

ANNUAL GROUNDWATER MONITORING REPORT FOR 2024

COLORADO SPRINGS UTILITIES' CLEAR SPRING RANCH Coal Combustion Residuals Landfill El Paso County, Colorado

January 31, 2025

Prepared For: 40 CFR Part 257.90(e) and Colorado Department of Public Health and Environment Hazardous Materials and Waste Management Division 4300 Cherry Creek Drive South Denver, Colorado 80246-1530

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TABLE OF CONTENTS

1.0	EXEC	CUTIVE SUMMARY	1
2.0	INTR		1
	2.1	Groundwater Classification and Management	1
3.0	GRO	UNDWATER FLOW ANALYSIS AND GEOLOGIC PROFILE	2
4.0	GRO	UNDWATER QUALITY SAMPLING AND ANALYSIS	2
	4.1	Detection Monitoring	3
	4.2	Assessment Monitoring	3
	4.3	Quality Assurance / Quality Control	3
	4.4	Monitoring Well Installation, Repair, and Abandonment	4
5.0	STAT	TISTICAL ANALYSIS RESULTS SUMMARY	
6.0	GRO	UNDWATER PROTECTION STANDARDS (GWPS)	4
7.0	SUM	MARY OF FINDINGS	6
	7.1	Risk	6
	7.2	Activities for 2025	7
8.0	REFE	ERENCES	7

- **APPENDIX A** Vicinity Map and Groundwater Elevation Contours
- APPENDIX B Groundwater Laboratory Analytical Results and Groundwater Depths / Elevations / Hydrographs
- APPENDIX C Laboratory Analytical Reports
- APPENDIX D Statistical Analysis Report
- APPENDIX E August 23, 2023, Groundwater Monitoring Network Modification letter



1.0 EXECUTIVE SUMMARY

During the 2024 reporting period, Colorado Springs Utilities' (Utilities') Clear Spring Ranch (CSR) Coal Combustion Residuals (CCR) Landfill was operating pursuant to the assessment monitoring program set forth in 40 CFR §257.95. The landfill entered assessment monitoring in 2018.

During 2024, the following monitoring wells were determined to have a statistically significant increase over background for the following EPA CCR Rule Appendix III constituents pursuant to 40 CFR §257.94(e):

- ▼ Boron within monitoring wells SC-11 and SC-12
- ▼ Fluoride within monitoring well SC-12

As previously reported in the Annual Groundwater Monitoring Report for 2021, EPA CCR Rule Appendix IV constituent selenium was measured in downgradient well SC-10 at a statistically significant level exceeding the Groundwater Protection Standards (GWPS) during the second semi-annual (2021) sampling event. Utilities completed an Alternate Source Demonstration (ASD) in April 2022, in accordance with §257.95(g)(3)(ii). During 2024, no EPA CCR Rule Appendix IV constituents were measured at a statistically significant level exceeding the GWPS.

2.0 INTRODUCTION

This annual report summarizes the groundwater monitoring activities performed during 2024 in association with the CCR Landfill at Utilities' CSR. The landfill is located west-southwest of the intersection of Interstate 25 and Ray Nixon Road (Exit 125) in El Paso County, Colorado. CCR from Utilities' Ray Nixon Power Plant is placed in the landfill. CCR from Utilities' Martin Drake Power Plant was being placed in the landfill; however, the Martin Drake Power Plant ceased operation of its coal-burning units in Fall 2021 and CCR is no longer being generated at this power plant.

The CCR Landfill is regulated by the U.S. Environmental Protection Agency (EPA), the Colorado Department of Public Health & Environment (CDPHE), and El Paso County. The land-use is authorized via a Certificate of Designation (CD) obtained from El Paso County (CD #004-001).

The groundwater monitoring activities were performed for compliance with the EPA's Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments (40 CFR §257.50 through §257.107) (EPA CCR Rule) and the CDPHE's Regulations Pertaining to Solid Waste Sites and Facilities (6 CCR 1007-2, Part 1, Section 2.2 - Ground Water Monitoring).

The groundwater monitoring activities were conducted in general accordance with the Coal Combustion Residuals Landfill Groundwater Detection Monitoring Plan (AECOM 2017). This Monitoring Plan was approved by the CDPHE on November 14, 2017 (CDPHE 2017).

This report fulfills the EPA's, CDPHE's, and El Paso County's annual reporting requirements.

2.1 Groundwater Classification and Management

From its inception in the late 1970's, the CCR Landfill has been designed and operated to protect the Fountain Creek Alluvial Aquifer, which is the closest aquifer to the site used for drinking water purposes. The CCR Landfill is located approximately 0.5 miles upgradient of a Retention Dam, described below. The



Fountain Creek Alluvial Aquifer is located approximately 0.5 miles downgradient of the Retention Dam. There are no drinking water or agricultural wells within the CD Area, in which the CCR Landfill is located. To protect the Fountain Creek Alluvial Aquifer, groundwater associated with the CCR Landfill is managed via a Retention Dam System. The Retention Dam was constructed downgradient of the CCR Landfill in 1978 to inhibit the off-site migration of surface water and groundwater. The dam has a bentonite core and is keyed into the underlying Pierre Shale bedrock. To improve the dam's performance, in the 1990s, Utilities installed a bentonite barrier wall along the upgradient toe of the dam. The Retention Dam System also includes a french drain and pump back system downgradient of the dam. The drain extends for approximately 525 feet along the southern portion of the dam. The french drain's collection trench is gravel filled and slopes towards a sump located at the northern end of the trench. An extraction well and pump remove water collected in the sump and pump it back to the upgradient Retention Dam pond. The dam is registered with and inspected by the Office of the State Engineer - Division of Water Resources - Dam Safety Branch (Dam I.D. #100401). A site plan is presented in Appendix A.

3.0 GROUNDWATER FLOW ANALYSIS AND GEOLOGIC PROFILE

The CCR Landfill is located within a small, west-east trending topographic depression that contains up to approximately 50 feet of Piney Creek Alluvium sediments underlain with, and bounded to the north and south, by Pierre Shale, which has a reported thickness of approximately 3,500 to 4,000 feet and forms a hydraulic barrier between the alluvium and any potential deeper water-bearing formations, if present.

The alluvium is concentrated in the lower areas and drainages, with Pierre Shale generally present nearer the ground surface along the higher topographic features and ridges. The groundwater flow beneath the CCR Landfill is present within hydraulically separated buried paleo-alluvial valley drainages, two of which are separated by a bedrock high located beneath the landfill. These two paleo-alluvial valley drainages are referred to as the "South Paleo-Alluvial Valley" and the "North Paleo-Alluvial Valley" (AECOM, 2022).

Groundwater elevation measurements collected October 14 and 15, 2024, were used to interpolate a potentiometric groundwater surface, which is depicted within Appendix A – Figure 2. The groundwater surface data suggests that groundwater beneath the CCR Landfill generally flows in an east / southeasterly direction towards the Retention Dam.

4.0 GROUNDWATER QUALITY SAMPLING AND ANALYSIS

As detailed in the CCR Landfill Groundwater Detection Monitoring Plan, the current groundwater quality monitoring well network for the CCR Landfill is comprised of five background wells (CC-1, FC-1, FC-2, FC-3A, & FC-3B), four downgradient wells (SC-10, SC-11, SC-12, & SC-13) along the eastern edge of the landfill, and one cross gradient well (SC-14) on the south side of the landfill. Two rounds of semi-annual Appendix III Detection Monitoring and Appendix IV Assessment Monitoring groundwater samples were collected from these wells in March 2024 and September 2024. The locations of the monitoring wells are depicted within Appendix A – Figure 2.

Groundwater samples were collected in general accordance with the 2017 CCR Landfill Groundwater Detection Monitoring Plan. The monitoring wells were purged using dedicated bladder pumps with tubing; after which, the groundwater samples were collected from the discharge tube of the bladder pump directly into laboratory-supplied sample containers. The sample containers were then labeled and placed into an insulated ice-chilled sample cooler. Samples were hand delivered to the analytical laboratory.



In 2018, Utilities' CCR Landfill migrated from Detection Monitoring to Assessment Monitoring. Assessment Monitoring is required whenever a statistically significant increase over background levels has been detected for one or more of the Detection Monitoring constituents. Assessment Monitoring must continue until concentrations of all Detection and Assessment Monitoring constituents are determined to be at or below background values using statistical procedures for two consecutive sampling events.

Boron and fluoride have been measured at concentrations estimated statistically as being significantly higher than background and have not been determined to be at or below background values using statistical procedures for two consecutive sampling events. Therefore, both Detection Monitoring and Assessment Monitoring continued throughout 2024.

4.1 Detection Monitoring

During 2024, Utilities collected groundwater samples semi-annually from the monitoring wells listed in Section 4.0 above and analyzed the samples using EPA and/or industry accepted methods for the Detection Monitoring constituents listed in Appendix III of the EPA CCR Rule (boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids). The laboratory analytical results and sampling dates are summarized in the table presented in Appendix B. Copies of the analytical reports and chain of custody documentation are presented in Appendix C.

4.2 Assessment Monitoring

During 2024, Utilities collected groundwater samples semi-annually from the monitoring wells listed in Section 4.0 above and analyzed the samples using EPA and/or industry accepted methods for the Assessment Monitoring constituents listed in Appendix IV of the EPA CCR Rule (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, radium 226 + 228, selenium, and thallium). The laboratory analytical results and sampling dates are summarized in the table presented in Appendix B. Copies of the analytical reports and chain of custody documentation are presented in Appendix C.

4.3 Quality Assurance / Quality Control

Quality assurance and quality control (QA/QC) measures were implemented to ensure the reliability and validity of field and analytical data. Appendix C contains copies of the laboratory analytical reports along with QA/QC data. The QA/QC data includes duplicate samples (identified as Duplicate), equipment / decontamination blanks (identified by Equip-Blk), method blanks (identified as LRB – Lab Reagent Blank), matrix spike sample results, and laboratory control sample results.

The equipment blanks were collected using laboratory-provided distilled water. Analytes were not detected in the equipment blank samples. During the March 2024 sampling event a duplicate sample was collected from monitoring well SC-12. A duplicate sample was also collected during the September 2024 sampling event; however, a field data error was made such that the duplicate location was not recorded. September 2024 duplicate sample laboratory results are provided in the Appendix C laboratory report, but are not reflected elsewhere in this report due to the field error.

Utilities reviewed the analytical results for laboratory QC samples. Review included chain-of-custody record and laboratory-receipt form to verify custody, sample holding-times were met, and samples were properly handled from collection through laboratory analysis.



QA/QC exceptions noted include:

- In March 2024, calcium, fluoride, and selenium matrix spike samples were recovered outside of the established range. Associated data are qualified, as reflected in the Appendix C laboratory reports. Calcium, fluoride, and selenium concentrations from the affected samples were generally consistent with historic sample concentrations.
- In September 2024, some fluoride, cadmium, lead, selenium, and calcium matrix spike samples were recovered outside of the established range. Associated data are qualified as reflected in the Appendix C laboratory reports. Metal concentrations from the affected samples were generally consistent with historic sample concentrations.

Laboratory quality control activities are discussed in the Appendix C laboratory report case narratives.

4.4 Monitoring Well Installation, Repair, and Abandonment

No CCR landfill monitoring wells were installed, repaired, or abandoned in 2024.

5.0 STATISTICAL ANALYSIS RESULTS SUMMARY

The methods used to statistically analyze the Detection and Assessment Monitoring groundwater data, the rationale for the analytical methods, and the results of the 2024 statistical analysis are presented in Appendix D.

The 2024 groundwater sampling results suggest that the following EPA CCR Rule Appendix III constituents are present at concentrations estimated as being a statistically significant increase above background:

- Boron within monitoring wells SC-11 and SC-12
- ▼ Fluoride within monitoring well SC-12

During 2024, no EPA CCR Rule Appendix IV constituents were measured at a statistically significant level exceeding the GWPS.

6.0 GROUNDWATER PROTECTION STANDARDS (GWPS)

GWPS were established in accordance with 257.95(d)(2) of the EPA CCR Rule. The Rule states in 257.95(h) that the GWPS shall be:

- (1) For constituents for which a maximum contaminant level (MCL) has been established under §141.62 and §141.66 of this title, the MCL for that constituent;
- (2) For the following constituents:
 - (i) Cobalt 6 micrograms per liter (ug/l);
 - (ii) Lead 15 ug/l;
 - (iii) Lithium 40 ug/l; and
 - (iv) Molybdenum 100 ug/l.
- (3) For constituents for which the background level is higher than the levels identified under paragraphs (*h*)(1) and (*h*)(2) of this section, the background concentration.



To create the GWPS, an upper tolerance limit (UTL) was calculated for each of the EPA CCR Rule Appendix IV constituents to establish their background concentration. Each UTL was then compared to the corresponding MCL or EPA CCR Rule standard. If a UTL was greater than the MCL or standard, then the UTL was used as the GWPS.

GWPS were calculated for the 2024 semi-annual sampling events and are provided in the statistical analysis report provided in Appendix D. A summary of the GWPS resulting from the 2024 sampling are presented in the table below:

Appendix IV Constituent	MCL (ug/L)	EPA CCR Rule Standard (ug/L)	Background Higher than MCL or Standard *	Upper Tolerance Limit (ug/L)	GWPS (ug/L)
Antimony	6	-	No	4.13	6
Arsenic	10	-	Yes	11	11
Barium	2000	-	No	27.6	2000
Beryllium	4	-	No	2	4
Cadmium	5	-	No	5	5
Chromium	100	-	No	10	100
Cobalt	-	6	Yes	11.8	11.8
Fluoride	4 mg/L	-	No	0.837 mg/L	4 mg/L
Lead	-	15	No	5.2	15
Lithium	-	40	Yes	1166	1166
Mercury	2	-	No	0.009	2
Molybdenum	-	100	No	11	100
Selenium	50	-	Yes	224	224
Thallium	2	-	Yes	4.18	4.18
Radium 226 and 228 Combined	5 pCi/L	-	No	4.8 pCi/L	5 pCi/L

GROUNDWATER PROTECTION STANDARDS

Upper tolerance limit calculated for the constituents and compared to the MCL or the EPA CCR Rule standard. If the UTL was greater than the MCL or standard, then the UTL was used as the GWPS.

Once GWPS have been calculated, §257.95(g) requires that the owner / operator determine if any of the Appendix IV constituents are present at a statistically significant level exceeding the GWPS. To determine such, a confidence interval was calculated for each constituent and compared to the GWPS. A statistically significant level is identified if the confidence interval band fully exceeds the GWPS at the most recent sampling event. The confidence interval calculations for 2024 are provided in Appendix D. The confidence interval calculations indicate that no Appendix IV constituents exceeded the GWPS at a statistically significant level in 2024.



7.0 SUMMARY OF FINDINGS

Comparison of the groundwater flow to those historically measured shows de minimis differences in the groundwater flow regime beneath the site. Groundwater associated with the CCR Landfill continues to flow in an east / southeasterly direction towards the Retention Dam, which inhibits its migration off-site.

Statistical analysis suggests that boron concentrations at compliance groundwater monitoring wells SC-11 and SC-12 and fluoride concentrations at compliance groundwater monitoring well SC-12 exhibit a statistically significant increase over background concentrations; therefore, the CCR Landfill will continue with Assessment Monitoring in 2025.

No EPA CCR Rule Appendix IV constituents were measured at a statistically significant level exceeding the GWPS during 2024.

The overall CCR Landfill groundwater monitoring program was reviewed. It was identified that groundwater chemistry is different in the North Paleo-Alluvial Valley as compared to the South Paleo-Alluvial Valley, but the current background data set for statistical evaluation is based only on wells located within the South Paleo-Alluvial Valley (AECOM 2022). In consideration of this complex geology, a previously submitted Alternative Source Demonstration, the August 23, 2023 *Groundwater Monitoring Network Modification* letter (Appendix E), and other constraints, Utilities continues the effort to modify the groundwater monitoring program to account for the full diversity of background geochemical conditions of the North and South Paleo-Alluvial Valleys. Additional monitoring wells are being sampled to establish a new background dataset for the North Paleo-Alluvial Valley. A revised groundwater monitoring plan for the CCR Landfill will be completed following a minimum of eight background monitoring well sampling events. Utilities anticipates that the revised groundwater monitoring plan will be complete in 2025. As recommended in the August 23, 2023, *Groundwater Monitoring Network Modification* letter, Utilities continues to conduct activities in general accordance with the 2017 Professional Engineer-certified and CDPHE-approved Coal Combustion Residuals Landfill Groundwater Detection Monitoring Plan.

7.1 <u>Risk</u>

Utilities believes that the risk posed by the CCR Landfill to human health and the environment via the groundwater exposure pathway continues to be low for the following reasons:

- Groundwater underlying the CSR CD Area (which includes the CCR Landfill) is not used for domestic or agricultural purposes. There are no drinking water or agricultural wells within the CD Area and there is no reasonable potential for future domestic or agricultural uses of groundwater within this area, as it is owned and controlled by Utilities.
- Previously evaluated groundwater quality data indicated that groundwater upgradient of and underlying the CSR CD Area, in which the CCR Landfill is located, has a total dissolved solids (TDS) concentration exceeding 10,000 mg/L. The EPA, in their Guidelines for Groundwater Classification Under the EPA Groundwater Protection Strategy, classifies groundwater with TDS concentrations greater than or equal to 10,000 mg/L as Class III water (EPA 1988). Class III is defined as "groundwater not a potential source of drinking water and/or limited beneficial use." The high TDS of groundwater upgradient of and beneath the CD Area discourages its use for domestic or agricultural purposes.



The CSR Retention Dam inhibits the off-site migration of stormwater and groundwater associated with the CCR Landfill; therefore, limiting the potential for exposure. The Retention Dam largely hydrologically disconnects the CCR Landfill associated groundwater from the downgradient Fountain Creek Alluvial Aquifer (i.e. the closest drinking water source).

7.2 Activities for 2025

For 2025, Utilities plans to continue with Detection Monitoring and Assessment Monitoring. Utilities will also continue conducting the activities described in the August 23, 2023, *Groundwater Monitoring Network Modification* letter sent to the CDPHE on August 23, 2023. See Appendix E.

8.0 REFERENCES

AECOM Technical Services. 2017. Coal Combustion Residuals (CCR) Ash Monofill Groundwater Detection Monitoring Plan Clear Spring Ranch, El Paso County, Colorado Revision 0. October 2017.

AECOM. 2022. Coal Combustion Residuals (CCR) Landfill Alternative Source Demonstration Assessment Monitoring, Selenium Clear Spring Ranch, El Paso County, Colorado Revision 0. April 2022.

CDPHE. 2017. E-Mail from Jill Parisi / CDPHE to Patti Zietlow / Colorado Springs Utilities Re: Clear Spring Ranch CCR Landfill Groundwater Detection Monitoring Plan. November 14, 2017.

Haley & Aldrich. 1994. Hannah Ranch Dam Seepage Analysis Preliminary Engineering Report. April 1994.

Haley & Aldrich. 1995. Hanna Ranch Supernatant Dam Design Summary Report. February 1995.

Layne Western. 1977. Ash Disposal Site, R.D. Nixon Power Plant. Carl Nuzman, Bruce Maxwell & Carl Larson. August 1977.

Title 40 of the Code of Federal Regulations (CFR) Part 257 Subpart D.

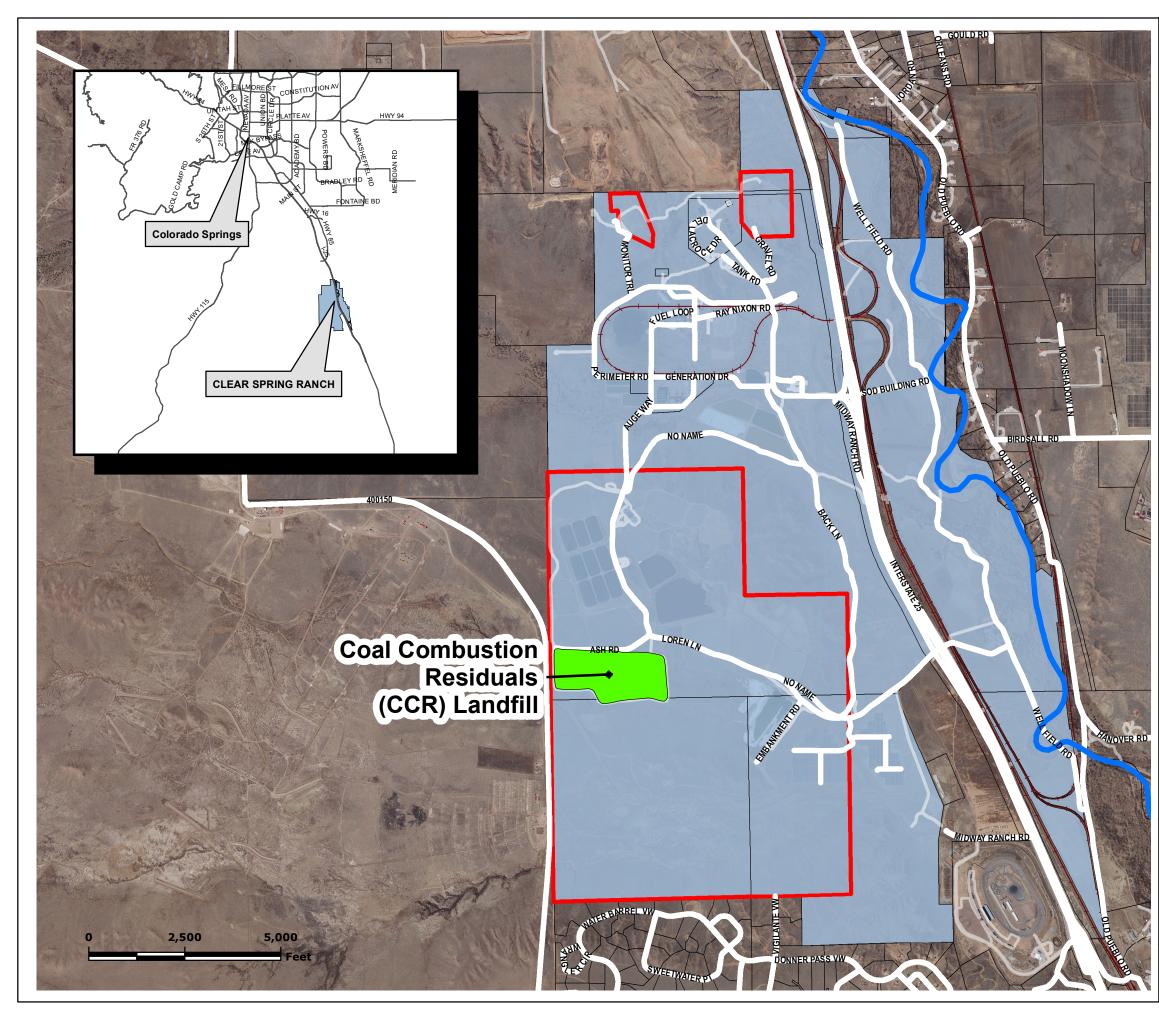
U.S. EPA. 1988. Guidelines for Groundwater Classification Under the EPA Groundwater Protection Strategy. Office of Groundwater Protection. June 1988.

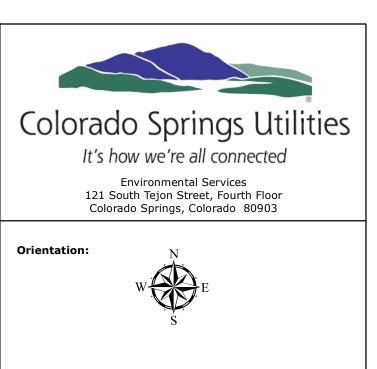
Report Distribution List:

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APPENDIX A

Vicinity Map and Groundwater Elevation Contours





Legend:



Fountain Creek

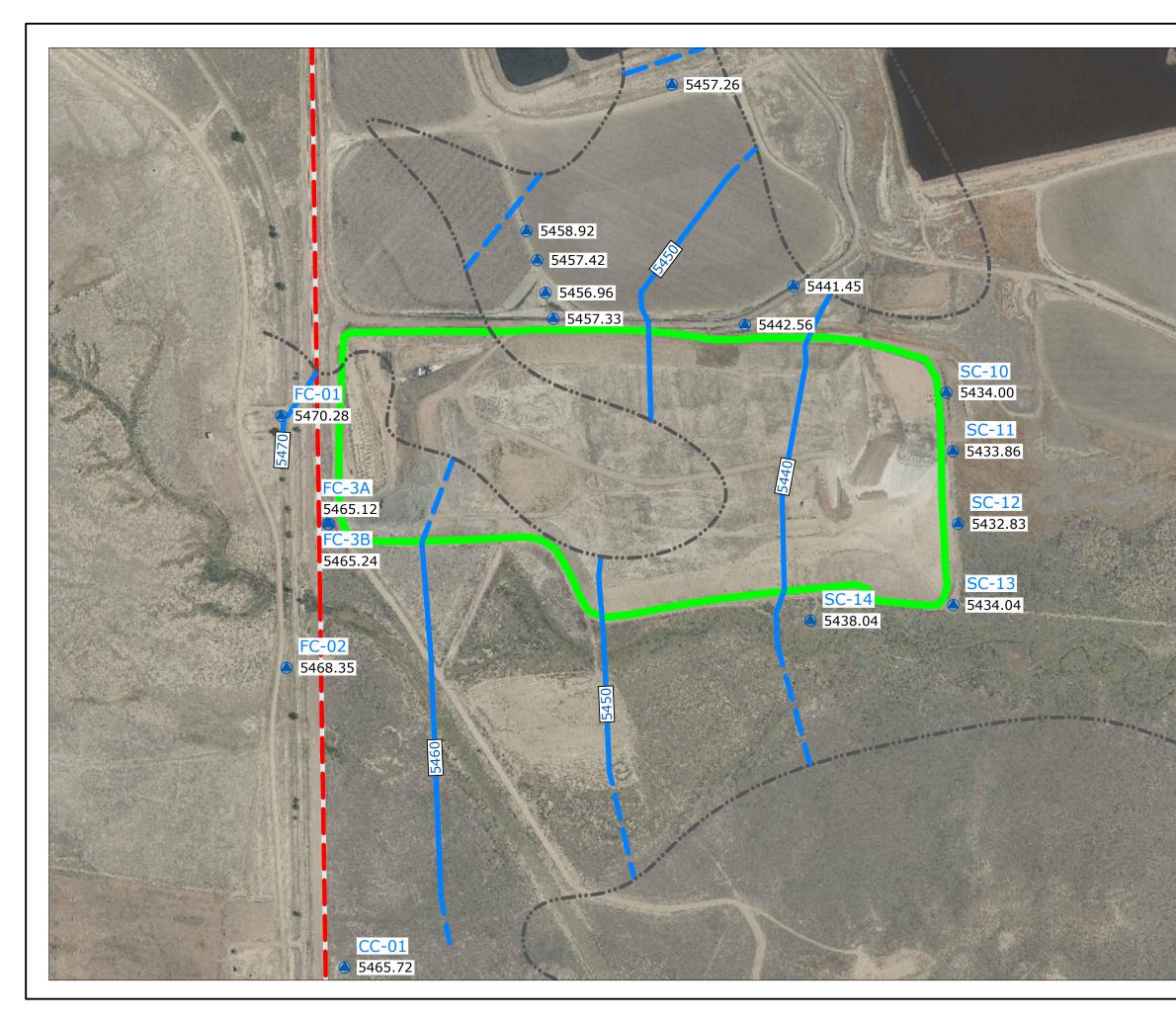
Boundary - Certificate of Designation CD-04-001

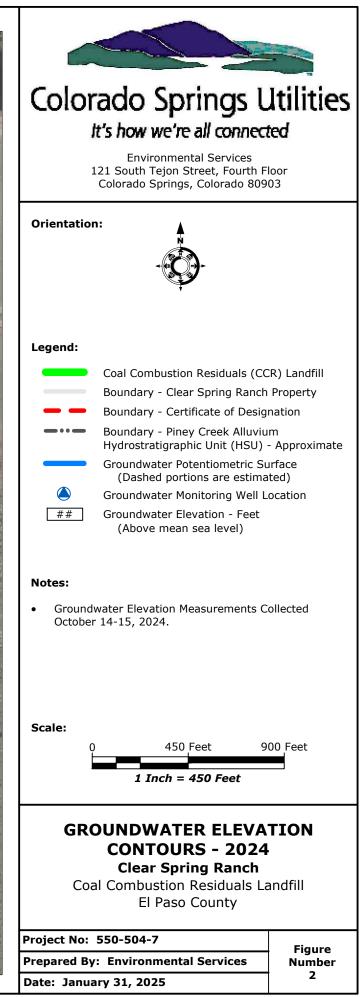
Boundary - Clear Spring Ranch

VICINITY MAP

Clear Spring Ranch Coal Combustion Residuals Landfill El Paso County

Project No:	550-504-7	Figure
Prepared By	Environmental Services	Number
Date:	January 31, 2025	1





APPENDIX B

Groundwater Laboratory Analytical Results and Groundwater Depths / Elevations / Hydrographs



CCR LANDFILL Groundwater Laboratory Analytical Results

Monitoring	Sample	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chloride	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	рН	Radium 226 + 228	Selenium	Sulfate	Thallium	Total Dissolved Solids
Well ID	Date	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L	SU	pCi/L	ug/L	mg/L	ug/L	mg/L
CC-1	3/18/2024	<2.0	<5.0	5.7	<1.0	1020	<1.0	419000	1750	<3.0	<5.00	0.21	<1.0	771	0.007	<2.0	6.9	2.20	170	21300	<1.0	34900
00-1	9/17/2024	<2.0	<5.0	5.8	<1.0	1120	<1.0	416000	1690	<3.0	2.38	0.21	1.1	702	0.005	<2.0	6.9	2.04	180	21700	<1.0	35200
FC-1	3/18/2024	<2.0	<5.0	8.6	<1.0	1010	<1.0	378000	840	<3.0	<5.00	0.12	<1.0	949	0.002	2.1	7.1	4.18	<5.0	13900	<1.0	22000
10-1	9/17/2024	<2.0	<5.0	9.0	<1.0	1040	<1.0	390000	802	<3.0	<2.00	0.12	<1.0	923	0.002	2.2	7.1	2.02	<5.0	13500	<1.0	21700
FC-2	3/18/2024	<2.0	<5.0	6.2	<1.0	921	<1.0	403000	109	<3.0	<5.00	0.49	<1.0	315	0.003	2.8	7.3	2.17	39	6390	<1.0	9780
10-2	9/17/2024	<2.0	<5.0	6.4	<1.0	999	<1.0	397000	115	<3.0	<2.00	0.50	<1.0	276	0.002	2.8	7.3	0.377	37	6330	<1.0	10100
FC-3A	3/18/2024	<2.0	<5.0	11	<1.0	1040	<1.0	408000	144	<3.0	<5.00	0.44	<1.0	317	<0.002	6.9	7.4	0.601	55	5670	<1.0	9220
10-34	9/18/2024	<2.0	<5.0	11	<1.0	1000	<1.0	408000	148	<3.0	<2.00	0.46	<1.0	253	0.002	7.9	7.4	0.146	46	5610	<1.0	9000
FC-3B	3/18/2024	<2.0	<5.0	11	<1.0	1170	<1.0	237000	233	<3.0	<5.00	0.61	<1.0	278	<0.002	11	7.2	1.16	<5.0	4270	<1.0	7600
10-08	9/18/2024	<2.0	<5.0	11	<1.0	1190	<1.0	253000	212	<3.0	<2.00	0.64	<1.0	232	0.006	8.2	7.3	0.234	<5.0	4320	<1.0	7320
SC-10	3/19/2024	<2.0	<5.0	12	<1.0	1180	<1.0	403000	1000	<3.0	<5.00	0.49	<1.0	688	0.007	4.6	7.2	0.508	200	9810	<1.0	16900
00-10	9/18/2024	<2.0	<5.0	9.7	<1.0	1270	<1.0	419000	998	<3.0	<2.00	0.50	<1.0	633	0.006	4.8	7.3	0.350	200	9800	<1.0	16500
SC-11	3/19/2024	<2.0	<5.0	12	<1.0	2570	<1.0	458000	1290	<3.0	<5.00	0.56	<1.0	623	0.011	2.9	7.2	0.878	330	8400	<1.0	16000
00-11	9/18/2024	<2.0	<5.0	8.2	<1.0	2710	<1.0	467000	1270	<3.0	<2.00	0.58	<1.0	534	0.006	3.5	7.2	0.344	330	8580	<1.0	15600
	3/19/2024	<2.0	<5.0	6.4	<1.0	4400	<1.0	397000	340	<3.0	<5.00	0.89	<1.0	442	0.004	4.3	7.3	0.329	12	8120	<1.0	13400
SC-12	3/19/2024 Dup	<2.0	<5.0	6.2	<1.0	4420	<1.0	373000	341	<3.0	<5.00	0.88	<1.0	455	0.004	4.6	7.3	0.734	13	8060	<1.0	13500
	9/18/2024	<2.0	<5.0	5.8	<1.0	4600	<1.0	398000	353	<3.0	<2.00	0.88	<1.0	374	0.002	5.2	7.2	-0.100	12	8300	<1.0	13200
SC-13	3/19/2024	<2.0	<5.0	7.1	<1.0	1490	<1.0	378000	163	<3.0	<5.00	0.70	<1.0	363	0.002	3.6	7.3	0.684	31	6950	<1.0	11400
00-10	9/18/2024	<2.0	<5.0	5.8	<1.0	1560	<1.0	406000	180	<3.0	<2.00	0.71	<1.0	288	0.002	3.5	7.3	-0.291	27	7570	<1.0	11900
SC-14	3/19/2024	<2.0	<5.0	5.4	<1.0	1390	<1.0	378000	152	<3.0	<5.00	0.69	<1.0	371	<0.002	11	7.2	0.680	7.8	6880	<1.0	11300
00-14	9/18/2024	<2.0	<5.0	5.2	<1.0	1460	<1.0	398000	160	<3.0	<2.00	0.70	<1.0	246	0.001	11	7.3	0.235	7.0	7100	<1.0	10700

* Metals are Total / Total Recoverable

* See laboratory reports for data qualifiers

< Indicates the constituent was not detected above the stated laboratory reporting limit

Dup = Duplicate



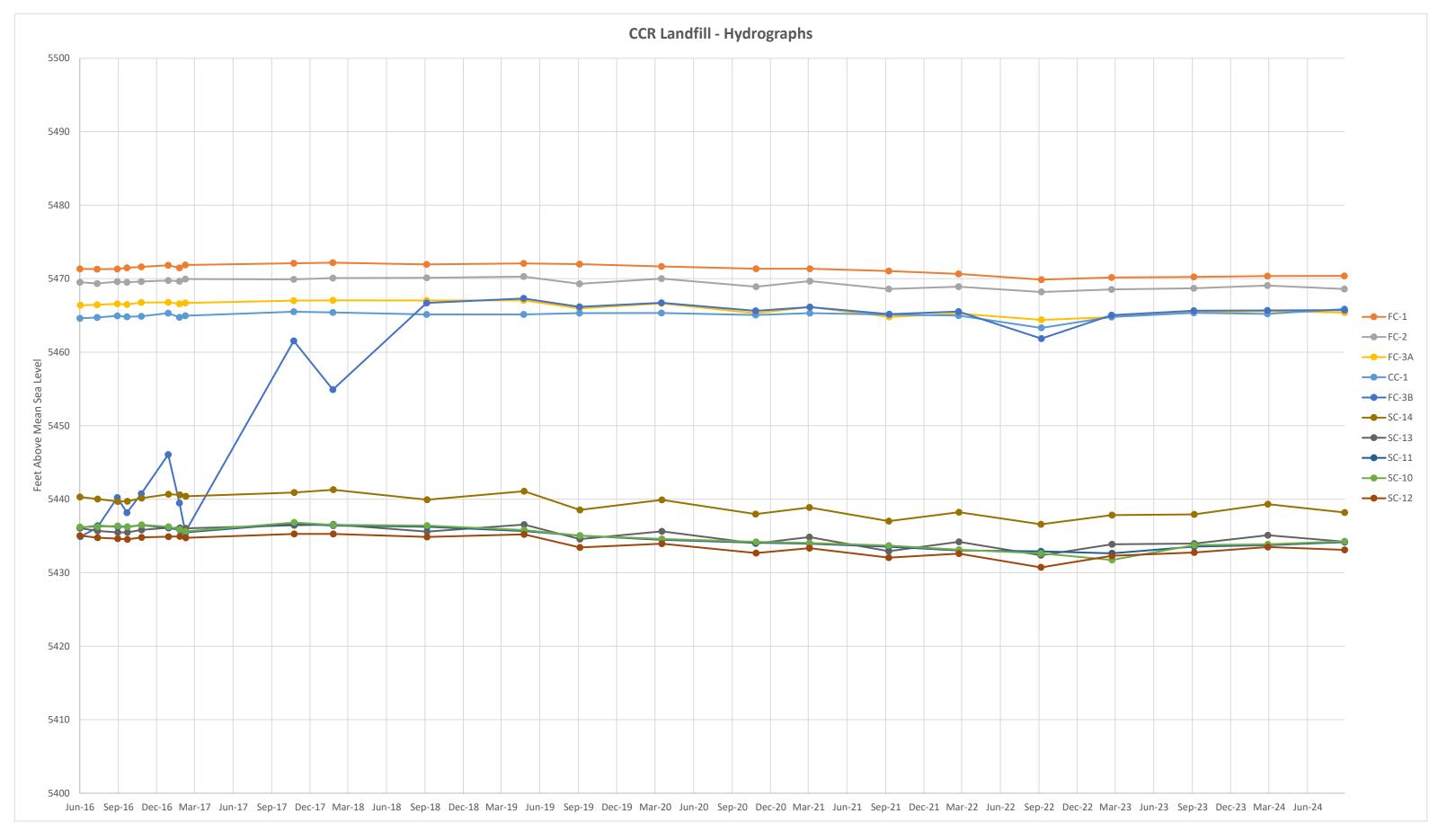
CCR LANDFILL Groundwater Depths / Elevations

