity	NTU	10/10/2024	N001	28.00	4.75		-	-
Uranium	mg/L	10/10/2024	0001	28.00	0.699		0.00067	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site
LOCATION: 0781 <well> Configuration 4
REPORT DATE: 3/11/2025 9:29 AM

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	10/10/2024	0001	46.00	581		17	-
Oxidation Reduction Potential	mV	10/10/2024	N001	46.00	229		-	-
pH	s.u.	10/10/2024	N001	46.00	6.98		-	-
Specific Conductance	umhos/cm	10/10/2024	N001	46.00	54474		-	-
Temperature	C	10/10/2024	N001	46.00	15.60		-	-
Turbidity	NTU	10/10/2024	N001	46.00	2.89		-	-
Uranium	mg/L	10/10/2024	0001	46.00	3.220		0.00335	-

Appendix A. October 2024 CF4 and CF5 Sampling Event *(continued)*
Water Quality Data

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0782 <well> Configuration 4

REPORT DATE: 3/11/2025 9:29 AM

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	10/10/2024	0001	33.00	351			17	-
Oxidation Reduction Potential	mV	10/10/2024	N001	33.00	229			-	-
pH	s.u.	10/10/2024	N001	33.00	6.98			-	-
Specific Conductance	umhos/cm	10/10/2024	N001	33.00	22825			-	-
Temperature	C	10/10/2024	N001	33.00	16.20			-	-
Turbidity	NTU	10/10/2024	N001	33.00	3.43			-	-
Uranium	mg/L	10/10/2024	0001	33.00	2.550			0.00335	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0783 <well> Configuration 4

REPORT DATE: 3/11/2025 9:29 AM

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	10/10/2024	0001	18.00	55.6			1.7	-
Oxidation Reduction Potential	mV	10/10/2024	N001	18.00	147			-	-
pH	s.u.	10/10/2024	N001	18.00	7.02			-	-
Specific Conductance	umhos/cm	10/10/2024	N001	18.00	7662			-	-
Temperature	C	10/10/2024	N001	18.00	16.60			-	-
Turbidity	NTU	10/10/2024	N001	18.00	3.32			-	-
Uranium	mg/L	10/10/2024	0001	18.00	0.731			0.00067	-

Appendix A. October 2024 CF4 and CF5 Sampling Event *(continued)*
Water Quality Data

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0784 <well> Configuration 4

REPORT DATE: 3/11/2025 9:29 AM

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	10/10/2024	0001	18.00	0.841		0.017	-
Oxidation Reduction Potential	mV	10/10/2024	N001	18.00	-22		-	-
pH	s.u.	10/10/2024	N001	18.00	7.43		-	-
Specific Conductance	umhos/cm	10/10/2024	N001	18.00	1247		-	-
Temperature	C	10/10/2024	N001	18.00	20.9		-	-
Turbidity	NTU	10/10/2024	N001	18.00	2.35		-	-
Uranium	mg/L	10/10/2024	0001	9.38 - 19.38	0.0293		6.7E-05	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0785 <well> Configuration 4

REPORT DATE: 3/11/2025 9:29 AM

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	10/10/2024	0001	18.00	7.21		0.17	-
Oxidation Reduction Potential	mV	10/10/2024	N001	18.00	1		-	-
pH	s.u.	10/10/2024	N001	18.00	7.24		-	-
Specific Conductance	umhos/cm	10/10/2024	N001	18.00	1322		-	-
Temperature	C	10/10/2024	N001	18.00	21.80		-	-
Turbidity	NTU	10/10/2024	N001	18.00	2.81		-	-
Uranium	mg/L	10/10/2024	0001	18.00	0.0423		6.7E-05	-

Appendix A. October 2024 CF4 and CF5 Sampling Event *(continued)*
Water Quality Data

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0786 <well> Configuration 4

REPORT DATE: 3/11/2025 9:29 AM

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	10/10/2024	0001	28.00	254			17	-
Oxidation Reduction Potential	mV	10/10/2024	N001	28.00	73			-	-
pH	s.u.	10/10/2024	N001	28.00	6.94			-	-
Specific Conductance	umhos/cm	10/10/2024	N001	28.00	15743			-	-
Temperature	C	10/10/2024	N001	28.00	19.50			-	-
Turbidity	NTU	10/10/2024	N001	28.00	1.94			-	-
Uranium	mg/L	10/10/2024	0001	28.00	1.850			0.00168	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0787 <well> Configuration 4

REPORT DATE: 3/11/2025 9:29 AM

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	10/10/2024	0001	36.00	815			17	-
Oxidation Reduction Potential	mV	10/10/2024	N001	36.00	114			-	-
pH	s.u.	10/10/2024	N001	36.00	6.92			-	-
Specific Conductance	umhos/cm	10/10/2024	N001	36.00	42767			-	-
Temperature	C	10/10/2024	N001	36.00	19.90			-	-
Turbidity	NTU	10/10/2024	N001	36.00	2.67			-	-
Uranium	mg/L	10/10/2024	0001	36.00	3.220			0.00335	-

Appendix A. October 2024 CF4 and CF5 Sampling Event *(continued)*
Water Quality Data

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0810 <well, extraction well> Configuration 5

REPORT DATE: 3/11/2025 9:29 AM

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	10/10/2024	0001	35.00	249		17	-
Ammonia Total as N	mg/L	10/10/2024	0002	35.00	305		17	-
Oxidation Reduction Potential	mV	10/10/2024	N001	35.00	31		-	-
pH	s.u.	10/10/2024	N001	35.00	6.87		-	-
Specific Conductance	umhos/cm	10/10/2024	N001	35.00	26486		-	-
Temperature	C	10/10/2024	N001	35.00	17.40		-	-
Turbidity	NTU	10/10/2024	N001	35.00	82.90		-	-
Uranium	mg/L	10/10/2024	0001	35.00	2.740		0.00335	-
Uranium	mg/L	10/10/2024	0002	35.00	2.810		0.00335	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0811 <well, extraction well> Configuration 5

REPORT DATE: 3/11/2025 9:29 AM

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	10/10/2024	0001	35.00	295		17	-
Oxidation Reduction Potential	mV	10/10/2024	N001	35.00	130		-	-
pH	s.u.	10/10/2024	N001	35.00	6.86		-	-
Specific Conductance	umhos/cm	10/10/2024	N001	35.00	18446		-	-
Temperature	C	10/10/2024	N001	35.00	17.10		-	-
Turbidity	NTU	10/10/2024	N001	35.00	22.90		-	-
Uranium	mg/L	10/10/2024	0001	35.00	2.490		0.00168	-

Appendix A. October 2024 CF4 and CF5 Sampling Event *(continued)*
Water Quality Data

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0812 <well, extraction well> Configuration 5

REPORT DATE: 3/11/2025 9:29 AM

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	10/10/2024	0001	40.00	300			17	-
Oxidation Reduction Potential	mV	10/10/2024	N001	40.00	118			-	-
pH	s.u.	10/10/2024	N001	40.00	6.82			-	-
Specific Conductance	umhos/cm	10/10/2024	N001	40.00	16069			-	-
Temperature	C	10/10/2024	N001	40.00	16.40			-	-
Turbidity	NTU	10/10/2024	N001	40.00	6.27			-	-
Uranium	mg/L	10/10/2024	0001	40.00	2.100			0.00268	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0813 <well, extraction well> Configuration 5

REPORT DATE: 3/11/2025 9:29 AM

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	10/10/2024	0001	40.00	245			17	-
Oxidation Reduction Potential	mV	10/10/2024	N001	40.00	144			-	-
pH	s.u.	10/10/2024	N001	40.00	6.73			-	-
Specific Conductance	umhos/cm	10/10/2024	N001	40.00	12549			-	-
Temperature	C	10/10/2024	N001	40.00	19.80			-	-
Turbidity	NTU	10/10/2024	N001	40.00	5.90			-	-
Uranium	mg/L	10/10/2024	0001	40.00	1.690			0.00134	-

Appendix A. October 2024 CF4 and CF5 Sampling Event *(continued)*
Water Quality Data

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0814 <well, extraction well> Configuration 5