Monitoring Well ID	C	C-1	FC	-1	FC	-2	FC	-3A	FC	-3B	SC	-10	SC	-11	sc	-12	SC	-13	SC	-14
Measuring Point Elevation	547	8.67	5486	6.87	5483	3.00	548	4.29	548	3.75	544	7.65	5444	4.54	544	4.32	544	5.98	5450	0.23
Date Measured	Depth to Water	Water Surface Elevation																		
6/22/2016	14.07	5,464.60	15.53	5,471.34	13.49	5,469.51	-	-	-	-	11.43	5,436.22	8.40	5,436.14	9.29	5,435.03	9.92	5,436.06	9.94	5,440.29
6/23/2016	-	-	-	-	-	-	17.91	5,466.38	48.85	5,434.90	-	-	-	-	-	-	-	-	-	-
8/2/2016 8/3/2016	13.95	5,464.72	15.57	5,471.30	13.67	5,469.33	17.85	5,466.44	47.62	5,436.13	- 11.40	- 5 426 25	- 0 15	- 5,436.39	- 9.56	- 5 424 76	- 10.30	-	-	-
9/19/2016	- 13.74	- 5,464.93	- 15.55	- 5,471.32	- 13.41	- 5,469.59	- 17.70	- 5,466.59	43.52	- 5,440.23	-	5,436.25	8.15 -	5,430.39	9.56	5,434.76	-	5,435.68	10.21	5,440.02
9/20/2016	-	-	-	-	-	-	-	-	-	- 0,740.20	11.28	5,436.37	8.28	5,436.26	9.70	5,434.62	10.50	5,435.48	10.54	5,439.69
10/12/2016	13.85	5,464.82	15.40	5,471.47	13.49	5,469.51	17.80	5,466.49	45.58	5,438.17	-	-	-	-	-	-	-	-	-	-
10/13/2016	-	-	-	-	-	-	-	-	-	-	11.39	5,436.26	8.30	5,436.24	9.79	5,434.53	10.49	5,435.49	10.52	5,439.71
11/15/2016	13.79	5,464.88	15.26	5,471.61	13.38	5,469.62	17.54	5,466.75	43.01	5,440.74	-	-	-	-	-	-	-	-	-	-
11/16/2016	-	-	-	-	-	-	-	-	-	-	11.15	5,436.50	8.07	5,436.47	9.51	5,434.81	10.15	5,435.83	10.08	5,440.15
1/18/2017 1/19/2017	13.35	5,465.32	15.04	5,471.83	13.25	5,469.75	17.51	5,466.78	37.68	5,446.07	- 11.40	- 5,436.25	- 8.44	- 5,436.10	- 9.42	- 5,434.90	- 9.87	- 5,436.11	- 9.56	- 5,440.67
2/14/2017	13.93	- 5,464.74	15.39	- 5,471.48	13.35	- 5,469.65	17.71	- 5,466.58	44.27	- 5,439.48	-	-	-	-	9.42	- 5,454.90	9.07	- 5,430.11	9.50	5,440.07
2/15/2017	-	-	-	-	-	-	-	-	-	-	11.78	5,435.87	8.74	5,435.80	9.38	5,434.94	9.88	5,436.10	9.64	5,440.59
2/28/2017	13.71	5,464.96	15.00	5,471.87	13.06	5,469.94	17.60	5,466.69	48.20	5,435.55	-	-	-	-	-	-	-	-	-	-
3/1/2017	-	-	-	-	-	-	-	-	-	-	12.03	5,435.62	9.05	5,435.49	9.57	5,434.75	9.95	5,436.03	9.83	5,440.40
11/13/2017	13.16	5,465.51	14.78	5,472.09	13.10	5,469.90	17.28	5,467.01	22.21	5,461.54	-	-	-	-	-	-	-	-	-	
11/14/2017 2/14/2018	- 13.26	- 5,465.41	- 14.69	- 5,472.18	- 12.91	- 5,470.09	- 17.23	- 5,467.06	- 28.84	- 5,454.91	10.82	5,436.83	7.85	5,436.69	9.05	5,435.27	9.54	5,436.44	9.32	5,440.91
2/15/2018	-	5,405.41	-	5,472.10	-	5,470.09	-	5,407.00	20.04 -	5,454.91	- 11.15	- 5,436.50	- 8.13	- 5,436.41	- 9.04	- 5,435.28	- 9.40	- 5,436.58	- 8.94	- 5,441.29
9/25/2018	13.54	5,465.13	14.94	5,471.93	12.88	5,470.12	17.25	5,467.04	17.06	5,466.69	-	-	-	-	-	-	-	-	-	-
9/26/2018	-	-	-	-	-	-	-	-	-	-	11.24	5,436.41	8.28	5,436.26	9.45	5,434.87	10.39	5,435.59	10.30	5,439.93
5/14/2019	13.54	5,465.13	14.79	5,472.08	12.71	5,470.29	17.24	5,467.05	16.43	5,467.32	-	-	-	-	-	-	-	-	-	-
5/15/2019	-		-		-		-		-		11.85	5,435.80	8.87	5,435.67	9.11	5,435.21	9.44	5,436.54	9.14	5,441.09
9/24/2019	13.36	5,465.31	14.90	5,471.97	13.71	5,469.29	18.34	5,465.95	17.57	5,466.18	-	-	-	-	-	-	-	-	-	-
9/25/2019 4/6/2020	- 13.34	- 5,465.33	- 15.20	- 5,471.67	- 12.99	- 5,470.01	- 17.65	- 5,466.64	- 17.04	- 5,466.71	12.62 -	5,435.03	9.50	5,435.04	10.89	5,433.43	11.41 -	5,434.57	11.69 -	5,438.54
4/7/2020	-	-	-	- 5,471.07	-	- 3,470.01	-	J,400.04 -	-	- 5,400.71	- 13.06	- 5,434.59	- 10.07	- 5,434.47	10.38	- 5,433.94	10.35	- 5,435.63	10.32	- 5,439.91
11/16/2020	13.62	5,465.05	-	-	_	-	19.00	5,465.29	18.13	5,465.62	-	-	-	-	-	-	11.99	5,433.99	12.25	5,437.98
11/17/2020	-	-	15.52	5,471.35	14.09	5,468.91	-	-	-	-	13.45	5,434.20	10.45	5,434.09	11.65	5,432.67	-	-	-	-
3/24/2021	-	-	-	-	-	-	-	-	-	-	13.60	5,434.05	10.60	5,433.94	10.99	5,433.33	11.14	5,434.84	11.35	5,438.88
3/25/2021	13.35	5,465.32	15.51	5,471.36	13.32	5,469.68	18.14	5,466.15	17.62	5,466.13	-	-	-	-	-	-	-	-	-	-
9/29/2021 9/30/2021	- 13.56	- 5,465.11	15.83	5,471.04	14.41	5,468.59	-	- 5 161 01	-	-	13.96	5,433.69	11.01	5,433.53	12.28	5,432.04	13.05	5,432.93	13.22	5,437.01
3/14/2022	13.56	5,465.11 5,464.98	- 16.23	- 5,470.64	- 14.09	- 5,468.91	19.48 19.04	5,464.81 5,465.25	18.57 18.22	5,465.18 5,465.53	-	-	-	-	_	-	_	-	-	-
3/15/2022	-	U,	-	0,77	-		-	-	-	-	- 14.52	- 5,433.13	- 11.51	- 5,433.03	- 11.72	- 5,432.60	- 11.78	- 5,434.20	- 12.01	- 5,438.22
9/26/2022	-	-	-	-	-	-	-	-	-	-	15.01	5,432.64	11.64	5,432.90	13.59	5,430.73	13.61	5,432.37	13.64	5,436.59
9/27/2022	15.36	5,463.31	17.00	5,469.87	14.80	5,468.20	19.88	5,464.41	21.91	5,461.84	-	-	-	-	-	-	-	-	-	-
3/13/2023	13.87	5,464.80	16.71	5,470.16	14.46	5,468.54	19.52	5,464.77	18.72	5,465.03	-	-	-	-	-	-	-	-		-
3/14/2023	-	- 5 /65 25	-	-	-	-	-	- 5 165 11	-	-	15.91	5,431.74	11.89	5,432.65	12.01	5,432.31	12.12	5,433.86	12.40	5,437.83
9/25/2023 9/26/2023	13.32 -	5,465.35	16.64 -	5,470.23	14.31 -	5,468.69	18.88	5,465.41 -	18.10	5,465.65 -	- 13.91	- 5,433.74	- 10.98	- 5,433.56	- 11.57	- 5,432.75	- 12.02	- 5,433.96	12.30	- 5,437.93
3/18/2024	13.46	- 5,465.21	- 16.52	- 5,470.35	- 13.94	- 5,469.06	- 18.71	- 5,465.58	18.06	- 5,465.69	-	U, + U, +	-	-	-	-	-	-	12.00	- -
3/19/2024	-	-	-	-	-	-	-	-	-	-	13.78	5,433.87	10.80	5,433.74	10.83	5,433.49	10.88	5,435.10	10.90	5,439.33
9/17/2024	12.80	5,465.87	16.49	5,470.38	14.41	5,468.59	-	-	-	-	-	-	-	-	-	-	-	-		-
9/18/2024	-	-	-	-	-	-	18.90	5,465.39	18.02	5,465.73	13.38	5,434.27	10.39	5,434.15	11.22	5,433.10	11.77	5,434.21	12.04	5,438.19

Depth to Water = Feet

Water Surface Elevation = Feet Above Mean Sea Level





APPENDIX C

Laboratory Analytical Results



Colorado Springs Utilities It's how we're all connected



Laboratory Report For:

Coal Combustion Residuals - Landfill

Colorado Springs Utilities Environmental Services

Report Authorized by: Wendy M Asay

Title: Environmental Specialist

Report Date: April 19, 2024

Report generated by: Wendy M. Asay

Colorado Springs Utilities Laboratory Services Section certifies that the test results meet all approved method and Laboratory Quality Assurance Plan requirements unless otherwise noted

Samples

496701	18-Mar-2024 15:16	Crooked Canyon Well #1
496702	18-Mar-2024 10:25	Fort Carson Well #1
496703	18-Mar-2024 11:30	Fort Carson Well #2
496704	18-Mar-2024 13:58	Fort Carson Well #3A
496705	18-Mar-2024 13:16	Fort Carson Well #3B
496706	19-Mar-2024 16:40	Equipment Blank
496707	19-Mar-2024 16:05	Sand Canyon Well #10
496708	19-Mar-2024 14:41	Sand Canyon Well #11
496709	19-Mar-2024 13:25	Sand Canyon Well #12
496710	19-Mar-2024 12:25	Sand Canyon Well #13
496711	19-Mar-2024 10:33	Sand Canyon Well #14
496712	19-Mar-2024 00:00	Field Duplicate sample

LIMS #: 496701 Sample Date: 3/18/2024 3:16:51 PM Sample Point: CC_1 Sample Point Description: Crooked Canyon Well #1 Collection Comments: Perform MS/MSD Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
+	SM_4500HB	рН	6.9	SU	2.0			1	
+	SM_2550_B	Temperature Centigrade (Field)	12.2	degrees C	0.000			1	
+	SM_2510_B	Conductivity	28600	umhos/cm	1			1	
+	SM_2580_B	Oxidation-Reduction Potential	157	mV	0			1	
+	SM_4500_0G	Dissolved Oxygen	<1.0	mg/L	1.0			1	
+	SM_2130_B	Turbidity	8.9	NTU	0.05			1	
	NA	Depth to Water	13.46	ft.	0.000			1	
	EPA_200_7	Boron (Total Recoverable)	1020	ug/L	20.0		03/25/2024	1	
		Calcium (Total Recoverable)	419000	ug/L	1000	T1/D	03/25/2024	10	
		Cobalt (Total Recoverable)	<5.00	ug/L	5.00		03/25/2024	1	
		Lithium (Total Recoverable)	771	ug/L	300	D	03/25/2024	10	
	EPA_1631	Mercury (Total)	0.007	ug/L	0.002		04/01/2024	1	
	EPA_300_0	Chloride	1750	mg/L	25.0	D	03/29/2024	50	
		Sulfate	21300	mg/L	500	D	03/29/2024	1000	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		04/01/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		04/01/2024	1	
		Barium (Total)	5.7	ug/L	3.0		04/01/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		04/01/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0		04/01/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		04/01/2024	1	
		Lead (Total)	<1.0	ug/L	1.0		04/01/2024	1	
		Molybdenum (Total)	<2.0	ug/L	2.0		04/01/2024	1	
		Selenium (Total)	170	ug/L	5.0	T1	04/01/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		04/01/2024	1	
	SM_2540_C	Total Dissolved Solids	34900	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	0.21	mg/L	0.10	Т	03/29/2024	1	

LIMS #: 496702 Sample Date: 3/18/2024 10:25:51 AM Sample Point: FC_1 Sample Point Description: Fort Carson Well #1 Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor
	EPA_300_0	Chloride	840	mg/L	25.0	D	03/29/2024	50
		Sulfate	13900	mg/L	250	D	03/29/2024	500
+	SM_4500HB	рН	7.1	SU	2.0			1
+	SM_2550_B	Temperature Centigrade (Field)	13.2	degrees C	0.000			1
+	SM_2510_B	Conductivity	21900	umhos/cm	1			1
+	SM_2580_B	Oxidation-Reduction Potential	242	mV	0			1
+	SM_4500_0G	Dissolved Oxygen	<1.0	mg/L	1.0			1
+	SM_2130_B	Turbidity	9.8	NTU	0.05			1
	NA	Depth to Water	16.52	ft.	0.000			1
	SM_2540_C	Total Dissolved Solids	22000	mg/L	10			1
	SM_4500_FC	Fluoride (Total)	0.12	mg/L	0.10	т	03/29/2024	1
	EPA_200_7	Boron (Total Recoverable)	1010	ug/L	20.0		03/25/2024	1
		Calcium (Total Recoverable)	378000	ug/L	1000	T1/D	03/25/2024	10
		Cobalt (Total Recoverable)	<5.00	ug/L	5.00		03/25/2024	1
		Lithium (Total Recoverable)	949	ug/L	300	D	03/25/2024	10
	EPA_1631	Mercury (Total)	0.002	ug/L	0.002		04/01/2024	1
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		03/26/2024	1
		Arsenic (Total)	<5.0	ug/L	5.0		03/26/2024	1
		Barium (Total)	8.6	ug/L	3.0		03/26/2024	1
		Beryllium (Total)	<1.0	ug/L	1.0		03/26/2024	1
		Cadmium (Total)	<1.0	ug/L	1.0		03/26/2024	1
		Chromium (Total)	<3.0	ug/L	3.0		03/26/2024	1
		Lead (Total)	<1.0	ug/L	1.0		03/26/2024	1
		Molybdenum (Total)	2.1	ug/L	2.0		03/26/2024	1
		Selenium (Total)	<5.0	ug/L	5.0		03/26/2024	1
		Thallium (Total)	<1.0	ug/L	1.0		03/26/2024	1

LIMS #: 496703 Sample Date: 3/18/2024 11:30:51 AM Sample Point: FC_2 Sample Point Description: Fort Carson Well #2 Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor
	EPA_300_0	Chloride	109	mg/L	25.0	D	03/29/2024	50
		Sulfate	6390	mg/L	250	D	03/29/2024	500
+	SM_4500HB	рН	7.3	SU	2.0			1
+	SM_2550_B	Temperature Centigrade (Field)	12.3	degrees C	0.000			1
+	SM_2510_B	Conductivity	9740	umhos/cm	1			1
+	SM_2580_B	Oxidation-Reduction Potential	189	mV	0			1
+	SM_4500_0G	Dissolved Oxygen	<1.0	mg/L	1.0			1
+	SM_2130_B	Turbidity	4.8	NTU	0.05			1
	NA	Depth to Water	13.94	ft.	0.000			1
	SM_2540_C	Total Dissolved Solids	9780	mg/L	10			1
	SM_4500_FC	Fluoride (Total)	0.49	mg/L	0.10	т	03/29/2024	1
	EPA_200_7	Boron (Total Recoverable)	921	ug/L	20.0		03/25/2024	1
		Calcium (Total Recoverable)	403000	ug/L	1000	T1/D	03/25/2024	10
		Cobalt (Total Recoverable)	<5.00	ug/L	5.00		03/25/2024	1
		Lithium (Total Recoverable)	315	ug/L	300	D	03/25/2024	10
	EPA_1631	Mercury (Total)	0.003	ug/L	0.002		04/01/2024	1
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		03/26/2024	1
		Arsenic (Total)	<5.0	ug/L	5.0		03/26/2024	1
		Barium (Total)	6.2	ug/L	3.0		03/26/2024	1
		Beryllium (Total)	<1.0	ug/L	1.0		03/26/2024	1
		Cadmium (Total)	<1.0	ug/L	1.0		03/26/2024	1
		Chromium (Total)	<3.0	ug/L	3.0		03/26/2024	1
		Lead (Total)	<1.0	ug/L	1.0		03/26/2024	1
		Molybdenum (Total)	2.8	ug/L	2.0		03/26/2024	1
		Selenium (Total)	39	ug/L	5.0		03/26/2024	1
		Thallium (Total)	<1.0	ug/L	1.0		03/26/2024	1

LIMS #: 496704 Sample Date: 3/18/2024 1:58:51 PM Sample Point: FC_3A Sample Point Description: Fort Carson Well #3A Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor
	EPA_300_0	Chloride	144	mg/L	25.0	D	03/29/2024	50
		Sulfate	5670	mg/L	250	D	03/29/2024	500
+	SM_4500HB	рН	7.4	SU	2.0			1
+	SM_2550_B	Temperature Centigrade (Field)	12.6	degrees C	0.000			1
+	SM_2510_B	Conductivity	8930	umhos/cm	1			1
+	SM_2580_B	Oxidation-Reduction Potential	107	mV	0			1
+	SM_4500_OG	Dissolved Oxygen	<1.0	mg/L	1.0			1
+	SM_2130_B	Turbidity	3.9	NTU	0.05			1
	NA	Depth to Water	18.71	ft.	0.000			1
	SM_2540_C	Total Dissolved Solids	9220	mg/L	10			1
	SM_4500_FC	Fluoride (Total)	0.44	mg/L	0.10	т	03/29/2024	1
	EPA_200_7	Boron (Total Recoverable)	1040	ug/L	20.0		03/25/2024	1
		Calcium (Total Recoverable)	408000	ug/L	1000	T1/D	03/25/2024	10
		Cobalt (Total Recoverable)	<5.00	ug/L	5.00		03/25/2024	1
		Lithium (Total Recoverable)	317	ug/L	300	D	03/25/2024	10
	EPA_1631	Mercury (Total)	< 0.002	ug/L	0.002		04/01/2024	1
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		03/26/2024	1
		Arsenic (Total)	<5.0	ug/L	5.0		03/26/2024	1
		Barium (Total)	11	ug/L	3.0		03/26/2024	1
		Beryllium (Total)	<1.0	ug/L	1.0		03/26/2024	1
		Cadmium (Total)	<1.0	ug/L	1.0		03/26/2024	1
		Chromium (Total)	<3.0	ug/L	3.0		03/26/2024	1
		Lead (Total)	<1.0	ug/L	1.0		03/26/2024	1
		Molybdenum (Total)	6.9	ug/L	2.0		03/26/2024	1
		Selenium (Total)	55	ug/L	5.0		03/26/2024	1
		Thallium (Total)	<1.0	ug/L	1.0		03/26/2024	1

LIMS #: 496705 Sample Date: 3/18/2024 1:16:51 PM Sample Point: FC_3B Sample Point Description: Fort Carson Well #3B Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor
	EPA_300_0	Chloride	233	mg/L	25.0	D	03/29/2024	50
		Sulfate	4270	mg/L	250	D	03/29/2024	500
+	SM_4500HB	рН	7.2	SU	2.0			1
+	SM_2550_B	Temperature Centigrade (Field)	12.8	degrees C	0.000			1
+	SM_2510_B	Conductivity	8790	umhos/cm	1			1
+	SM_2580_B	Oxidation-Reduction Potential	-99	mV	0			1
+	SM_4500_0G	Dissolved Oxygen	<1.0	mg/L	1.0			1
+	SM_2130_B	Turbidity	11	NTU	0.05			1
	NA	Depth to Water	18.06	ft.	0.000			1
	SM_2540_C	Total Dissolved Solids	7600	mg/L	10			1
	SM_4500_FC	Fluoride (Total)	0.61	mg/L	0.10	т	03/29/2024	1
	EPA_200_7	Boron (Total Recoverable)	1170	ug/L	20.0		03/25/2024	1
		Calcium (Total Recoverable)	237000	ug/L	1000	T1/D	03/25/2024	10
		Cobalt (Total Recoverable)	<5.00	ug/L	5.00		03/25/2024	1
		Lithium (Total Recoverable)	278	ug/L	30.0		03/25/2024	1
	EPA_1631	Mercury (Total)	<0.002	ug/L	0.002		04/01/2024	1
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		03/26/2024	1
		Arsenic (Total)	<5.0	ug/L	5.0		03/26/2024	1
		Barium (Total)	11	ug/L	3.0		03/26/2024	1
		Beryllium (Total)	<1.0	ug/L	1.0		03/26/2024	1
		Cadmium (Total)	<1.0	ug/L	1.0		03/26/2024	1
		Chromium (Total)	<3.0	ug/L	3.0		03/26/2024	1
		Lead (Total)	<1.0	ug/L	1.0		03/26/2024	1
		Molybdenum (Total)	11	ug/L	2.0		03/26/2024	1
		Selenium (Total)	<5.0	ug/L	5.0		03/26/2024	1
		Thallium (Total)	<1.0	ug/L	1.0		03/26/2024	1

LIMS #: 496706 Sample Date: 3/19/2024 4:40:52 PM Sample Point: EQUIP_BLK Sample Point Description: Equipment Blank Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
	EPA_300_0	Chloride	<0.50	mg/L	0.50		03/29/2024	1	
		Sulfate	<0.50	mg/L	0.50		03/29/2024	1	
	SM_2540_C	Total Dissolved Solids	<10	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	<0.10	mg/L	0.10	Т	03/29/2024	1	
	EPA_200_7	Boron (Total Recoverable)	<20.0	ug/L	20.0		03/25/2024	1	
		Calcium (Total Recoverable)	<100	ug/L	100	T1	03/25/2024	1	
		Cobalt (Total Recoverable)	<5.00	ug/L	5.00		03/25/2024	1	
		Lithium (Total Recoverable)	<30.0	ug/L	30.0		03/25/2024	1	
	EPA_1631	Mercury (Total)	<0.002	ug/L	0.002		04/01/2024	1	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		03/26/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		03/26/2024	1	
		Barium (Total)	<3.0	ug/L	3.0		03/26/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		03/26/2024	1	
		Lead (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Molybdenum (Total)	<2.0	ug/L	2.0		03/26/2024	1	
		Selenium (Total)	<5.0	ug/L	5.0		03/26/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		03/26/2024	1	

LIMS #: 496707 Sample Date: 3/19/2024 4:05:43 PM Sample Point: SC_10 Sample Point Description: Sand Canyon Well #10 Collection Comments: Perform MS/MSD; Turbid Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
+	SM_4500HB	рН	7.2	SU	2.0			1	
+	SM_2550_B	Temperature Centigrade (Field)	14.2	degrees C	0.000			1	
+	SM_2510_B	Conductivity	17500	umhos/cm	1			1	
+	SM_2580_B	Oxidation-Reduction Potential	168	mV	0			1	
+	SM_4500_0G	Dissolved Oxygen	<1.0	mg/L	1.0			1	
+	SM_2130_B	Turbidity	27	NTU	0.05			1	
	NA	Depth to Water	13.78	ft.	0.000			1	
	EPA_200_7	Boron (Total Recoverable)	1180	ug/L	20.0		03/25/2024	1	
		Calcium (Total Recoverable)	403000	ug/L	1000	T1/D	03/25/2024	10	
		Cobalt (Total Recoverable)	<5.00	ug/L	5.00		03/25/2024	1	
		Lithium (Total Recoverable)	688	ug/L	300	D	03/25/2024	10	
	EPA_1631	Mercury (Total)	0.007	ug/L	0.002		04/01/2024	1	
	EPA_300_0	Chloride	1000	mg/L	25.0	D	03/26/2024	50	
		Sulfate	9810	mg/L	250	D	03/26/2024	500	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		04/01/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		04/01/2024	1	
		Barium (Total)	12	ug/L	3.0		04/01/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		04/01/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0		04/01/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		04/01/2024	1	
		Lead (Total)	<1.0	ug/L	1.0		04/01/2024	1	
		Molybdenum (Total)	4.6	ug/L	2.0		04/01/2024	1	
		Selenium (Total)	200	ug/L	5.0	T1	04/01/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		04/01/2024	1	
	SM_2540_C	Total Dissolved Solids	16900	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	0.49	mg/L	0.10	Т	03/29/2024	1	

LIMS #: 496708 Sample Date: 3/19/2024 2:41:43 PM Sample Point: SC_11 Sample Point Description: Sand Canyon Well #11 Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
+	SM_4500HB	рН	7.2	SU	2.0			1	
+	SM_2550_B	Temperature Centigrade (Field)	14.3	degrees C	0.000			1	
+	SM_2510_B	Conductivity	16600	umhos/cm	1			1	
+	SM_2580_B	Oxidation-Reduction Potential	203	mV	0			1	
+	SM_4500_OG	Dissolved Oxygen	<1.0	mg/L	1.0			1	
+	SM_2130_B	Turbidity	22	NTU	0.05			1	
	NA	Depth to Water	10.80	ft.	0.000			1	
	SM_2540_C	Total Dissolved Solids	16000	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	0.56	mg/L	0.10	Т	03/29/2024	1	
	EPA_200_7	Boron (Total Recoverable)	2570	ug/L	20.0		03/25/2024	1	
		Calcium (Total Recoverable)	458000	ug/L	1000	T1/D	03/25/2024	10	
		Cobalt (Total Recoverable)	<5.00	ug/L	5.00		03/25/2024	1	
		Lithium (Total Recoverable)	623	ug/L	300	D	03/25/2024	10	
	EPA_1631	Mercury (Total)	0.011	ug/L	0.002		04/01/2024	1	
	EPA_300_0	Chloride	1290	mg/L	25.0	D	03/26/2024	50	
		Sulfate	8400	mg/L	250	D	03/26/2024	500	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		03/26/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		03/26/2024	1	
		Barium (Total)	12	ug/L	3.0		03/26/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		03/26/2024	1	
		Lead (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Molybdenum (Total)	2.9	ug/L	2.0		03/26/2024	1	
		Selenium (Total)	330	ug/L	5.0		03/26/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		03/26/2024	1	

LIMS #: 496709 Sample Date: 3/19/2024 1:25:43 PM Sample Point: SC_12 Sample Point Description: Sand Canyon Well #12 Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
+	SM_4500HB	рН	7.3	SU	2.0			1	
+	SM_2550_B	Temperature Centigrade (Field)	14.2	degrees C	0.000			1	
+	SM_2510_B	Conductivity	13200	umhos/cm	1			1	
+	SM_2580_B	Oxidation-Reduction Potential	488	mV	0			1	
+	SM_4500_0G	Dissolved Oxygen	<1.0	mg/L	1.0			1	
+	SM_2130_B	Turbidity	3.5	NTU	0.05			1	
	NA	Depth to Water	10.83	ft.	0.000			1	
	SM_2540_C	Total Dissolved Solids	13400	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	0.89	mg/L	0.10	т	03/29/2024	1	
	EPA_200_7	Boron (Total Recoverable)	4400	ug/L	20.0		03/25/2024	1	
		Calcium (Total Recoverable)	397000	ug/L	1000	T1/D	03/25/2024	10	
		Cobalt (Total Recoverable)	<5.00	ug/L	5.00		03/25/2024	1	
		Lithium (Total Recoverable)	442	ug/L	300	D	03/25/2024	10	
	EPA_1631	Mercury (Total)	0.004	ug/L	0.002		04/01/2024	1	
	EPA_300_0	Chloride	340	mg/L	25.0	D	03/26/2024	50	
		Sulfate	8120	mg/L	250	D	03/26/2024	500	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		03/26/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		03/26/2024	1	
		Barium (Total)	6.4	ug/L	3.0		03/26/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		03/26/2024	1	
		Lead (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Molybdenum (Total)	4.3	ug/L	2.0		03/26/2024	1	
		Selenium (Total)	12	ug/L	5.0		03/26/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		03/26/2024	1	

LIMS #: 496710 Sample Date: 3/19/2024 12:25:43 PM Sample Point: SC_13 Sample Point Description: Sand Canyon Well #13 Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
+	SM_4500HB	рН	7.3	SU	2.0			1	
+	SM_2550_B	Temperature Centigrade (Field)	12.1	degrees C	0.000			1	
+	SM_2510_B	Conductivity	10700	umhos/cm	1			1	
+	SM_2580_B	Oxidation-Reduction Potential	180	mV	0			1	
+	SM_4500_0G	Dissolved Oxygen	<1.0	mg/L	1.0			1	
+	SM_2130_B	Turbidity	7.3	NTU	0.05			1	
	NA	Depth to Water	10.88	ft.	0.000			1	
	SM_2540_C	Total Dissolved Solids	11400	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	0.70	mg/L	0.10	т	03/29/2024	1	
	EPA_200_7	Boron (Total Recoverable)	1490	ug/L	20.0		03/25/2024	1	
		Calcium (Total Recoverable)	378000	ug/L	1000	T1/D	03/25/2024	10	
		Cobalt (Total Recoverable)	<5.00	ug/L	5.00		03/25/2024	1	
		Lithium (Total Recoverable)	363	ug/L	300	D	03/25/2024	10	
	EPA_1631	Mercury (Total)	0.002	ug/L	0.002		04/01/2024	1	
	EPA_300_0	Chloride	163	mg/L	25.0	D	03/26/2024	50	
		Sulfate	6950	mg/L	250	D	03/26/2024	500	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		03/26/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		03/26/2024	1	
		Barium (Total)	7.1	ug/L	3.0		03/26/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		03/26/2024	1	
		Lead (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Molybdenum (Total)	3.6	ug/L	2.0		03/26/2024	1	
		Selenium (Total)	31	ug/L	5.0		03/26/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		03/26/2024	1	

LIMS #: 496711 Sample Date: 3/19/2024 10:33:43 AM Sample Point: SC_14 Sample Point Description: Sand Canyon Well #14 Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
+	SM_4500HB	рН	7.2	SU	2.0			1	
+	SM_2550_B	Temperature Centigrade (Field)	11.5	degrees C	0.000			1	
+	SM_2510_B	Conductivity	10700	umhos/cm	1			1	
+	SM_2580_B	Oxidation-Reduction Potential	206	mV	0			1	
+	SM_4500_0G	Dissolved Oxygen	<1.0	mg/L	1.0			1	
+	SM_2130_B	Turbidity	3.6	NTU	0.05			1	
	NA	Depth to Water	10.90	ft.	0.000			1	
	SM_2540_C	Total Dissolved Solids	11300	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	0.69	mg/L	0.10	т	03/29/2024	1	
	EPA_200_7	Boron (Total Recoverable)	1390	ug/L	20.0		03/25/2024	1	
		Calcium (Total Recoverable)	378000	ug/L	1000	T1/D	03/25/2024	10	
		Cobalt (Total Recoverable)	<5.00	ug/L	5.00		03/25/2024	1	
		Lithium (Total Recoverable)	371	ug/L	300	D	03/25/2024	10	
	EPA_1631	Mercury (Total)	<0.002	ug/L	0.002		04/01/2024	1	
	EPA_300_0	Chloride	152	mg/L	25.0	D	03/26/2024	50	
		Sulfate	6880	mg/L	250	D	03/26/2024	500	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		03/26/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		03/26/2024	1	
		Barium (Total)	5.4	ug/L	3.0		03/26/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		03/26/2024	1	
		Lead (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Molybdenum (Total)	11	ug/L	2.0		03/26/2024	1	
		Selenium (Total)	7.8	ug/L	5.0		03/26/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		03/26/2024	1	

LIMS #: 496712 Sample Date: 3/19/2024 12:00:43 AM Sample Point: FIELD_DUP Sample Point Description: Field Duplicate sample Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
	SM_2540_C	Total Dissolved Solids	13500	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	0.88	mg/L	0.10	Т	03/29/2024	1	
	EPA_200_7	Boron (Total Recoverable)	4420	ug/L	20.0		03/25/2024	1	
		Calcium (Total Recoverable)	373000	ug/L	1000	T1/D	03/25/2024	10	
		Cobalt (Total Recoverable)	<5.00	ug/L	5.00		03/25/2024	1	
		Lithium (Total Recoverable)	455	ug/L	300	D	03/25/2024	10	
	EPA_1631	Mercury (Total)	0.004	ug/L	0.002		04/01/2024	1	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		03/26/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		03/26/2024	1	
		Barium (Total)	6.2	ug/L	3.0		03/26/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		03/26/2024	1	
		Lead (Total)	<1.0	ug/L	1.0		03/26/2024	1	
		Molybdenum (Total)	4.6	ug/L	2.0		03/26/2024	1	
		Selenium (Total)	13	ug/L	5.0		03/26/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		03/26/2024	1	
	EPA_300_0	Chloride	341	mg/L	25.0	D	03/26/2024	50	
		Sulfate	8060	mg/L	250	D	03/26/2024	500	

Flags

- * Analysis performed by an external contract laboratory.
- + Analysis performed in the field.

Data Qualifiers

- D Value reported is multiplied by a dilution factor.
- T- MS recovery outside the established range. The recovery is matrix related, not method related.
- T1 The analyte concentration is disproportionate to the spike level and is outside the established range.

Glossary

DQ - Data Qualifer RL – Reporting Limit MDL – Method Detection Limit Dil Fac – Dilution Factor

Case Narrative



Colorado Springs Utilities Laboratory Services Grab Samples

CCR Landfill Groundwater Assessment Upgradient Wells Sample Date: 3/18/2024

QC Report Needed

		usion where		pH. Field (au) SM 4500 H	Temperature, Fleid (°C)	Conductivity, Floid (urithosicm), Shi 2610 g	Oxidadon Reduction Polantia, Freid	Dissolved Oxygen (mgr.)	Turbidity, Fleid INTU,, Shi 2130 B	Depth to Water (feet)	Check which sample should have Alexa.	Fluande, SM 4500 F.C.	Total Dissolved Solids, SAL	Chioride. Sultate Epa a.	EPA 200,7 (B. Ca, Co & Li . Total B.	Era 6020 B (Sh. As, Ba, Ba, Cd, Ct, Pb, Ma, San Ib Eurofing Ta Bancor and the Cd (Ct, Pb, Ma, San Ib Eurofing Ta Dancor	Mercury, EPA 1831	Totai Radium 228 & Radium	Contimients
OCATION	# Bottles	LIMS #	Sample Time	Please mark bo	es that apply.							1							
L1	7	496701	15.16	6.90	12.2	28579	157.1	0,12	8.94	13.46	V	x	×	×	×	×	×	x	
51	7	496702	10:25	7.08	13.2	21876	241.9	0.25	9.78	16.52		x	x	x	×	x	×	x	
_2	7	496703	11:30	7.27	12.3	9739	188.8	0.15	4.83	13.94		x	×	x	×	x	x	×	
5_3A	7	496704	13:58	7.42	12.6	8933	107.1	0.35	3.87	18.71		x	x	x	x	x	x	×	
_3B	7	496705	13:16	7.20	12.8	8792	-98.5	0.27	10.98	18.00		x	x	x	x	x	x	x	
UIP_BLK	-	496706										x	x	x	x	x	x	x	
tal≢of ittles	35											1-500 m	LGP	1-250 mL GP	1-500 mL New Certified plastic	1-250 mL bottles provided by external lab (pre-preserved with HNO3)	glass acid- rinsed	2-1000 mL plastic	Rejections/

2042



Colorado Springs Utilities Laboratory Services Grab Samples

CCR Landfill Groundwater Assessment Upgradient Wells Sample Date: 3/19/24 QC Report Needed

Sampler: _	3 4	Suslow Holmberg		HH FIND (HT)	8 0952 Temperature	Conduction, Four	Oxidanten Reeduction Potential, Front	Dissolved Oxygen (mg/L)	Turbury, Fous (NTU), SM 2130 B	Depth to Water (feet)	Check which sample should have Mc	Fluarida, Siri 4500 F.C.	Tobel Dissolved Solids, S.	Chloride, Sulfate Ep.	EPA 2007 (8. Ca. Co & LI. TOALD.	EAA BO20 B (S), Ac, Ba, Be, Cc, Cr, Pa, Mo, Sa & Th-Total Recoverable) Sent De Luches TA Denne.	Moreury, EPA 1831	Totai Radum 226 & Radium 220	Comments
DCATION	# Bottles	LIMS #	Sample Time	Please mark bo	oxes that apply,							1							
-								-			-	x	x	x	x	х	x	x	
-	-								-			x	x	x	x	x	x	x	
-	-			-								x	x	×	x	x	x	x	
-	-			-	-							x	x	x	×	x	x	x	
				-								x	x	x	x	x	x	×	
BLK	7	12.00	16:40		-				-		-	x	x	x	x	x	x	x	
of	T	496706	16.40	1			1									-	-		
	/	/	1		/							1-500 m	LGP	1-250 mL GP	1-500 mL New Certified plastic	1-250 mL bottles provided by external lab (pre-preserved with HNC3)	rinsed	mL plastic	
s uished by ed by		Print last north	by Im	Nel	5	50	15/a	v		3/2/2	5: 50	-	3		24 *	Actions Workflow: Project ID: Test Sche	CCR_LAND CCR_LAND CCR_LAND dule: CCR_L	FILL) AND	Rejections/ the field.

* Samples left in Sample Receiving Walk-in cooler overnight. KAN 3/20/24

0f 2 Colorado Springs Utilities

Laboratory Services Grab Samples

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CCR Landfill Groundwater Assessment Downgradient and Cross Gradient Wells

Sample Date: 3/19/2024

QC Report Needed

Sampler Ą	<u>J.</u> . He	susl <i>ow</i> Imbrg		BH Find (su) SM 4500 H	Temperature SM 2260 B. Field ('C)	Inductivity, Field Thoucan) SM 2510 B	Oxidalion Reduction Potembal, Field	Dissolved Oxygen (mg/L)	Turbiny, Find (NTU), SM 2130 B	Path to Water (feet)	Peck which sample should have to	Jonde, SM 4500 F.C	Total Dissolved Solids, Sur	Chiloride, Suttate Ec.	EPA 200,7 (B, Ca, Co & L, Folar E.	Ere 6020 B (St. As. Ba, Ba, Cd. Cr. Pb, Mo. Se 8 77-777	lercury, EPA 1631	tai Radium 228 & Radium	Comments
LOCATION	# Bottles	LIMS #	Sample	Please mark bo		103	10 5		185	0	0	E	14	<u>d</u>	្រែ] य द ज	2	123	ă.
C_10	7	496707	6:05	7.25	14.2	17494	167.9	0.12	26.92	13.78	X	x	x	х	x	x	x	x	TUr6iz
iC_11	7	496708	14:41	7.23	14.3	16632	202.8	0.12	21.86	10.80		x	x	x	x	×	x	x	
GC_12	7	496709	13:25	7.26	14.2	13166	487.7	0.25	3.50	10.83		x	x	х.	x	x	x	×	-
SC_13	7	496710	12:25	7.28	12.1	10709		0.17	7.28	10.88		×	x	x	x	x	x	x	
SC_14	7	496711	10:33	7.25	11.5	10709	206.2	0.18	3.55	10.90		x	x	x	x	x	x	x	
FIELD_DUP	7	496712	00:00									×	x	x	x	x	x	x	
Total # of Bottles	42	4	/		/							1-500 mL	GP	1-250 mL GP	1-500 mL New Certified plastic	(pre-preserved with HNO3)		mL plastic	
Relinquished by	Signature/F		No series	Nels	5.	5	usio	u	-	Date/Time	8:50		3/	19	/24	Additional Actions Workflow: C Project ID: C Test Schedu Samples ar	CR_LAND	FILL	

* Samples left in Sample Receiving Walk-in cocier overnight. KAN 3/20/24



It's how we're all connected

Laboratory Services Section QC Report

CCR Landfill Wells March 2024

Quality Assurance Approval: Lesley Susic

Date: 4/22/2024

QC Narrative

This report is for sample numbers 496701 – 496712.

Total Dissolved Solids by Standard Methods 2540 C

There are no anomalies to report for this analysis.

Fluoride by Standard Methods 4500 F C

The matrix spike recoveries are outside the established range. The recoveries are matrix related, not method related. Associated data are T qualified.

Anions by EPA Method 300.0

There are no anomalies to report for this analysis.

Mercury by EPA 1631 E

There are no anomalies to report for this analysis.

EPA 200.7

The calcium concentrations are disproportionate to the spike level and are outside the established range. Associated data are T1 qualified.

Method: Total Dissolved Solids by Standard Methods 2540 C Batch Analysis date: 3/20/24 Sampled date: 3/18/24 for samples 496701 - 496705 Sampled date: 3/19/24 for samples 496706 - 496712

Matrix QC performed on samples 496701 and 496707

QC Type	Analyte	Recovery (%)	Acceptable Range (%)		RPD (%)	RPD Limit (%)
QCS	Total Dissolved Solids	93	ę	91 - 118		
Duplicate	Total Dissolved Solids (496701)				<1	<10
Duplicate	Total Dissolved Solids (496707)				1	<10
QC Type	Analyte	Concentrati	on	Limit		
LRB	Total Dissolved Solids	<10 mg/L		10 mg/L		

Method: Fluoride by Standard Methods 4500 F C Batch Analysis date: 3/29/24 Sampled date: 3/18/24 for samples 496701 - 496705 Sampled date: 3/19/24 for samples 496706 - 496712

Matrix QC performed on samples 496701 and 496707

QC Type	Analyte		Recove	ery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Fluoride (Total)		99	9	90 - 110		
QCS	Fluoride (Total)		9	7	90 - 110		
MS	Fluoride (Total) (490	6701)	*3	9	80 - 120		
MSD	Fluoride (Total) (496	6701)				1	<20
MS	Fluoride (Total) (490	6707)	*6	3	80 - 120		
MSD	Fluoride (Total) (490	6707)				1	<20
QC Type	Analyte	Concent	tration		Limit		
LRB	Fluoride (Total)	<0.05 r	mg/L 0.05		.05 mg/L		

*See Narrative

Method: Anions by EPA Method 300.0 Batch Number: ANIONS000039 Batch Analysis date: 3/29/24 Sampled date: 3/18/24 for samples 496701 - 496705 Sampled date: 3/19/24 for sample 496706

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Chloride	114	50-150		
LFB	Chloride	97	90-110	2	<20
LD	Chloride			1	<20
MS	Chloride	117	80-120		
MRL	Sulfate	122	50-150		
LFB	Sulfate	94	90-110	2	<20
LD	Sulfate			1	<20
MS	Sulfate	112	80-120		
QC Type	Analyte	Concentration	Limit		
LRB	Chloride	<0.17 mg/L	0.17 mg/L		
LRB	Sulfate	<0.17 mg/L	0.17 mg/L		

Matrix QC performed on sample 496701

Method: Anions by EPA Method 300.0 Batch Number: ANIONS000038 Batch Analysis date: 3/26/24 Sampled date: 3/19/24 for samples 496707 - 496712

Matrix QC performed on sample 496707

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Chloride	115	50-150		
LFB	Chloride	99	90-110	0	<20
LD	Chloride			2	<20
MS	Chloride	102	80-120		
MRL	Sulfate	124	50-150		
LFB	Sulfate	97	90-110	0	<20
LD	Sulfate			3	<20
MS	Sulfate	112	80-120		
QC Type	Analyte	Concentration	Limit		
LRB	Chloride	<0.17 mg/L	0.17 mg/L		
LRB	Sulfate	<0.17 mg/L	0.17 mg/L		

Method: Mercury by EPA 1631 E Batch Number: HG_PSA000007 Batch Analysis date: 4/1/24 Sampled date: 3/18/24 for samples 496701 - 496705 Sampled date: 3/19/24 for samples 496706 - 496712

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Mercury (Total)	97	60-140		
QCS	Mercury (Total)	102	77-123		
MS	Mercury (Total) (496701)	102	71-125		
MSD	Mercury (Total) (496701)			2	<24
MS	Mercury (Total) (496707)	106	71-125		
MSD	Mercury (Total) (496707)			2	<24
QC Type	Analyte	Concentration	Limit		
LRB	Mercury (Total)	<0.5 ng/L	0.5 ng/L		

Matrix QC performed on samples 496701 and 496707

Method: EPA 200.7 Batch Analysis date: 3/25/24 Digestion date: 3/21/24 Sampled date: 3/18/24 for samples 496701 - 496705 Sampled date: 3/19/24 for samples 496706 - 496712

Matrix QC performed on samples 496701 and 496707

QC Type	Analyte	Recovery	Acceptable	RPD	RPD Limit
	_	(%)	Range (%)	(%)	(%)
MRL	Boron (Total Recoverable)	109	50-150		
LFB	Boron (Total Recoverable)	102	85-115		
MS	Boron (Total Recoverable) (496701)	93	70-130		
MSD	Boron (Total Recoverable) (496701)			1	<20
MS	Boron (Total Recoverable) (496707)	103	70-130		
MSD	Boron (Total Recoverable) (496707)			0	<20
MRL	Calcium (Total Recoverable)	115	50-150		
LFB	Calcium (Total Recoverable)	103	85-115		
MS	Calcium (Total Recoverable) (496701)	<u>*-41</u>	70-130		
MSD	Calcium (Total Recoverable) (496701)			3	<20
MS	Calcium (Total Recoverable) (496707)	<u>*241</u>	70-130		
MSD	Calcium (Total Recoverable) (496707)			0	<20
MRL	Cobalt (Total Recoverable)	106	50-150		
LFB	Cobalt (Total Recoverable)	102	85-115		
MS	Cobalt (Total Recoverable) (496701)	77	70-130		
MSD	Cobalt (Total Recoverable) (496701)			4	<20
MS	Cobalt (Total Recoverable) (496707)	84	70-130		
MSD	Cobalt (Total Recoverable) (496707)			2	<20

MRL	Lithium (Total Recoverable)	98	50-	150		
LFB	Lithium (Total Recoverable)	103	85-	115		
MS	Lithium (Total Recoverable) (496701)	95	70-	130		
MSD	Lithium (Total Recoverable) (496701)				3	<20
MS	Lithium (Total Recoverable) (496707)	119	70-	130		
MSD	Lithium (Total Recoverable) (496707)				3	<20
-					•	,
QC Type	Analyte	Concentrat	tion		Limit	
		Concentrat <15.4 ug/			-	
QC Type	Analyte		′L	15	Limit	
QC Type	Analyte Boron (Total Recoverable)	<15.4 ug/	′L ′L	15 36	Limit 5.4 ug/L	
QC Type LRB LRB	Analyte Boron (Total Recoverable) Calcium (Total Recoverable)	<15.4 ug/ <36.1 ug/	′L ′L ′L	15 36 1.7	Limit 5.4 ug/L 5.1 ug/L	

*See Narrative

LD – Field Duplicate LFB – Laboratory Fortified Blank LRB – Laboratory Reagent Blank (Method Blank) QCS – Quality Control Sample MRL – Minimum Reporting Limit (Verification) MS – Matrix Spike MSD – Matrix Spike Duplicate <u>Underline</u> – Data was outside the limit



Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Wendy Asay Colorado Springs Utilities Laboratory Services Section 701 E. Las Vegas St., MC 1465 Colorado Springs, Colorado 80903 Generated 4/3/2024 10:44:21 AM

JOB DESCRIPTION

CCR Landfill

JOB NUMBER

280-189073-1

Eurofins Denver 4955 Yarrow Street Arvada CO 80002





Eurofins Denver

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization

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Authorized for release by Shelby McCabe, Project Manager I <u>Shelby.McCabe@et.eurofinsus.com</u> (303)736-0165

Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Definitions	5
Detection Summary	6
Method Summary	8
Sample Summary	9
Client Sample Results	10
QC Sample Results	22
QC Association	26
Chronicle	28
Receipt Checklists	30
Chain of Custody	31

Job ID: 280-189073-1

Eurofins Denver

Job Narrative 280-189073-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to
 demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the
 method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 3/21/2024 9:20 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 11.2°C. It can be noted that thermal preservation is not required for 6020B Metals.