REPORT DATE: 3/11/2025 9:29 AM

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	10/10/2024	0001	40.00	139			17	-
Oxidation Reduction Potential	mV	10/10/2024	N001	40.00	155			-	-
pH	s.u.	10/10/2024	N001	40.00	6.89			-	-
Specific Conductance	umhos/cm	10/10/2024	N001	40.00	19445			-	-
Temperature	C	10/10/2024	N001	40.00	17.90			-	-
Turbidity	NTU	10/10/2024	N001	40.00	3.13			-	-
Uranium	mg/L	10/10/2024	0001	40.00	2.790			0.00335	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: SMI-PW02 <well>

REPORT DATE: 3/11/2025 9:29 AM

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	10/10/2024	0001	55.00	327			17	-
Oxidation Reduction Potential	mV	10/10/2024	N001	55.00	136			-	-
pH	s.u.	10/10/2024	N001	55.00	6.82			-	-
Specific Conductance	umhos/cm	10/10/2024	N001	55.00	22496			-	-
Temperature	C	10/10/2024	N001	55.00	16.50			-	-
Turbidity	NTU	10/10/2024	N001	55.00	8.27			-	-
Uranium	mg/L	10/10/2024	0001	55.00	2.710			0.00335	-

Appendix A. October 2024 CF4 and CF5 Sampling Event *(continued)*
Water Quality Data

RECORDS: SELECTED FROM USEE105 WHERE RIN = '2207137' AND (DataValidationQualifiers IS NULL OR (DataValidationQualifiers NOT LIKE '%N%' AND DataValidationQualifiers NOT LIKE '%R%' AND DataValidationQualifiers NOT LIKE '%X%'))

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Results above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic & Radiochemistry: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFERS:

- F Low flow sampling method used.
- G Possible grout contamination, pH > 9.
- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- N Presumptive evidence that analyte is present. The analyte is "tentatively identified".
- Q Qualitative result due to sampling technique
- R Unusable result.
- U Parameter analyzed for but was not detected.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

Appendix A. 2023 CF4 and CF5 Sampling Event Sampling Events (*continued*)
Minimums and Maximums Report

				Current			Historical Maximum			Historical Minimum			Count	
					Qualifiers			Qualifiers			Qualifiers			
Site Code	Location Code	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect
MOA01	0787	10/10/2024	Uranium	3.22			2.8			0.022			64	0

Note: all concentrations are in mg/L

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Results above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic & Radiochemistry: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFERS:

- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- R Unusable result.
- G Possible grout contamination, pH > 9.
- N Presumptive evidence that analyte is present. The analyte is "tentatively identified".
- U Parameter analyzed for but was not detected.
- J Estimated value.
- Q Qualitative result due to sampling technique
- X Location is undefined.

Appendix A. 2023 CF4 and CF5 Sampling Event Sampling Events (*continued*)
Static Water Levels

STATIC WATER LEVELS (USEE700) FOR SITE MOA01, Moab Site

REPORT DATE: 3/25/2024 12:07 PM

LOCATION CODE	FLOW CODE	TOP OF CASING ELEVATION (FT)	MEASUREMENT DATE	MEASUREMENT TIME	DEPTH FROM TOP OF CASING (FT)	WATER ELEVATION (FT)	WATER LEVEL FLAG
0780		3968.45	10/10/2024		16.11	3952.34	
0781		3968.56	10/10/2024		15.89	3952.67	
0782		3968.46	10/10/2024		16.22	3952.24	
0783		3966.16	10/10/2024		14.24	3951.92	
0785		3969.24	10/10/2024		16.49	3952.75	
0786		3968.14	10/10/2024		15.93	3952.21	
0787		3968.43	10/10/2024		16.11	3952.32	

RECORDS: SELECTED FROM USEE700 WHERE RIN = '2307143'

FLOW CODES:
O : ON-SITE

WATER LEVEL FLAGS

Appendix B.
2024 Crescent Junction Sampling Event

Water Sampling Field Activities Verification
Trip Report
Water Quality Data
Minimums and Maximums Report
Static Water Levels

Appendix B. 2024 Crescent Junction Sampling Event
Water Sampling Field Activities Verification

Sampling Event/RIN	August 2024 CJ Sampling Event/RIN 2312144	**Date(s) of Water Sampling**	August 13 and November 5, 2024
Date(s) of Verification	03/13/2025	**Name of Verifier**	James Ritchey

	Response (Yes, No, NA)	Comments
1. Is the Sampling Analysis Plan (SAP) the primary document directing field procedures?	Yes	
List other documents, standard operating procedures, instructions.	NA	
2. Were the sampling locations specified in the planning documents sampled?	Yes	
3. Was a pre-trip calibration conducted as specified in the aforementioned documents?	Yes	
4. Was an operational check of the field equipment conducted in accordance with the SAP?	Yes	
Did the operational checks meet criteria?	Yes	
5. Were the number and types (alkalinity, temperature, electrical conductivity, pH, turbidity, oxidation reduction potential) of field measurements taken as specified?	Yes	Field measurements for temperature, pH, turbidity, oxidation reduction potential, and conductivity were collected.
6. Was the category of the well documented?	Yes	
7. Were the following conditions met when purging a Category I well: Was one pump/tubing volume purged before sampling?	NA	Low flow method was utilized.
Did the water level stabilize before sampling?	Yes	
Did pH, specific conductance, and turbidity measurements stabilize before sampling?	Yes	
Was the flow rate less than 500 milliliters per minute?	Yes	
If a portable pump was used, was there a 4-hour delay between pump installation and sampling?	No	

Appendix B. 2024 Crescent Junction Sampling Event *(continued)*
Water Sampling Field Activities Verification

	Response (Yes, No, NA)	Comments
8. Were the following conditions met when purging a Category II well:		
Was the flow rate less than 500 milliliters per minute?	Yes	
Was one pump/tubing volume removed before sampling?	No	
9. Were duplicates taken at a frequency of one per 20 samples?	NA	Only 2 samples were collected during this event on each of two separate dates.
10. Were EBs taken at a frequency of one per 20 samples that were collected with non-dedicated equipment?	NA	The samples were collected using the same bladder pump and was externally cleaned with DI between locations. Well water at next location ran through before sampling.
11. Were trip blanks prepared and included with each shipment of volatile organic compound samples?	NA	
12. Were quality-control samples assigned a fictitious site identification number?	NA	
13. Was the identity of the samples recorded on the quality assurance sample log?	NA	
14. Were samples collected in the containers specified?	Yes	
15. Were samples filtered and preserved as specified?	Yes	
16. Were the number and types of samples collected as specified?	Yes	
17. Were COC records completed, and was sample custody maintained?	Yes	
18. Are field data sheets signed and dated by both team members?	Yes	
19. Was all other pertinent information documented on the field data sheets?	Yes	
20. Was the presence or absence of ice in the cooler documented at every sample location?	Yes	
21. Were water levels measured at the locations specified in the planning documents?	Yes	

Appendix B. 2024 Crescent Junction Sampling Event (*continued*)
Trip Report

Date: November 13, 2024
To: Ken Pill
From: James Ritchey
Subject: August 2024 CJ Sampling Event

Site: Crescent Junction – Well 0202 and 0205 Sampling Event – June 2024

Date of Sampling Event: August 28 and November 5, 2024

Team Members: K. Pill and J. Ritchey

RIN Number Assigned: All samples were assigned to RIN 2408150.

Sample Shipment: The samples were shipped in two coolers overnight UPS to Gel Laboratory from Moab, Utah on September 4 and November 12 of 2024 (Tracking numbers: 1ZE243120195860611 and 1ZE243120192023825).

Number of Locations Sampled: Two samples were collected from each well 0202 and well 0205 during the August 2024 CJ sampling event totaling four samples.

Locations Not Sampled/Reason: None.

Field Variance: None.

Quality Control Sample Cross Reference: None.

Location Specific Information: Wells 0202 and 0205 were sampled using a non-dedicated submersible pump with non-dedicated tubing. The table below provides additional information:

Location	Date	Time	Sample Depth (ft btoc)	Depth to Water (ft btoc)	Comments
0202	8/28/2024	10:45	60	48.65	Light yellow color.
0205	8/28/2024	11:25	68	43.74	Yellow color. Darker than 0202.
0202	11/5/2024	13:05	60	48.30	
0205	11/5/2024	11:35	68	43.36	

Notes: ft btoc = feet below top of casing.

Equipment Issues: None.

Corrective Action Required/Taken: None.