Method 6020B - Metals (ICP/MS)

Samples 496701 CC_1 (280-189073-1), 496701 CC_1 (280-189073-1MS), 496701 CC_1 (280-189073-1MSD), 496702 FC_1 (280-189073-2), 496703 FC_2 (280-189073-3), 496704 FC_3A (280-189073-4), 496705 FC_3B (280-189073-5), 496706 EQUIP_BLK (280-189073-6), 496707 SC_10 (280-189073-7), 496707 SC_10 (280-189073-7MS), 496707 SC_10 (280-189073-7MSD), 496708 SC_11 (280-189073-8), 496709 SC_12 (280-189073-9), 496710 SC_13 (280-189073-10), 496711 SC_14 (280-189073-11) and 496712 FIELD_DUP (280-189073-12) were analyzed for Metals (ICP/MS). The samples were prepared on 3/25/2024 and 4/1/2024 and analyzed on 3/26/2024 and 4/1/2024.

The following sample was improperly preserved in the field: 496702 FC_1 (280-189073-2). 2.5 mL of preservative was added by the laboratory to achieve the desired pH.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

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Qualifiers

Metals Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary		
Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	
CFL	Contains Free Liquid	
CFU	Colony Forming Unit	
CNF	Contains No Free Liquid	
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision Level Concentration (Radiochemistry)	
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	
LOQ	Limit of Quantitation (DoD/DOE)	
MCL	EPA recommended "Maximum Contaminant Level"	
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
MPN	Most Probable Number	
MQL	Method Quantitation Limit	
NC	Not Calculated	
ND	Not Detected at the reporting limit (or MDL or EDL if shown)	
NEG	Negative / Absent	
POS	Positive / Present	
PQL	Practical Quantitation Limit	
PRES	Presumptive	
QC	Quality Control	
RER	Relative Error Ratio (Radiochemistry)	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	

- Toxicity Equivalent Factor (Dioxin) TEQ Toxicity Equivalent Quotient (Dioxin)
- TNTC Too Numerous To Count

TEF

Detection Summary

Client: Colorado Springs Utilities Project/Site: CCR Landfill Job ID: 280-189073-1

	96701 CC_1					Lab Sa	imple ID: 2	80-189073-
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Barium	5.7		3.0		ug/L	1	6020B	Total/NA
Selenium	170		5.0		ug/L	1	6020B	Total/NA
Client Sample ID: 49	96702 FC_1					Lab Sa	mple ID: 2	80-189073-
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Barium	8.6		3.0		ug/L	1	6020B	Total/NA
Molybdenum	2.1		2.0		ug/L	1	6020B	Total/NA
Client Sample ID: 49	96703 FC_2					Lab Sa	mple ID: 2	80-189073-
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Barium	6.2		3.0		ug/L	1	6020B	Total/NA
Molybdenum	2.8		2.0		ug/L	1	6020B	Total/NA
Selenium	39		5.0		ug/L	1	6020B	Total/NA
Client Sample ID: 49	96704 FC_3A					Lab Sa	mple ID: 2	80-189073-
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Barium	11		3.0		ug/L	1	6020B	Total/NA
Molybdenum	6.9		2.0		ug/L	1	6020B	Total/NA
Selenium	55		5.0		ug/L	1	6020B	Total/NA
Client Sample ID: 4	96705 FC_3B					Lab Sa	mple ID: 2	80-189073-
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Barium	11		3.0		ug/L	1	6020B	Total/NA
Molybdenum	11		2.0		ug/L	1	6020B	Total/NA
_ ,								
Client Sample ID: 4	96706 EQUIP_BI	_K				Lab Sa	mple ID: 2	80-189073-
Client Sample ID: 4		LK						
Client Sample ID: 4		LK						
Client Sample ID: 45 No Detections. Client Sample ID: 45 Analyte	96707 SC_10 Result	_K Qualifier	RL	MDL	Unit	Lab Sa Dil Fac	mple ID: 2	80-189073- Prep Type
Client Sample ID: 49 No Detections. Client Sample ID: 49 Analyte Barium	96707 SC_10 <u> Result</u> 12		3.0	MDL	ug/L	Lab Sa	D Method 0 6020B	80-189073 - Prep Type Total/NA
Client Sample ID: 49 No Detections. Client Sample ID: 49 Analyte Barium	96707 SC_10 Result			MDL		Lab Sa Dil Fac	mple ID: 2	80-189073
Client Sample ID: 45 No Detections. Client Sample ID: 45 Analyte	96707 SC_10 <u> Result</u> 12		3.0	MDL	ug/L	Lab Sa	D Method 0 6020B	80-189073 - Prep Type Total/NA
Client Sample ID: 4 No Detections. Client Sample ID: 4 Analyte Barium Molybdenum Selenium	96707 SC_10 Result 12 4.6 200		3.0 2.0	MDL	ug/L ug/L	Lab Sa 	D Method 6020B 6020B 6020B 6020B	Prep Type Total/NA Total/NA Total/NA
Client Sample ID: 4 No Detections. Client Sample ID: 4 Analyte Barium Molybdenum Selenium Client Sample ID: 4	96707 SC_10 Result 12 4.6 200 96708 SC_11 Result		3.0 2.0	MDL	ug/L ug/L ug/L	Lab Sa 	Method Method<	Prep Type Total/NA Total/NA Total/NA
Client Sample ID: 4 No Detections. Client Sample ID: 4 Analyte Barium Molybdenum Selenium Client Sample ID: 4	96707 SC_10 Result 12 4.6 200 96708 SC_11	Qualifier	3.0 2.0 5.0		ug/L ug/L ug/L	Lab Sa Dil Fac 1 1 1 Lab Sa	Method 6020B 6020B 6020B 6020B 6020B 6020B	280-189073- Prep Type Total/NA Total/NA Total/NA 280-189073-
Client Sample ID: 4 No Detections. Client Sample ID: 4 Analyte Barium Molybdenum Selenium Client Sample ID: 4 Analyte Barium	96707 SC_10 Result 12 4.6 200 96708 SC_11 Result	Qualifier	3.0 2.0 5.0 RL		ug/L ug/L ug/L Unit	Lab Sa Dil Fac 1 1 1 Lab Sa	Method Method<	280-189073- Prep Type Total/NA Total/NA Total/NA 880-189073- Prep Type
Client Sample ID: 4 No Detections. Client Sample ID: 4 Analyte Barium Molybdenum Selenium Client Sample ID: 4 Analyte Barium	96707 SC_10 Result 12 4.6 200 96708 SC_11 Result 12	Qualifier	3.0 2.0 5.0 RL 3.0		ug/L ug/L ug/L Unit ug/L	Lab Sa Dil Fac 1 1 1 Lab Sa	Method Method<	Total/NA Total/NA Total/NA 880-189073- Prep Type Total/NA
Client Sample ID: 4 No Detections. Client Sample ID: 4 Analyte Barium Molybdenum Selenium Client Sample ID: 4 Analyte Barium Molybdenum Selenium	96707 SC_10 Result 12 4.6 200 96708 SC_11 Result 12 2.9 330	Qualifier	3.0 2.0 5.0 RL 3.0 2.0		ug/L ug/L ug/L Unit ug/L ug/L	Lab Sa Dil Fac 1 1 1 Lab Sa Dil Fac 1 1 1 1 1 1 1 1 1 1 1 1 1	Method Method<	280-189073- Prep Type Total/NA Total/NA Total/NA 280-189073- Prep Type Total/NA Total/NA
Client Sample ID: 49 No Detections. Client Sample ID: 49 Analyte Barium Molybdenum Selenium Client Sample ID: 49 Analyte Barium Molybdenum Selenium Client Sample ID: 49	96707 SC_10 Result 12 4.6 200 96708 SC_11 Result 12 2.9 330 96709 SC_12	Qualifier	3.0 2.0 5.0 RL 3.0 2.0		ug/L ug/L ug/L ug/L ug/L ug/L	Lab Sa Dil Fac 1 1 1 Lab Sa Dil Fac 1 1 1 1 1 1 1 1 1 1 1 1 1	Method Method<	280-189073 Prep Type Total/NA Total/NA Total/NA 280-189073 Prep Type Total/NA Total/NA Total/NA
Client Sample ID: 49 No Detections. Client Sample ID: 49 Analyte Barium Molybdenum Selenium Client Sample ID: 49 Analyte Barium Molybdenum Selenium Client Sample ID: 49	96707 SC_10 Result 12 4.6 200 96708 SC_11 Result 12 2.9 330 96709 SC_12	Qualifier	3.0 2.0 5.0 RL 3.0 2.0 5.0	MDL	ug/L ug/L ug/L ug/L ug/L ug/L	Lab Sa Dil Fac 1 1 1 Lab Sa Dil Fac 1 1 1 Lab Sa	Method Method<	280-189073 Prep Type Total/NA Total/NA 280-189073 Prep Type Total/NA Total/NA Total/NA 280-189073
Client Sample ID: 49 No Detections. Client Sample ID: 49 Analyte Barium Molybdenum Selenium Client Sample ID: 49 Analyte Barium Molybdenum Selenium Client Sample ID: 49 Analyte	96707 SC_10 Result 12 4.6 200 96708 SC_11 Result 12 2.9 330 96709 SC_12 Result	Qualifier	3.0 2.0 5.0 RL 3.0 2.0 5.0 RL	MDL	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	Lab Sa Dil Fac 1 1 1 Lab Sa Dil Fac 1 1 1 Lab Sa	Method Method<	280-189073- Prep Type Total/NA Total/NA Total/NA 280-189073- Prep Type Total/NA Total/NA Total/NA 280-189073- Prep Type

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Colorado Springs Utilities Project/Site: CCR Landfill

Client Sample ID: 496710 SC 13

Job ID: 280-189073-1

Lab Sample ID: 280-189073-12

5

Client Sample ID: 496710 SC_13					Lab Sample ID: 280-189073-10			0-189073-10	
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	7.1		3.0		ug/L	1	_	6020B	Total/NA
Molybdenum	3.6		2.0		ug/L	1		6020B	Total/NA
Selenium	31		5.0		ug/L	1		6020B	Total/NA
Client Sample ID: 49	96711 SC_14					Lab Sa	mp	ole ID: 28	0-189073-11

Client Sample ID: 496711 SC_14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type	
Barium	5.4		3.0		ug/L	1	_	6020B	Total/NA	
Molybdenum	11		2.0		ug/L	1		6020B	Total/NA	
Selenium	7.8		5.0		ug/L	1		6020B	Total/NA	

Client Sample ID: 496712 FIELD_DUP

Analyte	Result	Qualifier RL	MDL	Unit	Dil Fac	D	Method	Prep Type	4
Barium	6.2	3.0		ug/L	1	_	6020B	Total/NA	
Molybdenum	4.6	2.0		ug/L	1		6020B	Total/NA	
Selenium	13	5.0		ug/L	1		6020B	Total/NA	

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Colorado Springs Utilities Project/Site: CCR Landfill

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET DEN
3020A	Preparation, Total Metals	SW846	EET DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Colorado Springs Utilities Project/Site: CCR Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-189073-1	496701 CC_1	Water	03/18/24 15:16	03/21/24 09:20
280-189073-2	496702 FC_1	Water	03/18/24 10:25	03/21/24 09:20
280-189073-3	496703 FC_2	Water	03/18/24 11:30	03/21/24 09:20
280-189073-4	496704 FC_3A	Water	03/18/24 13:58	03/21/24 09:20
280-189073-5	496705 FC_3B	Water	03/18/24 13:16	03/21/24 09:20
280-189073-6	496706 EQUIP_BLK	Water	03/19/24 16:40	03/21/24 09:20
280-189073-7	496707 SC_10	Water	03/19/24 16:05	03/21/24 09:20
280-189073-8	496708 SC_11	Water	03/19/24 14:41	03/21/24 09:20
280-189073-9	496709 SC_12	Water	03/19/24 13:25	03/21/24 09:20
280-189073-10	496710 SC_13	Water	03/19/24 12:25	03/21/24 09:20
280-189073-11	496711 SC_14	Water	03/19/24 10:33	03/21/24 09:20
280-189073-12	496712 FIELD_DUP	Water	03/19/24 00:00	03/21/24 09:20

Client Sample ID: 496701 CC_1 Date Collected: 03/18/24 15:16 Date Received: 03/21/24 09:20

	- Metals (ICP/MS)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0		ug/L		04/01/24 09:20	04/01/24 18:48	1
Arsenic	ND		5.0		ug/L		04/01/24 09:20	04/01/24 18:48	1
Barium	5.7		3.0		ug/L		04/01/24 09:20	04/01/24 18:48	1
Beryllium	ND		1.0		ug/L		04/01/24 09:20	04/01/24 18:48	1
Cadmium	ND		1.0		ug/L		04/01/24 09:20	04/01/24 18:48	1
Chromium	ND		3.0		ug/L		04/01/24 09:20	04/01/24 18:48	1
Lead	ND		1.0		ug/L		04/01/24 09:20	04/01/24 18:48	1
Molybdenum	ND		2.0		ug/L		04/01/24 09:20	04/01/24 18:48	1
Selenium	170		5.0		ug/L		04/01/24 09:20	04/01/24 18:48	1
Thallium	ND		1.0		ug/L		04/01/24 09:20	04/01/24 18:48	1

Lab Sample ID: 280-189073-1 Matrix: Water

Client Sample ID: 496702 FC_1 Date Collected: 03/18/24 10:25 Date Received: 03/21/24 09:20

	Metals (ICP/MS)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0		ug/L		03/25/24 18:13	03/26/24 10:14	1
Arsenic	ND		5.0		ug/L		03/25/24 18:13	03/26/24 10:14	1
Barium	8.6		3.0		ug/L		03/25/24 18:13	03/26/24 10:14	1
Beryllium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:14	1
Cadmium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:14	1
Chromium	ND		3.0		ug/L		03/25/24 18:13	03/26/24 10:14	1
Lead	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:14	1
Molybdenum	2.1		2.0		ug/L		03/25/24 18:13	03/26/24 10:14	1
Selenium	ND		5.0		ug/L		03/25/24 18:13	03/26/24 10:14	1
Thallium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:14	1

Lab Sample ID: 280-189073-2 Matrix: Water

5

8

Client Sample ID: 496703 FC_2 Date Collected: 03/18/24 11:30 Date Received: 03/21/24 09:20

Method: SW846 6020B -	Metals (ICP/MS)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0		ug/L		03/25/24 18:13	03/26/24 10:16	1
Arsenic	ND		5.0		ug/L		03/25/24 18:13	03/26/24 10:16	1
Barium	6.2		3.0		ug/L		03/25/24 18:13	03/26/24 10:16	1
Beryllium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:16	1
Cadmium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:16	1
Chromium	ND		3.0		ug/L		03/25/24 18:13	03/26/24 10:16	1
Lead	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:16	1
Molybdenum	2.8		2.0		ug/L		03/25/24 18:13	03/26/24 10:16	1
Selenium	39		5.0		ug/L		03/25/24 18:13	03/26/24 10:16	1
Thallium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:16	1

Lab Sample ID: 280-189073-3 Matrix: Water

5

8

9

Client Sample ID: 496704 FC_3A Date Collected: 03/18/24 13:58 Date Received: 03/21/24 09:20

Method: SW846 6020B -	- Metals (ICP/MS)							
Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0	ug/L		03/25/24 18:13	03/26/24 10:18	1
Arsenic	ND		5.0	ug/L		03/25/24 18:13	03/26/24 10:18	1
Barium	11		3.0	ug/L		03/25/24 18:13	03/26/24 10:18	1
Beryllium	ND		1.0	ug/L		03/25/24 18:13	03/26/24 10:18	1
Cadmium	ND		1.0	ug/L		03/25/24 18:13	03/26/24 10:18	1
Chromium	ND		3.0	ug/L		03/25/24 18:13	03/26/24 10:18	1
Lead	ND		1.0	ug/L		03/25/24 18:13	03/26/24 10:18	1
Molybdenum	6.9		2.0	ug/L		03/25/24 18:13	03/26/24 10:18	1
Selenium	55		5.0	ug/L		03/25/24 18:13	03/26/24 10:18	1
Thallium	ND		1.0	ug/L		03/25/24 18:13	03/26/24 10:18	1

Lab Sample ID: 280-189073-4 Matrix: Water

Water

5

8 9

Client Sample ID: 496705 FC_3B Date Collected: 03/18/24 13:16 Date Received: 03/21/24 09:20

	Metals (ICP/MS)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0		ug/L		03/25/24 18:13	03/26/24 10:21	1
Arsenic	ND		5.0		ug/L		03/25/24 18:13	03/26/24 10:21	1
Barium	11		3.0		ug/L		03/25/24 18:13	03/26/24 10:21	1
Beryllium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:21	1
Cadmium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:21	1
Chromium	ND		3.0		ug/L		03/25/24 18:13	03/26/24 10:21	1
Lead	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:21	1
Molybdenum	11		2.0		ug/L		03/25/24 18:13	03/26/24 10:21	1
Selenium	ND		5.0		ug/L		03/25/24 18:13	03/26/24 10:21	1
Thallium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:21	1

Lab Sample ID: 280-189073-5 Matrix: Water

5 6

8 9

Client Sample ID: 496706 EQUIP_BLK Date Collected: 03/19/24 16:40 Date Received: 03/21/24 09:20

Method: SW846 6020B	- Metals (ICP/MS)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0		ug/L		03/25/24 18:13	03/26/24 10:23	1
Arsenic	ND		5.0		ug/L		03/25/24 18:13	03/26/24 10:23	1
Barium	ND		3.0		ug/L		03/25/24 18:13	03/26/24 10:23	1
Beryllium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:23	1
Cadmium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:23	1
Chromium	ND		3.0		ug/L		03/25/24 18:13	03/26/24 10:23	1
Lead	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:23	1
Molybdenum	ND		2.0		ug/L		03/25/24 18:13	03/26/24 10:23	1
Selenium	ND		5.0		ug/L		03/25/24 18:13	03/26/24 10:23	1
Thallium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:23	1

Lab Sample ID: 280-189073-6 Matrix: Water

trix: water

5

8 9

Client Sample ID: 496707 SC_10 Date Collected: 03/19/24 16:05 Date Received: 03/21/24 09:20

Method: SW846 6020B -	Metals (ICP/MS)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0		ug/L		04/01/24 09:20	04/01/24 19:09	1
Arsenic	ND		5.0		ug/L		04/01/24 09:20	04/01/24 19:09	1
Barium	12		3.0		ug/L		04/01/24 09:20	04/01/24 19:09	1
Beryllium	ND		1.0		ug/L		04/01/24 09:20	04/01/24 19:09	1
Cadmium	ND		1.0		ug/L		04/01/24 09:20	04/01/24 19:09	1
Chromium	ND		3.0		ug/L		04/01/24 09:20	04/01/24 19:09	1
Lead	ND		1.0		ug/L		04/01/24 09:20	04/01/24 19:09	1
Molybdenum	4.6		2.0		ug/L		04/01/24 09:20	04/01/24 19:09	1
Selenium	200		5.0		ug/L		04/01/24 09:20	04/01/24 19:09	1
Thallium	ND		1.0		ug/L		04/01/24 09:20	04/01/24 19:09	1

Lab Sample ID: 280-189073-7 Matrix: Water

Client Sample ID: 496708 SC_11 Date Collected: 03/19/24 14:41 Date Received: 03/21/24 09:20

Method: SW846 6020B	- Metals (ICP/MS)							
Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0	ug/L		03/25/24 18:13	03/26/24 10:27	1
Arsenic	ND		5.0	ug/L		03/25/24 18:13	03/26/24 10:27	1
Barium	12		3.0	ug/L		03/25/24 18:13	03/26/24 10:27	1
Beryllium	ND		1.0	ug/L		03/25/24 18:13	03/26/24 10:27	1
Cadmium	ND		1.0	ug/L		03/25/24 18:13	03/26/24 10:27	1
Chromium	ND		3.0	ug/L		03/25/24 18:13	03/26/24 10:27	1
Lead	ND		1.0	ug/L		03/25/24 18:13	03/26/24 10:27	1
Molybdenum	2.9		2.0	ug/L		03/25/24 18:13	03/26/24 10:27	1
Selenium	330		5.0	ug/L		03/25/24 18:13	03/26/24 10:27	1
Thallium	ND		1.0	ug/L		03/25/24 18:13	03/26/24 10:27	1

Lab Sample ID: 280-189073-8 Matrix: Water

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8 9

Client Sample ID: 496709 SC_12 Date Collected: 03/19/24 13:25 Date Received: 03/21/24 09:20

Method: SW846 6020B	- Metals (ICP/MS)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0		ug/L		03/25/24 18:13	03/26/24 10:34	1
Arsenic	ND		5.0		ug/L		03/25/24 18:13	03/26/24 10:34	1
Barium	6.4		3.0		ug/L		03/25/24 18:13	03/26/24 10:34	1
Beryllium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:34	1
Cadmium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:34	1
Chromium	ND		3.0		ug/L		03/25/24 18:13	03/26/24 10:34	1
Lead	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:34	1
Molybdenum	4.3		2.0		ug/L		03/25/24 18:13	03/26/24 10:34	1
Selenium	12		5.0		ug/L		03/25/24 18:13	03/26/24 10:34	1
Thallium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:34	1

Lab Sample ID: 280-189073-9

Matrix: Water

5

8

Job ID: 280-189073-1

Client Sample ID: 496710 SC_13 Date Collected: 03/19/24 12:25 Date Received: 03/21/24 09:20

Method: SW846 6020B ·	/lethod: SW846 6020B - Metals (ICP/MS)											
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
Antimony	ND		2.0		ug/L		03/25/24 18:13	03/26/24 10:36	1			
Arsenic	ND		5.0		ug/L		03/25/24 18:13	03/26/24 10:36	1			
Barium	7.1		3.0		ug/L		03/25/24 18:13	03/26/24 10:36	1			
Beryllium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:36	1			
Cadmium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:36	1			
Chromium	ND		3.0		ug/L		03/25/24 18:13	03/26/24 10:36	1			
Lead	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:36	1			
Molybdenum	3.6		2.0		ug/L		03/25/24 18:13	03/26/24 10:36	1			
Selenium	31		5.0		ug/L		03/25/24 18:13	03/26/24 10:36	1			
Thallium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:36	1			

Lab Sample ID: 280-189073-10

Matrix: Water

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8 9

Client Sample ID: 496711 SC_14 Date Collected: 03/19/24 10:33 Date Received: 03/21/24 09:20

Method: SW846 6020B ·	lethod: SW846 6020B - Metals (ICP/MS)											
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
Antimony	ND		2.0		ug/L		03/25/24 18:13	03/26/24 10:39	1			
Arsenic	ND		5.0		ug/L		03/25/24 18:13	03/26/24 10:39	1			
Barium	5.4		3.0		ug/L		03/25/24 18:13	03/26/24 10:39	1			
Beryllium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:39	1			
Cadmium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:39	1			
Chromium	ND		3.0		ug/L		03/25/24 18:13	03/26/24 10:39	1			
Lead	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:39	1			
Molybdenum	11		2.0		ug/L		03/25/24 18:13	03/26/24 10:39	1			
Selenium	7.8		5.0		ug/L		03/25/24 18:13	03/26/24 10:39	1			
Thallium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:39	1			

Lab Sample ID: 280-189073-11

Matrix: Water

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8 9

Client Sample ID: 496712 FIELD_DUP Date Collected: 03/19/24 00:00 Date Received: 03/21/24 09:20

Method: SW846 6020B	ethod: SW846 6020B - Metals (ICP/MS)										
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac		
Antimony	ND		2.0		ug/L		03/25/24 18:13	03/26/24 10:41	1		
Arsenic	ND		5.0		ug/L		03/25/24 18:13	03/26/24 10:41	1		
Barium	6.2		3.0		ug/L		03/25/24 18:13	03/26/24 10:41	1		
Beryllium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:41	1		
Cadmium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:41	1		
Chromium	ND		3.0		ug/L		03/25/24 18:13	03/26/24 10:41	1		
Lead	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:41	1		
Molybdenum	4.6		2.0		ug/L		03/25/24 18:13	03/26/24 10:41	1		
Selenium	13		5.0		ug/L		03/25/24 18:13	03/26/24 10:41	1		
Thallium	ND		1.0		ug/L		03/25/24 18:13	03/26/24 10:41	1		

Lab Sample ID: 280-189073-12

Matrix: Water

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8

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-647001/1-A Matrix: Water Analysis Batch: 647181

	IB MB							
Analyte Res	ult Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony I	1D	2.0		ug/L		03/25/24 18:13	03/26/24 10:07	1
Arsenic	1D	5.0		ug/L		03/25/24 18:13	03/26/24 10:07	1
Barium	1D	3.0		ug/L		03/25/24 18:13	03/26/24 10:07	1
Beryllium	I D	1.0		ug/L		03/25/24 18:13	03/26/24 10:07	1
Cadmium	1D	1.0		ug/L		03/25/24 18:13	03/26/24 10:07	1
Chromium	1D	3.0		ug/L		03/25/24 18:13	03/26/24 10:07	1
Lead	I D	1.0		ug/L		03/25/24 18:13	03/26/24 10:07	1
Molybdenum	1D	2.0		ug/L		03/25/24 18:13	03/26/24 10:07	1
Selenium	1D	5.0		ug/L		03/25/24 18:13	03/26/24 10:07	1
Thallium	ID	1.0		ug/L		03/25/24 18:13	03/26/24 10:07	1

Lab Sample ID: LCS 280-647001/2-A Matrix: Water Analysis Batch: 647181

Client Sample ID: Lab Control Sample Prep Type: Total/NA Prep Batch: 647001

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Spike	LCS	LCS				%Rec
Added	Result	Qualifier	Unit	D	%Rec	Limits
40.0	41.9		ug/L		105	85 - 115
40.0	41.5		ug/L		104	85 - 117
40.0	40.6		ug/L		102	85 - 118
40.0	43.2		ug/L		108	80 - 125
40.0	40.8		ug/L		102	85 - 115
40.0	39.9		ug/L		100	84 - 121
40.0	40.7		ug/L		102	85 - 118
40.0	39.2		ug/L		98	85 - 119
40.0	42.0		ug/L		105	77 - 122
40.0	39.7		ug/L		99	85 - 118
	Added 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.	Added Result 40.0 41.9 40.0 41.5 40.0 40.6 40.0 40.6 40.0 43.2 40.0 40.8 40.0 39.9 40.0 39.2 40.0 42.0	Added Result Qualifier 40.0 41.9 40.0 41.9 40.0 41.5 40.0 40.6 40.0 40.2 40.0 40.8 40.0 40.7 40.0 39.2 40.0 42.0 40.0 40.7	Added Result Qualifier Unit 40.0 41.9 ug/L 40.0 41.5 ug/L 40.0 40.6 ug/L 40.0 40.6 ug/L 40.0 43.2 ug/L 40.0 40.8 ug/L 40.0 39.9 ug/L 40.0 39.2 ug/L 40.0 39.2 ug/L 40.0 42.0 ug/L	Added Result Qualifier Unit D 40.0 41.9 ug/L ug/L ug/L 40.0 41.5 ug/L ug/L 40.0 40.6 ug/L ug/L 40.0 43.2 ug/L ug/L 40.0 40.8 ug/L ug/L 40.0 39.9 ug/L ug/L 40.0 39.2 ug/L ug/L 40.0 39.2 ug/L ug/L 40.0 42.0 ug/L ug/L	Added Result Qualifier Unit D %Rec 40.0 41.9 ug/L 105 105 40.0 41.5 ug/L 104 40.0 40.6 ug/L 102 40.0 43.2 ug/L 108 40.0 40.8 ug/L 102 40.0 39.9 ug/L 100 40.0 39.9 ug/L 102 40.0 40.7 ug/L 102 40.0 39.2 ug/L 98 40.0 42.0 ug/L 105

Lab Sample ID: 280-188987-A-1-B MS
Matrix: Water
Analysis Batch: 647181

Analysis Batch: 647181									Prep Batch: 647001
	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Antimony	ND		40.0	40.7		ug/L		102	80 - 111
Arsenic	ND		40.0	42.2		ug/L		103	92 - 112
Barium	98		40.0	137		ug/L		98	92 - 117
Beryllium	ND		40.0	42.2		ug/L		105	87 - 118
Cadmium	ND		40.0	40.1		ug/L		100	91 - 114
Chromium	ND		40.0	39.9		ug/L		100	91 - 114
Lead	ND		40.0	40.3		ug/L		101	95 - 116
Molybdenum	ND		40.0	41.4		ug/L		101	84 - 117
Selenium	ND		40.0	43.6		ug/L		109	90 - 115
Thallium	ND		40.0	39.6		ug/L		99	94 - 115

Lab Sample ID: 280-188987-A-1-C MSD

Analysis Batch: 647181									Prep Iy Prep B	· · · · · · · · · · · · · · · · · · ·	
-	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	ND		40.0	40.6		ug/L		102	80 - 111	0	20

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Prep Type: Total/NA

Prep Batch: 647001

Client Sample ID: Method Blank

9

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-188987-A-1-C MSD Matrix: Water

	alei		
Analysis	Batch:	647181	

Analysis Batch: 647181									Prep Ba	atch: 64	47001
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	ND		40.0	42.3		ug/L		104	92 - 112	0	20
Barium	98		40.0	135		ug/L		93	92 - 117	1	20
Beryllium	ND		40.0	41.8		ug/L		105	87 - 118	1	20
Cadmium	ND		40.0	39.1		ug/L		98	91 - 114	3	20
Chromium	ND		40.0	40.5		ug/L		101	91 - 114	2	20
Lead	ND		40.0	41.6		ug/L		104	95 - 116	3	20
Molybdenum	ND		40.0	40.4		ug/L		98	84 - 117	2	20
Selenium	ND		40.0	42.7		ug/L		107	90 - 115	2	20
Thallium	ND		40.0	40.5		ug/L		101	94 - 115	2	20

Lab Sample ID: MB 280-647628/1-A **Matrix: Water** Analysis Batch: 647894

-	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0		ug/L		04/01/24 09:20	04/01/24 18:41	1
Arsenic	ND		5.0		ug/L		04/01/24 09:20	04/01/24 18:41	1
Barium	ND		3.0		ug/L		04/01/24 09:20	04/01/24 18:41	1
Beryllium	ND		1.0		ug/L		04/01/24 09:20	04/01/24 18:41	1
Cadmium	ND		1.0		ug/L		04/01/24 09:20	04/01/24 18:41	1
Chromium	ND		3.0		ug/L		04/01/24 09:20	04/01/24 18:41	1
Lead	ND		1.0		ug/L		04/01/24 09:20	04/01/24 18:41	1
Molybdenum	ND		2.0		ug/L		04/01/24 09:20	04/01/24 18:41	1
Selenium	ND		5.0		ug/L		04/01/24 09:20	04/01/24 18:41	1
Thallium	ND		1.0		ug/L		04/01/24 09:20	04/01/24 18:41	1

Lab Sample ID: LCS 280-647628/2-A **Matrix: Water** Analysis Batch: 647894

Spike	LCS	LCS				%Rec
Added	Result	Qualifier	Unit	D	%Rec	Limits
40.0	39.7		ug/L		99	85 - 115
40.0	42.3		ug/L		106	85 - 117
40.0	41.3		ug/L		103	85 - 118
40.0	38.6		ug/L		97	80 - 125
40.0	39.5		ug/L		99	85 - 115
40.0	40.5		ug/L		101	84 - 121
40.0	39.9		ug/L		100	85 - 118
40.0	39.2		ug/L		98	85 - 119
40.0	40.0		ug/L		100	77 - 122
40.0	38.8		ug/L		97	85 - 118
	Added 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.	Added Result 40.0 39.7 40.0 42.3 40.0 41.3 40.0 38.6 40.0 39.5 40.0 40.5 40.0 39.9 40.0 39.9 40.0 39.2 40.0 40.0	Added Result Qualifier 40.0 39.7 40.0 39.7 40.0 42.3 40.0 41.3 40.0 31.7 40.0 38.6 40.0 39.5 40.0 39.5 40.0 39.9 40.0 39.2 40.0 40.0 39.2 40.0	Added Result Qualifier Unit 40.0 39.7 ug/L ug/L 40.0 42.3 ug/L 40.0 41.3 ug/L 40.0 38.6 ug/L 40.0 39.5 ug/L 40.0 39.5 ug/L 40.0 39.5 ug/L 40.0 39.9 ug/L 40.0 39.9 ug/L 40.0 39.2 ug/L 40.0 40.0 ug/L	Added Result Qualifier Unit D 40.0 39.7 ug/L ug/L 40.0 42.3 ug/L 40.0 41.3 ug/L 40.0 38.6 ug/L 40.0 39.5 ug/L 40.0 39.5 ug/L 40.0 39.5 ug/L 40.0 39.5 ug/L 40.0 39.9 ug/L 40.0 39.2 ug/L 40.0 40.0 ug/L	Added Result Qualifier Unit D %Rec 40.0 39.7 ug/L ug/L 99 40.0 42.3 ug/L 106 40.0 41.3 ug/L 103 40.0 38.6 ug/L 99 40.0 39.5 ug/L 99 40.0 39.5 ug/L 101 40.0 39.5 ug/L 101 40.0 39.9 ug/L 101 40.0 39.9 ug/L 100 40.0 39.2 ug/L 98 40.0 40.0 ug/L 100

Lab Sample ID: LCSD 280-647628/3-A Matrix: Water

Analysis Batch: 647894							Prep Ba	atch: 64	47628
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	40.0	42.1		ug/L		105	85 - 115	6	9
Arsenic	40.0	42.1		ug/L		105	85 - 117	0	10

Eurofins Denver

Prep Type: Total/NA

5 9

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 647628

Job ID: 280-189073-1

Prep Type: Total/NA

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 647628

Job ID: 280-189073-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 280-647628/3-A **Client Sample ID: Lab Control Sample Dup** Matrix: Water Prep Type: Total/NA Prep Batch: 647628 Analysis Batch: 647894 Spike LCSD LCSD %Rec RPD Analyte Added **Result Qualifier** Unit D %Rec Limits RPD Limit Barium 40.0 41.5 104 85 - 118 0 11 ug/L Beryllium 40.0 40.3 ug/L 101 80 - 125 4 22 Cadmium 85 - 115 40.0 40.3 ug/L 101 7 2 Chromium 40.0 41.1 ug/L 103 84 - 121 8 1 Lead 40.0 41.0 ug/L 102 85 - 118 3 7 Molybdenum 40.0 39.5 ug/L 99 85 - 119 1 8 ug/L Selenium 40.0 40.4 101 77 - 122 9 1 Thallium 40.0 40.1 100 85 - 118 3 5 ug/L

Lab Sample ID: 280-189073-1 MS Matrix: Water

Analysis Batch: 647894

Analysis Batch: 64/894	0	0	Omilia		MO				Prep Batch: 64/628
	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Antimony	ND		40.0	42.3		ug/L		106	80 - 111
Arsenic	ND		40.0	42.1		ug/L		105	92 - 112
Barium	5.7		40.0	47.2		ug/L		104	92 - 117
Beryllium	ND		40.0	41.4		ug/L		103	87 - 118
Cadmium	ND		40.0	37.5		ug/L		93	91 - 114
Chromium	ND		40.0	39.7		ug/L		99	91 - 114
Lead	ND		40.0	40.5		ug/L		100	95 - 116
Molybdenum	ND		40.0	41.0		ug/L		100	84 - 117
Selenium	170		40.0	209	4	ug/L		94	90 - 115
Thallium	ND		40.0	40.1		ug/L		99	94 - 115

Lab Sample ID: 280-189073-1 MSD Matrix: Water Analysis Batch: 647894

Analysis Batch: 647894									Prep Ba	atch: 64	47628
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	ND		40.0	41.3		ug/L		103	80 - 111	2	20
Arsenic	ND		40.0	40.8		ug/L		102	92 - 112	3	20
Barium	5.7		40.0	48.5		ug/L		107	92 - 117	3	20
Beryllium	ND		40.0	43.2		ug/L		108	87 - 118	4	20
Cadmium	ND		40.0	36.6		ug/L		91	91 - 114	3	20
Chromium	ND		40.0	40.5		ug/L		101	91 - 114	2	20
Lead	ND		40.0	42.2		ug/L		105	95 - 116	4	20
Molybdenum	ND		40.0	41.1		ug/L		101	84 - 117	0	20
Selenium	170		40.0	206	4	ug/L		88	90 - 115	1	20
Thallium	ND		40.0	40.5		ug/L		100	94 - 115	1	20

Lab Sample ID: 280-189073-7 MS Matrix: Water Analysis Batch: 647894

Analysis Batch: 647894									Prep Batch: 647628	3
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Antimony	ND		40.0	41.5		ug/L		104	80 - 111	-
Arsenic	ND		40.0	41.3		ug/L		101	92 - 112	
Barium	12		40.0	53.8		ug/L		104	92 - 117	

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Client Sample ID: 496701 CC_1

Client Sample ID: 496701 CC_1

Client Sample ID: 496707 SC_10

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA Prep Batch: 647628

12

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-189073-7 MS **Matrix: Water**

Analysis Batch: 647894

Analysis Batch. 047034	Sample	Sample	Spike	MS	MS				%Rec
Analyte	•	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Beryllium	ND		40.0	40.3		ug/L		101	87 - 118
Cadmium	ND		40.0	37.0		ug/L		93	91 - 114
Chromium	ND		40.0	39.4		ug/L		96	91 - 114
Lead	ND		40.0	40.7		ug/L		100	95 - 116
Molybdenum	4.6		40.0	44.2		ug/L		99	84 - 117
Selenium	200		40.0	235	4	ug/L		99	90 - 115
Thallium	ND		40.0	40.0		ug/L		100	94 - 115

Lab Sample ID: 280-189073-7 MSD Matrix: Water Analysis Batch: 647894

Analysis Batch: 64789	4							Prep Ba	atch: 64	4 762 8	
	Sample Samp	le Spike	MSD	MSD				%Rec		RPD	
Analyte	Result Qualif	ier Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Antimony	ND	40.0	41.3		ug/L		103	80 - 111	1	20	
Arsenic	ND	40.0	43.5		ug/L		107	92 - 112	5	20	
Barium	12	40.0	52.3		ug/L		100	92 - 117	3	20	
Beryllium	ND	40.0	42.1		ug/L		105	87 - 118	4	20	
Cadmium	ND	40.0	37.0		ug/L		92	91 - 114	0	20	
Chromium	ND	40.0	38.9		ug/L		95	91 - 114	1	20	
Lead	ND	40.0	40.4		ug/L		100	95 - 116	1	20	
Molybdenum	4.6	40.0	43.7		ug/L		98	84 - 117	1	20	
Selenium	200	40.0	230	4	ug/L		87	90 - 115	2	20	
Thallium	ND	40.0	39.6		ug/L		99	94 - 115	1	20	
Ihallium	ND	40.0	39.6		ug/L		99	94 - 115		1	1 20

Client Sample ID: 496707 SC_10 Prep Type: Total/NA Prep Batch: 647628

Client Sample ID: 496707 SC_10

Prep Type: Total/NA

Job ID: 280-189073-1

5

Prep Batch: 647001

Metals

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-189073-2	496702 FC_1	Total/NA	Water	3020A	
280-189073-3	496703 FC_2	Total/NA	Water	3020A	
280-189073-4	496704 FC_3A	Total/NA	Water	3020A	
280-189073-5	496705 FC_3B	Total/NA	Water	3020A	
280-189073-6	496706 EQUIP_BLK	Total/NA	Water	3020A	
280-189073-8	496708 SC_11	Total/NA	Water	3020A	
280-189073-9	496709 SC_12	Total/NA	Water	3020A	
280-189073-10	496710 SC_13	Total/NA	Water	3020A	
280-189073-11	496711 SC_14	Total/NA	Water	3020A	
280-189073-12	496712 FIELD_DUP	Total/NA	Water	3020A	
MB 280-647001/1-A	Method Blank	Total/NA	Water	3020A	
LCS 280-647001/2-A	Lab Control Sample	Total/NA	Water	3020A	
280-188987-A-1-B MS	Matrix Spike	Total/NA	Water	3020A	
280-188987-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	3020A	

Analysis Batch: 647181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-189073-2	496702 FC_1	Total/NA	Water	6020B	647001
280-189073-3	496703 FC_2	Total/NA	Water	6020B	647001
280-189073-4	496704 FC_3A	Total/NA	Water	6020B	647001
280-189073-5	496705 FC_3B	Total/NA	Water	6020B	647001
280-189073-6	496706 EQUIP_BLK	Total/NA	Water	6020B	647001
280-189073-8	496708 SC_11	Total/NA	Water	6020B	647001
280-189073-9	496709 SC_12	Total/NA	Water	6020B	647001
280-189073-10	496710 SC_13	Total/NA	Water	6020B	647001
280-189073-11	496711 SC_14	Total/NA	Water	6020B	647001
280-189073-12	496712 FIELD_DUP	Total/NA	Water	6020B	647001
MB 280-647001/1-A	Method Blank	Total/NA	Water	6020B	647001
LCS 280-647001/2-A	Lab Control Sample	Total/NA	Water	6020B	647001
280-188987-A-1-B MS	Matrix Spike	Total/NA	Water	6020B	647001
280-188987-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	6020B	647001