Appendix B. 2024 Crescent Junction Sampling Event (*continued*)
Water Quality Data

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE CRJ01, Crescent Junction Site
LOCATION: 0202 <well>
REPORT DATE: 3/11/2025 9:31 AM

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	08/28/2024	0001		8.56			0.085	-
	mg/L	11/05/2024	0001	60.00	8.23			0.085	-
Arsenic	mg/L	08/28/2024	0001		0.00500	UN		0.005	-
	mg/L	11/05/2024	0001	60.00	0.0500	U		0.05	-
Barium	mg/L	08/28/2024	0001		0.0500	UN*		0.05	-
	mg/L	11/05/2024	0001	60.00	0.0121	B		0.01	-
Bromide	mg/L	08/28/2024	0001		29.2			3.35	-
	mg/L	11/05/2024	0001	60.00	39.2			3.35	-
Cadmium	mg/L	08/28/2024	0001		0.00100	U		0.001	-
	mg/L	11/05/2024	0001	60.00	0.0100	U		0.01	-
Calcium	mg/L	08/28/2024	0001		404.000			0.05	-
	mg/L	11/05/2024	0001	60.00	445.000			0.5	-
Chloride	mg/L	08/28/2024	0001		6770			67	-
	mg/L	11/05/2024	0001	60.00	6110			67	-
Chromium	mg/L	08/28/2024	0001		0.00100	U		0.001	-
	mg/L	11/05/2024	0001	60.00	0.0270	B		0.01	-
Cobalt	mg/L	08/28/2024	0001		0.00238	B		0.001	-
	mg/L	11/05/2024	0001	60.00	0.0100	U		0.01	-
Copper	mg/L	08/28/2024	0001		0.00799	B		0.003	-
	mg/L	11/05/2024	0001	60.00	0.0300	U		0.03	-
Fluoride	mg/L	08/28/2024	0001		1.65	U		1.65	-
	mg/L	11/05/2024	0001	60.00	1.65	U		1.65	-

Appendix B. 2023 Crescent Junction Sampling Event (*continued*)
Water Quality Data

Iron	mg/L	08/28/2024	0001		0.0300	U	0.03	-
	mg/L	11/05/2024	0001	60.00	0.300	U	0.3	-
Lead	mg/L	08/28/2024	0001		0.165	UN*	0.165	-
	mg/L	11/05/2024	0001	60.00	0.0430	B	0.033	-
Magnesium	mg/L	08/28/2024	0001		1160.000	*	5.5	-
	mg/L	11/05/2024	0001	60.00	1080.000		1.1	-
Manganese	mg/L	08/28/2024	0001		0.472		0.002	-
	mg/L	11/05/2024	0001	60.00	0.444		0.02	-
MOLYBDENUM	ug/L	08/28/2024	0001		2.00	U	2	-
	ug/L	11/05/2024	0001	60.00	20.0	U	20	-
Nitrate + Nitrite as Nitrogen	mg/L	08/28/2024	0001		500		8.5	-
	mg/L	11/05/2024	0001	60.00	483		17	-
Oxidation Reduction Potential	mV	11/05/2024	N001	60.00	131		-	-
pH	s.u.	11/05/2024	N001	60.00	6.93		-	-
Ra-228	pCi/L	11/05/2024	0001	60.00	2.34	U	2.34	±1.30
Radium-226	pCi/L	11/05/2024	0001	60.00	0.535	U	0.535	±0.29
Selenium	mg/L	08/28/2024	0001		0.175	B	0.06	-
	mg/L	11/05/2024	0001	60.00	0.228	BN	0.06	-
Sodium	mg/L	08/28/2024	0001		11600.000	*	5	-
	mg/L	11/05/2024	0001	60.00	11400.000		10	-
Specific Conductance	umhos/cm	11/05/2024	N001	60.00	45563		-	-
Sulfate	mg/L	08/28/2024	0001		20300		266	-
	mg/L	11/05/2024	0001	60.00	17900		133	-
Temperature	C	11/05/2024	N001	60.00	13.70		-	-

Tritium	pCi/L	08/28/2024	0001		118	U	486	-
	pCi/L	11/05/2024	0001	60.00	-57.2	U	488	-
Turbidity	NTU	11/05/2024	N001	60.00	2.31		-	-
Uranium	mg/L	08/28/2024	0001		0.0285		0.00168	-
	mg/L	11/05/2024	0001	60.00	0.0242		0.000335	-