Prep Batch: 647628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-189073-1	496701 CC_1	Total/NA	Water	3020A	
280-189073-7	496707 SC_10	Total/NA	Water	3020A	
MB 280-647628/1-A	Method Blank	Total/NA	Water	3020A	
LCS 280-647628/2-A	Lab Control Sample	Total/NA	Water	3020A	
LCSD 280-647628/3-A	Lab Control Sample Dup	Total/NA	Water	3020A	
280-189073-1 MS	496701 CC_1	Total/NA	Water	3020A	
280-189073-1 MSD	496701 CC_1	Total/NA	Water	3020A	
280-189073-7 MS	496707 SC_10	Total/NA	Water	3020A	
280-189073-7 MSD	496707 SC_10	Total/NA	Water	3020A	

Analysis Batch: 647894

Lab Sample ID 280-189073-1	Client Sample ID 496701 CC_1	Prep Type Total/NA	Matrix Water	Method 6020B	Prep Batch 647628
280-189073-7	496707 SC_10	Total/NA	Water	6020B	647628
MB 280-647628/1-A	Method Blank	Total/NA	Water	6020B	647628
LCS 280-647628/2-A	Lab Control Sample	Total/NA	Water	6020B	647628
LCSD 280-647628/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	647628

10

Metals (Continued)

Analysis Batch: 647894 (Continued)

Lab Sample ID 280-189073-1 MS	Client Sample ID 496701 CC_1	Prep Type Total/NA	Matrix Water	Method 6020B	Prep Batch 647628
280-189073-1 MSD	496701 CC_1	Total/NA	Water	6020B	647628
280-189073-7 MS	496707 SC_10	Total/NA	Water	6020B	647628
280-189073-7 MSD	496707 SC_10	Total/NA	Water	6020B	647628

Total/NA

Analysis

6020B

Client Sample ID: 496701 CC_1 Date Collected: 03/18/24 15:16 Date Received: 03/21/24 09:20

Lab Sample ID: 280-189073-1
Lab Gampie 10. 200-100010-1
Matrix: Water

Prep Type Total/NA Total/NA	Batch Type Prep Analysis	Batch <u>Method</u> 3020A 6020B	Run	Dil Factor	Initial Amount 50 mL	Final Amount 50 mL	Batch - <u>Number</u> 647628 647894	Prepared or Analyzed 04/01/24 09:20 04/01/24 18:48	Analyst AES LMT	Lab EET DEN EET DEN
ate Collecte	ple ID: 496 d: 03/18/24 1 d: 03/21/24 0	0:25					La	b Sample II		189073-; trix: Wate
-	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep				50 mL	50 mL	647001	03/25/24 18:13		EET DEN
Total/NA	Analysis	6020B		1			647181	03/26/24 10:14		EET DEN
lient Sam	ple ID: 496	703 FC 2					la	b Sample II	ר. 280-י	189073-
ate Collecte	d: 03/18/24 1 d: 03/21/24 0	1:30								trix: Wate
-	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3020A			50 mL	50 mL	647001	03/25/24 18:13	AES	EET DEN
Total/NA	Analysis	6020B		1			647181	03/26/24 10:16	LMT	EET DEN
ate Receive	d: 03/21/24 0 Batch	9:20 Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	- 3020A			50 mL	50 mL	647001	03/25/24 18:13	AES	EET DEN
Total/NA	Analysis	6020B		1	00 1112	00 1112	647181	03/26/24 10:18		EET DEN
lient Sam	ple ID: 496	705 FC_3B					La	b Sample II	D: 280-	189073-
	d: 03/18/24 1 d: 03/21/24 0								Ma	trix: Wate
-	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
		3020A			50 mL	50 mL	647001	03/25/24 18:13	AES	EET DEN
Total/NA	Prep						647181	03/26/24 10:21	IMT	EET DEN
	Prep Analysis	6020B		1						EET DEN
ate Collecte	Analysis ple ID: 496 d: 03/19/24 1	706 EQUIP 6:40	_BLK	1				b Sample II	D: 280-	
Total/NA Client Sam Pate Collecte	Analysis ple ID: 496 d: 03/19/24 1 d: 03/21/24 0	706 EQUIP 6:40 9:20	_BLK		Initial	Final	La	b Sample II	D: 280-	189073-
Total/NA Client Sam Date Collecte Date Receive	Analysis ple ID: 496 d: 03/19/24 1 d: 03/21/24 0 Batch	706 EQUIP 6:40 9:20 Batch		Dil	Initial Amount	Final	La Batch	b Sample II	D: 280- Ma	189073- trix: Wate
Total/NA	Analysis ple ID: 496 d: 03/19/24 1 d: 03/21/24 0	706 EQUIP 6:40 9:20	_BLK		Initial Amount 50 mL	Final Amount 50 mL	La	b Sample II	D: 280- Ma Analyst	189073-

Lab Chronicle

EET DEN

647181

03/26/24 10:23 LMT

1

Prep Type

Total/NA

Total/NA

Client Sample ID: 496707 SC 10 Date Collected: 03/19/24 16:05 Date Received: 03/21/24 09:20

Batch

Туре Prep

Analysis

Batch Method

3020A

6020B

Lab Sample ID: 280-189073-7

	Dil	l-: !! al	Final	Datah	Duramound		
D	Dil	Initial	Final	Batch	Prepared	•	h
Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	
		50 mL	50 mL	647628	04/01/24 09:20	AES	EET DEN
	1			647894	04/01/24 19:09	LMT	EET DEN
				La	b Sample II		
						Ма	trix: Wate
	Dil	Initial	Final	Batch	Prepared		
Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
		50 mL	50 mL	647001	03/25/24 18:13	AES	EET DEN
	1			647181	03/26/24 10:27	LMT	EET DEN
				La	b Sample II	D: 280-	189073-9
					-	Ма	trix: Wate
	Dil	Initial	Final	Batch	Prepared		
Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
		50 mL	50 mL	647001	03/25/24 18:13	AES	EET DEN
	1			647181	03/26/24 10:34	LMT	EET DEN
				Lab	Sample ID	: 280-1	89073-10
					-	Ма	trix: Wate
	Dil	Initial	Final	Batch	Droparad		
Run	Factor	Amount	Amount	Number	Prepared or Analyzed	Analyst	Lab
		50 mL	50 mL	647001	$\frac{03/25/24}{03/25/24}$ 18:13	AES	
	1	50 IIIL	00 ML	647181	03/26/24 10:16		EET DEN
	· · ·						
				Lab	Sample ID		
						Ма	trix: Wate
	Dil	Initial	Final	Batch	Prepared		
Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
		50 mL	50 mL	647001	03/25/24 18:13	AES	EET DEN
	1	<u>-</u>					EET DEN
	1	50 IIIL	50 ME	647181	03/26/24 10:39		

Date Collected: 03/19/24 14:41 Date Received: 03/21/24 09:20

Client Sample ID: 496708 SC_11

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3020A			50 mL	50 mL	647001	03/25/24 18:13	AES	EET DEN
Total/NA	Analysis	6020B		1			647181	03/26/24 10:27	LMT	EET DEN

Client Sample ID: 496709 SC_12 Date Collected: 03/19/24 13:25

Date Received: 03/21/24 09:20

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3020A			50 mL	50 mL	647001	03/25/24 18:13	AES	EET DEN
Total/NA	Analysis	6020B		1			647181	03/26/24 10:34	LMT	EET DEN

Client Sample ID: 496710 SC 13

Date Collected: 03/19/24 12:25

Date Received: 03/21/24 09:20

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3020A			50 mL	50 mL	647001	03/25/24 18:13	AES	EET DEN
Total/NA	Analysis	6020B		1			647181	03/26/24 10:36	LMT	EET DEN

Client Sample ID: 496711 SC_14 Date Collected: 03/19/24 10:33

Date Received: 03/21/24 09:20

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep	Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/N	NA	Prep	3020A			50 mL	50 mL	647001	03/25/24 18:13	AES	EET DEN
Total/I	NA	Analysis	6020B		1			647181	03/26/24 10:39	LMT	EET DEN

Client Sample ID: 496712 FIELD DUP Date Collected: 03/19/24 00:00 Date Received: 03/21/24 09:20

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3020A			50 mL	50 mL	647001	03/25/24 18:13	AES	EET DEN
Total/NA	Analysis	6020B		1			647181	03/26/24 10:41	LMT	EET DEN

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Lab Sample ID: 280-189073-12 **Matrix: Water**

Job ID: 280-189073-1

Matrix: Water

Client: Colorado Springs Utilities

Login Number: 189073 List Number: 1 Creator: Swegle, Jarod M

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	Thermal preservation not required for 6020B.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 280-189073-1

List Source: Eurofins Denver

Jenver	Street
ofins [Yarrow
Euro	4955

Chain of Custody Record

🐝 eurofins America

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Arvada, CO 80002-4517 bhone 303.736.0100 fax 303.431.7171	Regul	Regulatory Program:		> MQ ?		CRA	CRA Other:			Eurofins Environment Testing America	cd.
	Project Manager: Wendy Asay	nager: Wer	idy Asay		Γ					COC No:	
Client Contact	Email: wasay@csu.org	/@csu.org				ite Co	Site Contact: Wendy Asay	Date:		of COCs	
Colorado Springs Utilities	Tel/Fax: 719-668-4603	9-668-4603				ab Co	Lab Contact: Shelby Turner	Carrier:	er:	TALS Project #:	•
01 E. Las Vegas St.	•	Analysis Turnaro	rnaround Time	ime						Sampler:	
Colorado Springs, CO 80903 719-668-4603	CALENDAR DAYS	ENDAR DAYS	n Balow	WORKING DAYS		(N				For Lab Use Only: Walk-in Client:	
xxx) xxx-xxxx FAX		2 W	2 weeks			1/1				Lab Sampling:	1
CCR Landfill		1 week	eek		<u>, </u>						1
Site:		2 days	iys		/ -1-					Job / SDG No.:	
# O c		1 day	y				D 'F	280-180073 Chain of Custody	tustody		
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered S. Perform M	Ba, Be, Co			Sample Specific Notes:	
496701 CC_1	3/18/2024	15:16	U	N N U	-	≻ z				Preserved with HNO3	11
496702 FC_1	3/18/2024	10:25	J	۵ ا	-	z	×			Preserved with HNO3	
496703 FC_2	3/18/2024	11:30	U	۵ م	-	z	×			Preserved with HNO3	1
496704 FC_3A	3/18/2024	13:58	U	ВW	-	z	×			Preserved with HNO3	
496705 FC_3B	3/18/2024	13:16	J	дM	-	z	×			Preserved with HNO3	
496706 EQUIP_BLK	3/19/2024	16:40	g	GW	-	z	×			Preserved with HNO3	1
496707 SC_10	3/19/2024	16:05	G	GW	+	≻ z	×			Preserved with HNO3	
496708 SC_11	3/19/2024	14:41	ß	GW	+	z	×			Preserved with HNO3	
496709 SC_12	3/19/2024	13:25	ŋ	GW	+	z	×			Preserved with HNO3	
496710 SC_13	3/19/2024	12:25	ß	GW	+	z	×			Preserved with HNO3	
496711 SC_14	3/19/2024	10:33	U	GW	+	z	×			Preserved with HNO3	
496712 FIELD_DUP	3/19/2024	00:00	U	дW	-	z	×			Preserved with HNO3	
² reservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=	4=HNO3; 5=NaOH; 6= Other	OH; 6= Oth	er								
ossible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.	Please List a	any EPA W	aste Codes	for the s	ample i		ple Disposal (A fee m	ay be assessed i	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	nger than 1 month)	
Von-Hazard Flammable Skin Ir	Skin Irritant Doison B		Unknown	nn			Return to Client	Disposal by Lab	ov Lab	Months	
its & Co	s: Use lowes	t dilution p	ossible if c	ilution is	s neede	d. RL	eporting only.				
Custody Seals Intact:	Custody Seal No.	al No.:						Cooler Temp. (°C): Obs'd: II.	1. Corr'd: 11-2	Therm ID No.: 14	
Relinquished by: Ald Martin	Company:	the services	LthLthrs	Date/Time: 3/24/24	e: 11.45		Received by full		NJULIT	Date/Time: 3/21/24 0920	
Relinquished by:		_		Date/Time			Receive d b y:		Company:	Date/Time:	
Relinquished by:	Company:			Date/Time:	.: •	Rece	Received in Laboratory by:		Company:	Date/Time:	1





Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Wendy Asay Colorado Springs Utilities Laboratory Services Section 701 E. Las Vegas St., MC 1465 Colorado Springs, Colorado 80903 Generated 4/18/2024 4:01:21 PM

JOB DESCRIPTION

CCR Landfill

JOB NUMBER

160-53538-1

Eurofins St. Louis 13715 Rider Trail North Earth City MO 63045





Eurofins St. Louis

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization

michakonung

Generated 4/18/2024 4:01:21 PM

5 6 7

Authorized for release by Micha Korrinhizer, Project Manager Micha.Korrinhizer@et.eurofinsus.com (314)298-8566

Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Chain of Custody	6
Receipt Checklists	7
Definitions/Glossary	8
Method Summary	9
Sample Summary	10
Client Sample Results	11
QC Sample Results	15
QC Association Summary	16
Tracer Carrier Summary	17

Job ID: 160-53538-1

Eurofins St. Louis

CASE NARRATIVE

Client: Colorado Springs Utilities

Project: Radiochemistry Analysis

Report Number: 160-53538-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition, all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method.

Eurofins Environment Testing attests to the validity of the laboratory data generated by Eurofins facilities reported herein. All analyses performed by Eurofins Environment Testing facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins Environment Testing's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report.

Calculations are performed before rounding to avoid round-off errors in calculated results.

Proper preservation was noted for the methods performed on these samples, unless otherwise detailed below.

All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client.

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

The matrix for the Method Blank and LCS/LCSD is as close to the samples as can be reasonably achieved. Detailed information can be found in the most current revision of the associated SOP.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.

Reference the chain of custody and receipt report for any variations on receipt conditions.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

Receipt

The samples were received on 3/21/2024 8:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved. The temperatures of the 2 coolers at receipt time were 9.5°C and 10.8°C.

Receipt Exceptions

The sampler name was not listed on the COC.

Method 903.0 - Radium-226 (GFPC)

Samples 496707 SC_10 (160-53538-1), 496708 SC_11 (160-53538-2), 496709 SC_12 (160-53538-3), 496710 SC_13 (160-53538-4), 496711 SC_14 (160-53538-5) and 496712 FIELD_DUP (160-53538-6) were analyzed for Radium-226 (GFPC). The samples were prepared on 3/25/2024 and analyzed on 4/18/2024.

No analytical or quality issues were noted, other than those described in the Definitions/ Glossary page.

Method 904.0 - Radium-228 (GFPC)

Samples 496707 SC_10 (160-53538-1), 496708 SC_11 (160-53538-2), 496709 SC_12 (160-53538-3), 496710 SC_13 (160-53538-4), 496711 SC_14 (160-53538-5) and 496712 FIELD_DUP (160-53538-6) were analyzed for Radium-228 (GFPC).

Eurofins St. Louis

Job ID: 160-53538-1 (Continued)

The samples were prepared on 3/25/2024 and analyzed on 4/17/2024.

The detection goal was not met for the following samples in batch 160-653868 due to the reduced aliquot attributed to the presence of matrix interferences noted during prep: 496707 SC_10 (160-53538-1), 496708 SC_11 (160-53538-2) and (240-201469-D-2-B). In addition, the samples had lower, but still passing, barium carrier recoveries. Analytical results are reported with the detection limit achieved.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Ra226_Ra228 - Combined Radium-226 and Radium-228

Samples 496707 SC_10 (160-53538-1), 496708 SC_11 (160-53538-2), 496709 SC_12 (160-53538-3), 496710 SC_13 (160-53538-4), 496711 SC_14 (160-53538-5) and 496712 FIELD_DUP (160-53538-6) were analyzed for Combined Radium-226 and Radium-228. The samples were analyzed on 4/18/2024.

No analytical or quality issues were noted, other than those described in the Definitions/ Glossary page.

Louis	
a St.	l North
estAmerica	3715 Rider Trail I
F	0

Chain of Custody Record

TestAmerica

Client Contact	Project M	Project Manager: Wendy Asay	endy Asay		S	Site Contact:	act:		Date:	ie i		COC No:	OC No:
Colorado Springs Utilities	Tel/Fax: 7	Tel/Fax: 719-668-4603	33		<u>ت</u>	ab Cont	act: Rho	Lab Contact: Rhonda Ridenhower	enhower Ca	Carrier:		of	cocs
701 E. Las Vegas St.		Analysis Turnaround Time	urnaround	Time	┢	E						Sampler:	
Colorado Springs, CO 80903	CALEN	CALENDAR DAYS	WOR	WORKING DAYS								For Lab Use Only:	Only:
(719) 668-4603 Phone	TA	TAT if different fro	om Below									Walk-in Client:	
(xxx) xxx-xxxx FAX	5	2	weeks		<u>(N</u>	/ λ						Lab Sampling:	
Project Name: CCR Landfill		1	week		/ 1) c							
Site:		2	days) əl	ISW						Job / SDG No	
P O #		1	U U		dwe	1/5							
Sampte Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	C * Sitered Si	Pertorm M Total Radi	ibsЯ IstoT benidmoC						Samula Socoritio Motoo.
496707 SC_10	3/19/24	16:05	U	δ	11) × . ×					5	
496708 SC_11	3/19/24	14:41	G	В	Z ⊲	×	××						
496709 SC_12	3/19/24	13:25	U	GW	Z ⊳	×	××						
496710 SC_13	3/19/24	12:25	U	л М	Z ⊳	×	××						
496711 SC_14	3/19/24	10:33	U	GW	Z ⊲	×	××						
496712 FIELD_DUP	3/19/24	00:00	J	ß	Z ⊲	×	××						
									9	0-53538 CI	160-53538 Chain of Custody		
									-				
							-						
Preservation Used: 1= Ice, 2= HCI; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other	=NaOH; 6= C	other						-					
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please L Comments Section if the lab is to dispose of the sample.	Please List any EPA Waste Cod	Waste Coo	des for the sample in the	sample ir	the	Sample	e Dispo	sal (A fee	e may be as	sessed if s	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	ed longer than 1	month)
 Non-Hazard Flammable Skin Irritant 	Poison B	В	Unknown	wn		R	Return to Client	lient	Dispos	Disposal by Lab	Archive for	Months	
Special Instructions/QC Requirements & Comments: Please be sure to use	se be sur	e to use	the listed method numbers	d metl	nu po	mbers	പ്						
Custody Seals Intact: Tes No	Custody Seal No.:	eal No.:					Coo	ler Temp.	Cooler Temp. (°C): Obs'd:_		Corr'd:	Therm ID No.:	
Relinquished by: AULU M. P. K.	Company:	6 Samers	LIblib/s	Slavinue:	e: 14.25	Received by:	eived by:	1 22	NUM AN	Company	こ 金	Date/Time:	0 82 ()
Relinquished by:	Company:			Date/Time:		Received by:	ed by:			Company	iny:	Date/Time:	
Relinquished by:	Company:			Date/Time:	ini ini	Receive	ed in Lal	Received in Laboratory by:	Ä	Company:	any:	Date/Time:	
											Form No. 0	:A-C-WI-002, Re	Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018

4

Client: Colorado Springs Utilities

Login Number: 53538 List Number: 1 Creator: Worthington, Sierra M

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	The samplers name is not listed on the COC.,
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 160-53538-1

List Source: Eurofins St. Louis

6

Qualifiers

	_	-
к	а	α
	-	~

Qualifier	Qualifier Description	
G	The Sample MDC is greater than the requested RL.	
U	Result is less than the sample detection limit.	5

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Colorado Springs Utilities Project/Site: CCR Landfill

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
Protocol Refe EPA = US None = No	Environmental Protection Agency		

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Colorado Springs Utilities Project/Site: CCR Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-53538-1	496707 SC_10	Water	03/19/24 16:05	03/21/24 08:30
160-53538-2	496708 SC_11	Water	03/19/24 14:41	03/21/24 08:30
160-53538-3	496709 SC_12	Water	03/19/24 13:25	03/21/24 08:30
160-53538-4	496710 SC_13	Water	03/19/24 12:25	03/21/24 08:30
160-53538-5	496711 SC_14	Water	03/19/24 10:33	03/21/24 08:30
160-53538-6	496712 FIELD_DUP	Water	03/19/24 00:00	03/21/24 08:30

Total

Uncert.

(2**σ**+/-)

0.355

Total

Uncert.

(2**σ**+/-)

0.706

RL

1.00

RL

1.00

MDC Unit

0.522 pCi/L

MDC Unit

1.30 pCi/L

Analyte

Carrier

Analyte

Carrier

Ba Carrier

Y Carrier

Radium-228

Ba Carrier

Radium-226

Client Sample ID: 496707 SC_10 Date Collected: 03/19/24 16:05 Date Received: 03/21/24 08:30

Method: EPA 903.0 - Radium-226 (GFPC)

Method: EPA 904.0 - Radium-228 (GFPC)

Result Qualifier

%Yield Qualifier

Result Qualifier

%Yield Qualifier

0.0948 UG

51.3

82.2

0.413 U

51.3

Analyzed

Analyzed

Analyzed

Analyzed

Matrix: Water

Lab Sample ID: 160-53538-1

03/25/24 09:33 04/18/24 07:33

03/25/24 09:33 04/18/24 07:33

03/25/24 09:47 04/17/24 11:56

03/25/24 09:47 04/17/24 11:56

03/25/24 09:47 04/17/24 11:56

Lab Sample ID: 160-53538-2

Matrix: Water

Prepared

Prepared

Prepared

Prepared

Dil Fac 1 Dil Fac 1 Dil Fac 1 Dil Fac

1

Method: TAL_STL Ra226	Ra228 - Combined Radium-226 and Radium-228

Count

Uncert.

(20+/-)

Limits

30 - 110

Count Uncert.

(2**σ**+/-)

0.706

Limits

30 - 110

30 - 110

0.353

			Count	Total					
			Uncert.	Uncert.					
Analyte	Result	Qualifier	(2 σ+/-)	(2σ+/-)	RL	MDC Unit	t Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.508	U	0.789	0.790	5.00	1.30 pCi/L	/L	04/18/24 15:06	1

Client Sample ID: 496708 SC_11

Date Collected: 03/19/24 14:41 Date Received: 03/21/24 08:30

Method: EPA 903.0 - Radium-226 (GFPC)

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.598	U	0.482	0.485	1.00	0.725	pCi/L	03/25/24 09:33	04/18/24 07:33	1
Carrier Ba Carrier	%Yield 51.0	Qualifier	Limits 30 - 110					Prepared 03/25/24 09:33	Analyzed 04/18/24 07:33	Dil Fac

Method: EPA 904.0 - Radium-228 (GFPC)

		·	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.280	UG	0.647	0.648	1.00	1.15	pCi/L	03/25/24 09:47	04/17/24 11:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	51.0		30 - 110					03/25/24 09:47	04/17/24 11:56	1
Y Carrier	80.7		30 - 110					03/25/24 09:47	04/17/24 11:56	1

Client Sample Results

			Clier	nt Samp	le Res	ults				
lient: Colorado Sprin roject/Site: CCR Lan		5							Job ID: 160-5	53538-1
Client Sample ID: Date Collected: 03/19	9/24 14:41	1						Lab Sample		8538-2 : Water
ate Received: 03/21	1/24 08:30	1								
Method: TAL-STL R	ta226_Ra	228 - Coml	bined Radi	ium-226 an	d Radiun	n-228				
	_		Count	Total						
			Uncert.	Uncert.						
Analyte		Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC		Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.878	U	0.807	0.809	5.00	1.15	pCi/L		04/18/24 15:26	1
Client Sample ID:	: 496709	SC 12						Lab Sample	D: 160-53	538-3
hate Collected: 03/19										: Water
Date Received: 03/21	I/24 08:30	1								
Method: EPA 903.0	- Radium	-226 (GEP	C)							
	- Radian	-220 (011 (Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2 σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.104	U	0.125	0.125	1.00	0.203	pCi/L	03/25/24 09:33	04/18/24 07:33	1
Corrier	0/ V:-1-1	Qualifier	l incita					Dramawad	Analyzed	
Carrier Ba Carrier	103	Qualifier	Limits 30 - 110					Prepared	Analyzed 04/18/24 07:33	Dil Fac
	103		30 - 110					03/23/24 09.33	04/10/24 07.33	1
Method: EPA 904.0	- Radium	-228 (GFP	C)							
			Count	Total						
			Uncert.	Uncert.						
Analyte		Qualifier	(2σ+/-)	(2σ+/-)	RL _	MDC		Prepared	Analyzed	Dil Fac
Radium-228	0.225	U	0.343	0.343	1.00	0.579	pCi/L	03/25/24 09:47	04/17/24 11:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		30 - 110					<u> </u>	04/17/24 11:56	1
Y Carrier	80.7		30 - 110					03/25/24 09:47	04/17/24 11:56	1
		000 Cam	alianal Dadi		d De divu					
Method: TAL-STL R	azzo_Ra	228 - Comi		Total	a Radiun	1-228				
			Count Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226	0.329		0.365	0.365	5.00	0.579			04/18/24 15:26	1
+ 228										
Client Sample ID:	496710	SC 13						Lab Sample	D: 160-53	538-4
Date Collected: 03/19								Eas campio		: Water
									matrix	
Jale Received: US/Z										
-	Distant services	-226 (GFP								
-	- Radium	•	Count	Total						
Method: EPA 903.0	- Radium		Count	11						
		·	Uncert.	Uncert.		1100	1.1	Due a const	A	
Method: EPA 903.0	Result	Qualifier	Uncert. (2σ+/-)	(2σ+/-)	RL	MDC		Prepared	Analyzed	Dil Fac
Method: EPA 903.0		Qualifier	Uncert.		RL 1.00	MDC 0.325			Analyzed 04/18/24 07:33	Dil Fac
Method: EPA 903.0	Result 0.283	Qualifier	Uncert. (2σ+/-)	(2σ+/-)						

Client Sample ID: 496710 SC_13 Date Collected: 03/19/24 12:25 Date Received: 03/21/24 08:30

Method: EPA 904.0 - Radium-228 (GFPC)

Job ID: 1	60-53538-1
-----------	------------

 Lab Sample ID: 160-53538-4
 3

 Matrix: Water
 4

 5

Matrix: Water

		·	Count Uncert.	Total Uncert.							
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac	
Radium-228	0.401	U	0.462	0.464	1.00	0.759	pCi/L	03/25/24 09:47	04/17/24 11:56	1	
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac	
Ba Carrier	69.5		30 - 110					03/25/24 09:47	04/17/24 11:56	1	
Y Carrier	82.2		30 - 110					03/25/24 09:47	04/17/24 11:56	1	
Method: TAL-STL R	Ra226_Ra	228 - Com	bined Radi Count	um-226 an Total	d Radiur	n-228					
			Uncert.	Uncert.							
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac	
Combined Radium 226 + 228	0.684	U	0.513	0.516	5.00	0.759	pCi/L		04/18/24 15:26	1	
Client Sample ID	: 496711	SC_14						Lab Sample	D: 160-53	538-5	

Client Sample ID: 496711 SC_ Date Collected: 03/19/24 10:33 Date Received: 03/21/24 08:30

Method: EPA 903.0 - Radium-226 (GFPC) Count Total Uncert. Uncert. Analyte **Result Qualifier** (2σ+/-) (2**σ**+/-) RL MDC Unit Prepared Analyzed Dil Fac Radium-226 0.145 U 0.190 0.191 1.00 0.318 pCi/L 03/25/24 09:33 04/18/24 07:33 1 Carrier %Yield Qualifier Limits Prepared Analyzed Dil Fac 105 30 - 110 03/25/24 09:33 04/18/24 07:33 Ba Carrier 1

Method: EPA 904.0 - Radium-228 (GFPC)

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.535		0.333	0.337	1.00	0.489	pCi/L	03/25/24 09:47	04/17/24 11:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		30 - 110					03/25/24 09:47	04/17/24 11:56	1
Y Carrier	81.9		30 - 110					03/25/24 09:47	04/17/24 11:56	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.680		0.383	0.387	5.00	0.489	pCi/L		04/18/24 15:26	1

Client Sample ID: 496712 FIELD_DUP Date Collected: 03/19/24 00:00 Date Received: 03/21/24 08:30

Lab Sample ID: 160-53538-6 Matrix: Water

atrix: water

5 6

9

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.335		0.219	0.222	1.00	0.311	pCi/L	03/25/24 09:33	04/18/24 07:34	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier			30 - 110					03/25/24 09:33	04/18/24 07:34	1

			Uncert.	Uncert.							
Analyte	Result	Qualifier	(2 σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac	
Radium-228	0.400	U	0.317	0.319	1.00	0.491	pCi/L	03/25/24 09:47	04/17/24 11:56	1	
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac	
Ba Carrier	101		30 - 110					03/25/24 09:47	04/17/24 11:56	1	
Y Carrier	84.1		30 - 110					03/25/24 09:47	04/17/24 11:56	1	

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2 σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.734		0.385	0.389	5.00	0.491	pCi/L		04/18/24 15:26	1

QC Sample Results

Job ID: 160-53538-1

10

Method: 903.0 - Radium-226 (GFPC)

Lab Sample		60-6538	67/1-A						Cli		ole ID: Method	
Matrix: Wat											Prep Type: T	
Analysis Ba	atch: 6574	71									Prep Batch:	653867
				Count	Total							
		MB		Uncert.	Uncert.							
Analyte			Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC			Prepared	Analyzed	Dil Fac
Radium-226		0.09025	U	0.117	0.118	1.00	0.195	pCi/L	03/2	25/24 09:33	04/18/24 07:17	
		МВ	МВ									
Carrier		%Yield	Qualifier	Limits					F	Prepared	Analyzed	Dil Fae
Ba Carrier		101		30 - 110					03/2	25/24 09:33	04/18/24 07:17	
Lab Sample		160-653	867/2-4					Clie	ont Sa		Lab Control	Sample
Matrix: Wat		100-033	00112-A					Cili	ent Sa		Prep Type: T	
Analysis Ba		71									Prep Batch:	
						Total					Tiep Daten.	00000
			Spike	LCS	LCS	Uncert.					%Rec	
Analyte			Added	Result		(2σ+/-)	RL	MDC	Unit	%Rec	Limits	
Radium-226			11.3	10.48		1.25	1.00	0.180		93	75 - 125	
			11.0	10.40		1.20	1.00	0.100	poi/E	00	10-120	
	LCS	LCS										
Carrier	%Yield	Qualifier	Limits	_								
			30 - 110									
ethod: 90 _ab Sample Matrix: Wat	e ID: MB 1 er	60-6538	228 (GFPC	;)					Cli	ent Samp	ole ID: Method Prep Type: T	otal/N/
lethod: 90 Lab Sample Matrix: Wat)4.0 - Ra e ID: MB 1 er	60-6538	228 (GFPC		Total				Cli	ent Samp		otal/N/
lethod: 90 Lab Sample Matrix: Wat)4.0 - Ra e ID: MB 1 er	60-6538 98	228 (GFPC 68/1-A	Count	Total				Cli	ent Samp	Prep Type: Te	otal/NA
lethod: 90 Lab Sample Matrix: Wat Analysis Ba)4.0 - Ra e ID: MB 1 er	60-6538 98 MB	228 (GFPC 68/1-A MB	Count Uncert.	Uncert.	RI	MDC	Unit			Prep Type: T Prep Batch:	otal/NA 653868
lethod: 90 Lab Sample Matrix: Wat Analysis Ba Analyte)4.0 - Ra e ID: MB 1 er	60-6538 98 MB	228 (GFPC 68/1-A MB Qualifier	Count Uncert. (2σ+/-)	Uncert. (2σ+/-)		MDC 0.489		F	Prepared	Prep Type: Te	otal/NA 653868 Dil Fac
lethod: 90 Lab Sample Matrix: Wat Analysis Ba Analyte)4.0 - Ra e ID: MB 1 er	60-6538 98 MB Result 0.2013	228 (GFPC 68/1-A MB Qualifier U	Count Uncert.	Uncert.		MDC 0.489		F	Prepared	Prep Type: To Prep Batch: Analyzed	otal/NA 653868 Dil Fac
lethod: 90 Lab Sample Matrix: Wat Analysis Ba Analyte Radium-228)4.0 - Ra e ID: MB 1 er	60-6538 98 MB Result 0.2013 <i>MB</i>	228 (GFPC 68/1-A MB Qualifier U MB	Count Uncert. (2σ+/-) 0.290	Uncert. (2σ+/-)				F 03/2	Prepared 25/24 09:47	Prep Type: To Prep Batch: Analyzed 04/17/24 11:39	otal/NA 653868 Dil Fac
Aethod: 90 Lab Sample Matrix: Wat Analysis Ba Analyte Radium-228 Carrier)4.0 - Ra e ID: MB 1 er	60-6538 98 <u>MB</u> Result 0.2013 <i>MB</i> %Yield	228 (GFPC 68/1-A MB Qualifier U	Count Uncert. (2σ+/-) 0.290	Uncert. (2σ+/-)				F 03/2 	Prepared 25/24 09:47 Prepared	Prep Type: To Prep Batch: Analyzed 04/17/24 11:39 Analyzed	otal/NA 653868 Dil Fac 1 Dil Fac
Analysis Ba Analysis Ba Analysis Ba Analyte Radium-228 Carrier Ba Carrier)4.0 - Ra e ID: MB 1 er	60-6538 98 MB Result 0.2013 <i>MB</i>	228 (GFPC 68/1-A MB Qualifier U MB	Count Uncert. (2σ+/-) 0.290	Uncert. (2σ+/-)				— F 03/2 - F 03/2	Prepared 25/24 09:47 Prepared 25/24 09:47	Prep Type: To Prep Batch: Analyzed 04/17/24 11:39	otal/NA 653868
Analyte Radium-228	04.0 - Ra er atch: 6573	60-6538 98 <u>MB</u> Result 0.2013 <i>MB</i> %Yield 101 83.0	228 (GFPC 68/1-A MB Qualifier U MB Qualifier	Count Uncert. (2σ+/-) 0.290 Limits 30 - 110	Uncert. (2σ+/-)			pCi/L	F 03/2 F 03/2 03/2	Prepared 25/24 09:47 Prepared 25/24 09:47 25/24 09:47	Analyzed 04/17/24 11:39 Analyzed 04/17/24 11:39 04/17/24 11:39 04/17/24 11:39 04/17/24 11:39	otal/NA 653868 Dil Fac
Iethod: 90 Lab Sample Matrix: Wat Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample	94.0 - Ra e ID: MB 1 er atch: 6573	60-6538 98 <u>MB</u> Result 0.2013 <i>MB</i> %Yield 101 83.0	228 (GFPC 68/1-A MB Qualifier U MB Qualifier	Count Uncert. (2σ+/-) 0.290 Limits 30 - 110	Uncert. (2σ+/-)			pCi/L	F 03/2 F 03/2 03/2	Prepared 25/24 09:47 Prepared 25/24 09:47 25/24 09:47 25/24 09:47 mple ID:	Analyzed 04/17/24 04/17/24 04/17/24 04/17/24 04/17/24 11:39 04/17/24 0	otal/N/ 653868 Dil Fa Dil Fa
Iethod: 90 Lab Sample Matrix: Wat Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wat	94.0 - Ra e ID: MB 1 er atch: 6573	60-6538 98 MB Result 0.2013 MB %Yield 101 83.0	228 (GFPC 68/1-A MB Qualifier U MB Qualifier	Count Uncert. (2σ+/-) 0.290 Limits 30 - 110	Uncert. (2σ+/-)			pCi/L	F 03/2 F 03/2 03/2	Prepared 25/24 09:47 Prepared 25/24 09:47 25/24 09:47 25/24 09:47 mple ID:	Prep Type: To Prep Batch: <u>Analyzed</u> 04/17/24 11:39 <u>Analyzed</u> 04/17/24 11:39 04/17/24 11:39 Lab Control S Prep Type: To	otal/N/ 653868 Dil Fac Dil Fac Dil Fac
Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wat	94.0 - Ra e ID: MB 1 er atch: 6573	60-6538 98 MB Result 0.2013 MB %Yield 101 83.0	228 (GFPC 68/1-A MB Qualifier U MB Qualifier	Count Uncert. (2σ+/-) 0.290 Limits 30 - 110	Uncert. (2σ+/-)	1.00		pCi/L	F 03/2 F 03/2 03/2	Prepared 25/24 09:47 Prepared 25/24 09:47 25/24 09:47 25/24 09:47 mple ID:	Analyzed 04/17/24 04/17/24 04/17/24 04/17/24 04/17/24 11:39 04/17/24 0	otal/NA 653868 Dil Fac Dil Fac Dil Fac
Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wat	94.0 - Ra e ID: MB 1 er atch: 6573	60-6538 98 MB Result 0.2013 MB %Yield 101 83.0	228 (GFPC 68/1-A MB Qualifier U MB Qualifier 868/2-A	Count Uncert. (2σ+/-) 0.290 Limits 30 - 110 30 - 110	Uncert. (2σ+/-) 0.291	1.00		pCi/L	F 03/2 F 03/2 03/2	Prepared 25/24 09:47 Prepared 25/24 09:47 25/24 09:47 25/24 09:47 mple ID:	Prep Type: Tr Prep Batch: <u>Analyzed</u> 04/17/24 11:39 <u>Analyzed</u> 04/17/24 11:39 04/17/24 11:39 04/17/24 11:39 Lab Control S Prep Type: Tr Prep Batch:	otal/NA 653868 Dil Fac Dil Fac Dil Fac
Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wat Analysis Ba	94.0 - Ra e ID: MB 1 er atch: 6573	60-6538 98 MB Result 0.2013 MB %Yield 101 83.0	228 (GFPC 68/1-A MB Qualifier U MB Qualifier 868/2-A Spike	Count Uncert. (2σ+/-) 0.290 Limits 30 - 110 30 - 110	Uncert. (2σ+/-) 0.291	Total Uncert.	0.489	pCi/L Clie	— F 03/2 <i>F</i> 03/2 03/2 ent Sa	Prepared 25/24 09:47 Prepared 25/24 09:47 25/24 09:47 mple ID:	Prep Type: Tr Prep Batch: <u>Analyzed</u> 04/17/24 11:39 <u>Analyzed</u> 04/17/24 11:39 04/17/24 11:39 04/17/24 11:39 Lab Control S Prep Type: Tr Prep Batch: %Rec	otal/NA 653868 Dil Fac Dil Fac Dil Fac
lethod: 90 Matrix: Wat Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wat Analysis Ba	94.0 - Ra e ID: MB 1 er atch: 6573	60-6538 98 MB Result 0.2013 MB %Yield 101 83.0	228 (GFPC 68/1-A MB Qualifier U MB Qualifier 868/2-A Spike Added	Count Uncert. (2σ+/-) 0.290 Limits 30 - 110 30 - 110 30 - 110 Result	Uncert. (2σ+/-) 0.291	1.00 Total Uncert. (2σ+/-)	0.489	pCi/L Clie MDC	— F 03/2 03/2 03/2 ent Sa Unit	Prepared 25/24 09:47 Prepared 25/24 09:47 25/24 09:47 mple ID: %Rec	Prep Type: Tr Prep Batch: <u>Analyzed</u> 04/17/24 11:39 <u>Analyzed</u> 04/17/24 11:39 04/17/24 11:39 04/17/24 11:39 Lab Control S Prep Type: Tr Prep Batch: %Rec Limits	otal/N/ 653868 Dil Fac Dil Fac Dil Fac
lethod: 90 Matrix: Wat Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wat Analysis Ba	94.0 - Ra e ID: MB 1 er atch: 6573	60-6538 98 MB Result 0.2013 MB %Yield 101 83.0	228 (GFPC 68/1-A MB Qualifier U MB Qualifier 868/2-A Spike	Count Uncert. (2σ+/-) 0.290 Limits 30 - 110 30 - 110	Uncert. (2σ+/-) 0.291	Total Uncert.	0.489	pCi/L Clie	— F 03/2 03/2 03/2 ent Sa Unit	Prepared 25/24 09:47 Prepared 25/24 09:47 25/24 09:47 mple ID:	Prep Type: Tr Prep Batch: <u>Analyzed</u> 04/17/24 11:39 <u>Analyzed</u> 04/17/24 11:39 04/17/24 11:39 04/17/24 11:39 Lab Control S Prep Type: Tr Prep Batch: %Rec	otal/NA 653868 Dil Fa Dil Fa Dil Fa
Analyte Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wat Matrix: Wat Analysis Ba Analysis Ba Analyte	94.0 - Ra e ID: MB 1 er atch: 6573	60-6538 98 <u>Result</u> 0.2013 <i>MB</i> %Yield 101 83.0 160-653 98	228 (GFPC 68/1-A MB Qualifier U MB Qualifier 868/2-A Spike Added	Count Uncert. (2σ+/-) 0.290 Limits 30 - 110 30 - 110 30 - 110 Result	Uncert. (2σ+/-) 0.291	1.00 Total Uncert. (2σ+/-)	0.489	pCi/L Clie MDC	— F 03/2 03/2 03/2 ent Sa Unit	Prepared 25/24 09:47 Prepared 25/24 09:47 25/24 09:47 mple ID: %Rec	Prep Type: Tr Prep Batch: <u>Analyzed</u> 04/17/24 11:39 <u>Analyzed</u> 04/17/24 11:39 04/17/24 11:39 04/17/24 11:39 Lab Control S Prep Type: Tr Prep Batch: %Rec Limits	otal/NA 653868 Dil Fac Dil Fac Dil Fac
Ba Carrier Aethod: 90 Lab Sample Matrix: Wat Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wat Analysis Ba Analyte Radium-228 Carrier Carrier Carrier Canalysis Ba Carrier	04.0 - Ra a ID: MB 1 er atch: 6573 atch: 6573 er atch: 6573 LCS	60-6538 98 <u>Result</u> 0.2013 <i>MB</i> %Yield 101 83.0 160-653 98	228 (GFPC 68/1-A MB Qualifier U MB Qualifier 868/2-A 868/2-A Spike Added 9.02	Count Uncert. (2σ+/-) 0.290 Limits 30 - 110 30 - 110 30 - 110 Result	Uncert. (2σ+/-) 0.291	1.00 Total Uncert. (2σ+/-)	0.489	pCi/L Clie MDC	— F 03/2 03/2 03/2 ent Sa Unit	Prepared 25/24 09:47 Prepared 25/24 09:47 25/24 09:47 mple ID: %Rec	Prep Type: Tr Prep Batch: <u>Analyzed</u> 04/17/24 11:39 <u>Analyzed</u> 04/17/24 11:39 04/17/24 11:39 04/17/24 11:39 Lab Control S Prep Type: Tr Prep Batch: %Rec Limits	otal/NA 653868 Dil Fac 1 <i>Dil Fac</i> 1 Sample otal/NA
Aethod: 90 Lab Sample Matrix: Wat Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Y Carrier Lab Sample Matrix: Wat Analysis Ba Analyte Radium-228	04.0 - Ra a ID: MB 1 er atch: 6573 atch: 6573 er atch: 6573 LCS	60-6538 98 MB Result 0.2013 MB %Yield 101 83.0 160-653 98	228 (GFPC 68/1-A MB Qualifier U MB Qualifier 868/2-A 868/2-A Spike Added 9.02	Count Uncert. (2σ+/-) 0.290 Limits 30 - 110 30 - 110 30 - 110 30 - 110	Uncert. (2σ+/-) 0.291	1.00 Total Uncert. (2σ+/-)	0.489	pCi/L Clie MDC	— F 03/2 03/2 03/2 ent Sa Unit	Prepared 25/24 09:47 Prepared 25/24 09:47 25/24 09:47 mple ID: %Rec	Prep Type: Tr Prep Batch: <u>Analyzed</u> 04/17/24 11:39 <u>Analyzed</u> 04/17/24 11:39 04/17/24 11:39 04/17/24 11:39 Lab Control S Prep Type: Tr Prep Batch: %Rec Limits	otal/NA 653868 Dil Fac 1 Dil Fac 1 Sample otal/NA

Rad

Prep Batch: 653867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-53538-1	496707 SC_10	Total/NA	Water	PrecSep-21	
160-53538-2	496708 SC_11	Total/NA	Water	PrecSep-21	
160-53538-3	496709 SC_12	Total/NA	Water	PrecSep-21	
160-53538-4	496710 SC_13	Total/NA	Water	PrecSep-21	
160-53538-5	496711 SC_14	Total/NA	Water	PrecSep-21	
160-53538-6	496712 FIELD_DUP	Total/NA	Water	PrecSep-21	
MB 160-653867/1-A	Method Blank	Total/NA	Water	PrecSep-21	
_CS 160-653867/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batc
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
160-53538-1	496707 SC_10	Total/NA	Water	PrecSep_0	
60-53538-2			14/-+		
100-0000-2	496708 SC_11	Total/NA	Water	PrecSep_0	
	496708 SC_11 496709 SC_12	Total/NA Total/NA	Water	PrecSep_0 PrecSep_0	
160-53538-3	-			•_	
160-53538-3 160-53538-4	496709 SC_12	Total/NA	Water	PrecSep_0	
160-53538-3 160-53538-4 160-53538-5	496709 SC_12 496710 SC_13	Total/NA Total/NA	Water Water	PrecSep_0 PrecSep_0	
160-53538-2 160-53538-3 160-53538-5 160-53538-6 MB 160-653868/1-A	496709 SC_12 496710 SC_13 496711 SC_14	Total/NA Total/NA Total/NA	Water Water Water	PrecSep_0 PrecSep_0 PrecSep_0	

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep	Type:	Total/NA	

Prep Type: Total/NA

Job ID: 160-53538-1

_			Percent Yield (Acceptance Limits)	
		Ва		
Lab Sample ID	Client Sample ID	(30-110)		5
160-53538-1	496707 SC_10	51.3		
160-53538-2	496708 SC_11	51.0		
160-53538-3	496709 SC_12	103		
160-53538-4	496710 SC_13	69.5		
160-53538-5	496711 SC_14	105		
160-53538-6	496712 FIELD_DUP	101		8
LCS 160-653867/2-A	Lab Control Sample	99.5		
MB 160-653867/1-A	Method Blank	101		Q
Tracer/Carrier Legen	d			
Ba = Ba Carrier	u			

Method: 904.0 - Radium-228 (GFPC)

496712 FIELD_DUP

Lab Control Sample

Method Blank

Matrix: Water

Lab Sample ID 160-53538-1

160-53538-2

160-53538-3

160-53538-4

160-53538-5

160-53538-6

Percent Yield (Acceptance Limits) Ва Υ **Client Sample ID** (30-110) (30-110) 496707 SC 10 51.3 82.2 496708 SC_11 51.0 80.7 496709 SC 12 103 80.7 496710 SC_13 69.5 82.2 496711 SC_14 105 81.9

101

99.5

101

84.1

82.2

83.0

Tracer/Carrier Legend

Ba = Ba Carrier

LCS 160-653868/2-A

MB 160-653868/1-A

Y = Y Carrier

12



Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Wendy Asay Colorado Springs Utilities Laboratory Services Section 701 E. Las Vegas St., MC 1465 Colorado Springs, Colorado 80903 Generated 4/19/2024 4:37:28 PM

JOB DESCRIPTION

CCR Landfill

JOB NUMBER

160-53539-1

Eurofins St. Louis 13715 Rider Trail North Earth City MO 63045





Eurofins St. Louis

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization

michakonung

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Authorized for release by Micha Korrinhizer, Project Manager Micha.Korrinhizer@et.eurofinsus.com (314)298-8566

Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Chain of Custody	6
Receipt Checklists	7
Definitions/Glossary	8
Method Summary	9
Sample Summary	10
Client Sample Results	11
QC Sample Results	15
QC Association Summary	16
Tracer Carrier Summary	17

Job ID: 160-53539-1

Eurofins St. Louis

CASE NARRATIVE

Client: Colorado Springs Utilities

Project: Radiochemistry Analysis

Report Number: 160-53539-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition, all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method.

Eurofins Environment Testing attests to the validity of the laboratory data generated by Eurofins facilities reported herein. All analyses performed by Eurofins Environment Testing facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins Environment Testing's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report.

Calculations are performed before rounding to avoid round-off errors in calculated results.

Proper preservation was noted for the methods performed on these samples, unless otherwise detailed below.

All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client.

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

The matrix for the Method Blank and LCS/LCSD is as close to the samples as can be reasonably achieved. Detailed information can be found in the most current revision of the associated SOP.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.

Reference the chain of custody and receipt report for any variations on receipt conditions.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

Receipt

The samples were received on 3/21/2024 8:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 9.5°C and 10.8°C.

Receipt Exceptions

The sampler name is not listed on the COC.

The reference method requires samples to have a pH of less than 2 SU. The following sample was received with a pH of 7 SU: 496705 FC_3B (160-53539-5). The sample was adjusted to the appropriate pH in the laboratory.

Method 903.0 - Radium-226 (GFPC)

Samples 496701 CC__1 (160-53539-1), 496702 FC_1 (160-53539-2), 496703 FC_2 (160-53539-3), 496704 FC_3A (160-53539-4), 496705 FC_3B (160-53539-5) and 496706 EQUIP_BLK (160-53539-6) were analyzed for Radium-226 (GFPC). The samples were prepared on 3/25/2024 and analyzed on 4/18/2024.

No analytical or quality issues were noted, other than those described in the Definitions/ Glossary page.

Job ID: 160-53539-1 (Continued)

Eurofins St. Louis

Method 904.0 - Radium-228 (GFPC)

Samples 496701 CC__1 (160-53539-1), 496702 FC_1 (160-53539-2), 496703 FC_2 (160-53539-3), 496704 FC_3A (160-53539-4), 496705 FC_3B (160-53539-5) and 496706 EQUIP_BLK (160-53539-6) were analyzed for Radium-228 (GFPC). The samples were prepared on 3/25/2024 and analyzed on 4/15/2024.

The Laboratory Control Sample (LCS 160-653870/2-A) associated with batch 160-653870 recovered at (136%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (69-145%) per method requirements. The LCS passes, no further action is required

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Ra226_Ra228 - Combined Radium-226 and Radium-228

Samples 496701 CC__1 (160-53539-1), 496702 FC_1 (160-53539-2), 496703 FC_2 (160-53539-3), 496704 FC_3A (160-53539-4), 496705 FC_3B (160-53539-5) and 496706 EQUIP_BLK (160-53539-6) were analyzed for Combined Radium-226 and Radium-228. The samples were analyzed on 4/19/2024.

No analytical or quality issues were noted, other than those described in the Definitions/ Glossary page.

4/19/2024

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Test/	13715 F

Chain of Custody Record

TestAmerica

Earth City, MO 63045-1205 phone 314.298.8566 fax 314.298.8757	Regu	Regulatory Program:		MD	NPDES	RCRA	✓ Other:	Coal Combustion Rule	ion Rule	THE LEADER IN ENVIRONMENTAL TESTING TestAmerica Laboratories, Inc.	L TESTING ies, Inc.
Client Contact	Project M	anager: W	Project Manager: Wendy Asay		s	Site Contact:	ct:	Date:	e:	COC No:	
Colorado Springs Utilities	Tel/Fax: 7	Tel/Fax: 719-668-4603	03			ab Conta	ct: Rhonda	Lab Contact: Rhonda Ridenhower Cai	Carrier:	of COCs	
701 E. Las Vegas St.		Analysis T	Analysis Turnaround Time	Time		E				Sampler:	
Colorado Springs, CO 80903	CALEN	CALENDAR DAYS	IOM	WORKING DAYS		0				For Lab Use Only:	
(719) 668-4603 Phone	TA	TAT if different from Below	om Below			°803				Walk-in Client:	
(xxx) xxx-xxxx FAX			2 weeks			i∀α / λ				Lab Sampling:	
Project Name: CCR Landfill			1 week		/ *) (,	
Site:			2 days		/ 0	526 N21				loh / SDG No	
P O #			1 day			ພກ I/S					
	Sample	Sample	Sample Type		ered Sa	M mrotn tal Radi	ibsЯ Isi benidm				
Sample Identification	Date	Time	G=Grab)	Matrix		Pei ToT	_			Sample Specific Notes:	S:
496701 CC_1	3/18/24	15:16	σ	GW	2 N	×	××				
496702 FC_1	3/18/24	10:25	σ	GW	2	×	×××				
496703 FC_2	3/18/24	11:30	σ	GW	Z ∾	×	×××				
496704 FC_3A	3/18/24	13:58	σ	GW	Z ∾	×	× ×				
496705 FC_3B	3/18/24	13:16	σ	GW	N S	×	××				
496706 EQUIP_BLK	3/19/24	16:40	σ	βŴ	Z ∾	×	××				
								100-03039 Chain of Custody	ain of Custody		
Preservation Used: 1= Ice, 2= HCI; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other	NaOH; 6= 0	other									
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please L Comments Section if the lab is to dispose of the sample.	Please List any EPA Waste Cod	Waste Co	des for the sample in the	sample ir	the	Sample	Disposal (A fee may be ass	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	led longer than 1 month)	
Non-Hazard	Poison B	8	Unknown	UM		Re	Return to Client	Disposal by Lab	I by Lab	Months	_
Special Instructions/QC Requirements & Comments: Please be Sure to use	e be sur	e to use	the listed method numbers	ed met	nd nu	mbers					
Custody Seals Intact: Custody Custody	Custody Seal No.:	eal No.:					Cooler To	Cooler Temp. (°C): Obs'd:_	Corr'd:	Therm ID No.:	Τ
Relinquished by:	Company: Colorado	Sphinds Whiches	Mithes	Date/Time: 3/20/24	e: 1 10:30	Received by:	J N N	J'WW	Company	Date/Time:	
Relinquished by:	Company:	-		Dáte/Time:	-ë	Received by:	d by:	5	Company:		
Relinquished by:	Company:			Date/Time:	ë	Receive	Received in Laboratory by:	ory by:	Company:	Date/Time:	
									Form No. (Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018	9/5/2018

4

5 6

Client: Colorado Springs Utilities

Login Number: 53539 List Number: 1 Creator: Worthington, Sierra M

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	The samplers name is not listed on the COC.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 160-53539-1

List Source: Eurofins St. Louis

Qualifiers

Rad

r roject/one. v	CCR Landfill	
Qualifiers		-
<mark>Rad</mark> Qualifier	Qualifier Description	
U	Result is less than the sample detection limit.	-
Glossary		- 5
Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	-
%R	Percent Recovery	
CFL	Contains Free Liquid	
CFU	Colony Forming Unit	
CNF	Contains No Free Liquid	
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision Level Concentration (Radiochemistry)	
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	
LOQ	Limit of Quantitation (DoD/DOE)	
MCL	EPA recommended "Maximum Contaminant Level"	
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
MPN	Most Probable Number	
MQL	Method Quantitation Limit	
NC	Not Calculated	
ND	Not Detected at the reporting limit (or MDL or EDL if shown)	
NEG	Negative / Absent	
POS	Positive / Present	
PQL	Practical Quantitation Limit	
PRES	Presumptive	
QC	Quality Control	
RER	Relative Error Ratio (Radiochemistry)	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEQ	Toxicity Equivalent Quotient (Dioxin)	
TNTC	Too Numerous To Count	

Method Summary

Client: Colorado Springs Utilities Project/Site: CCR Landfill

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
Protocol Ref FPA = US	erences: Environmental Protection Agency		
None = No	5,		
TAL-STL =	- TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.		

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Colorado Springs Utilities Project/Site: CCR Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-53539-1	496701 CC_1	Water	03/18/24 15:16	03/21/24 08:30
160-53539-2	496702 FC_1	Water	03/18/24 10:25	03/21/24 08:30
160-53539-3	496703 FC_2	Water	03/18/24 11:30	03/21/24 08:30
160-53539-4	496704 FC_3A	Water	03/18/24 13:58	03/21/24 08:30
160-53539-5	496705 FC_3B	Water	03/18/24 13:16	03/21/24 08:30
160-53539-6	496706 EQUIP_BLK	Water	03/19/24 16:40	03/21/24 08:30

Client Sample ID: 496701 CC_1 Date Collected: 03/18/24 15:16 Date Received: 03/21/24 08:30

Lab	Sample ID	: 160-53539-1

Prepared

Analyzed

03/25/24 09:49 04/18/24 09:13

Job ID: 160-53539-1 **Matrix: Water** Dil Fac

1

Analyte	Result Qual	ifier (2σ+/-)
Radium-226	0.362	0.185

Method: EPA 903.0 - Radium-226 (GFPC)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.8		30 - 110	03/25/24 09:49	04/18/24 09:13	1

RL

1.00

MDC Unit

0.236 pCi/L

Total Uncert.

(2**σ+/-**)

0.188

Count

Uncert.

Method: EPA 904.0 - Radium-228 (GFPC)

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2 σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.84		0.555	0.580	1.00	0.600	pCi/L	03/25/24 09:54	04/15/24 12:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.8		30 - 110					03/25/24 09:54	04/15/24 12:02	1
Y Carrier	82.6		30 - 110					03/25/24 09:54	04/15/24 12:02	1

Method: TAL-STL Ra226 Ra228 - Combined Radium-226 and Radium-228

			Count	Total					
			Uncert.	Uncert.					
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.20		0.585	0.610	5.00	0.600 pCi/L		04/19/24 08:46	1

Client Sample ID: 496702 FC_1

Date Collected: 03/18/24 10:25

Date Received: 03/21/24 08:30

Method: EPA 903.0 - Radium-226 (GFPC)

Carrier Ba Carrier	% Yield 95.8	Qualifier	Limits 30 - 110					Prepared 03/25/24 09:49	Analyzed 04/18/24 09:13	Dil Fac
Radium-226	0.555		0.209	0.215	1.00	0.223	pCi/L	03/25/24 09:49	04/18/24 09:13	1
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Count Uncert.	Total Uncert.						

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte Radium-228		Qualifier	Count Uncert. (2σ+/-) 0.738	Total Uncert. (2σ+/-) 0.810	RL 1.00	MDC 0.682	 Prepared 03/25/24 09:54	Analyzed 04/15/24 12:02	Dil Fac
Carrier Ba Carrier	%Yield 95.8	Qualifier	Limits 30 - 110				Prepared	Analyzed	Dil Fac
Y Carrier	83.0		30 - 110 30 - 110					04/15/24 12:02	1

Eurofins St. Louis

Lab Sample ID: 160-53539-2

Matrix: Water

Client Sample Results

lient: Colorado Spri	nas Utilities	2	Clier	nt Samp	le Res	ults			Job ID: 160-5	3539-1
roject/Site: CCR La		,							000 10. 100-0	0000-1
Client Sample ID Date Collected: 03/1	8/24 10:25	5 –						Lab Sample		539-2 Water
ate Received: 03/2	1/24 08:30									
Method: TAL-STL I	Ra226 Ra2	228 - Com	bined Radi	um-226 an	d Radiun	n-228				
	_		Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2 σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	4.18		0.767	0.838	5.00	0.682	pCi/L		04/19/24 08:46	1
Client Sample ID	: 496703	FC 2						Lab Sample	D: 160-53	539-3
Date Collected: 03/1										Water
Date Received: 03/2									Matrix	mater
-										
Method: EPA 903.0	- Radium	-226 (GFP	C)							
			Count	Total						
			Uncert.	Uncert.						
Analyte		Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC		Prepared	Analyzed	Dil Fac
Radium-226	0.111	U	0.144	0.145	1.00	0.241	pCi/L	03/25/24 09:49	04/18/24 09:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		30 - 110					03/25/24 09:49	04/18/24 09:13	1
-										
Method: EPA 904.0	- Radium	-228 (GFP								
			Count	Total						
			Uncert.	Uncert.						
Analyte		Qualifier	<u>(2σ+/-)</u>	<u>(2σ+/-)</u>		MDC		Prepared	Analyzed	Dil Fac
Radium-228	2.06		0.667	0.694	1.00	0.803	pCI/L	03/25/24 09:54	04/15/24 12:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		30 - 110						04/15/24 12:02	1
Y Carrier	81.1		30 - 110					03/25/24 09:54	04/15/24 12:02	1
Method: TAL-STL I	Ra226_Ra	228 - Com			d Radiun	n-228				
			Count	Total						
Analysia	Deau!!	Qualifian	Uncert.	Uncert.		MDO	11	Descent		
Analyte Combined Radium		Qualifier	<u>(2σ+/-)</u> 0.682	<u>(2σ+/-)</u> 0.709	RL 5.00	0.803		Prepared	Analyzed 04/19/24 09:56	Dil Fac
226 + 228	2.17		0.002	0.709	5.00	0.003	POI/L		04/13/24 03.30	1
-	106704	EC 24						Lah Comela	D. 460 53	E20 4
Client Sample ID								Lab Sample		
Date Collected: 03/1									watrix	Water
Date Received: 03/2	1/24 08:30	1								
Method: EPA 903.0	- Radium	-226 (GFP	C)							
			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2 σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0611	U	0.113	0.113	1.00	0.200	pCi/L	03/25/24 09:49	04/18/24 09:13	1
a i	A/1-0-1-	o						-		
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	72.5		30 - 110						04/18/24 09:13	1

Total

Uncert.

(2σ+/-)

0.424

Date Collected: 03/18/24 13:58

Date Received: 03/21/24 08:30

Analyte

Carrier

Ba Carrier

Y Carrier

Radium-228

Client Sample ID: 496704 FC 3A

Method: EPA 904.0 - Radium-228 (GFPC)

Job ID: 160-53539-1

Matrix: Water

Dil Fac

Dil Fac

Matrix: Water

1

1

1

Lab Sample ID: 160-53539-4

Analyzed

Analyzed

Prepared

Prepared

03/25/24 09:54 04/15/24 12:01

03/25/24 09:54 04/15/24 12:01

03/25/24 09:54 04/15/24 12:01

Lab Sample ID: 160-53539-5

0 7 8 9

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Result Qualifier

%Yield Qualifier

0.540 U

72.5

78.5

Count

Uncert.

(20+/-)

Limits

30 - 110

30 - 110

0.421

			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226	0.601	U	0.436	0.439	5.00	0.641	pCi/L		04/19/24 09:56	1
+ 228										

RL

1.00

MDC Unit

0.641 pCi/L

Client Sample ID: 496705 FC_3B Date Collected: 03/18/24 13:16 Date Received: 03/21/24 08:30

Method: EPA 903.0 - Radium-226 (GFPC) Count Total Uncert. Uncert. Analyte **Result Qualifier** (2σ+/-) (2**σ**+/-) RL MDC Unit Prepared Analyzed Dil Fac Radium-226 0.147 U 0.138 0.139 1.00 0.213 pCi/L 03/25/24 09:49 04/18/24 09:14 1 Carrier %Yield Qualifier Limits Prepared Dil Fac Analyzed 03/25/24 09:49 04/18/24 09:14 Ba Carrier 95.5 30 - 110 1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte Radium-228	Result	Qualifier	Count Uncert. (2σ+/-) 0.501	Total Uncert. (2σ+/-) 0.509	RL 1.00	MDC 0.678	Unit pCi/L	Prepared 03/25/24 09:54	Analyzed 04/15/24 12:01	Dil Fac
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.5		30 - 110					03/25/24 09:54	04/15/24 12:01	1
Y Carrier	81.9		30 - 110					03/25/24 09:54	04/15/24 12:01	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.16		0.520	0.528	5.00	0.678	pCi/L		04/19/24 09:56	1

Client Sample ID: 496706 EQUIP_BLK Date Collected: 03/19/24 16:40 Date Received: 03/21/24 08:30

Lab Sample ID: 160-53539-6 Matrix: Water

5 6

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0217	U	0.0814	0.0814	1.00	0.157	pCi/L	03/25/24 09:49	04/18/24 09:14	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.5		30 - 110					03/25/24 09:49	04/18/24 09:14	1

Method: EPA 904.0 - Radium-228 (GFPC)

Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac	
Ba Carrier	95.5		30 - 110					03/25/24 09:49	04/18/24 09:14	1	8
Method: EPA 90	4.0 - Radium	-228 (GFP	C)								
			Count	Total							9
			Uncert.	Uncert.							
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac	
Radium-228	0.634		0.379	0.384	1.00	0.553	pCi/L	03/25/24 09:54	04/15/24 12:01	1	
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac	
Ba Carrier	95.5		30 - 110					03/25/24 09:54	04/15/24 12:01	1	

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2 σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.656		0.388	0.393	5.00	0.553	pCi/L		04/19/24 09:56	1

QC Sample Results

Job ID: 160-53539-1

10

Method: 903.0 - Radium-226 (GFPC)

Lab Sample Matrix: Wate	er		69/1-A						Clie		ole ID: Method Prep Type: T	otal/NA
Analysis Ba	tch: 6572	26									Prep Batch:	653869
				Count	Total							
		MB	МВ	Uncert.	Uncert.							
Analyte		Result	Qualifier	(2 σ+/-)	(2 σ+/-)	RL	MDC	Unit	Р	repared	Analyzed	Dil Fa
Radium-226		-0.05918	U	0.0867	0.0869	1.00	0.225	pCi/L	03/2	25/24 09:49	04/16/24 09:55	
		МВ	МВ									
Carrier		%Yield	Qualifier	Limits					P	Prepared	Analyzed	Dil Fa
Ba Carrier		93.8		30 - 110					03/2	25/24 09:49	04/16/24 09:55	
Lab Sample Matrix: Wate		160-653	869/2-A					Clie	ent Sa	mple ID:	Lab Control S Prep Type: T	
		26									Prep Batch:	
Analysis Ba	IICH. 0572	20				Total					Prep Batch.	05500
			Spike	1.06	LCS	Uncert.					%Rec	
Analyte			Added	Result		(2σ+/-)	RL	MDC	Unit	%Rec	Limits	
Radium-226				9.127	<u></u>	1.17	1.00			81	75 - 125	
Calaini-220			11.5	3.121		1.17	1.00	0.201	P01/L	01	70-120	
	LCS	LCS										
Carrier	%Yield	Qualifier	Limits									
			30 - 110	_								
lethod: 90 Lab Sample	ID: MB 1		228 (GFPC	;)					Clie	ent Samp	ole ID: Method Prep Type: T	
lethod: 90 Lab Sample Matrix: Wate	94.0 - Ra 9 ID: MB 1 er	60-6538	228 (GFPC	,	Total				Clie	ent Samp	ole ID: Method Prep Type: T Prep Batch:	otal/N
lethod: 90 Lab Sample Matrix: Wate	94.0 - Ra 9 ID: MB 1 er	60-6538 49	228 (GFPC 70/1-A	Count	Total Uncert.				Clie	ent Samp	Prep Type: Te	otal/N/
Ba Carrier Iethod: 90 Lab Sample Matrix: Wate Analysis Ba	94.0 - Ra 9 ID: MB 1 er	60-6538 49 мв	228 (GFPC 70/1-А мв	Count Uncert.	Uncert.	RL	MDC	Unit			Prep Type: T Prep Batch:	otal/N/ 65387
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte	94.0 - Ra 9 ID: MB 1 er	60-6538 49 мв	228 (GFPC 70/1-A MB Qualifier	Count			MDC 0.642		P	Prepared	Prep Type: Te	otal/N/ 65387 Dil Fa
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte	94.0 - Ra 9 ID: MB 1 er	60-6538 49 MB <u>Result</u> -0.04036	228 (GFPC 70/1-A MB Qualifier U	Count Uncert. (2σ+/-)	Uncert. (2σ+/-)				P	Prepared	Prep Type: To Prep Batch: Analyzed	otal/N/ 65387 Dil Fa
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte Radium-228	94.0 - Ra 9 ID: MB 1 er	60-6538 49 MB Result -0.04036 <i>MB</i>	228 (GFPC 70/1-A MB Qualifier U MB	Count Uncert. (2σ+/-) 0.335	Uncert. (2σ+/-)				P 03/2	Prepared 25/24 09:54	Prep Type: To Prep Batch: Analyzed 04/15/24 13:23	otal/N/ 65387 Dil Fa
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte Radium-228 Carrier	94.0 - Ra 9 ID: MB 1 er	60-6538 49 MB Result -0.04036 <i>MB</i> %Yield	228 (GFPC 70/1-A MB Qualifier U	Count Uncert. (2σ+/-) 0.335	Uncert. (2σ+/-)				P 03/2 	Prepared	Prep Type: To Prep Batch: Analyzed 04/15/24 13:23 Analyzed	otal/N/ 65387 Dil Fa
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte Radium-228 Carrier Ba Carrier	94.0 - Ra 9 ID: MB 1 er	60-6538 49 MB Result -0.04036 <i>MB</i>	228 (GFPC 70/1-A MB Qualifier U MB	Count Uncert. (2σ+/-) 0.335	Uncert. (2σ+/-)				— P 03/2 P 03/2	Prepared 25/24 09:54 Prepared 25/24 09:54	Prep Type: To Prep Batch: Analyzed 04/15/24 13:23 Analyzed	otal/N 65387 Dil Fa Dil Fa
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wate	94.0 - Ra e ID: MB 1 er atch: 6568	60-6538 49 MB Result -0.04036 MB %Yield 93.8 81.5 160-653	228 (GFPC 70/1-A MB Qualifier U MB Qualifier	Count Uncert. (2σ+/-) 0.335 Limits 30 - 110	Uncert. (2σ+/-)	1.00		pCi/L	P 03/2 P 03/2 03/2	Prepared 25/24 09:54 Prepared 25/24 09:54 25/24 09:54 25/24 09:54 mple ID:	Analyzed 04/15/24 13:23 Analyzed 04/15/24	otal/N 65387 Dil Fa Dil Fa Dil Fa
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wate	94.0 - Ra e ID: MB 1 er atch: 6568	60-6538 49 MB Result -0.04036 MB %Yield 93.8 81.5 160-653	228 (GFPC 70/1-A MB Qualifier U MB Qualifier 870/2-A	Count Uncert. (2σ+/-) 0.335 Limits 30 - 110 30 - 110	Uncert. (2σ+/-) 0.335			pCi/L	P 03/2 P 03/2 03/2	Prepared 25/24 09:54 Prepared 25/24 09:54 25/24 09:54 25/24 09:54 mple ID:	Prep Type: Tr Prep Batch: <u>Analyzed</u> 04/15/24 13:23 <u>Analyzed</u> 04/15/24 13:23 04/15/24 13:23 04/15/24 13:23 Lab Control S Prep Type: Tr Prep Batch:	otal/N 65387 Dil Fa Dil Fa Dil Fa
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wate	94.0 - Ra e ID: MB 1 er atch: 6568	60-6538 49 MB Result -0.04036 MB %Yield 93.8 81.5 160-653	228 (GFPC 70/1-A MB Qualifier U MB Qualifier 870/2-A Spike	Count Uncert. (2σ+/-) 0.335 Limits 30 - 110 30 - 110	Uncert. (2σ+/-) 0.335	1.00	0.642	pCi/L Clie	P 03/2 P 03/2 03/2 03/2	Prepared 25/24 09:54 Prepared 25/24 09:54 25/24 09:54 mple ID:	Prep Type: Tr Prep Batch: <u>Analyzed</u> 04/15/24 13:23 <u>Analyzed</u> 04/15/24 13:23 04/15/24 13:23 04/15/24 13:23 Lab Control S Prep Type: Tr Prep Batch: %Rec	otal/N/ 65387 Dil Fa Dil Fa Dil Fa
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wate Analysis Ba	94.0 - Ra e ID: MB 1 er atch: 6568	60-6538 49 MB Result -0.04036 MB %Yield 93.8 81.5 160-653	228 (GFPC 70/1-A MB Qualifier U MB Qualifier 870/2-A Spike Added	Count Uncert. (2σ+/-) 0.335 Limits 30 - 110 30 - 110 30 - 110 LCS Result	Uncert. (2σ+/-) 0.335	Total Uncert. (2σ+/-)	0.642	pCi/L Clie	P 03/2 P 03/2 03/2 ent Sa	Prepared 25/24 09:54 Prepared 25/24 09:54 25/24 09:54 mple ID: %Rec	Prep Type: Tr Prep Batch: 04/15/24 13:23 Analyzed 04/15/24 13:23 04/15/24 13:23 04/15/24 13:23 Lab Control S Prep Type: Tr Prep Batch: %Rec Limits	otal/N 65387 Dil Fa Dil Fa Dil Fa
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Y Carrier Lab Sample Matrix: Wate Analysis Ba	94.0 - Ra e ID: MB 1 er atch: 6568	60-6538 49 MB Result -0.04036 MB %Yield 93.8 81.5 160-653	228 (GFPC 70/1-A MB Qualifier U MB Qualifier 870/2-A Spike	Count Uncert. (2σ+/-) 0.335 Limits 30 - 110 30 - 110	Uncert. (2σ+/-) 0.335	Total Uncert.	0.642	pCi/L Clie	P 03/2 P 03/2 03/2 ent Sa	Prepared 25/24 09:54 Prepared 25/24 09:54 25/24 09:54 mple ID:	Prep Type: Tr Prep Batch: <u>Analyzed</u> 04/15/24 13:23 <u>Analyzed</u> 04/15/24 13:23 04/15/24 13:23 04/15/24 13:23 Lab Control S Prep Type: Tr Prep Batch: %Rec	otal/N 65387 Dil Fa Dil Fa Dil Fa
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wate Analysis Ba	94.0 - Ra e ID: MB 1 er atch: 6568	60-6538 49 MB Result -0.04036 <i>MB</i> %Yield 93.8 81.5 160-653 02	228 (GFPC 70/1-A MB Qualifier U MB Qualifier 870/2-A Spike Added	Count Uncert. (2σ+/-) 0.335 Limits 30 - 110 30 - 110 30 - 110 LCS Result	Uncert. (2σ+/-) 0.335	Total Uncert. (2σ+/-)	0.642	pCi/L Clie	P 03/2 P 03/2 03/2 ent Sa	Prepared 25/24 09:54 Prepared 25/24 09:54 25/24 09:54 mple ID: %Rec	Prep Type: Tr Prep Batch: 04/15/24 13:23 Analyzed 04/15/24 13:23 04/15/24 13:23 04/15/24 13:23 Lab Control S Prep Type: Tr Prep Batch: %Rec Limits	otal/N 65387 Dil Fa Dil Fa Dil Fa
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wate Analysis Ba Analyte Radium-228	94.0 - Ra 1D: MB 1 er atch: 6568 1D: LCS er atch: 6570 LCS	60-6538 49 MB Result -0.04036 <i>MB</i> %Yield 93.8 81.5 160-653 02	228 (GFPC 70/1-A MB Qualifier U MB Qualifier 870/2-A 870/2-A Spike Added 9.03	Count Uncert. (2σ+/-) 0.335 Limits 30 - 110 30 - 110 30 - 110 LCS Result	Uncert. (2σ+/-) 0.335	Total Uncert. (2σ+/-)	0.642	pCi/L Clie	P 03/2 P 03/2 03/2 ent Sa	Prepared 25/24 09:54 Prepared 25/24 09:54 25/24 09:54 mple ID: %Rec	Prep Type: Tr Prep Batch: 04/15/24 13:23 Analyzed 04/15/24 13:23 04/15/24 13:23 04/15/24 13:23 Lab Control S Prep Type: Tr Prep Batch: %Rec Limits	otal/N/ 65387 Dil Fa Dil Fa Dil Fa
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier	94.0 - Ra 1D: MB 1 er atch: 6568 1D: LCS er atch: 6570 LCS	60-6538 49 MB Result -0.04036 MB %Yield 93.8 81.5 160-653 02 LCS	228 (GFPC 70/1-A MB Qualifier U MB Qualifier 870/2-A 870/2-A Spike Added 9.03	Count Uncert. (2σ+/-) 0.335 Limits 30 - 110 30 - 110 30 - 110 LCS Result	Uncert. (2σ+/-) 0.335	Total Uncert. (2σ+/-)	0.642	pCi/L Clie	P 03/2 P 03/2 03/2 ent Sa	Prepared 25/24 09:54 Prepared 25/24 09:54 25/24 09:54 mple ID: %Rec	Prep Type: Tr Prep Batch: 04/15/24 13:23 Analyzed 04/15/24 13:23 04/15/24 13:23 04/15/24 13:23 Lab Control S Prep Type: Tr Prep Batch: %Rec Limits	otal/N/ 65387 Dil Fa Dil Fa Dil Fa

Rad

Prep Batch: 653869

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
60-53539-1	496701 CC_1	Total/NA	Water	PrecSep-21	
60-53539-2	496702 FC_1	Total/NA	Water	PrecSep-21	
60-53539-3	496703 FC_2	Total/NA	Water	PrecSep-21	
60-53539-4	496704 FC_3A	Total/NA	Water	PrecSep-21	
60-53539-5	496705 FC_3B	Total/NA	Water	PrecSep-21	
60-53539-6	496706 EQUIP_BLK	Total/NA	Water	PrecSep-21	
/IB 160-653869/1-A	Method Blank	Total/NA	Water	PrecSep-21	
CS 160-653869/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
rep Batch: 653870					
ab Sample ID	Client Sample ID		Matrix	Method	Prep Batch
ab Sample ID 60-53539-1	496701 CC_1	Total/NA	Water	PrecSep_0	Prep Batch
-ab Sample ID 60-53539-1	•				Prep Batch
ab Sample ID 60-53539-1 60-53539-2	496701 CC_1	Total/NA	Water	PrecSep_0	Prep Batch
ab Sample ID 60-53539-1 60-53539-2 60-53539-3	496701 CC_1 496702 FC_1	Total/NA Total/NA	Water Water	PrecSep_0 PrecSep_0	Prep Batch
ab Sample ID 60-53539-1 60-53539-2 60-53539-3 60-53539-4	496701 CC_1 496702 FC_1 496703 FC_2	Total/NA Total/NA Total/NA	Water Water Water	PrecSep_0 PrecSep_0 PrecSep_0	Prep Batch
ab Sample ID 60-53539-1 60-53539-2 60-53539-3 60-53539-4 60-53539-5	496701 CC_1 496702 FC_1 496703 FC_2 496704 FC_3A	Total/NA Total/NA Total/NA Total/NA	Water Water Water Water	PrecSep_0 PrecSep_0 PrecSep_0 PrecSep_0 PrecSep_0	Prep Batch
Tep Batch: 653870 Lab Sample ID 160-53539-1 160-53539-2 160-53539-3 160-53539-4 160-53539-4 160-53539-5 160-53539-6 MB 160-653870/1-A 160-653870/1-A	496701 CC_1 496702 FC_1 496703 FC_2 496704 FC_3A 496705 FC_3B	Total/NA Total/NA Total/NA Total/NA Total/NA	Water Water Water Water Water	PrecSep_0 PrecSep_0 PrecSep_0 PrecSep_0 PrecSep_0 PrecSep_0	Prep Batch

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Lab Sample ID 160-53539-1 160-53539-2 160-53539-3 160-53539-4 160-53539-5

160-53539-6

		Prep Type: Total/NA	
		Percent Yield (Acceptance Limits)	4
	Ва		_
Client Sample ID	(30-110)		5
496701 CC_1	95.8		
496702 FC_1	95.8		6
496703 FC_2	92.0		
496704 FC_3A	72.5		7
496705 FC_3B	95.5		
496706 EQUIP_BLK	95.5		8

Tracer/Carrier Legend

Ba = Ba Carrier

LCS 160-653869/2-A

MB 160-653869/1-A

Method: 904.0 - Radium-228 (GFPC)

Lab Control Sample

Method Blank

Matrix: Water

Prep Type: Total/NA

12

			Percent Yield (Acceptance Limits)		
		Ва	Y		
Lab Sample ID	Client Sample ID	(30-110)	(30-110)		
160-53539-1	496701 CC_1	95.8	82.6		
160-53539-2	496702 FC_1	95.8	83.0		
160-53539-3	496703 FC_2	92.0	81.1		
160-53539-4	496704 FC_3A	72.5	78.5		
160-53539-5	496705 FC_3B	95.5	81.9		
160-53539-6	496706 EQUIP_BLK	95.5	82.2		
LCS 160-653870/2-A	Lab Control Sample	92.3	81.5		
MB 160-653870/1-A	Method Blank	93.8	81.5		

92.3

93.8

Tracer/Carrier Legend

Ba = Ba Carrier Y = Y Carrier



Colorado Springs Utilities It's how we're all connected



Laboratory Report For:

Coal Combustion Residuals - Landfill

Colorado Springs Utilities Environmental Services

Report Authorized by: Wendy M Asay

Title: Environmental Specialist

Report Date: November 15, 2024

Report generated by: Wendy M. Asay

Colorado Springs Utilities Laboratory Services Section certifies that the test results meet all approved method and Laboratory Quality Assurance Plan requirements unless otherwise noted

Samples

507188	17-Sep-2024 13:52	Crooked Canyon Well #1
507189	17-Sep-2024 09:32	Fort Carson Well #1
507190	17-Sep-2024 10:35	Fort Carson Well #2
507191	18-Sep-2024 08:20	Fort Carson Well #3A
507192	18-Sep-2024 09:28	Fort Carson Well #3B
507193	18-Sep-2024 09:56	Equipment Blank
507194	18-Sep-2024 16:50	Sand Canyon Well #10
507195	18-Sep-2024 15:30	Sand Canyon Well #11
507196	18-Sep-2024 14:20	Sand Canyon Well #12
507197	18-Sep-2024 13:08	Sand Canyon Well #13
507198	18-Sep-2024 11:45	Sand Canyon Well #14
507199	18-Sep-2024 00:00	Field Duplicate sample

LIMS #: 507188 Sample Date: 9/17/2024 1:52:33 PM Sample Point: CC_1 Sample Point Description: Crooked Canyon Well #1 Collection Comments: High turbidity. Perform matrix QC Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
	EPA_200_7	Lithium (Total)	702	ug/L	100	D	10/01/2024	10	_
+	SM_4500HB	рН	6.9	SU	2.0			1	
+	SM_2550_B	Temperature Centigrade (Field)	14.8	degrees C	0.000			1	
+	SM_2510_B	Conductivity	29200	umhos/cm	1			1	
+	SM_2580_B	Oxidation-Reduction Potential	217	mV	0			1	
+	SM_4500_0G	Dissolved Oxygen	<1.0	mg/L	1.0			1	
+	SM_2130_B	Turbidity	13	NTU	0.05			1	
	NA	Depth to Water	12.80	ft.	0.000			1	
	SM_2540_C	Total Dissolved Solids	35200	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	0.21	mg/L	0.10	т	09/30/2024	1	
	EPA_300_0	Chloride	1690	mg/L	25.0	D	09/26/2024	50	
		Sulfate	21700	mg/L	250	D	09/26/2024	500	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		09/24/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		09/24/2024	1	
		Barium (Total)	5.8	ug/L	3.0		09/24/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0	т	09/24/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		09/24/2024	1	
		Lead (Total)	1.1	ug/L	1.0	т	09/24/2024	1	
		Molybdenum (Total)	<2.0	ug/L	2.0		09/24/2024	1	
		Selenium (Total)	180	ug/L	5.0	T1	09/24/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
	EPA_200_7	Boron (Total)	1120	ug/L	80.0	D		10	
		Calcium (Total)	416000	ug/L	500	D/T1	09/24/2024	10	
		Cobalt (Total)	2.38	ug/L	2.00	F	09/24/2024	1	
*	EPA_1631	Mercury (Total)	0.005	ug/L	0.001		10/14/2024	1	

LIMS #: 507189 Sample Date: 9/17/2024 9:32:33 AM Sample Point: FC_1 Sample Point Description: Fort Carson Well #1 Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor
	EPA_200_7	Lithium (Total)	923	ug/L	100	D	10/01/2024	10
+	SM_4500HB	рН	7.1	SU	2.0			1
+	SM_2550_B	Temperature Centigrade (Field)	13.9	degrees C	0.000			1
+	SM_2510_B	Conductivity	21800	umhos/cm	1			1
+	SM_2580_B	Oxidation-Reduction Potential	245	mV	0			1
+	SM_4500_0G	Dissolved Oxygen	<1.0	mg/L	1.0			1
+	SM_2130_B	Turbidity	2.1	NTU	0.05			1
	NA	Depth to Water	16.49	ft.	0.000			1
	SM_2540_C	Total Dissolved Solids	21700	mg/L	10			1
	SM_4500_FC	Fluoride (Total)	0.12	mg/L	0.10	т	09/30/2024	1
	EPA_300_0	Chloride	802	mg/L	25.0	D	09/26/2024	50
		Sulfate	13500	mg/L	250	D	09/26/2024	500
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		09/24/2024	1
		Arsenic (Total)	<5.0	ug/L	5.0		09/24/2024	1
		Barium (Total)	9.0	ug/L	3.0		09/24/2024	1
		Beryllium (Total)	<1.0	ug/L	1.0		09/24/2024	1
		Cadmium (Total)	<1.0	ug/L	1.0	т	09/24/2024	1
		Chromium (Total)	<3.0	ug/L	3.0		09/24/2024	1
		Lead (Total)	<1.0	ug/L	1.0	т	09/24/2024	1
		Molybdenum (Total)	2.2	ug/L	2.0		09/24/2024	1
		Selenium (Total)	<5.0	ug/L	5.0	T1	09/24/2024	1
		Thallium (Total)	<1.0	ug/L	1.0		09/24/2024	1
	EPA_200_7	Boron (Total)	1040	ug/L	80.0	D		10
		Calcium (Total)	390000	ug/L	500	D/T1	09/24/2024	10
		Cobalt (Total)	<2.00	ug/L	2.00	F	09/24/2024	1
*	EPA_1631	Mercury (Total)	0.002	ug/L	0.001		10/14/2024	1