Appendix B. 2023 Crescent Junction Sampling Event (*continued*)
Water Quality Data

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE CRJ01, Crescent Junction Site

LOCATION: 0205 <well>

REPORT DATE: 3/11/2025 9:31 AM

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	08/28/2024	0001		7.99				0.085	-
	mg/L	11/05/2024	0001	68.00	8.92				0.085	-
Arsenic	mg/L	08/28/2024	0001		0.00500	UN			0.005	-
	mg/L	11/05/2024	0001	68.00	0.0500	U			0.05	-
Barium	mg/L	08/28/2024	0001		0.0500	UN*			0.05	-
	mg/L	11/05/2024	0001	68.00	0.0100	U			0.01	-
Bromide	mg/L	08/28/2024	0001		3.35	U			3.35	-
	mg/L	11/05/2024	0001	68.00	3.35	U			3.35	-
Cadmium	mg/L	08/28/2024	0001		0.00100	U			0.001	-
	mg/L	11/05/2024	0001	68.00	0.0100	U			0.01	-
Calcium	mg/L	08/28/2024	0001		416.000				0.05	-
	mg/L	11/05/2024	0001	68.00	381.000				0.5	-
Chloride	mg/L	08/28/2024	0001		2090				67	-
	mg/L	11/05/2024	0001	68.00	1890				33.5	-
Chromium	mg/L	08/28/2024	0001		0.00100	U			0.001	-
	mg/L	11/05/2024	0001	68.00	0.0317	B			0.01	-
Cobalt	mg/L	08/28/2024	0001		0.00292	B			0.001	-
	mg/L	11/05/2024	0001	68.00	0.0100	U			0.01	-

Copper	mg/L	08/28/2024 0001		0.0120	B	0.003	-
	mg/L	11/05/2024 0001	68.00	0.0300	U	0.03	-
Fluoride	mg/L	08/28/2024 0001		1.65	U	1.65	-
	mg/L	11/05/2024 0001	68.00	1.65	U	1.65	-
Iron	mg/L	08/28/2024 0001		0.0300	U	0.03	-
	mg/L	11/05/2024 0001	68.00	0.300	U	0.3	-
Lead	mg/L	08/28/2024 0001		0.165	UN*	0.165	-
	mg/L	11/05/2024 0001	68.00	0.0330	U	0.033	-
Magnesium	mg/L	08/28/2024 0001		1410.000	*	5.5	-
	mg/L	11/05/2024 0001	68.00	1420.000		1.1	-
Manganese	mg/L	08/28/2024 0001		0.298		0.002	-
	mg/L	11/05/2024 0001	68.00	0.336		0.02	-
MOLYBDENUM	ug/L	08/28/2024 0001		2.00	U	2	-
	ug/L	11/05/2024 0001	68.00	20.0	U	20	-
Nitrate + Nitrite as Nitrogen	mg/L	08/28/2024 0001		448		8.5	-
	mg/L	11/05/2024 0001	68.00	636		17	-
Oxidation Reduction Potential	mV	11/05/2024 N001	68.00	152		-	-
pH	s.u.	11/05/2024 N001	68.00	7.01		-	-
Ra-228	pCi/L	11/05/2024 0001	68.00	3.21		2.57	±1.71
Radium-226	pCi/L	11/05/2024 0001	68.00	0.817		0.412	±0.40
Selenium	mg/L	08/28/2024 0001		2.610		0.06	-
	mg/L	11/05/2024 0001	68.00	2.830	N	0.06	-
Sodium	mg/L	08/28/2024 0001		7870.000	*	5	-
	mg/L	11/05/2024 0001	68.00	8010.000		10	-

Appendix B. 2024 Crescent Junction Sampling Event (*continued*)
Water Quality Data

Specific Conductance	umhos/cm	11/05/2024	N001	68.00	33833		-	-
Sulfate	mg/L	08/28/2024	0001		20700		266	-
	mg/L	11/05/2024	0001	68.00	17100		266	-
Temperature	C	11/05/2024	N001	68.00	14.80		-	-
Tritium	pCi/L	08/28/2024	0001		104	U	452	-
	pCi/L	11/05/2024	0001	68.00	-23.0	U	494	-
Turbidity	NTU	11/05/2024	N001	68.00	6.11		-	-
Uranium	mg/L	08/28/2024	0001		0.0420		0.000335	-
	mg/L	11/05/2024	0001	68.00	0.0406		0.000335	-