LIMS #: 507190 Sample Date: 9/17/2024 10:35:33 AM Sample Point: FC_2 Sample Point Description: Fort Carson Well #2 Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
	EPA_200_7	Lithium (Total)	276	ug/L	100	D	10/01/2024	10	
+	SM_4500HB	рН	7.3	SU	2.0			1	
+	SM_2550_B	Temperature Centigrade (Field)	13.8	degrees C	0.000			1	
+	SM_2510_B	Conductivity	9750	umhos/cm	1			1	
+	SM_2580_B	Oxidation-Reduction Potential	296	mV	0			1	
+	SM_4500_0G	Dissolved Oxygen	<1.0	mg/L	1.0			1	
+	SM_2130_B	Turbidity	5.3	NTU	0.05			1	
	NA	Depth to Water	14.41	ft.	0.000			1	
	SM_2540_C	Total Dissolved Solids	10100	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	0.50	mg/L	0.10	т	09/30/2024	1	
	EPA_300_0	Chloride	115	mg/L	25.0	D	09/26/2024	50	
		Sulfate	6330	mg/L	250	D	09/26/2024	500	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		09/24/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		09/24/2024	1	
		Barium (Total)	6.4	ug/L	3.0		09/24/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0	Т	09/24/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		09/24/2024	1	
		Lead (Total)	<1.0	ug/L	1.0	т	09/24/2024	1	
		Molybdenum (Total)	2.8	ug/L	2.0		09/24/2024	1	
		Selenium (Total)	37	ug/L	5.0	T1	09/24/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
	EPA_200_7	Boron (Total)	999	ug/L	80.0	D		10	
		Calcium (Total)	397000	ug/L	500	D/T1	09/24/2024	10	
		Cobalt (Total)	<2.00	ug/L	2.00	F	09/24/2024	1	
*	EPA_1631	Mercury (Total)	0.002	ug/L	0.001		10/14/2024	1	

LIMS #: 507191 Sample Date: 9/18/2024 8:20:53 AM Sample Point: FC_3A Sample Point Description: Fort Carson Well #3A Collection Comments: Perform matrix QC Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
+	SM_4500HB	рН	7.4	SU	2.0			1	
+	SM_2550_B	Temperature Centigrade (Field)	13.2	degrees C	0.000			1	
+	SM_2510_B	Conductivity	8850	umhos/cm	1			1	
+	SM_2580_B	Oxidation-Reduction Potential	239	mV	0			1	
+	SM_4500_OG	Dissolved Oxygen	<1.0	mg/L	1.0			1	
+	SM_2130_B	Turbidity	8.8	NTU	0.05			1	
	NA	Depth to Water	18.90	ft.	0.000			1	
	SM_2540_C	Total Dissolved Solids	9000	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	0.46	mg/L	0.10	т	09/30/2024	1	
	EPA_300_0	Chloride	148	mg/L	25.0	D	09/26/2024	50	
		Sulfate	5610	mg/L	250	D	09/26/2024	500	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		09/24/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		09/24/2024	1	
		Barium (Total)	11	ug/L	3.0		09/24/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0	Т	09/24/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		09/24/2024	1	
		Lead (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Molybdenum (Total)	7.9	ug/L	2.0		09/24/2024	1	
		Selenium (Total)	46	ug/L	5.0		09/24/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
	EPA_200_7	Boron (Total)	1000	ug/L	160	D		20	
		Calcium (Total)	408000	ug/L	1000	D	09/28/2024	20	
		Cobalt (Total)	<2.00	ug/L	2.00	F	09/28/2024	1	
		Lithium (Total)	253	ug/L	200	D	09/28/2024	20	
*	EPA_1631	Mercury (Total)	0.002	ug/L	0.001		10/14/2024	1	

LIMS #: 507192 Sample Date: 9/18/2024 9:28:53 AM Sample Point: FC_3B Sample Point Description: Fort Carson Well #3B Collection Comments: High turbidity Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
+	SM_4500HB	рН	7.3	SU	2.0			1	
+	SM_2550_B	Temperature Centigrade (Field)	13.7	degrees C	0.000			1	
+	SM_2510_B	Conductivity	8640	umhos/cm	1			1	
+	SM_2580_B	Oxidation-Reduction Potential	-42	mV	0			1	
+	SM_4500_OG	Dissolved Oxygen	<1.0	mg/L	1.0			1	
+	SM_2130_B	Turbidity	28	NTU	0.05			1	
	NA	Depth to Water	18.02	ft.	0.000			1	
	SM_2540_C	Total Dissolved Solids	7320	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	0.64	mg/L	0.10	т	09/30/2024	1	
	EPA_300_0	Chloride	212	mg/L	25.0	D	09/26/2024	50	
		Sulfate	4320	mg/L	250	D	09/26/2024	500	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		09/24/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		09/24/2024	1	
		Barium (Total)	11	ug/L	3.0		09/24/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0	т	09/24/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		09/24/2024	1	
		Lead (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Molybdenum (Total)	8.2	ug/L	2.0		09/24/2024	1	
		Selenium (Total)	<5.0	ug/L	5.0		09/24/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
	EPA_200_7	Boron (Total)	1190	ug/L	160	D		20	
		Calcium (Total)	253000	ug/L	1000	D	09/28/2024	20	
		Cobalt (Total)	<2.00	ug/L	2.00	F	09/28/2024	1	
		Lithium (Total)	232	ug/L	200	D	09/28/2024	20	
*	EPA_1631	Mercury (Total)	0.006	ug/L	0.001		10/14/2024	1	

LIMS #: 507193 Sample Date: 9/18/2024 9:56:53 AM Sample Point: EQUIP_BLK Sample Point Description: Equipment Blank Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
	SM_2540_C	Total Dissolved Solids	<10	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	<0.10	mg/L	0.10			1	
	EPA_300_0	Chloride	<0.50	mg/L	0.50		09/25/2024	1	
		Sulfate	<0.50	mg/L	0.50		09/25/2024	1	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		09/24/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		09/24/2024	1	
		Barium (Total)	<3.0	ug/L	3.0		09/24/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0	т	09/24/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		09/24/2024	1	
		Lead (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Molybdenum (Total)	<2.0	ug/L	2.0		09/24/2024	1	
		Selenium (Total)	<5.0	ug/L	5.0		09/24/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
	EPA_200_7	Boron (Total)	<8.00	ug/L	8.00		09/28/2024	1	
		Calcium (Total)	<50.0	ug/L	50.0		09/28/2024	1	
		Cobalt (Total)	<2.00	ug/L	2.00		09/28/2024	1	
		Lithium (Total)	<10.0	ug/L	10.0		09/28/2024	1	
*	EPA_1631	Mercury (Total)	<0.001	ug/L	0.001		10/14/2024	1	

LIMS #: 507194 Sample Date: 9/18/2024 4:50:53 PM Sample Point: SC_10 Sample Point Description: Sand Canyon Well #10 Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
+	SM_4500HB	рН	7.3	SU	2.0			1	
+	SM_2550_B	Temperature Centigrade (Field)	14.8	degrees C	0.000			1	
+	SM_2510_B	Conductivity	17500	umhos/cm	1			1	
+	SM_2580_B	Oxidation-Reduction Potential	284	mV	0			1	
+	SM_4500_OG	Dissolved Oxygen	<1.0	mg/L	1.0			1	
+	SM_2130_B	Turbidity	8.4	NTU	0.05			1	
	NA	Depth to Water	13.38	ft.	0.000			1	
	SM_2540_C	Total Dissolved Solids	16500	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	0.50	mg/L	0.10	т	09/30/2024	1	
	EPA_300_0	Chloride	998	mg/L	25.0	D	09/26/2024	50	
		Sulfate	9800	mg/L	250	D	09/26/2024	500	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		09/24/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		09/24/2024	1	
		Barium (Total)	9.7	ug/L	3.0		09/24/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0	т	09/24/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		09/24/2024	1	
		Lead (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Molybdenum (Total)	4.8	ug/L	2.0		09/24/2024	1	
		Selenium (Total)	200	ug/L	5.0		09/24/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
	EPA_200_7	Boron (Total)	1270	ug/L	160	D		20	
		Calcium (Total)	419000	ug/L	1000	D	09/28/2024	20	
		Cobalt (Total)	<2.00	ug/L	2.00	F	09/28/2024	1	
		Lithium (Total)	633	ug/L	200	D	09/28/2024	20	
*	EPA_1631	Mercury (Total)	0.006	ug/L	0.001		10/14/2024	1	

LIMS #: 507195 Sample Date: 9/18/2024 3:30:53 PM Sample Point: SC_11 Sample Point Description: Sand Canyon Well #11 Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
+	SM_4500HB	рН	7.2	SU	2.0			1	
+	SM_2550_B	Temperature Centigrade (Field)	16.0	degrees C	0.000			1	
+	SM_2510_B	Conductivity	16800	umhos/cm	1			1	
+	SM_2580_B	Oxidation-Reduction Potential	294	mV	0			1	
+	SM_4500_0G	Dissolved Oxygen	<1.0	mg/L	1.0			1	
+	SM_2130_B	Turbidity	7.5	NTU	0.05			1	
	NA	Depth to Water	10.39	ft.	0.000			1	
	SM_2540_C	Total Dissolved Solids	15600	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	0.58	mg/L	0.10	т	09/30/2024	1	
	EPA_300_0	Chloride	1270	mg/L	25.0	D	09/26/2024	50	
		Sulfate	8580	mg/L	250	D	09/26/2024	500	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		09/24/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		09/24/2024	1	
		Barium (Total)	8.2	ug/L	3.0		09/24/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0	т	09/24/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		09/24/2024	1	
		Lead (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Molybdenum (Total)	3.5	ug/L	2.0		09/24/2024	1	
		Selenium (Total)	330	ug/L	5.0		09/24/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
	EPA_200_7	Boron (Total)	2710	ug/L	160	D		20	
		Calcium (Total)	467000	ug/L	1000	D	09/28/2024	20	
		Cobalt (Total)	<2.00	ug/L	2.00	F	09/28/2024	1	
		Lithium (Total)	534	ug/L	200	D	09/28/2024	20	
*	EPA_1631	Mercury (Total)	0.006	ug/L	0.001		10/14/2024	1	

LIMS #: 507196 Sample Date: 9/18/2024 2:20:53 PM Sample Point: SC_12 Sample Point Description: Sand Canyon Well #12 Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor
+	SM_4500HB	рН	7.2	SU	2.0			1
+	SM_2550_B	Temperature Centigrade (Field)	16.7	degrees C	0.000			1
+	SM_2510_B	Conductivity	13100	umhos/cm	1			1
+	SM_2580_B	Oxidation-Reduction Potential	327	mV	0			1
+	SM_4500_0G	Dissolved Oxygen	<1.0	mg/L	1.0			1
+	SM_2130_B	Turbidity	1.1	NTU	0.05			1
	NA	Depth to Water	11.22	ft.	0.000			1
	SM_2540_C	Total Dissolved Solids	13200	mg/L	10			1
	SM_4500_FC	Fluoride (Total)	0.88	mg/L	0.10	т	09/30/2024	1
	EPA_300_0	Chloride	353	mg/L	25.0	D	09/26/2024	50
		Sulfate	8300	mg/L	250	D	09/26/2024	500
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		09/24/2024	1
		Arsenic (Total)	<5.0	ug/L	5.0		09/24/2024	1
		Barium (Total)	5.8	ug/L	3.0		09/24/2024	1
		Beryllium (Total)	<1.0	ug/L	1.0		09/24/2024	1
		Cadmium (Total)	<1.0	ug/L	1.0	Т	09/24/2024	1
		Chromium (Total)	<3.0	ug/L	3.0		09/24/2024	1
		Lead (Total)	<1.0	ug/L	1.0		09/24/2024	1
		Molybdenum (Total)	5.2	ug/L	2.0		09/24/2024	1
		Selenium (Total)	12	ug/L	5.0		09/24/2024	1
		Thallium (Total)	<1.0	ug/L	1.0		09/24/2024	1
	EPA_200_7	Boron (Total)	4600	ug/L	160	D		20
		Calcium (Total)	398000	ug/L	1000	D	09/28/2024	20
		Cobalt (Total)	<2.00	ug/L	2.00	F	09/28/2024	1
		Lithium (Total)	374	ug/L	200	D	09/28/2024	20
*	EPA_1631	Mercury (Total)	0.002	ug/L	0.001		10/14/2024	1

LIMS #: 507197 Sample Date: 9/18/2024 1:08:53 PM Sample Point: SC_13 Sample Point Description: Sand Canyon Well #13 Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
+	SM_4500HB	рН	7.3	SU	2.0			1	
+	SM_2550_B	Temperature Centigrade (Field)	13.5	degrees C	0.000			1	
+	SM_2510_B	Conductivity	11300	umhos/cm	1			1	
+	SM_2580_B	Oxidation-Reduction Potential	235	mV	0			1	
+	SM_4500_0G	Dissolved Oxygen	<1.0	mg/L	1.0			1	
+	SM_2130_B	Turbidity	4.6	NTU	0.05			1	
	NA	Depth to Water	11.77	ft.	0.000			1	
	SM_2540_C	Total Dissolved Solids	11900	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	0.71	mg/L	0.10	т	09/30/2024	1	
	EPA_300_0	Chloride	180	mg/L	25.0	D	09/26/2024	50	
		Sulfate	7570	mg/L	250	D	09/26/2024	500	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		09/24/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		09/24/2024	1	
		Barium (Total)	5.8	ug/L	3.0		09/24/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0	т	09/24/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		09/24/2024	1	
		Lead (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Molybdenum (Total)	3.5	ug/L	2.0		09/24/2024	1	
		Selenium (Total)	27	ug/L	5.0		09/24/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
	EPA_200_7	Boron (Total)	1560	ug/L	160	D		20	
		Calcium (Total)	406000	ug/L	1000	D	09/28/2024	20	
		Cobalt (Total)	<2.00	ug/L	2.00	F	09/28/2024	1	
		Lithium (Total)	288	ug/L	200	D	09/28/2024	20	
*	EPA_1631	Mercury (Total)	0.002	ug/L	0.001		10/14/2024	1	

LIMS #: 507198 Sample Date: 9/18/2024 11:45:53 AM Sample Point: SC_14 Sample Point Description: Sand Canyon Well #14 Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
+	SM_4500HB	рН	7.3	SU	2.0			1	
+	SM_2550_B	Temperature Centigrade (Field)	12.6	degrees C	0.000			1	
+	SM_2510_B	Conductivity	10600	umhos/cm	1			1	
+	SM_2580_B	Oxidation-Reduction Potential	271	mV	0			1	
+	SM_4500_0G	Dissolved Oxygen	<1.0	mg/L	1.0			1	
+	SM_2130_B	Turbidity	0.54	NTU	0.05			1	
	NA	Depth to Water	12.04	ft.	0.000			1	
	SM_2540_C	Total Dissolved Solids	10700	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	0.70	mg/L	0.10	т	09/30/2024	1	
	EPA_300_0	Chloride	160	mg/L	25.0	D	09/26/2024	50	
		Sulfate	7100	mg/L	250	D	09/26/2024	500	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		09/24/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		09/24/2024	1	
		Barium (Total)	5.2	ug/L	3.0		09/24/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0	т	09/24/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		09/24/2024	1	
		Lead (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Molybdenum (Total)	11	ug/L	2.0		09/24/2024	1	
		Selenium (Total)	7.0	ug/L	5.0		09/24/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
	EPA_200_7	Boron (Total)	1460	ug/L	160	D		20	
		Calcium (Total)	398000	ug/L	1000	D	09/28/2024	20	
		Cobalt (Total)	<2.00	ug/L	2.00	F	09/28/2024	1	
		Lithium (Total)	246	ug/L	200	D	09/28/2024	20	
*	EPA_1631	Mercury (Total)	0.001	ug/L	0.001		10/14/2024	1	

LIMS #: 507199 Sample Date: 9/18/2024 12:00:53 AM Sample Point: FIELD_DUP Sample Point Description: Field Duplicate sample Collection Comments: Sample Type: GRAB Sampler Initials: JDC

Flag	Method	Analyte	Result	Units	RL	Data Qualifiers	Analyzed On	Dilution Factor	
	SM_2540_C	Total Dissolved Solids	11900	mg/L	10			1	
	SM_4500_FC	Fluoride (Total)	0.72	mg/L	0.10	т	09/30/2024	1	
	EPA_300_0	Chloride	176	mg/L	025.0	D	09/26/2024	50	
		Sulfate	7400	mg/L	250	D	09/26/2024	500	
*	EPA_6020_B	Antimony (Total)	<2.0	ug/L	2.0		09/24/2024	1	
		Arsenic (Total)	<5.0	ug/L	5.0		09/24/2024	1	
		Barium (Total)	5.1	ug/L	3.0		09/24/2024	1	
		Beryllium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Cadmium (Total)	<1.0	ug/L	1.0	т	09/24/2024	1	
		Chromium (Total)	<3.0	ug/L	3.0		09/24/2024	1	
		Lead (Total)	<1.0	ug/L	1.0		09/24/2024	1	
		Molybdenum (Total)	3.7	ug/L	2.0		09/24/2024	1	
		Selenium (Total)	29	ug/L	5.0		09/24/2024	1	
		Thallium (Total)	<1.0	ug/L	1.0		09/24/2024	1	
	EPA_200_7	Boron (Total)	1600	ug/L	160	D	09/28/2024	20	
		Calcium (Total)	479000	ug/L	1000	D	09/28/2024	20	
		Cobalt (Total)	<2.00	ug/L	2.00	F	09/28/2024	1	
		Lithium (Total)	278	ug/L	200	D	09/28/2024	20	
*	EPA_1631	Mercury (Total)	0.002	ug/L	0.001		10/14/2024	1	

Flags

- * Analysis performed by an external contract laboratory.
- + Analysis performed in the field.

Data Qualifiers

- D Value reported is multiplied by a dilution factor.
- F- Customer/Project data quality requirements met. There are deviations from the reference method or the SOP.
- T- MS recovery outside the established range. The recovery is matrix related, not method related.
- T1 The analyte concentration is disproportionate to the spike level and is outside the established range.

Glossary

DQ - Data Qualifer RL – Reporting Limit MDL – Method Detection Limit Dil Fac – Dilution Factor

Case Narrative



CCR Landfill Groundwater Assessment Upgradient Wells

Sample Date: 9/17/2024

QC Report Needed

Sampler:	5.	SU5/0	W	PH. Fund (au) SM 4500 H	Temporature, Field ('C)	Conductivity, Fleid (umhoe/cm) SM 2510 B	Oxtation Reduction Potential, Flerd	Dissolved Oxygen (mg/L)	Tubidity, Field INTU, SM 2130 B	Depth to Water (reat)	Check which sample should have Asc	Fluondo, SM 4500 F.C	Total Diasolved Solida, SA	Chloride, Sultate EPA 300 C	EPA 200,7 (B, Ca, Co & Li - Total Race	EPA 6020 B (Sb, 48, Ba, Be, Cd, Cr, Pb, Mo, So, Cd, Cd, Cd, Cd, Cd, Cd, Cd, Cd, Cd, Cd	laroury, EPA 1831	Tolai Haaliun 220 & Hadium 220.	Continents	
LOCATION		LIMS #	Sample	Please mark bo	xes that apply.	100	100	12	140	15	0.		1 1	0 1	4	1410	1<	1~ 0	0	
C_1	Bottles 7	507188	13° 52	6,92	14.8	29187	216.9	0.23	12,6	12.80	X	x	x	x	x	x	x	x	High	tu
0_1	7	507189	9:32	7.10	13.9		244.9	0.31	2.10	16.49		x	x	x	x	x	x	x		
2_2	7	507190	10:35	7.26	13.8	9753	296.1		5,34	14.41		x	x	x	x	x	x	x		
34		507191		-								x	x	x	x	x	x	x		-
38	-	507192		-							-	x	x	x	x	x	x	x		
UIP_BLK	-	507193			1	1					-	×	x	x	x	x	x	x		_
tal # of ttles finquished by ceived by	21 Signature	EX/l ly Milpa	All Nelso	1		Ĵ S	USO	w		9-17- 1/18/24	24			1-250 mL GP	1-500 mL New Centified plastic	Actions Workflow Project ID Test Sch		plastic s / Sample FILL) AND		

Comp blank: 1.5°C

Colorado Springs Utilities Laboratory Services Grab Samples



Colorado Springs Utilities Laboratory Services Grab Samples

CCR Landfill Groundwater Assessment Upgradient Wells Sample Date: 9 - 18 - 24

Sample Date:

QC Report Needed

Sampler:	0	5456	av	PH, Feid (su) SM 4500 H	Tomboauue, Floid ('C) SM 2530 B	Conductivity, Flaid (umhoa/cm) SM 2510 B	Oxtamon Reduction Potential, Flerd	Dissolved Oxygen (mg/L)	Tubut, Field NTU, SM 2130 B	Depth to Water (feet)	Check which sample should have he	Fluende, SM 4500 F.C	Total Dissolved Solids o.	Chloride, Sultate Epg. 50	EPA 2007 (B. Ca, Co & LI, TONIO	EPA 6020 B (Sb, As, Ba, Be, Cd, Cr, Pb, Mo, So and Sent to Eurolins TA Denver	Mercury, EPA 1631	Polai Radium 226 & Radium o.	Comments	/
LOCATION	# Bottles	LIMS #	Sample Time	Please mark box	es that apply.]
00_1	Donnes		Thie							-	-	×	x	x	×	×	x	×		1
FC 1				-								x	x	×	*	×	×-	×		1
FC 2												*	x	×	x	×	×-	- ×		1
FC_3A	7	507191	820	7.39	13.2	8852	239.0	0.33	8.85	18.90	X	x	x	x	x	x	x	x		
C_38	7	507192	928	7.29	13.7	8540	-42.2		28.4	1802		x	x	x	x	x	x	x	Hight	ur6
QUIP_BLK	7	507193	956					- 1	-0	-	-	x	x	x	x	x	x	x		1
Total≢of Bottles	21	1		1								1-500 m	L GP	1-250 mL GP	1-500 mL New Certified plastic	1-250 mL bottles provided by external lab (pre-preserved with HN03)	rinsed	mL plastic	e Rejections/	
Relinquished by	Æ	Print last name	Nelson	Z	/	9	-18	-24	100	alia	124	Date/Tir			2	Actions Workflow Project ID Test Sche	CCR_LANE CCR_LANE CCR_LANE edule: CCR_ s are NOT	DFILL D LAND		

Temp blank: 0.8°C KAN a/19/24



CCR Landfill Groundwater Assessment Downgradient and Cross Gradient Wells

Sample Date: 9/18/2024

QC Report Needed

Sample		545	low	PH Field (u) BM 4500 H	Temperature, Field (°C) SM 2550 B	Conductivity, Fleid (umhosiccm) SM 2510 B	Oxidation Reduction Potential, Freid	Dissolved Oxygen (mg/L)	Turbury, Field INTU), SM 2130 B	Dapth to Water (feet)	Check which sample should have As.a.	uorida, Siri 4500 F.C	Total Dissorved Solids, SM 24	Chloride, Sullate Epg. 000	EPA 200.7 (B. Ca, Co & LI - Total Par-	EPA 6020 B (Sb, As, Ba, Bo, Cd, Cr, Pb, Mo, So & T, - Trum	Mercury, EPA 1831	Total Padium 226 & Padium 220	Comments	/
LOCATION		LIMS #	Sample	Please mark box	es that apply.	100	102	14	12	14	0				4	140	1<	11	0	1
SC_10	Bottles	507194	Time 16:50	7.26	14.8	17483	284.4	Ooll	8.44	13.38	-	x	x	x	x	x	x	×		1
SC_11	7	507195	1930	7.23	60	1675		0.14	7.46	10-39		x	×	x	x	x	x	×		
SC_12	7	507196	14:20	7.25	-	13062	-	0.23		11.22		x	x	x	x	x	x	×		
SC_13	7	507197	13:08	7.27	13.5	11271	235.1	0-18	4,63	11.77		x	x	x	x	x	x	×	11.01	1
SC_14	7	507198	11:45	7.28	12.6	10612	271.0	030	0.54	12.04		x	x	x	х	x	x	x		
FIELD_DUP	7	507199	0:00		2				000		1	x	x	x	x	x	x	x		
Total # of Bottles Relinquished by Received by	0	nn last prame WMJor WMJor	ds/	en mp	ble	9-18	1/19/24	e (840		Samples lef	1-500 mL	GP	mL GP	1-500 mL. New Certified plastic	HNO3)	1-250 mL glass acid insed Comment CCR_LAND CCR_LAND CCR_LAND tule: CCR_	FILL DIAND	Rejections/ e field.	

Colorado Springs Utilities Laboratory Services Grab Samples

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It's how we're all connected

Laboratory Services Section QC Report

CCR Landfill Wells September 2024

Quality Assurance Approval: Lesley Pearce

Date: 11/14/2024

This report is for sample numbers 507188 – 507189.

Total Dissolved Solids by Standard Methods 2540 C

There are no anomalies to report for this analysis.

Fluoride by Standard Methods 4500 F C

The matrix spike recoveries are outside the established range. The recoveries are matrix related, not method related. Associated data are T qualified.

Anions by EPA Method 300.0

There are no anomalies to report for this analysis.

EPA 200.7

The calcium concentrations are disproportionate to the spike level and are outside the established range for three samples. Associated data are T1 qualified.

Method: Total Dissolved Solids by Standard Methods 2540 C Batch Analysis date: 9/20/24 Sampled date: 9/17/24 for samples 507188 - 507190 Sampled date: 9/18/24 for samples 507191 - 507199

QC Type	Analyte	Recovery (%)		ceptable ange (%)	RPD (%)	RPD Limit (%)
QCS	Total Dissolved Solids	109	5	30 - 120		
Duplicate	Total Dissolved Solids (507188)				<1	<10
Duplicate	Total Dissolved Solids (507191)				1	<10
QC Type	Analyte	Concentrati	on	Limit		
LRB	Total Dissolved Solids	<10 mg/L		10 mg/L		

Matrix QC performed on samples 507188 and 507191

Method: Fluoride by Standard Methods 4500 F C Batch Analysis date: 9/30/24 Sampled date: 9/17/24 for samples 507188 - 507190 Sampled date: 9/18/24 for samples 507191 - 507199

Matrix QC performed on samples 507188 and 507191

QC Type	Analyte		Recov	ery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Fluoride (Total)		1(01	90 - 110		
QCS	Fluoride (Total)		9	8	90 - 110		
MS	Fluoride (Total) (507	7188)	*?	<u>88</u>	80 - 120		
MSD	Fluoride (Total) (507	7188)				1	<20
MS	Fluoride (Total) (507	7191)	*7	<u>73</u>	80 - 120		
MSD	Fluoride (Total) (507	7191)				1	<20
QC Type	Analyte	Concent	tration		Limit		
LRB	Fluoride (Total)	<0.05 ו	mg/L	0	.05 mg/L		

*See Narrative

Method: Anions by EPA Method 300.0 Batch Number: ANIONS_NOX000007 Batch Analysis date: 9/25/24 and 9/26/24 Sampled date: 9/17/24 for samples 507188 - 507190 Sampled date: 9/18/24 for samples 507191 - 507199

QC Type	Analyte	Recovery (%)	Acceptable Range (%)	RPD (%)	RPD Limit (%)
MRL	Chloride	125	50-150		
LFB	Chloride	100	90-110	0	<20
LD	Chloride (507170)			0	<20
MS	Chloride (507170)	102	80-120		
LD	Chloride (507191)			0	<20
MS	Chloride (507191)	105	80-120		
MRL	Sulfate	93	50-150		
LFB	Sulfate	100	90-110	0	<20
LD	Sulfate (507170)			1	<20
MS	Sulfate (507170)	107	80-120		
LD	Sulfate (507191)			1	<20
MS	Sulfate (507191)	108	80-120		
QC Type	Analyte	Concentration	Limit		
LRB	Chloride	<0.17 mg/L	0.17 mg/L		
LRB	Sulfate	<0.17 mg/L	0.17 mg/L		

Matrix QC performed on samples 507170 and 507191

Method: EPA 200.7 Batch Number: OES_TOT000018 Batch Analysis date: 9/24/24 for B, Ca and Co Digestion date: 9/20/24 Sampled date: 9/17/24 for samples 507188 - 507190

Matrix QC performed on sample 507166

QC Type	Analyte	Recovery (%)		ptable je (%)	RPD (%)	RPD Limit (%)
MRL	Boron (Total)	103		.150	(/0)	(70)
LFB	Boron (Total)	103		115		
MS	Boron (Total)	91	70-	·130		
MSD	Boron (Total)				1	<20
MRL	Calcium (Total)	99	50-	·150		
LFB	Calcium (Total)	101	85-	·115		
MS	Calcium (Total)	<u>*14</u>	70-	·130		
MSD	Calcium (Total)				1	<20
MRL	Cobalt (Total)	91	50-	·150		
LFB	Cobalt (Total)	103	85-	·115		
MS	Cobalt (Total)	89	70-	·130		
MSD	Cobalt (Total)				1	<20
QC Type	Analyte	Concentra	tion		Limit	
LRB	Boron (Total)	<8.00 ug	/L	8.0)0 ug/L	
LRB	Calcium (Total)	<49.3 ug	/L	49	.3 ug/L	
LRB	Cobalt (Total)	<0.744 ug	g/L	0.7	44 ug/L	
*Soo Narrat			<i>y</i> : =	•	· ·	l

*See Narrative

Method: EPA 200.7 Batch Number: OES_TOT000021 Batch Analysis date: 10/1/24 for Li Digestion date: 9/20/24 Sampled date: 9/17/24 for samples 507188 - 507190

QC Type	Analyte	Recovery (%)		ptable je (%)	RPD (%)	RPD Limit (%)
MRL	Lithium (Total)	103	50-	150		
LFB	Lithium (Total)	107	85-	115		
MS	Lithium (Total)	103	70-	130		
MSD	Lithium (Total)				0	<20
QC Type	Analyte	Concentra	tion		Limit	
LRB	Lithium (Total)	<10.0 ug	/L	10	.0 ug/L	

Matrix QC performed on sample 507166

Method: EPA 200.7 Batch Number: OES_TOT000020 Batch Analysis date: 9/28/24 Digestion date: 9/26/24 Sampled date: 9/18/24 for samples 507191 - 507199

Matrix QC performed on sample 507191

QC Type	Analyte	Recovery	Acce	ptable	RPD	RPD Limit
	-	(%)	Rang	je (%)	(%)	(%)
MRL	Boron (Total)	100	50-	150		
LFB	Boron (Total)	101	85-	115		
MS	Boron (Total)	108	70-	130		
MSD	Boron (Total)				2	<20
MRL	Calcium (Total)	100	50-	150		
LFB	Calcium (Total)	99	85-	115		
MS	Calcium (Total)	130	70-	130		
MSD	Calcium (Total)				2	<20
MRL	Cobalt (Total)	106	50-	150		
LFB	Cobalt (Total)	101	85-	115		
MS	Cobalt (Total)	99	70-	130		
MSD	Cobalt (Total)				0	<20
MRL	Lithium (Total)	103	50-	150		
LFB	Lithium (Total)	102	85-	115		
MS	Lithium (Total)	111	70-	130		
MSD	Lithium (Total)				1	<20
QC Type	Analyte	Concentra	tion		Limit	
LRB	Boron (Total)	<8.00 ug/L 8		8.0)0 ug/L	
LRB	Calcium (Total)	<49.3 ug/L 4		49	.3 ug/L	
LRB	Cobalt (Total)	<0.744 ug	v		44 ug/L	
LRB	Lithium (Total)	<10.0 ug/	/L 10		.0 ug/L	

LD – Field Duplicate

LFB – Laboratory Fortified Blank

LRB – Laboratory Reagent Blank (Method Blank)

QCS – Quality Control Sample

MRL – Minimum Reporting Limit (Verification)

MS – Matrix Spike

MSD – Matrix Spike Duplicate

<u>Underline</u> – Data was outside the limit



Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Wendy Asay Colorado Springs Utilities Laboratory Services Section 701 E. Las Vegas St., MC 1465 Colorado Springs, Colorado 80903 Generated 9/30/2024 9:29:01 AM

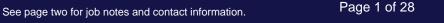
JOB DESCRIPTION

CCR Landfill

JOB NUMBER

280-196994-1

Eurofins Denver 4955 Yarrow Street Arvada CO 80002





Eurofins Denver

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization

Shilly Mccabe

Generated 9/30/2024 9:29:01 AM

Authorized for release by Shelby McCabe, Project Manager I <u>Shelby.McCabe@et.eurofinsus.com</u> (303)736-0165

Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Definitions	5
Detection Summary	6
Method Summary	8
Sample Summary	9
Client Sample Results	10
QC Sample Results	22
QC Association	24
Chronicle	25
Receipt Checklists	27
Chain of Custody	28

Job ID: 280-196994-1

Eurofins Denver

Job Narrative 280-196994-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these
 situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise
 specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 9/20/2024 9:10 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 18.6°C. It can be noted that thermal preservation is not required for 6020B Metals.

Method 6020B - Metals (ICP/MS) - Total Recoverable

Samples 507188 CC_1 (280-196994-1), 507188 CC_1 (280-196994-1MS), 507188 CC_1 (280-196994-1MSD), 507189 FC_1 (280-196994-2), 507190 FC_2 (280-196994-3), 507191 FC_3A (280-196994-4), 507191 FC_3A (280-196994-4MS), 507191 FC_3A (280-196994-4MSD), 507192 FC_3B (280-196994-5), 507193 EQUIP_BLK (280-196994-6), 507194 SC_10 (280-196994-7), 507195 SC_11 (280-196994-8), 507196 SC_12 (280-196994-9), 507197 SC_13 (280-196994-10), 507198 SC_14 (280-196994-11) and 507199 FIELD_DUP (280-196994-12) were analyzed for Metals (ICP/MS) - Total Recoverable. The samples were prepared on 9/23/2024 and analyzed on 9/24/2024.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 280-668282 and analytical batch 280-668581 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Qualifiers

Metals		
Qualifier	Qualifier Description	4
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.	5
F1	MS and/or MSD recovery exceeds control limits.	
Glossary		
Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	
CFL	Contains Free Liquid	8
CFU	Colony Forming Unit	
CNF	Contains No Free Liquid	9
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision Level Concentration (Radiochemistry)	
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	
LOQ	Limit of Quantitation (DoD/DOE)	12
MCL	EPA recommended "Maximum Contaminant Level"	

Glossary

Glussaly	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Detection Summary

lient: Colorado Springs Uti roject/Site: CCR Landfill	ilities							Job ID): 280-196994-1
Client Sample ID: 507	188 CC_1					Lab S	an	nple ID: 2	80-196994-1
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	5.8		3.0		ug/L	1	_	6020B	Total Recoverable
Lead	1.1	F1	1.0		ug/L	1		6020B	Total Recoverable
Selenium	180		5.0		ug/L	1		6020B	Total Recoverable
Client Sample ID: 507	189 FC_1					Lab S	an	ple ID: 2	80-196994-2
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	9.0		3.0		ug/L	1	·	6020B	Total Recoverable
Molybdenum	2.2		2.0		ug/L	1		6020B	Total Recoverable
Client Sample ID: 507	190 FC_2					Lab S	arr	ple ID: 2	80-196994-3
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	6.4	· · · · · · · · · · · · · · · · · · ·	3.0		ug/L	1	·	6020B	Total Recoverable
Molybdenum	2.8		2.0		ug/L	1		6020B	Total Recoverable
Selenium _	37		5.0		ug/L	1		6020B	Total Recoverable
Client Sample ID: 507	191 FC_3A					Lab S	arr	ple ID: 2	80-196994-4
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	11		3.0		ug/L	1		6020B	Total Recoverable
Molybdenum	7.9		2.0		ug/L	1		6020B	Total Recoverable
Selenium	46		5.0		ug/L	1		6020B	Recoverable Total Recoverable
Client Sample ID: 507	'192 FC_3B					Lab S	an	nple ID: 2	280-196994-5
_ Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	<u> </u>		3.0		ug/L	1		6020B	Total Recoverable
Molybdenum	8.2		2.0		ug/L	1		6020B	Total Recoverable
Client Sample ID: 507	'193 EQUIP_B'	LK				Lab S	an	nple ID: 2	80-196994-6
No Detections.									
Client Sample ID: 507	194 SC_10					Lab Sa	am	ple ID: 2	280-196994-7
Analyte		Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	9.7		3.0		ug/L	1	•	6020B	Total Recoverable
Molybdenum	4.8		2.0		ug/L	1		6020B	Total Recoverable
Colonium			ΕO			4		COOOD	T-4-1

This Detection Summary does not include radiochemical test results.

200

Selenium

Eurofins Denver

Total Recoverable

6020B

1

5.0

ug/L

Detection Summary

Client: Colorado Springs Utilities Project/Site: CCR Landfill

Client Sample ID: 507195 SC_11

Job ID: 280-196994-1

Lab Sample ID: 280-196994-8

5

Barium	Result	Qualifier	RL	MDL	Unit	Dil Fac	Method	Prep Type
	8.2		3.0		ug/L	1	6020B	Total
lolybdenum	3.5		2.0		ug/L	1	6020B	Recoverable Total
	0.0		2.0		s.g, =		00202	Recoverable
Selenium	330		5.0		ug/L	1	6020B	Total
								Recoverable
lient Sample ID: 5071	196 SC_12					Lab Sa	mple ID: 2	80-196994-9
Analyte		Qualifier	RL	MDL			Method	Prep Type
arium	5.8		3.0		ug/L	1	6020B	Total Recoverable
lolybdenum	5.2		2.0		ug/L	1	6020B	Total
								Recoverable
elenium	12		5.0		ug/L	1	6020B	Total Recoverable
lient Sample ID: 5071	197 SC 13					Lab Sam	ple ID: 28	0-196994-10
nalyte		Qualifier	RL	MDL	Unit	Dil Fac	-	Prep Type
Barium	<u></u>		3.0		ug/L		6020B	Total
					-			Recoverable
Nolybdenum	3.5		2.0		ug/L	1	6020B	Total Recoverable
Selenium	27		5.0		ug/L	1	6020B	Total
					5			Recoverable
lient Sample ID: 5071	198 SC_14					Lab Sam	ple ID: 28	0-196994-1′
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	Method	Ргер Туре
Barium	5.2		3.0		ug/L	1	6020B	Total
	11		2.0		ug/L	1	6020B	Recoverable Total
/olybdenum			2.0		ug/L	•	00208	
<i>l</i> olybdenum								Recoverable
Molybdenum Selenium	7.0		5.0		ug/L	1	6020B	Recoverable Total
Selenium	7.0		5.0		ug/L			Total Recoverable
Selenium	7.0	JP	5.0		ug/L			Total
ient Sample ID: 5071 Malyte	7.0 199 FIELD_DU Result	JP Qualifier	RL	MDL	Unit	Lab Sam	ple ID: 28	Total Recoverable 0-196994-12 Prep Type
Selenium lient Sample ID: 5071 Analyte	7.0 199 FIELD_DL			MDL		Lab Sam	ple ID: 28	Total Recoverable 0-196994-12 Prep Type Total
Selenium lient Sample ID: 5071 Analyte Barium	7.0 199 FIELD_DU Result 5.1		RL 3.0	MDL	Unit ug/L	Lab Sam	ple ID: 28 <u>Method</u> 6020B	Total Recoverable 0-196994-12 Prep Type Total Recoverable
-	7.0 199 FIELD_DU Result		RL	MDL	Unit	Lab Sam	ple ID: 28	Total Recoverable 0-196994-12 Prep Type

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Colorado Springs Utilities Project/Site: CCR Landfill

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Colorado Springs Utilities Project/Site: CCR Landfill

Job ID: 280-196994-

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-196994-1	507188 CC_1	Water	09/17/24 13:52	09/20/24 09:10
280-196994-2	507189 FC_1	Water	09/17/24 09:32	09/20/24 09:10
280-196994-3	507190 FC_2	Water	09/17/24 10:35	09/20/24 09:10
280-196994-4	507191 FC_3A	Water	09/18/24 08:20	09/20/24 09:10
280-196994-5	507192 FC_3B	Water	09/18/24 09:28	09/20/24 09:10
280-196994-6	507193 EQUIP_BLK	Water	09/18/24 09:56	09/20/24 09:10
280-196994-7	507194 SC_10	Water	09/18/24 16:50	09/20/24 09:10
280-196994-8	507195 SC_11	Water	09/18/24 15:30	09/20/24 09:10
280-196994-9	507196 SC_12	Water	09/18/24 14:20	09/20/24 09:10
280-196994-10	507197 SC_13	Water	09/18/24 13:08	09/20/24 09:10
280-196994-11	507198 SC_14	Water	09/18/24 11:45	09/20/24 09:10
280-196994-12	507199 FIELD_DUP	Water	09/18/24 00:00	09/20/24 09:10

5

Client Sample ID: 507188 CC_1 Date Collected: 09/17/24 13:52 Date Received: 09/20/24 09:10

Lab Sample ID: 280-196994-1 Matrix: Water

5 6

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	5.0	ug/L		09/23/24 15:06	09/24/24 21:08	1
Barium	5.8	3.0	ug/L		09/23/24 15:06	09/24/24 21:08	1
Beryllium	ND	1.0	ug/L		09/23/24 15:06	09/24/24 21:08	1
Cadmium	ND F1	1.0	ug/L		09/23/24 15:06	09/24/24 21:08	1
Chromium	ND	3.0	ug/L		09/23/24 15:06	09/24/24 21:08	1
Molybdenum	ND	2.0	ug/L		09/23/24 15:06	09/24/24 21:08	1
Lead	1.1 F1	1.0	ug/L		09/23/24 15:06	09/24/24 21:08	1
Antimony	ND	2.0	ug/L		09/23/24 15:06	09/24/24 21:08	1
Selenium	180	5.0	ug/L		09/23/24 15:06	09/24/24 21:08	1
Thallium	ND	1.0	ug/L		09/23/24 15:06	09/24/24 21:08	1

Client Sample ID: 507189 FC_1 Date Collected: 09/17/24 09:32 Date Received: 09/20/24 09:10

Lab Sample ID: 280-196994-2 Matrix: Water

5 6

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	5.0	ug/L		09/23/24 15:06	09/24/24 21:19	1
Barium	9.0	3.0	ug/L		09/23/24 15:06	09/24/24 21:19	1
Beryllium	ND	1.0	ug/L		09/23/24 15:06	09/24/24 21:19	1
Cadmium	ND	1.0	ug/L		09/23/24 15:06	09/24/24 21:19	1
Chromium	ND	3.0	ug/L		09/23/24 15:06	09/24/24 21:19	1
Molybdenum	2.2	2.0	ug/L		09/23/24 15:06	09/24/24 21:19	1
Lead	ND	1.0	ug/L		09/23/24 15:06	09/24/24 21:19	1
Antimony	ND	2.0	ug/L		09/23/24 15:06	09/24/24 21:19	1
Selenium	ND	5.0	ug/L		09/23/24 15:06	09/24/24 21:19	1
Thallium	ND	1.0	ug/L		09/23/24 15:06	09/24/24 21:19	1

Client Sample ID: 507190 FC_2 Date Collected: 09/17/24 10:35 Date Received: 09/20/24 09:10

Lab Sample ID: 280-196994-3 Matrix: Water

5 6

Analyte	Result C	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.0		ug/L		09/23/24 15:06	09/24/24 21:22	1
Barium	6.4		3.0		ug/L		09/23/24 15:06	09/24/24 21:22	1
Beryllium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:22	1
Cadmium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:22	1
Chromium	ND		3.0		ug/L		09/23/24 15:06	09/24/24 21:22	1
Molybdenum	2.8		2.0		ug/L		09/23/24 15:06	09/24/24 21:22	1
Lead	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:22	1
Antimony	ND		2.0		ug/L		09/23/24 15:06	09/24/24 21:22	1
Selenium	37		5.0		ug/L		09/23/24 15:06	09/24/24 21:22	1
Thallium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:22	1

Client Sample ID: 507191 FC_3A Date Collected: 09/18/24 08:20 Date Received: 09/20/24 09:10

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Lab Sample ID: 280-196994-4 Matrix: Water

5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.0		ug/L		09/23/24 15:06	09/24/24 21:24	1
Barium	11		3.0		ug/L		09/23/24 15:06	09/24/24 21:24	1
Beryllium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:24	1
Cadmium	ND	F1	1.0		ug/L		09/23/24 15:06	09/24/24 21:24	1
Chromium	ND		3.0		ug/L		09/23/24 15:06	09/24/24 21:24	1
Molybdenum	7.9		2.0		ug/L		09/23/24 15:06	09/24/24 21:24	1
Lead	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:24	1
Antimony	ND		2.0		ug/L		09/23/24 15:06	09/24/24 21:24	1
Selenium	46		5.0		ug/L		09/23/24 15:06	09/24/24 21:24	1
Thallium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:24	1

Client Sample ID: 507192 FC_3B Date Collected: 09/18/24 09:28 Date Received: 09/20/24 09:10

Job ID: 280-196994-	1
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Lab Sample ID: 280-196994-5 Matrix: Water

5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.0		ug/L		09/23/24 15:06	09/24/24 21:35	1
Barium	11		3.0		ug/L		09/23/24 15:06	09/24/24 21:35	1
Beryllium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:35	1
Cadmium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:35	1
Chromium	ND		3.0		ug/L		09/23/24 15:06	09/24/24 21:35	1
Molybdenum	8.2		2.0		ug/L		09/23/24 15:06	09/24/24 21:35	1
Lead	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:35	1
Antimony	ND		2.0		ug/L		09/23/24 15:06	09/24/24 21:35	1
Selenium	ND		5.0		ug/L		09/23/24 15:06	09/24/24 21:35	1
Thallium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:35	1

Client Sample ID: 507193 EQUIP_BLK Date Collected: 09/18/24 09:56 Date Received: 09/20/24 09:10

Lab Sample ID: 280-196994-6 Matrix: Water

5

8 9

Analyte	- Metals (ICP/MS) - Total Reco Result Qualifier	RL	MDL Unit	D	Prepared	Analvzed	Dil Fac
				Ľ			DIFAC
Arsenic	ND	5.0	ug/L		09/23/24 15:06	09/24/24 21:38	1
Barium	ND	3.0	ug/L		09/23/24 15:06	09/24/24 21:38	1
Beryllium	ND	1.0	ug/L		09/23/24 15:06	09/24/24 21:38	1
Cadmium	ND	1.0	ug/L		09/23/24 15:06	09/24/24 21:38	1
Chromium	ND	3.0	ug/L		09/23/24 15:06	09/24/24 21:38	1
Molybdenum	ND	2.0	ug/L		09/23/24 15:06	09/24/24 21:38	1
Lead	ND	1.0	ug/L		09/23/24 15:06	09/24/24 21:38	1
Antimony	ND	2.0	ug/L		09/23/24 15:06	09/24/24 21:38	1
Selenium	ND	5.0	ug/L		09/23/24 15:06	09/24/24 21:38	1
Thallium	ND	1.0	ug/L		09/23/24 15:06	09/24/24 21:38	1

Client Sample ID: 507194 SC_10 Date Collected: 09/18/24 16:50 Date Received: 09/20/24 09:10

Job ID: 280-196994-1

Lab Sample ID: 280-196994-7 Matrix: Water

Analyte	Result Qua	alifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	5.0		ug/L		09/23/24 15:06	09/24/24 21:40	1
Barium	9.7	3.0		ug/L		09/23/24 15:06	09/24/24 21:40	1
Beryllium	ND	1.0		ug/L		09/23/24 15:06	09/24/24 21:40	1
Cadmium	ND	1.0		ug/L		09/23/24 15:06	09/24/24 21:40	1
Chromium	ND	3.0		ug/L		09/23/24 15:06	09/24/24 21:40	1
Molybdenum	4.8	2.0		ug/L		09/23/24 15:06	09/24/24 21:40	1
Lead	ND	1.0		ug/L		09/23/24 15:06	09/24/24 21:40	1
Antimony	ND	2.0		ug/L		09/23/24 15:06	09/24/24 21:40	1
Selenium	200	5.0		ug/L		09/23/24 15:06	09/24/24 21:40	1
Thallium	ND	1.0		ug/L		09/23/24 15:06	09/24/24 21:40	1

Client Sample ID: 507195 SC_11 Date Collected: 09/18/24 15:30 Date Received: 09/20/24 09:10

1 2 3 4 5 6 7 8 9

Lab Sample ID: 280-196994-8 Matrix: Water

Job ID: 280-196994-1

Method: SW846 6020B	- Metals (ICP/MS)	- Total Recov	/erable						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.0		ug/L		09/23/24 15:06	09/24/24 21:42	1
Barium	8.2		3.0		ug/L		09/23/24 15:06	09/24/24 21:42	1
Beryllium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:42	1
Cadmium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:42	1
Chromium	ND		3.0		ug/L		09/23/24 15:06	09/24/24 21:42	1
Molybdenum	3.5		2.0		ug/L		09/23/24 15:06	09/24/24 21:42	1
Lead	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:42	1
Antimony	ND		2.0		ug/L		09/23/24 15:06	09/24/24 21:42	1
Selenium	330		5.0		ug/L		09/23/24 15:06	09/24/24 21:42	1
Thallium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:42	1

Client Sample ID: 507196 SC_12 Date Collected: 09/18/24 14:20 Date Received: 09/20/24 09:10

Lab Sample ID: 280-196994-9 Matrix: Water

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable Analyte Result Qualifier RL MDL Unit D Prepared Dil Fac Analyzed Arsenic ND 5.0 09/23/24 15:06 09/24/24 21:45 ug/L 1 3.0 **Barium** 5.8 ug/L 09/23/24 15:06 09/24/24 21:45 1 Beryllium ND 1.0 ug/L 09/23/24 15:06 09/24/24 21:45 1 Cadmium ND 1.0 09/23/24 15:06 09/24/24 21:45 1 ug/L Chromium ND 3.0 ug/L 09/23/24 15:06 09/24/24 21:45 1 09/23/24 15:06 09/24/24 21:45 Molybdenum 2.0 5.2 ug/L 1 Lead ND 1.0 ug/L 09/23/24 15:06 09/24/24 21:45 1 ND Antimony 2.0 ug/L 09/23/24 15:06 09/24/24 21:45 1 5.0 09/23/24 15:06 09/24/24 21:45 **Selenium** 12 ug/L 1 Thallium ND 09/23/24 15:06 09/24/24 21:45 1.0 ug/L 1

5

8

Client Sample ID: 507197 SC_13 Date Collected: 09/18/24 13:08 Date Received: 09/20/24 09:10

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200	ID.	200-	190	994-	

Lab Sample ID: 280-196994-10 Matrix: Water

5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.0		ug/L		09/23/24 15:06	09/24/24 21:47	1
Barium	5.8		3.0		ug/L		09/23/24 15:06	09/24/24 21:47	1
Beryllium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:47	1
Cadmium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:47	1
Chromium	ND		3.0		ug/L		09/23/24 15:06	09/24/24 21:47	1
Molybdenum	3.5		2.0		ug/L		09/23/24 15:06	09/24/24 21:47	1
Lead	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:47	1
Antimony	ND		2.0		ug/L		09/23/24 15:06	09/24/24 21:47	1
Selenium	27		5.0		ug/L		09/23/24 15:06	09/24/24 21:47	1
Thallium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:47	1

Client Sample ID: 507198 SC_14 Date Collected: 09/18/24 11:45 Date Received: 09/20/24 09:10

loh	ın	280-	196	994-	1
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Lab Sample ID: 280-196994-11 Matrix: Water

5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.0		ug/L		09/23/24 15:06	09/24/24 21:49	1
Barium	5.2		3.0		ug/L		09/23/24 15:06	09/24/24 21:49	1
Beryllium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:49	1
Cadmium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:49	1
Chromium	ND		3.0		ug/L		09/23/24 15:06	09/24/24 21:49	1
Molybdenum	11		2.0		ug/L		09/23/24 15:06	09/24/24 21:49	1
Lead	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:49	1
Antimony	ND		2.0		ug/L		09/23/24 15:06	09/24/24 21:49	1
Selenium	7.0		5.0		ug/L		09/23/24 15:06	09/24/24 21:49	1
Thallium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:49	1

Client Sample ID: 507199 FIELD_DUP Date Collected: 09/18/24 00:00 Date Received: 09/20/24 09:10

Lab Sample ID: 280-196994-12 Matrix: Water

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8 9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.0		ug/L		09/23/24 15:06	09/24/24 21:51	1
Barium	5.1		3.0		ug/L		09/23/24 15:06	09/24/24 21:51	1
Beryllium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:51	1
Cadmium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:51	1
Chromium	ND		3.0		ug/L		09/23/24 15:06	09/24/24 21:51	1
Molybdenum	3.7		2.0		ug/L		09/23/24 15:06	09/24/24 21:51	1
Lead	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:51	1
Antimony	ND		2.0		ug/L		09/23/24 15:06	09/24/24 21:51	1
Selenium	29		5.0		ug/L		09/23/24 15:06	09/24/24 21:51	1
Thallium	ND		1.0		ug/L		09/23/24 15:06	09/24/24 21:51	1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-668282/1-A Matrix: Water Analysis Batch: 668581

ME	B MB					
Analyte Resul	t Qualifier R	L MDL	Unit D	Prepared	Analyzed	Dil Fac
Arsenic NE	5.	0	ug/L	09/23/24 15:06	09/24/24 20:43	1
Barium NE) 3.	0	ug/L	09/23/24 15:06	09/24/24 20:43	1
Beryllium NE) 1.	0	ug/L	09/23/24 15:06	09/24/24 20:43	1
Cadmium NE) 1.	0	ug/L	09/23/24 15:06	09/24/24 20:43	1
Chromium NE) 3.	0	ug/L	09/23/24 15:06	09/24/24 20:43	1
Molybdenum NE) 2.	0	ug/L	09/23/24 15:06	09/24/24 20:43	1
Lead NE) 1.	0	ug/L	09/23/24 15:06	09/24/24 20:43	1
Antimony NE) 2.	0	ug/L	09/23/24 15:06	09/24/24 20:43	1
Selenium NE) 5.	0	ug/L	09/23/24 15:06	09/24/24 20:43	1
Thallium NE) 1.	0	ug/L	09/23/24 15:06	09/24/24 20:43	1

Lab Sample ID: LCS 280-668282/2-A Matrix: Water Analysis Batch: 668581

Client Sample ID: Lab Control Sample Prep Type: Total Recoverable Prep Batch: 668282

Client Sample ID: 507188 CC_1

Client Sample ID: 507188 CC_1

Prep Type: Total Recoverable

	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Arsenic	40.0	39.3		ug/L		98	85 - 117
Barium	40.0	38.1		ug/L		95	85 - 118
Beryllium	40.0	38.5		ug/L		96	80 - 125
Cadmium	40.0	38.8		ug/L		97	85 - 115
Chromium	40.0	39.1		ug/L		98	84 - 121
Molybdenum	40.0	39.5		ug/L		99	85 - 119
Lead	40.0	39.2		ug/L		98	85 - 118
Antimony	40.0	39.6		ug/L		99	85 - 115
Selenium	40.0	39.5		ug/L		99	77 - 122
Thallium	40.0	39.8		ug/L		99	85 - 118

Lab Sample ID: 280-196994-1 MS Matrix: Water Analysis Batch: 668581

Analysis Batch: 668581									Prep Batch: 668282
	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Arsenic	ND		40.0	37.1		ug/L		93	92 - 112
Barium	5.8		40.0	45.9		ug/L		100	92 - 117
Beryllium	ND		40.0	39.9		ug/L		100	87 - 118
Cadmium	ND	F1	40.0	36.5		ug/L		91	91 - 114
Chromium	ND		40.0	39.0		ug/L		97	91 - 114
Molybdenum	ND		40.0	41.8		ug/L		102	84 - 117
Lead	1.1	F1	40.0	40.4		ug/L		98	95 - 116
Antimony	ND		40.0	39.1		ug/L		98	80 - 111
Selenium	180		40.0	221	4	ug/L		107	90 - 115
Thallium	ND		40.0	39.7		ug/L		98	94 - 115

Lab Sample ID: 280-196994-1 MSD

Matrix: Water							F	Prep Ty	pe: Total	Recove	erable
Analysis Batch: 668581									Prep Ba	atch: 60	6 8282
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	ND		40.0	37.1		ug/L		93	92 - 112	0	20

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Job ID: 280-196994-1

Prep Batch: 668282

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Page 22 of 28

9/30/2024

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-196994-1 MSD Matrix: Water

Matrix: Water	-						F	Prep Ty	pe: Total I	Recove	rable
Analysis Batch: 668581									Prep Ba	itch: 66	58282
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	5.8		40.0	44.5		ug/L		97	92 - 117	3	20
Beryllium	ND		40.0	38.0		ug/L		95	87 - 118	5	20
Cadmium	ND	F1	40.0	35.3	F1	ug/L		88	91 - 114	3	20
Chromium	ND		40.0	36.4		ug/L		91	91 - 114	7	20
Molybdenum	ND		40.0	40.6		ug/L		99	84 - 117	3	20
Lead	1.1	F1	40.0	38.8	F1	ug/L		94	95 - 116	4	20
Antimony	ND		40.0	38.6		ug/L		97	80 - 111	1	20
Selenium	180		40.0	207	4	ug/L		73	90 - 115	6	20
Thallium	ND		40.0	38.5		ug/L		95	94 - 115	3	20

Lab Sample ID: 280-196994-4 MS Matrix: Water Analysis Batch: 668581

Analysis Batch: 668581									Prep Batch: 668282
	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Arsenic	ND		40.0	38.5		ug/L		96	92 - 112
Barium	11		40.0	48.2		ug/L		94	92 - 117
Beryllium	ND		40.0	38.0		ug/L		95	87 - 118
Cadmium	ND	F1	40.0	37.5		ug/L		94	91 - 114
Chromium	ND		40.0	38.9		ug/L		95	91 - 114
Molybdenum	7.9		40.0	47.6		ug/L		99	84 - 117
Lead	ND		40.0	38.6		ug/L		95	95 - 116
Antimony	ND		40.0	39.2		ug/L		98	80 - 111
Selenium	46		40.0	85.2		ug/L		98	90 - 115
Thallium	ND		40.0	38.8		ug/L		97	94 - 115

Lab Sample ID: 280-196994-4 MSD **Matrix: Water** Analysis Batch: 668581

Analysis Daton. 000001									т тер Бе		JULUL
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	ND		40.0	38.1		ug/L		95	92 - 112	1	20
Barium	11		40.0	48.5		ug/L		95	92 - 117	1	20
Beryllium	ND		40.0	38.7		ug/L		97	87 - 118	2	20
Cadmium	ND	F1	40.0	35.9	F1	ug/L		90	91 - 114	4	20
Chromium	ND		40.0	38.9		ug/L		95	91 - 114	0	20
Molybdenum	7.9		40.0	48.8		ug/L		102	84 - 117	2	20
Lead	ND		40.0	39.7		ug/L		98	95 - 116	3	20
Antimony	ND		40.0	39.5		ug/L		99	80 - 111	1	20
Selenium	46		40.0	85.0		ug/L		97	90 - 115	0	20
Thallium	ND		40.0	39.4		ug/L		99	94 - 115	2	20

Job ID: 280-196994-1

Client Sample ID: 507188 CC_1

Client Sample ID: 507191 FC_3A

Prep Type: Total Recoverable

9/30/2024

Prep Batch: 668282

Client Sample ID: 507191 FC_3A

Prep Type: Total Recoverable

QC Association Summary

Job ID: 280-196994-1

Metals

Prep Batch: 668282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Bato
280-196994-1	507188 CC_1	Total Recoverable	Water	3005A	
280-196994-2	507189 FC_1	Total Recoverable	Water	3005A	
280-196994-3	507190 FC_2	Total Recoverable	Water	3005A	
280-196994-4	507191 FC_3A	Total Recoverable	Water	3005A	
280-196994-5	507192 FC_3B	Total Recoverable	Water	3005A	
280-196994-6	507193 EQUIP_BLK	Total Recoverable	Water	3005A	
280-196994-7	507194 SC_10	Total Recoverable	Water	3005A	
280-196994-8	507195 SC_11	Total Recoverable	Water	3005A	
280-196994-9	507196 SC_12	Total Recoverable	Water	3005A	
280-196994-10	507197 SC_13	Total Recoverable	Water	3005A	
280-196994-11	507198 SC_14	Total Recoverable	Water	3005A	
280-196994-12	507199 FIELD_DUP	Total Recoverable	Water	3005A	
MB 280-668282/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-668282/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-196994-1 MS	507188 CC_1	Total Recoverable	Water	3005A	
280-196994-1 MSD	507188 CC_1	Total Recoverable	Water	3005A	
280-196994-4 MS	507191 FC_3A	Total Recoverable	Water	3005A	
	507404 50 04	Total Recoverable	Water	3005A	
280-196994-4 MSD nalysis Batch: 668					
nalysis Batch: 668	581				Prop Bat
	581 Client Sample ID	Prep Type Total Recoverable	Matrix Water	Method	Prep Bat 6682
nalysis Batch: 668 Lab Sample ID 280-196994-1	581 Client Sample ID 507188 CC_1	Prep Type Total Recoverable	Matrix Water	Method 6020B	6682
nalysis Batch: 668 Lab Sample ID 280-196994-1 280-196994-2	581 <u>Client Sample ID</u> 507188 CC_1 507189 FC_1	Ргер Туре	Matrix	Method	6682
nalysis Batch: 668 Lab Sample ID 280-196994-1	581 Client Sample ID 507188 CC_1 507189 FC_1 507190 FC_2	Prep Type Total Recoverable Total Recoverable	Matrix Water Water	Method 6020B 6020B	6682 6682 6682
nalysis Batch: 668 Lab Sample ID 280-196994-1 280-196994-2 280-196994-3 280-196994-4	581 Client Sample ID 507188 CC_1 507189 FC_1 507190 FC_2 507191 FC_3A	Prep Type Total Recoverable Total Recoverable Total Recoverable	Matrix Water Water Water	Method 6020B 6020B 6020B 6020B 6020B	6682 6682 6682 6682 6682
nalysis Batch: 6688 Lab Sample ID 280-196994-1 280-196994-2 280-196994-3	581 Client Sample ID 507188 CC_1 507189 FC_1 507190 FC_2 507191 FC_3A 507192 FC_3B	Prep Type Total Recoverable Total Recoverable Total Recoverable Total Recoverable	Matrix Water Water Water Water	Method 6020B 6020B 6020B	6682 6682 6682 6682 6682 6682
nalysis Batch: 668 Lab Sample ID 280-196994-1 280-196994-2 280-196994-3 280-196994-4 280-196994-5	581 Client Sample ID 507188 CC_1 507189 FC_1 507190 FC_2 507191 FC_3A 507192 FC_3B 507193 EQUIP_BLK	Prep TypeTotal RecoverableTotal RecoverableTotal RecoverableTotal RecoverableTotal RecoverableTotal RecoverableTotal Recoverable	Matrix Water Water Water Water Water	Method 6020B 6020B 6020B 6020B 6020B 6020B 6020B	6682 6682 6682 6682 6682 6682
nalysis Batch: 668 Lab Sample ID 280-196994-1 280-196994-2 280-196994-3 280-196994-4 280-196994-5 280-196994-6	581 Client Sample ID 507188 CC_1 507189 FC_1 507190 FC_2 507191 FC_3A 507192 FC_3B 507193 EQUIP_BLK 507194 SC_10	Prep Type Total Recoverable Total Recoverable Total Recoverable Total Recoverable Total Recoverable Total Recoverable	Matrix Water Water Water Water Water Water	Method 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B	6682 6682 6682 6682 6682 6682 6682 6682
nalysis Batch: 6684 280-196994-1 280-196994-2 280-196994-3 280-196994-4 280-196994-5 280-196994-6 280-196994-7	581 Client Sample ID 507188 CC_1 507189 FC_1 507190 FC_2 507191 FC_3A 507192 FC_3B 507193 EQUIP_BLK	Prep TypeTotal RecoverableTotal Recoverable	Matrix Water Water Water Water Water Water Water	Method 6020B	6682 6682 6682 6682 6682 6682 6682 6682
nalysis Batch: 668 Lab Sample ID 280-196994-1 280-196994-2 280-196994-3 280-196994-4 280-196994-5 280-196994-6 280-196994-7 280-196994-8	Client Sample ID 507188 CC_1 507189 FC_1 507190 FC_2 507191 FC_3A 507192 FC_3B 507193 EQUIP_BLK 507194 SC_10 507195 SC_11	Prep TypeTotal RecoverableTotal Recoverable	Matrix Water Water Water Water Water Water Water Water Water	Method 6020B	6682 6682 6682 6682 6682 6682 6682 6682
nalysis Batch: 668 Lab Sample ID 280-196994-1 280-196994-2 280-196994-3 280-196994-4 280-196994-5 280-196994-6 280-196994-7 280-196994-8 280-196994-9	Client Sample ID 507188 CC_1 507189 FC_1 507190 FC_2 507191 FC_3A 507192 FC_3B 507193 EQUIP_BLK 507195 SC_11 507196 SC_12 507197 SC_13	Prep TypeTotal RecoverableTotal Recoverable	Matrix Water Water Water Water Water Water Water Water Water Water	Method 6020B	6682 6682 6682 6682 6682 6682 6682 6682
nalysis Batch: 668 Lab Sample ID 280-196994-1 280-196994-2 280-196994-3 280-196994-4 280-196994-5 280-196994-6 280-196994-7 280-196994-8 280-196994-9 280-196994-10	Client Sample ID 507188 CC_1 507189 FC_1 507190 FC_2 507191 FC_3A 507192 FC_3B 507193 EQUIP_BLK 507195 SC_11 507196 SC_12	Prep TypeTotal RecoverableTotal Recoverable	Matrix Water Water Water Water Water Water Water Water Water Water Water	Method 6020B	6682 6682 6682 6682 6682 6682 6682 6682
nalysis Batch: 668 Lab Sample ID 280-196994-1 280-196994-2 280-196994-3 280-196994-4 280-196994-5 280-196994-6 280-196994-7 280-196994-8 280-196994-9 280-196994-10 280-196994-11	Client Sample ID 507188 CC_1 507189 FC_1 507190 FC_2 507191 FC_3A 507192 FC_3B 507193 EQUIP_BLK 507195 SC_11 507196 SC_12 507197 SC_13 507198 SC_14	Prep TypeTotal RecoverableTotal Recoverable	Matrix Water Water Water Water Water Water Water Water Water Water Water Water	Method 6020B 6020B	6682 6682 6682 6682 6682 6682 6682 6682
nalysis Batch: 6688 Lab Sample ID 280-196994-1 280-196994-2 280-196994-3 280-196994-4 280-196994-5 280-196994-6 280-196994-7 280-196994-8 280-196994-9 280-196994-10	Client Sample ID 507188 CC_1 507189 FC_1 507190 FC_2 507191 FC_3A 507192 FC_3B 507193 EQUIP_BLK 507194 SC_10 507195 SC_11 507197 SC_13 507198 SC_14 507199 FIELD_DUP	Prep Type Total Recoverable Total Recoverable	Matrix Water Water Water Water Water Water Water Water Water Water Water Water Water	Method 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B	6682 6682 6682 6682 6682 6682 6682 6682
nalysis Batch: 668 Lab Sample ID 280-196994-1 280-196994-2 280-196994-3 280-196994-4 280-196994-5 280-196994-6 280-196994-7 280-196994-8 280-196994-9 280-196994-10 280-196994-12 WB 280-668282/1-A	581 Client Sample ID 507188 CC_1 507189 FC_1 507190 FC_2 507191 FC_3A 507192 FC_3B 507193 EQUIP_BLK 507194 SC_10 507195 SC_11 507196 SC_12 507197 SC_13 507198 SC_14 507199 FIELD_DUP Method Blank	Prep TypeTotal RecoverableTotal Recoverable	Matrix Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water	Method 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B	6682 6682 6682 6682 6682 6682 6682 6682
nalysis Batch: 668 280-196994-1 280-196994-2 280-196994-2 280-196994-3 280-196994-4 280-196994-5 280-196994-6 280-196994-7 280-196994-8 280-196994-9 280-196994-10 280-196994-12 MB 280-668282/1-A _CS 280-668282/2-A	Client Sample ID 507188 CC_1 507189 FC_1 507190 FC_2 507191 FC_3A 507192 FC_3B 507193 EQUIP_BLK 507195 SC_11 507196 SC_12 507197 SC_13 507199 FIELD_DUP Method Blank Lab Control Sample	Prep TypeTotal RecoverableTotal Re	Matrix Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water	Method 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B	
nalysis Batch: 668 Lab Sample ID 280-196994-1 280-196994-2 280-196994-3 280-196994-3 280-196994-4 280-196994-5 280-196994-6 280-196994-7 280-196994-8 280-196994-9 280-196994-10 280-196994-11 280-196994-12 MB 280-668282/1-A LCS 280-668282/2-A 280-196994-1 MS	Client Sample ID 507188 CC_1 507189 FC_1 507190 FC_2 507191 FC_3A 507192 FC_3B 507193 EQUIP_BLK 507195 SC_11 507196 SC_12 507197 SC_13 507199 FIELD_DUP Method Blank Lab Control Sample 507188 CC_1	Prep TypeTotal RecoverableTotal Re	Matrix Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water	Method 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B 6020B	6682 6682 6682 6682 6682 6682 6682 6682

Client Sample ID: 507 Date Collected: 09/17/24 1 Date Received: 09/20/24 09

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	668282	09/23/24 15:06	KLG	EET DEN
Total Recoverable	Analysis	6020B		1			668581	09/24/24 21:08	LMT	EET DEN
Client Sample	D: 507	189 FC_1					La	b Sample II	D: 280-	196994-
Date Collected: Date Received:								-	Ма	trix: Wate
-	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
					50 1			09/23/24 15:06	KLG	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	668282	09/23/24 15:06	RLG	EET DEN
Total Recoverable Total Recoverable	Analysis	6020B 190 FC_2		1	50 mL	50 mL	668581	09/24/24 15:06 09/24/24 21:19 b Sample II	LMT D: 280-	EET DEN
Total Recoverable	Analysis D: 507 09/17/24 1	6020B 190 FC_2 0:35		1 Dil	50 mL	50 mL	668581	09/24/24 21:19	LMT D: 280-	EET DEN
Total Recoverable Total Recoverable Client Sample Date Collected:	Analysis ID: 507 09/17/24 1 09/20/24 0	6020B 190 FC_2 0:35 9:10	Run				668581 La	09/24/24 21:19 b Sample II	LMT D: 280-	EET DEN
Total Recoverable Total Recoverable Client Sample Date Collected: Date Received:	Analysis ID: 507 09/17/24 1 09/20/24 0 Batch	6020B 190 FC_2 0:35 9:10 Batch	Run	Dil	Initial	Final	668581 La Batch	09/24/24 21:19 b Sample II Prepared	LMT D: 280- Ma	EET DEN 196994- trix: Wate Lab
Total Recoverable Total Recoverable Client Sample Date Collected: Date Received: Prep Type	Analysis a ID: 507 09/17/24 1 09/20/24 0 Batch Type	6020B 190 FC_2 0:35 9:10 Batch Method	Run	Dil	Initial Amount	Final Amount	668581 La Batch Number	09/24/24 21:19 b Sample II Prepared or Analyzed	LMT D: 280- Ma <u>Analyst</u> KLG	EET DEN 196994 trix: Wat - Lab EET DEN
Total Recoverable Total Recoverable Client Sample Date Collected: Date Received: Prep Type Total Recoverable Total Recoverable	Analysis a ID: 507 09/17/24 1 09/20/24 0 Batch Type Prep Analysis	6020B 190 FC_2 0:35 9:10 Batch Method 3005A 6020B	Run	Dil Factor	Initial Amount	Final Amount	668581 La Batch Number 668282 668581	09/24/24 21:19 b Sample II Prepared or Analyzed 09/23/24 15:06	LMT D: 280- Ma Analyst KLG LMT	EET DEN 196994 trix: Wate EET DEN EET DEN
Total Recoverable Total Recoverable Client Sample Date Collected: Date Received: Date Received: Total Recoverable Total Recoverable Client Sample Date Collected:	Analysis ID: 507 09/17/24 1 09/20/24 0 Batch Type Prep Analysis ID: 507 09/18/24 0	6020B 190 FC_2 0:35 9:10 Batch Method 3005A 6020B 191 FC_3A 8:20	<u>Run</u>	Dil Factor	Initial Amount	Final Amount	668581 La Batch Number 668282 668581	09/24/24 21:19 b Sample II Prepared or Analyzed 09/23/24 15:06 09/24/24 21:22	LMT D: 280- Ma <u>Analyst</u> KLG LMT D: 280-	EET DEN 196994- trix: Wate Lab EET DEN EET DEN EET DEN 196994-
Total Recoverable Total Recoverable Client Sample Date Collected: Date Received: Prep Type Total Recoverable	Analysis ID: 507 09/17/24 1 09/20/24 0 Batch Type Prep Analysis ID: 507 09/18/24 0	6020B 190 FC_2 0:35 9:10 Batch Method 3005A 6020B 191 FC_3A 8:20	Run	Dil Factor	Initial Amount	Final Amount	668581 La Batch Number 668282 668581	09/24/24 21:19 b Sample II Prepared or Analyzed 09/23/24 15:06 09/24/24 21:22	LMT D: 280- Ma <u>Analyst</u> KLG LMT D: 280-	EET DEN 196994- trix: Wate EET DEN EET DEN
Total Recoverable Total Recoverable Client Sample Date Collected: Date Received: Prep Type Total Recoverable Total Recoverable Client Sample Date Collected:	Analysis ID: 507 09/17/24 1 09/20/24 0 Batch Type Prep Analysis ID: 507 09/18/24 0 09/20/24 0	6020B 190 FC_2 0:35 9:10 Batch Method 3005A 6020B 191 FC_3A 8:20 9:10	Run Run	Dil Factor 1	Initial Amount 50 mL	Final Amount 50 mL	668581 La Batch Number 668282 668581 La	09/24/24 21:19 b Sample II Prepared or Analyzed 09/23/24 15:06 09/24/24 21:22 b Sample II	LMT D: 280- Ma <u>Analyst</u> KLG LMT D: 280-	EET DEN 196994- trix: Wate Lab EET DEN EET DEN EET DEN 196994-
Total Recoverable Total Recoverable Client Sample Date Collected: Date Received: Prep Type Total Recoverable Total Recoverable Client Sample Date Collected: Date Received:	Analysis i ID: 507 09/17/24 1 09/20/24 0 Batch Type Prep Analysis i ID: 507 09/18/24 0 09/20/24 0 Batch	6020B 190 FC_2 0:35 9:10 Batch Method 3005A 6020B 191 FC_3A 8:20 9:10 Batch		Dil Factor 1 Dil	Initial Amount 50 mL	Final Amount 50 mL	668581 La Batch Number 668282 668581 La Batch	09/24/24 21:19 b Sample II Prepared or Analyzed 09/23/24 15:06 09/24/24 21:22 b Sample II Prepared	LMT D: 280- Ma Analyst KLG LMT D: 280- Ma	EET DEN 196994 trix: Wate EET DEN EET DEN 196994 trix: Wate

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	668282	09/23/24 15:06	KLG	EET DEN
Total Recoverable	Analysis	6020B		1			668581	09/24/24 21:35	LMT	EET DEN

Lab Chronicle

Client Sample ID: 507193 EQUIP BLK Date Collected: 09/18/24 09:56 Date Received: 09/20/24 09:10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	668282	09/23/24 15:06	KLG	EET DEN
Total Recoverable	Analysis	6020B		1			668581	09/24/24 21:38	LMT	EET DEN

Matrix: Water

Lab Sample ID: 280-196994-6

Prep Type

Prep Type

Total Recoverable

Total Recoverable

Total Recoverable

Total Recoverable

Client Sample ID: 507194 SC_10 Date Collected: 09/18/24 16:50 Date Received: 09/20/24 09:10

Batch

Type

Prep

Client Sample ID: 507195 SC_11

Batch

Туре

Prep

Client Sample ID: 507196 SC_12

Analysis

Date Collected: 09/18/24 15:30

Date Received: 09/20/24 09:10

Analysis

Batch

Method

3005A

6020B

Batch

Method

3005A

6020B

Analyst

KLG

Lab Sample ID: 280-196994-8

Lab Sample ID: 280-196994-7

Prepared

or Analyzed

09/23/24 15:06

Prepared

or Analyzed

09/23/24 15:06 KLG

09/24/24 21:40 LMT

Batch

Number

668282

668581

Batch

Number

668282

668581

Final

Amount

50 mL

Final

Amount

50 mL

	5
	8
	9

31 09/24/24 21:42 LMT EET DEN Lab Sample ID: 280-196994-9 Matrix: Water

Lab Sample ID: 280-196994-10

Lab Sample ID: 280-196994-11

Lab Sample ID: 280-196994-12

Analyst

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Lab

EET DEN

EET DEN

Matrix: Water

Lab

EET DEN

Date Collected: 09/18/24 14:20 Date Received: 09/20/24 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	668282	09/23/24 15:06	KLG	EET DEN
Total Recoverable	Analysis	6020B		1			668581	09/24/24 21:45	LMT	EET DEN

Lab Chronicle

Initial

Amount

50 mL

Initial

Amount

50 mL

Dil

1

Dil

1

Factor

Factor

Run

Run

Client Sample ID: 507197 SC_13 Date Collected: 09/18/24 13:08

Date Received: 09/20/24 09:10

Ргер Туре	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	668282	09/23/24 15:06	KLG	EET DEN
Total Recoverable	Analysis	6020B		1			668581	09/24/24 21:47	LMT	EET DEN

Client Sample ID: 507198 SC_14 Date Collected: 09/18/24 11:45

Date Received: 09/20/24 09:10

Ргер Туре	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	668282	09/23/24 15:06	KLG	EET DEN
Total Recoverable	Analysis	6020B		1			668581	09/24/24 21:49	LMT	EET DEN

Client Sample ID: 507199 FIELD_DUP Date Collected: 09/18/24 00:00 Date Received: 09/20/24 09:10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	668282	09/23/24 15:06	KLG	EET DEN
Total Recoverable	Analysis	6020B		1			668581	09/24/24 21:51	LMT	EET DEN

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Client: Colorado Springs Utilities

Login Number: 196994 List Number: 1 Creator: Naylis, Patrick J

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

List Source: Eurofins Denver

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Chain of Custody Record

Environment Test ng America 🛟 eurofins

Eurofins Environment Testing America

Arvada, CO 80002-4517 phone 303.736.0100 fax 303.431.7171

RCRA Regulatory Program: JDW JNPDES

Other:

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	Project Manager: Wendy Asay	ager: Wei	ndy Asay			-						T
Client Contact	Email: wasay@csu.org	@csu.org			S	ite Coi	Site Contact: Wendy Asay	ndy Asay	Date:		of cocs	- 1
Colorado Springs Utilities	Tel/Fax: 719-668-4603	-668-4603				ab Cor	ntact: She	Lab Contact: Shelby Turner	Carrier:		TALS Project #:	
701 E. Las Vegas St.	◄	nalysis Tu	Analysis Turnaround Time	Time							Sampler:	
Colorado Springs, CO 80903	CALENDAR DAYS	r days	- WOR	WORKING DAYS) 'p:				For Lab Use Only:	
719-668-4603	TAT	TAT if different from Below	m Below								Walk-in Client:	
(xxx) xxx-xxxx FAX	[7]	2 w	2 weeks			N					Lab Sampling:	
Project Name: CCR Landfill		1 w	1 week		<u> </u>	(X)	°8 '					
Site:	_	2 di	2 days) D			280-196994 Chain of Custody	stody	Job / SDG No.:	
P O #		1 day	λε		oju	SM /				-		
	Sample	Sample	Sample Type (C=Comp,		ية # (iltered Sam erform MS	0208 Total b, Mo, Se a					
Sample Identification	Late	eme	G=Grab)	Matrix		а					Sample Specific Notes.	Π
507188 CC_1	9/17/24	13:52	U	МÖ	-	≻ z	×				Preserved with HNO3	Т
507189 FC_1	9/17/24	09:32	ŋ	GW	-	z	×				Preserved with HNO3	
507190 FC_2	9/17/24	10:35	υ	ъ	-	z	×				Preserved with HNO3	
507191 FC_3A	9/18/24	08:20	U	ВW	-	≻ z	×				Preserved with HNO3	
507192 FC_3B	9/18/24	09:28	υ	МÖ	-	z	×				Preserved with HNO3	
507193 EQUIP_BLK	9/18/24	09:56	υ	GW	-	z	×				Preserved with HNO3	
507194 SC_10	9/18/24	16:50	υ	ВW	-	z	×				Preserved with HNO3	
507195 SC_11	9/18/24	15:30	U	δ	-	z	×				Preserved with HNO3	
507196 SC_12	9/18/24	14:20	U	МÖ	-	z	×				Preserved with HNO3	
507197 SC_13	9/18/24	13:08	υ	GW	-	z	×				Preserved with HNO3	I
507198 SC_14	9/18/24	11:45	ი	GW	1	z	×				Preserved with HNO3	
507199 FIELD_DUP	9/18/24	00:00	ი	GW	-	z	×				Preserved with HNO3	
Preservation Used: 1= Ice, 2= HCI; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other	HNO3; 5=Na(OH; 6= Oth	er									
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.	Please List mple.	any EPA W	/aste Code:	s for the s	ample i		ple Dispo	sal (A fee may be	assessed if	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	onger than 1 month)	
J Non-Hazard Hammable Skin Irritant	itant 🗌 Poison B			nwa			Return to Client		Disposal by Lab	Lab Archive for	Months	Т
Special Instructions/QC Requirements & Comments: Use lowest dilution possibl	s: Use lowes	t dilution p	oossible if	dilution	s neede	d. RL	e if dilution is needed. RL reporting only	-	R.S.T.C	15,5Tw (20-)		
Custody Seals Intact:	Custody Seal No.	al No.:						Cooler Temp. (°C): Obs'd	: Obs'd:	Corr'd:	Therm ID No.:	Т
Relinquished by:	Company:	4	Uthinds	Date/Time {\/4/24	е: 	Rece	Received by:	-		Company:	Date/Time:	
Relinquished by:	Company:			Date/Time		Rece	Received by	50		Company)	Rate/Time: 4 09/00	
Relinquished by:	Company:			Date/Time:	:9	Rece	ived M La	Received M Laboratory by:		Company:	Date/Time:	

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October 16, 2024

Report to: Wendy Asay Colorado Springs Utilities 701 E. Las Vegas Colorado Springs, CO 80903 Bill to: Wendy Asay Colorado Springs Utilities 701 E. Las Vegas Colorado Springs, CO 80903

Project ID: ACZ Project ID: L90679

Wendy Asay:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 05, 2024. This project has been assigned to ACZ's project number, L90679. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L90679. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 15, 2024. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Madeleine Murray Madeleine Murray has reviewed and approved this report.







Project ID: Sample ID: 507191 FC_3A

ACZ Sample ID: L90679-01 Date Sampled: 09/18/24 08:20 Date Received: 10/05/24 Sample Matrix: Waste Water

Metals Analysis									
Parameter	EPA Method	Dilution	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	EPA 1631E	1	1.60		ng/L	0.3	1	10/14/24 13:29	scp



Project ID: Sample ID: 507192 FC_3B

ACZ Sample ID: **L90679-02** Date Sampled: 09/18/24 09:28 Date Received: 10/05/24 Sample Matrix: Waste Water

Metals Analysis									
Parameter	EPA Method	Dilution	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	EPA 1631E	1	6.51		ng/L	0.3	1	10/14/24 13:42	scp



Inorganic Analytical Results

Colorado Springs Utilities

Project ID: Sample ID: 507193 EQUIP_BLK

ACZ Sample ID: L90679-03 Date Sampled: 09/18/24 09:56 Date Received: 10/05/24 Sample Matrix: Waste Water

Metals Analysis									
Parameter	EPA Method	Dilution	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	EPA 1631E	1	<0.3	U	ng/L	0.3	1	10/14/24 13:47	scp



Project ID: Sample ID: 507194 SC_10

ACZ Sample ID: L90679-04 Date Sampled: 09/18/24 16:50 Date Received: 10/05/24 Sample Matrix: Waste Water

Metals Analysis									
Parameter	EPA Method	Dilution	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	EPA 1631E	1	5.88		ng/L	0.3	1	10/14/24 13:51	scp



Project ID: Sample ID: 507195 SC_11

ACZ Sample ID: L90679-05 Date Sampled: 09/18/24 15:30 Date Received: 10/05/24 Sample Matrix: Waste Water

Metals Analysis									
Parameter	EPA Method	Dilution	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	EPA 1631E	1	6.19		ng/L	0.3	1	10/14/24 13:56	scp



Project ID: Sample ID: 507196 SC_12

ACZ Sample ID: L90679-06 Date Sampled: 09/18/24 14:20 Date Received: 10/05/24 Sample Matrix: Waste Water

Metals Analysis									
Parameter	EPA Method	Dilution	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	EPA 1631E	1	2.35		ng/L	0.3	1	10/14/24 14:00	scp



Project ID: Sample ID: 507197 SC_13

ACZ Sample ID: **L90679-07** Date Sampled: 09/18/24 13:08 Date Received: 10/05/24 Sample Matrix: Waste Water

Metals Analysis									
Parameter	EPA Method	Dilution	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	EPA 1631E	1	1.55		ng/L	0.3	1	10/14/24 14:14	scp



Project ID: Sample ID: 507198 SC_14

ACZ Sample ID: L90679-08 Date Sampled: 09/18/24 11:45 Date Received: 10/05/24 Sample Matrix: Waste Water

Metals Analysis									
Parameter	EPA Method	Dilution	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	EPA 1631E	1	1.07		ng/L	0.3	1	10/14/24 14:18	scp



Project ID: Sample ID: 507199 FIELD_DUP

ACZ Sample ID: **L90679-09** Date Sampled: 09/18/24 00:00 Date Received: 10/05/24 Sample Matrix: Waste Water

Metals Analysis									
Parameter	EPA Method	Dilution	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	EPA 1631E	1	1.53		ng/L	0.3	1	10/14/24 14:22	scp



Inorganic Reference

Batch	Explanations A distinct set of samples analyzed at a specific time		
Found	Value of the QC Type of interest Upper limit for RPD, in %.		
Limit Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)		
MDL		loss smitted or a	gual to the DOL (and commant #5)
MDL	Method Detection Limit. Same as Minimum Reporting Limit ur Allows for instrument and annual fluctuations.		qual to the FQE (see comment #3).
PCN/SCN	A number assigned to reagents/standards to trace to the man	Ifacturer's certific	ate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "		
	True Value of the Control Sample or the amount added to the		
Rec	Recovered amount of the true value or spike added, in % (exc	•	/Ka)
RPD	Relative Percent Difference, calculation used for Duplicate QC		
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)	51	
Sample	Value of the Sample of interest		
Sample Typ			Laboratory Control Comple - Water Duplicat
AS	Analytical Spike (Post Digestion)	LCSWD	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	LFB	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	LFM	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	LFMD	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate Initial Calibration Blank	LRB MS	Laboratory Reagent Blank
ICB ICV	Initial Calibration Blank	MS MSD	Matrix Spike
ICSAB		PBS	Matrix Spike Duplicate
ICSAD	Inter-element Correction Standard - A plus B solutions	PBS	Prep Blank - Soil
1000	Laboraton Control Sample Sail		Drop Plank Water
LCSS	Laboratory Control Sample - Soil	PBW	Prep Blank - Water Bractical Quantitation Varification standard
LCSSD	Laboratory Control Sample - Soil Duplicate	PQV	Practical Quantitation Verification standard
			•
LCSSD LCSW	Laboratory Control Sample - Soil Duplicate Laboratory Control Sample - Water be Explanations	PQV SDL	Practical Quantitation Verification standard Serial Dilution
LCSSD LCSW Sample Typ Blanks	Laboratory Control Sample - Soil Duplicate Laboratory Control Sample - Water De Explanations Verifies that there is no or minimal co	PQV SDL ntamination in th	Practical Quantitation Verification standard Serial Dilution e prep method or calibration procedure.
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https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf

REP001.03.15.02

AGZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

COSPGUTL

ACZ Project ID: L90679

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Mercury, total			EPA 1631	Ξ									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG597988													
WG597988ICV	ICV	09/24/24 12:38	HG240905-4	10		11.3	ng/L	113	79	121			
WG597988ICB	ICB	09/24/24 12:43				U	ng/L		-0.501	0.501			
WG599192													
WG599192CCV1	CCV	10/14/24 12:17	HG240905-4	10		10.1	ng/L	101	76.5	123.4			
WG599192CCB1	ССВ	10/14/24 12:22				U	ng/L		-0.501	0.501			
WG599192PQV	PQV	10/14/24 12:26	HG240905-6	1		.86	ng/L	86	70	130			
WG599192LFB1	LFB	10/14/24 12:31	HG240905-5	2		1.91	ng/L	96	71	125			
WG599192CCV2	CCV	10/14/24 13:11	HG240905-4	10		9.54	ng/L	95	76.5	123.4			
WG599192CCB2	CCB	10/14/24 13:15				U	ng/L		-0.501	0.501			
L90679-01MS	MS	10/14/24 13:33	HG240905-5	2	1.6	3.03	ng/L	72	71	125			
L90679-01MSD	MSD	10/14/24 13:38	HG240905-5	2	1.6	3.24	ng/L	82	71	125	7	24	
WG599192CCV3	CCV	10/14/24 14:05	HG240905-4	10		9.75	ng/L	98	76.5	123.4			
WG599192CCB3	CCB	10/14/24 14:09				U	ng/L		-0.501	0.501			
L90680-01MS	MS	10/14/24 14:31	HG240905-5	2	4.9	6.48	ng/L	79	71	125			
L90680-01MSD	MSD	10/14/24 14:36	HG240905-5	2	4.9	6.4	ng/L	75	71	125	1	24	
WG599192LFB2	LFB	10/14/24 14:40	HG240905-5	2		1.9	ng/L	95	71	125			
WG599192CCV4	CCV	10/14/24 14:58	HG240905-4	10		9.88	ng/L	99	76.5	123.4			
WG599192CCB4	CCB	10/14/24 15:03				U	ng/L		-0.501	0.501			
WG599192CCV5	CCV	10/14/24 15:52	HG240905-4	10		10.1	ng/L	101	76.5	123.4			
WG599192CCB5	CCB	10/14/24 15:56				U	ng/L		-0.501	0.501			
WG599192CCV6	CCV	10/14/24 16:45	HG240905-4	10		9.71	ng/L	97	76.5	123.4			
WG599192CCB6	CCB	10/14/24 16:50				U	ng/L		-0.501	0.501			
WG599192CCV7	CCV	10/15/24 11:14	HG240905-4	10		8.13	ng/L	81	76.5	123.4			
WG599192CCB7	CCB	10/15/24 11:18				U	ng/L		-0.501	0.501			
WG599192CCV8	CCV	10/15/24 12:07	HG240905-4	10		9.31	ng/L	93	76.5	123.4			
WG599192CCB8	CCB	10/15/24 12:12				U	ng/L		-0.501	0.501			



Inorganic Extended Qualifier Report

Colorado Springs Utilities

ACZ ID WORKNUM PARAMETER

METHOD

QUAL DESCRIPTION

ACZ Project ID: L90679

No extended qualifiers associated with this analysis



ACZ Project ID: L90679

No certification qualifiers associated with this analysis

REPAD.05.06.05.01

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493			nple eipt:	
	Project ID			L90679
	Received)5/202	4 09:54
	ceived By		40	1010004
Receipt Verification	te Printeo	1:	10	/8/2024
	YE	ES	NO	NA
1) Is a foreign soil permit included for applicable samples?				Х
2) Is the Chain of Custody form or other directive shipping papers present?)	K		
3) Does this project require special handling procedures such as CLP protocol?			Х	
4) Are any samples NRC licensable material?				Х
5) If samples are received past hold time, proceed with requested short hold time analyses?)	κ		
6) Is the Chain of Custody form complete and accurate?)	K		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the sample	s?		Х	
Samples/Containers				
	YE	ES	NO	NA
8) Are all containers intact and with no leaks?	>	K		
9) Are all labels on containers and are they intact and legible?)	K		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?)	K		
11) For preserved bottle types, was the pH checked and within limits? 1				Х
12) Is there sufficient sample volume to perform all requested work?)	K		
13) Is the custody seal intact on all containers?				Х
14) Are samples that require zero headspace acceptable?				Х
15) Are all sample containers appropriate for analytical requirements?)	K		
16) Is there an Hg-1631 trip blank present?			Х	
17) Is there a VOA trip blank present?				Х
18) Were all samples received within hold time?	>	×		
	NA ii	ndicates	Not Ap	plicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
NA43124	18.9	NA	15	Yes

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.



Colorado Springs Utilities	ACZ Project ID:	L90679
	Date Received:	10/05/2024 09:54
	Received By:	
	Date Printed:	10/8/2024
¹ The preservation of the following bottle types is not checked a	at sample receipt: Orange (oil and	

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACCredited Environmen Testing	2773 Downhill Drive tai Steamboat Springs, CO (970) 879-6590	80487	90	679		CHAIN o	f CUSTOD	Y
Report to:								
Name: Wendy Asay			Addre	ess: 701 E	Las Ve	egas St.		
Company: Colorado Spring	s Utilities	_	Colo	rado Sprir	ngs, CO	80903		
E-mail; wasay@csu.org			Telep	hone: 719	668-460	03		
Copy of Report to:								
Name: Wendy Asay			E-ma	il: wasay	@csu.o	org		
Company: Colorado Spring	s Utilities			hone: 719	-	-		
Invoice to:								
Name: Wendy Asay			Addre	ess: 701 E	Las V	enas St		
Company: Colorado Spring	s Utilities	-		rado Sprii		-		
E-mail: wasay@csu.org		-		hone: 719	- · ·			
				<u></u>		<u>.</u>		
Copy of Invoice to:				704 5	1			
Name: Wendy Asay Company: Colorado Spring	e l Itilitios	-		ess: 701 E				
E-mail: wasay@csu.org		-		rado Sprir				
E-mail: wasay@csu.org	ing time (HT) or if incufficien			hone: 719		10	YES 🖌	
analysis before expiration, sha				-			NO YES	
If "NO" then ACZ will contact client for further in		d, ACZ will pro		he requested anal		NT is expired, and data	will be qualified	
Are samples for SDWA Compli If yes, please include state fon	•	o POL for	Yes		No			
Sampler's Name:			State		7:-		71	
*Sampler's Signature:		st to the authen	licity and v	alidity of this sam	ple. I underst		Time Zone Isisbeling the time/date/loca	
PROJECT INFORMATION		ring with the sa	mpre in any		-	numishable by State Law TED (attach list of L		
Quote #:			ø	1)				
P0#:			je L	V 163 [°]				
Reporting state for compliance te	esting:	·····	Containers	EP,				
Check box if samples include NR			ŭ	Mercury (EPA				
SAMPLE IDENTIFICATIO	N DATE:TIME	Matrix		Mer				
507191 FC_3A	9/18/2024 08:20	GW	1					
507192 FC_3B	9/18/2024 09:28	GW	1	\checkmark				
507193 EQUIP_BLK	9/18/2024 09:56	GW	1	$\overline{\mathbf{A}}$				
507194 SC_10	9/18/2024 16:50	GW	1	\checkmark				
507195 SC_11	9/18/2024 15:30	GW	1	\checkmark				
507196 SC_12	9/18/2024 14:20	GW	1					
507197 SC_13	9/18/2024 13:08	GW	1	\checkmark				
507198 SC_14	9/18/2024 11:45	GW	1	\checkmark				
507199 FIELD_DUP	9/18/2024 00:00	GW	1	\checkmark				
Matrix SW (Surface Water)	GW (Ground Water) · WW (Waste	e Water) · D	W (Drini	king Water)	SL (Sludge	e) · SO (Soil) · OL	(Oil) · Other (Specify)	
REMARKS								
Past data on most	t sites between N	D and	l 20r	ng/L.				
Perform MS/MSD	on sample 50719	91 FC	_3A	•				
Pleas	e refer to ACZ's terms & cor	nditions lo	cated	on the reve	erse side	of this COC.		
RELINQUISHED					CEVIED		DATE: TIN	лE
chilly Julian	10/2/24	11:00	11				10 3/24	
			1				24.59	
+			1					

Revision #: 2 White - Return with sample. Yellow - Retain for your records.

Serge Chain of Custo

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October 16, 2024

Report to: Wendy Asay Colorado Springs Utilities 701 E. Las Vegas Colorado Springs, CO 80903 Bill to: Wendy Asay Colorado Springs Utilities 701 E. Las Vegas Colorado Springs, CO 80903

Project ID: ACZ Project ID: L90680

Wendy Asay:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 05, 2024. This project has been assigned to ACZ's project number, L90680. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L90680. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 15, 2024. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Madeleine Murray Madeleine Murray has reviewed and approved this report.







Project ID: Sample ID: 507188 CC_1

ACZ Sample ID: L90680-01 Date Sampled: 09/17/24 13:52 Date Received: 10/05/24 Sample Matrix: Waste Water

Metals Analysis									
Parameter	EPA Method	Dilution	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	EPA 1631E	1	4.90		ng/L	0.3	1	10/14/24 14:27	scp



Project ID: Sample ID: 507189 FC_1

ACZ Sample ID: L90680-02 Date Sampled: 09/17/24 09:32 Date Received: 10/05/24 Sample Matrix: Waste Water

Metals Analysis									
Parameter	EPA Method	Dilution	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	EPA 1631E	1	1.84		ng/L	0.3	1	10/14/24 14:45	scp



Project ID: Sample ID: 507190 FC_2

ACZ Sample ID: L90680-03 Date Sampled: 09/17/24 10:35 Date Received: 10/05/24 Sample Matrix: Waste Water

Metals Analysis									
Parameter	EPA Method	Dilution	Result	Qual XQ	Units	MDL	PQL	Date	Analyst
Mercury, total	EPA 1631E	1	2.18		ng/L	0.3	1	10/14/24 14:49	scp



Inorganic Reference

Batch	Explanations		
	A distinct set of samples analyzed at a specific time		
Found Limit	Value of the QC Type of interest Upper limit for RPD, in %.		
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)		
MDL	Method Detection Limit. Same as Minimum Reporting Limit ur	loss omittad or a	gual to the POL (see comment #5)
NDL	Allows for instrument and annual fluctuations.		
PCN/SCN	A number assigned to reagents/standards to trace to the man	ufacturer's certific	rate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term		
QC	True Value of the Control Sample or the amount added to the		
Rec	Recovered amount of the true value or spike added, in % (exc		u/Ka)
RPD	Relative Percent Difference, calculation used for Duplicate QC		y · · · · · · · · · · · · · · · · · · ·
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)	51	
Sample	Value of the Sample of interest		
Sample Typ			Loboratory Control Comple Water Duplicat
AS	Analytical Spike (Post Digestion)	LCSWD LFB	Laboratory Control Sample - Water Duplicate
ASD CCB	Analytical Spike (Post Digestion) Duplicate Continuing Calibration Blank	LFB LFM	Laboratory Fortified Blank
CCV	Continuing Calibration Blank	LFM	Laboratory Fortified Matrix Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	LFMD LRB	
ICB	Initial Calibration Blank	MS	Laboratory Reagent Blank Matrix Spike
ICV	Initial Calibration Dank	MS MSD	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	PBS	Prep Blank - Soil
ICSAD	-		•
1099	Laboratory Control Sample - Soil	PRW/	Pren Blank - Water
LCSS LCSSD	Laboratory Control Sample - Soil	PBW POV	Prep Blank - Water Practical Quantitation Verification standard
LCSSD	Laboratory Control Sample - Soil Duplicate	PQV	Practical Quantitation Verification standard
			•
LCSSD LCSW C Sample Typ	Laboratory Control Sample - Soil Duplicate Laboratory Control Sample - Water pe Explanations	PQV SDL	Practical Quantitation Verification standard Serial Dilution
LCSSD LCSW Sample Typ Blanks	Laboratory Control Sample - Soil Duplicate Laboratory Control Sample - Water pe Explanations Verifies that there is no or minimal co	PQV SDL	Practical Quantitation Verification standard Serial Dilution e prep method or calibration procedure.
LCSSD LCSW Sample Typ Blanks Control San	Laboratory Control Sample - Soil Duplicate Laboratory Control Sample - Water pe Explanations Verifies that there is no or minimal control of the method, Note: The second	PQV SDL ontamination in the	Practical Quantitation Verification standard Serial Dilution e prep method or calibration procedure. o procedure.
LCSSD LCSW Sample Typ Blanks Control San Duplicates	Laboratory Control Sample - Soil Duplicate Laboratory Control Sample - Water pe Explanations Verifies that there is no or minimal control of the method, Verifies the accuracy of the method, Verifies the precision of the instrume	PQV SDL ontamination in the including the prep nt and/or method	Practical Quantitation Verification standard Serial Dilution e prep method or calibration procedure. o procedure.
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LCSSD LCSW Sample Type Blanks Control Sam Duplicates Spikes/Forti Standard Z Qualifiers B H L U U Sthod Referent (1) (2) (3) (4) (5) Somments (1) (2)	Laboratory Control Sample - Soil Duplicate Laboratory Control Sample - Water pe Explanations Imples Verifies that there is no or minimal control for the precision of the instrume ified Matrix Determines sample matrix interferent Verifies the validity of the calibration. (Qual) Analyte concentration detected at a value between MDL and F Analyte concentration detected at a value between MDL and F Analysis exceeded method hold time. pH is a field test with and the material was analyzed for, but was not detected above the the associated value is either the sample quantitation limit or the associated value is either the sample quantitation limit or the the associated value is either the precent analysis of Water and EPA 600/R-93-100. Methods for the Determination of Inorganic EPA 600/R-93-100. Methods for the Determination of Metals is EPA SW-846. Test Methods for Evaluating Solid Waste. Standard Methods for the Examination of Water and Wasteward QC results calculated from raw data. Results may vary slightly Soil, Sludge, and Plant matrices for Inorganic analyses are reported on an "as	PQV SDL entamination in the including the prep int and/or method ces, if any. PQL. The associa is immediate hold pative threshold. Is level of the association is substances in n Environmental iter.	Practical Quantitation Verification standard Serial Dilution e prop method or calibration procedure. p procedure. to procedure. ted value is an estimated quantity. time. cociated value. tion limit. ch 1983. Environmental Samples, August 1993. Samples - Supplement I, May 1994. alues are used in the calculations. eight basis.

https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf

REP001.03.15.02

AGZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

COSPGUTL

ACZ Project ID: L90680

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Mercury, total			EPA 1631	Ξ									
ACZ ID	Туре	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG597988													
WG597988ICV	ICV	09/24/24 12:38	HG240905-4	10		11.3	ng/L	113	79	121			
WG597988ICB	ICB	09/24/24 12:43				U	ng/L		-0.501	0.501			
WG599192													
WG599192CCV1	CCV	10/14/24 12:17	HG240905-4	10		10.1	ng/L	101	76.5	123.4			
WG599192CCB1	ССВ	10/14/24 12:22				U	ng/L		-0.501	0.501			
WG599192PQV	PQV	10/14/24 12:26	HG240905-6	1		.86	ng/L	86	70	130			
WG599192LFB1	LFB	10/14/24 12:31	HG240905-5	2		1.91	ng/L	96	71	125			
WG599192CCV2	CCV	10/14/24 13:11	HG240905-4	10		9.54	ng/L	95	76.5	123.4			
WG599192CCB2	CCB	10/14/24 13:15				U	ng/L		-0.501	0.501			
WG599192CCV3	CCV	10/14/24 14:05	HG240905-4	10		9.75	ng/L	98	76.5	123.4			
WG599192CCB3	CCB	10/14/24 14:09				U	ng/L		-0.501	0.501			
L90680-01MS	MS	10/14/24 14:31	HG240905-5	2	4.9	6.48	ng/L	79	71	125			
L90680-01MSD	MSD	10/14/24 14:36	HG240905-5	2	4.9	6.4	ng/L	75	71	125	1	24	
WG599192LFB2	LFB	10/14/24 14:40	HG240905-5	2		1.9	ng/L	95	71	125			
WG599192CCV4	CCV	10/14/24 14:58	HG240905-4	10		9.88	ng/L	99	76.5	123.4			
WG599192CCB4	CCB	10/14/24 15:03				U	ng/L		-0.501	0.501			
L90698-06MS	MS	10/14/24 15:16	HG240905-5	2	.59	2.41	ng/L	91	71	125			
L90698-06MSD	MSD	10/14/24 15:21	HG240905-5	2	.59	2.33	ng/L	87	71	125	3	24	
WG599192CCV5	CCV	10/14/24 15:52	HG240905-4	10		10.1	ng/L	101	76.5	123.4			
WG599192CCB5	CCB	10/14/24 15:56				U	ng/L		-0.501	0.501			
WG599192CCV6	CCV	10/14/24 16:45	HG240905-4	10		9.71	ng/L	97	76.5	123.4			
WG599192CCB6	CCB	10/14/24 16:50				U	ng/L		-0.501	0.501			
WG599192CCV7	CCV	10/15/24 11:14	HG240905-4	10		8.13	ng/L	81	76.5	123.4			
WG599192CCB7	CCB	10/15/24 11:18				U	ng/L		-0.501	0.501			
WG599192CCV8	CCV	10/15/24 12:07	HG240905-4	10		9.31	ng/L	93	76.5	123.4			
WG599192CCB8	CCB	10/15/24 12:12				U	ng/L		-0.501	0.501			



Inorganic Extended Qualifier Report

Colorado Springs Utilities

ACZ ID WORKNUM PARAMETER

METHOD

QUAL DESCRIPTION

ACZ Project ID: L90680

No extended qualifiers associated with this analysis



Colorado Springs Utilities

ACZ Project ID: L90680

No certification qualifiers associated with this analysis

REPAD.05.06.05.01

ACZ Laboratories, Inc. 2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493		ample eceipt	
Colorado Springs Utilities ACZ Pr	roject ID:		L90680
	leceived: 1	0/05/202	24 09:54
	eived By:	4.0	
Receipt Verification	Printed:	10	/8/2024
	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			Х
2) Is the Chain of Custody form or other directive shipping papers present?	Х		
3) Does this project require special handling procedures such as CLP protocol?		Х	
4) Are any samples NRC licensable material?			Х
5) If samples are received past hold time, proceed with requested short hold time analyses?	Х		
6) Is the Chain of Custody form complete and accurate?	Х		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	?	Х	
Samples/Containers	_	-	
	YES	NO	NA
8) Are all containers intact and with no leaks?	Х		
9) Are all labels on containers and are they intact and legible?	Х		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	Х		
11) For preserved bottle types, was the pH checked and within limits? 1			Х
12) Is there sufficient sample volume to perform all requested work?	Х		
13) Is the custody seal intact on all containers?			Х
14) Are samples that require zero headspace acceptable?			Х
15) Are all sample containers appropriate for analytical requirements?	Х		
16) Is there an Hg-1631 trip blank present?		Х	
17) Is there a VOA trip blank present?			Х
18) Were all samples received within hold time?	Х		
	NA indica	ates Not Ap	plicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
NA43124	18.9	NA	15	Yes

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.



Colorado Springs Utilities	ACZ Project ID:	L90680
	Date Received:	10/05/2024 09:54
	Received By:	
	Date Printed:	10/8/2024
¹ The preservation of the following bottle types is not check	ed at sample receipt: Orange (oil and	

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

	Accredited Environmental Testing	2773 Downhill Drive Steamboat Springs, C (970) 879-8590	0 80487	.90	6\$C	Ì	CHAI	N of	cus	TOE	Υ
	Report to:		_								
	Name: Wendy Asay			Addre	_{ss:} 701	E. Las	Vegas St.				-
	Company: Colorado Springs U	tilities		Color	ado Sp	orings, C	O 80903				
	E-mail: wasay@csu.org			Telep	hone: 7	19-668-4	603				
	Copy of Report to:								_		
	Name: Wendy Asay			E-mai	· was	ay@csi	1.ora				
	Company: Colorado Springs L	Itilities		_	_	19-668-4	_				
	Invoice to:										
	Name: Wendy Asay				704	Elen		_			
							Vegas St.				
	Company: Colorado Springs L E-mail: wasay@csu.org		-		-	<u>_</u>	CO 80903				
				Telep	none: /	19-668-4		_			
	Copy of Invoice to:										
	Name: Wendy Asay		_		_		Vegas St.				
	Company: Colorado Springs L	Itilities	_				0 80903				
	E-mail: wasay@csu.org					19-668-4	603		·		
	If sample(s) received past holding analysis before expiration, shall A					e			YES NO	<u> </u>	
	If "NO" then ACZ will contact client for Arthur instruct					analysės, sve	if HT is expired,	and data wil			
	Are samples for SDWA Complianc	-		Yes	Ļ	N	• 🗸]			
	If yes, please include stata forms.			_				_			
	Sampler's Name: *Sampler's Signature:		test to the authen		dity of this	sample. I und			Time Z		tion or
	PROJECT INFORMATION		pering with the sa	npie in anj			ESTED (attact		c profe nu	n:berl	
	Quote #:			- 20	·					_	
	PO#:	· · · · ·		Containers	1631)						
	Reporting state for compliance testin			uta D	Mercury (EPA						
	Check box if samples include NRC li			ŭ	δın						
	SAMPLE IDENTIFICATION	DATE:TIME	Matrix		Mer						
	507188 CC_1	9/17/2024 13:52	GW	1	\checkmark						
	507189 FC_1	9/17/2024 09:32	ĠW	1	\checkmark						
	507190 FC_2	9/17/2024 10:35	GW	1	\checkmark						
				L							
ā									Ľ		
st o											
č i i i i								I .			
		V (Ground Water) · WW (Wa	ste Water) · D	W (Drin)	ing Water	r) · S L (Slu	lge) · SO (So	ii) · OL (O)il) · Other —	(Specify)	1
	REMARKS			_							
n i	Past data on most s	ites between N	ND and	20r	ıg/L.						
5											
8	Perform MS/MSD or	n sample 5071	88 CC	_1.							
0											
	RELINQUISHED BY	efer to ACZ's terms & co	onditions lo	cated (everse si ECEIVE		.0C.	- D 4	TE:TIN	45
	JAN ALL			17					ם לולד	1-11日 / く / ^	6
	Killy hillon	10/ 9/24	1 11:00	Ĩ					ŨCK	$\frac{C_{1}}{\zeta_{1}}$	· 1
		<u> </u>			_				- v v (11	

Qualtrax ID: 1984

Revision #: 2 White - Return with sample. Yellow - Retain for your records.



Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Wendy Asay Colorado Springs Utilities Laboratory Services Section 701 E. Las Vegas St., MC 1465 Colorado Springs, Colorado 80903 Generated 10/16/2024 8:44:29 PM

JOB DESCRIPTION

CCR Landfill

JOB NUMBER

160-55532-1

Eurofins St. Louis 13715 Rider Trail North Earth City MO 63045





Eurofins St. Louis

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization

michakonung

Generated 10/16/2024 8:44:29 PM 5 6 7

Authorized for release by Micha Korrinhizer, Project Manager Micha.Korrinhizer@et.eurofinsus.com (314)298-8566

Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Chain of Custody	5
Receipt Checklists	6
Definitions/Glossary	7
Method Summary	8
Sample Summary	9
Client Sample Results	10
QC Sample Results	12
QC Association Summary	13
Tracer Carrier Summary	14

Job ID: 160-55532-1

CASE NARRATIVE

Client: Colorado Springs Utilities

Project: Radiochemistry Analysis

Report Number: 160-55532-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition, all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method.

Eurofins Environment Testing attests to the validity of the laboratory data generated by Eurofins facilities reported herein. All analyses performed by Eurofins Environment Testing facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins Environment Testing's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report.

Calculations are performed before rounding to avoid round-off errors in calculated results.

Proper preservation was noted for the methods performed on these samples, unless otherwise detailed below.

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

The matrix for the Method Blank and LCS/LCSD is as close to the samples as can be reasonably achieved. Detailed information can be found in the most current revision of the associated SOP.

The method blank (MB) z-score is within limits, unless stated otherwise below, and is stored in the level IV raw data.

This laboratory report is confidential and is intended for the sole use of Eurofins Environment Testing and its client.

No additional analytical or quality issues were noted, other than those described below or in the Definitions/ Glossary page.

Receipt

The samples were received on 9/20/2024 8:50 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved. The temperatures of the 2 coolers at receipt time were 15.1°C and 17.7°C.

Method 903.0 - Radium-226 (GFPC)

Samples 507197 SC_13 (160-55532-1), 507198 SC_14 (160-55532-2) and 507199 FIELD_DUP (160-55532-3) were analyzed for Radium-226 (GFPC). The samples were prepared on 9/23/2024 and analyzed on 10/15/2024.

Method 904.0 - Radium-228 (GFPC)

Samples 507197 SC_13 (160-55532-1), 507198 SC_14 (160-55532-2) and 507199 FIELD_DUP (160-55532-3) were analyzed for Radium-228 (GFPC). The samples were prepared on 9/23/2024 and analyzed on 10/11/2024.

Method Ra226_Ra228 - Combined Radium-226 and Radium-228

Samples 507197 SC_13 (160-55532-1), 507198 SC_14 (160-55532-2) and 507199 FIELD_DUP (160-55532-3) were analyzed for Combined Radium-226 and Radium-228. The samples were analyzed on 10/16/2024.

Louis	
TestAmerica St.	13715 Rider Trail North

Chain of Custody Record



cartn Urly, M/O 55045-1205 phone 314.298.8566 fax 314.298.8757	Regula	Regulatory Prog	ram:	MO	NPDES	RCRA		Other:	Coal Combustion Rule	hustion	n Rule			TestAm	TestAmerica Laboratories. Inc.	atories. Inc.
Client Contact	Project Manager: Wendy Asay	ager: We	indy Asay		Sit	Site Contact:	ct:			Date:				COC No:		
Colorado Springs Utilities	Tel/Fax: 719-668-4603	9-668-460	3		Lal	Conta	ct: Rho	onda Ri	Lab Contact: Rhonda Ridenhower	r Carrier					of	COCs
701 E. Las Vegas St.	Ar	alysis Tu	Analysis Turnaround Time	ime		L			L	-			F	Campler		
Colorado Springs, CO 80903	CALENDAR DAYS	R DAYS	WORK	WORKING DAYS	Ì									For Lab Ilee Only-	lea Only:	
(719) 668-4603 Phone	TAT	TAT if different from Below	m Below			03.0		_	-					Walk-in Client	lient:	
		2	2 weeks			6 ∀								tab Sampling	olino.	
Project Name: CCR Landfill		-	1 week			Ъ							-			
Site		2	2 days			'9 77								100		
PO#		1	1 day			z wn		_						NON PLAS / GOL	NO.	
Sample Identification	Sample Date	Sample Time	mple Vpe ^{Comp} ,	Matrix c	و بې ۲ م ۳ الافلوط 5a	Perform M Total Radiu	Total Radi Combined									
507197 SC_13	9/18/24	13:08	11	11	z	. ×	××							5		NOICES.
507198 SC_14	9/18/24	11:45	υ	GW	2 7	×	××									
507199 FIELD_DUP	9/18/24	00:00	U	GW	N N	×	×						-			
										 	+	Ţ	+			
				+			-								ł	
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											60-5553	2 Chain	160-55532 Chain of Custody		ļ	
										-	_		-	-		
								-								
								<u> </u>								
Preservation Used: 1= Ice, 2= HCI; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other	NaOH; 6= Oti	ner		Number of											Contraction of the second	SALE STATES
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please I Comments Section if the lab is to dispose of the sample.	Please List any EPA Waste Code	Vaste Cod	es for the sample in the	ample in t		ample	Dispos	sal (Af	ee may b	e asses	sed if s	imples a	re retair	ed longer th	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Non-Hazard Flammable Skin Irritant	Poison B		Unknown	-		Re	Return to Client	ient		Disposal by Lab	lah	ſ	Archive for	W	Months	
Special Instructions/QC Requirements & Comments: Please be sure to use t	se be sure	to use	the listed method numbers	d meth	od nur	nbers	.1				2					
Custody Seals Intact: Yes No	Custody Seal No.	I No.:					Cool	er Tem	Cooler Temp. (°C): Obs'd	.p.so		Corr'd		Therm ID No.		
Relinquished by	Company: Cultando Sonas	the sund	ittes	Date/Time	1.50	Received by	d by:				Company:	:Au		Date/Time:		
hed by:	Company:			Date/Time:	2	Bage of a By	a By	2	110		Company:	J .tu	1457	1 BERMO 0	0 2024/	XXC
Relinquished by:	Company:			Date/Time:		eceive	d in Lab	Received in Laboratory by:	by:		Company:	- Z		Date/Time:		2
					1							R	rm No. O	A-C-WI-002,	Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018	ted 9/5/2018

Client: Colorado Springs Utilities

Login Number: 55532 List Number: 1 Creator: Pinette, Meadow L

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Samplers name is not on the COC
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 160-55532-1

List Source: Eurofins St. Louis

Qualifiers

Rad

r rejectionente.	CCR Landfill	
Qualifiers		
<mark>Rad</mark> Qualifier	Qualifier Description	
U	Result is less than the sample detection limit.	
Glossary		5
Abbreviation	These commonly used abbreviations may or may not be present in this report.	(
¢	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	
CFL	Contains Free Liquid	
CFU	Colony Forming Unit	d
CNF	Contains No Free Liquid	
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision Level Concentration (Radiochemistry)	
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	
LOQ	Limit of Quantitation (DoD/DOE)	
MCL	EPA recommended "Maximum Contaminant Level"	
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
MPN	Most Probable Number	
MQL	Method Quantitation Limit	
NC	Not Calculated	
ND	Not Detected at the reporting limit (or MDL or EDL if shown)	
NEG	Negative / Absent	
POS	Positive / Present	
PQL	Practical Quantitation Limit	
PRES	Presumptive	
QC	Quality Control	
RER	Relative Error Ratio (Radiochemistry)	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEQ	Toxicity Equivalent Quotient (Dioxin)	
TNTC	Too Numerous To Count	

Method Summary

Client: Colorado Springs Utilities Project/Site: CCR Landfill

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
Protocol Refe EPA = US None = No	Environmental Protection Agency		

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Eurofins St. Louis

Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-55532-1	507197 SC_13	Water	09/18/24 13:08	09/20/24 08:50
160-55532-2	507198 SC_14	Water	09/18/24 11:45	09/20/24 08:50
160-55532-3	507199 FIELD_DUP	Water	09/18/24 00:00	09/20/24 08:50

Client Sample ID: 507197 SC_13 Date Collected: 09/18/24 13:08 Date Received: 09/20/24 08:50

Lab Sample ID: 160-55532-1 **Matrix: Water**

Lab Sample ID: 160-55532-2

Matrix: Water

1

			Count Uncert.	Total Uncert.							
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac	
Radium-226	0.0406	U	0.0894	0.0895	1.00	0.162	pCi/L	09/23/24 08:35	10/15/24 09:21	1	
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac	
Ba Carrier	88.6		30 - 110					09/23/24 08:35	10/15/24 09:21	1	8
Mothody EDA 00	4.0 - Radium	-228 (GFP)	C)								-
welliou. EFA 30	T.V - I.uululli										
Wethou. EPA 90	4.0 - Ruulum		Count	Total							9
Method. EPA St	H.U - Hudium			Total Uncert.							9
Analyte		Qualifier	Count		RL	MDC	Unit	Prepared	Analyzed	Dil Fac	1
		Qualifier	Count Uncert.	Uncert.	RL 1.00	MDC 0.818		Prepared 09/23/24 08:40	Analyzed	Dil Fac	

0	Carrier %Yie	ld Qualifier	Limits	Prepared	Analyzed	Dil
Ē	Ba Carrier 88	.6	30 - 110	09/23/24 08:40	10/11/24 14:07	
1	Y Carrier 78	.9	30 - 110	09/23/24 08:40	10/11/24 14:07	

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2 σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.291	U	0.402	0.403	5.00	0.818	pCi/L		10/16/24 13:17	1

Client Sample ID: 507198 SC_14 Date Collected: 09/18/24 11:45

Date Received: 09/20/24 08:50

Method: EPA 903.0 - Radium-226 (GFPC)

	D	0	Count Uncert.	Total Uncert.	51		11	Descend	Ameland	D11 5
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0443	U	0.0874	0.0875	1.00	0.157	pCi/L	09/23/24 08:35	10/15/24 09:21	1
Carrier Ba Carrier	% Yield 84.6	Qualifier	Limits 30 - 110					Prepared 09/23/24 08:35	Analyzed 10/15/24 09:21	Dil Fac

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte Radium-228	Result 0.191	Qualifier	Count Uncert. (2σ+/-) 0.450	Total Uncert. (2σ+/-) 0.451	RL 1.00	MDC 0.790	 Prepared 09/23/24 08:40	Analyzed 10/11/24 14:07	Dil Fac
Carrier		Qualifier	Limits				Prepared	Analyzed	Dil Fac
Ba Carrier	84.6		30 - 110				09/23/24 08:40	10/11/24 14:07	1
Y Carrier	80.4		30 - 110				09/23/24 08:40	10/11/24 14:07	1

Client Sample Results

			Clier	nt Samp	le Res	ults				
Client: Colorado Spri	ings Utilities	;		-					Job ID: 160-5	5532-1
Project/Site: CCR La	undfill									
Client Sample IE): 507198	SC 14						Lab Sample	D: 160-55	532-2
ate Collected: 09/									Matrix	
Date Received: 09/2										
Method: TAL-STL	Pa226 Rat	228 - Comi	hinod Radi		d Radiur	n-228				
Methou. AL-OIL	Na220_Na2	.20 - Com	Count	Total		1-220				
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2 σ+/-)	(2 σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226	0.235	U	0.458	0.459	5.00	0.790	pCi/L		10/16/24 13:17	1
+ 228										
								Lab Sample	D: 160-55	532-3
Client Sample IF	· 507199	FIFI D I	פווח					Eux Guillers		
			DUP							Mator
ate Collected: 09/ [,]	18/ <mark>24 00:00</mark>) –	DUP						Matrix	Water
)ate Collected: 09/ [,]	18/ <mark>24 00:00</mark>) –	DUP							Water
Client Sample IE Date Collected: 09/ Date Received: 09/2 Method: EPA 903.0	18/24 00:00 20/24 08:50	, –								Water
Date Collected: 09/ [/] Date Received: 09/2	18/24 00:00 20/24 08:50	, –		Total						Water
Date Collected: 09/ [/] Date Received: 09/2	18/24 00:00 20/24 08:50	, –	C)	Total Uncert.				· ·		Water
Date Collected: 09/ Date Received: 09/2 Method: EPA 903.0 Analyte	18/24 00:00 20/24 08:50 0 - Radium- Result	-226 (GFP(Qualifier	C) Count Uncert. (2σ+/-)	Uncert. (2σ+/-)	RL	MDC		Prepared	Matrix Analyzed	Water Dil Fac
Date Collected: 09/ Date Received: 09/2 Method: EPA 903.0	18/24 00:00 20/24 08:50 0 - Radium-	-226 (GFP(Qualifier	C) Count Uncert.	Uncert.	RL 1.00	MDC 0.163			Matrix	
Analyte Radium-226	18/24 00:00 20/24 08:50 0 - Radium- <u>Result</u> 0.0492	-226 (GFP(Qualifier U	C) Count Uncert. (2σ+/-) 0.0921	Uncert. (2σ+/-)				Prepared 09/23/24 08:35	Matrix Analyzed 10/15/24 09:21	Dil Fac
Date Collected: 09/ Date Received: 09/2 Method: EPA 903.0 Analyte	18/24 00:00 20/24 08:50 0 - Radium- <u>Result</u> 0.0492	-226 (GFP(Qualifier	C) Count Uncert. (2σ+/-)	Uncert. (2σ+/-)				Prepared	Matrix Analyzed 10/15/24 09:21 Analyzed	Dil Fac
Date Collected: 09/ Date Received: 09/2 Method: EPA 903.0 Analyte Radium-226 Carrier	18/24 00:00 20/24 08:50 0 - Radium- <u>Result</u> 0.0492 %Yield	-226 (GFP(Qualifier U	C) Count Uncert. (2σ+/-) 0.0921 Limits	Uncert. (2σ+/-)				Prepared 09/23/24 08:35 Prepared	Matrix Analyzed 10/15/24 09:21 Analyzed	Dil Fac 1 Dil Fac
Date Collected: 09/ Date Received: 09/2 Method: EPA 903.0 Analyte Radium-226 Carrier	18/24 00:00 20/24 08:50 0 - Radium- <u>Result</u> 0.0492 <u>%Yield</u> 85.4	Qualifier	C) Count Uncert. (2σ+/-) 0.0921 Limits 30 - 110	Uncert. (2σ+/-)				Prepared 09/23/24 08:35 Prepared	Matrix Analyzed 10/15/24 09:21 Analyzed	Dil Fac 1 Dil Fac
Date Collected: 09/2 Date Received: 09/2 Method: EPA 903.0 Analyte Radium-226 Carrier Ba Carrier	18/24 00:00 20/24 08:50 0 - Radium- <u>Result</u> 0.0492 <u>%Yield</u> 85.4	Qualifier	C) Count Uncert. (2σ+/-) 0.0921 Limits 30 - 110	Uncert. (2σ+/-)				Prepared 09/23/24 08:35 Prepared	Matrix Analyzed 10/15/24 09:21 Analyzed	Dil Fac 1 Dil Fac
Date Collected: 09/2 Date Received: 09/2 Method: EPA 903.0 Analyte Radium-226 Carrier Ba Carrier	18/24 00:00 20/24 08:50 0 - Radium- <u>Result</u> 0.0492 <u>%Yield</u> 85.4	Qualifier	C) Count Uncert. $(2\sigma+/-)$ 0.0921 <u>Limits</u> 30 - 110 C)	Uncert. (2σ+/-) 0.0922				Prepared 09/23/24 08:35 Prepared	Matrix Analyzed 10/15/24 09:21 Analyzed	Dil Fac 1 Dil Fac
Date Collected: 09/2 Date Received: 09/2 Method: EPA 903.0 Analyte Radium-226 Carrier Ba Carrier Method: EPA 904.0 Analyte	18/24 00:00 20/24 08:50 0 - Radium- <u>Result</u> 0.0492 <u>%Yield</u> 85.4 0 - Radium-	Qualifier	C) Count Uncert. (2σ+/-) 0.0921 <u>Limits</u> 30 - 110 C) Count	Uncert. (2σ+/-) 0.0922			pCi/L	Prepared 09/23/24 08:35 Prepared	Matrix Analyzed 10/15/24 09:21 Analyzed	Dil Fac 1 Dil Fac
Analyte Radium-226 Carrier Ba Carrier Method: EPA 903.0	18/24 00:00 20/24 08:50 0 - Radium- <u>Result</u> 0.0492 <u>%Yield</u> 85.4 0 - Radium-	-226 (GFP(Qualifier U -228 (GFP(Qualifier	C) Count Uncert. (2σ+/-) 0.0921 <u>Limits</u> 30 - 110 C) Count Uncert.	Uncert. (2σ+/-) 0.0922 Total Uncert.