RECORDS: SELECTED FROM USEE105 WHERE RIN = '2212139' AND (DataValidationQualifiers IS NULL OR (DataValidationQualifiers NOT LIKE '%N%' AND DataValidationQualifiers NOT LIKE '%R%' AND DataValidationQualifiers NOT LIKE '%X%'))

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFERS:

- * Replicate analysis not within control limits.
- \+ Correlation coefficient for MSA < 0.995.
- \> Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic & Radiochemistry: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.

N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).

P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.

S Result determined by method of standard addition (MSA).

U Analytical result below detection limit.

W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.

X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFERS:

F Low flow sampling method used.

L Less than 3 bore volumes purged prior to sampling.

R Unusable result.

G Possible grout contamination, pH > 9.

N Presumptive evidence that analyte is present. The analyte is "tentatively identified".

U Parameter analyzed for but was not detected.

J Estimated value.

Q Qualitative result due to sampling technique

X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

Appendix B. 2024 Crescent Junction Sampling Event (*continued*)
Minimums and Maximums Report

Data Validation Minimums and Maximums Report - No Field Parameters

Laboratory: GEL Laboratories of Ohio LLC

RIN: 2408150

Comparison: All Historical Data

Report Date: 3/25/2024 11:34 AM

				Current			Historical Maximum			Historical Minimum			Count	
					Qualifiers			Qualifiers			Qualifiers			
Site Code	Location Code	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect
CRJ01	0202	08/28/2024	Chromium	0.001	U		0.018	U		0.00389	B		9	7
CRJ01	0202	11/05/2024	Chromium	0.027	B		0.018	U		0.001	U		10	8
CRJ01	0202	08/28/2024	Copper	0.00799	B		0.051	B		0.0097	U		10	7
CRJ01	0202	08/28/2024	Lead	0.165	UN*		0.0776	B		0.0013	B	U	9	6
CRJ01	0205	08/28/2024	Bromide	3.35	U		130			4.59	J		21	15
CRJ01	0205	08/28/2024	Calcium	416			400			260			21	0
CRJ01	0205	08/28/2024	Lead	0.165	UN*		0.033	U		0.00087	B	U	21	18
CRJ01	0205	08/28/2024	Magnesium	1410	*		1360			140			21	0
CRJ01	0205	11/05/2024	Magnesium	1420			1410	*		140			22	0

Note: all concentrations are in mg/L, red text = result more than 50% below minimum or 50% above maximum, blue text = historical value exceeded

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFERS:

* Replicate analysis not within control limits.

\+ Correlation coefficient for MSA < 0.995.

>	Results above upper detection limit.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic & Radiochemistry: Analyte also found in method blank.
C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P	> 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
S	Result determined by method of standard addition (MSA).
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Y	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Z	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFERS:

F	Low flow sampling method used.
G	Possible grout contamination, pH > 9.
J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.
N	Presumptive evidence that analyte is present. The analyte is "tentatively identified".
Q	Qualitative result due to sampling technique
R	Unusable result.
U	Parameter analyzed for but was not detected.
X	Location is undefined.

Appendix B. 2024 Crescent Junction Sampling Event (*continued*)
Static Water Levels

STATIC WATER LEVELS (USEE700) FOR SITE CRJ01, Crescent Junction Site

REPORT DATE: 3/25/2024 12:06 PM

LOCATION CODE	FLOW CODE	TOP OF CASING ELEVATION (FT)		MEASUREMENT DATE	MEASUREMENT TIME	DEPTH FROM TOP OF CASING (FT)	WATER ELEVATION (FT)	WATER LEVEL FLAG
0202			-	08/27/2024		48.65	(48.65)	
				11/05/2024		48.30	(48.30)	
0205	-			08/27/2024		43.74	(43.74)	
				11/05/2024		43.36	(43.36)	

RECORDS: SELECTED FROM USEE700 WHERE RIN = '2312144'

FLOW CODES:

WATER LEVEL FLAGS: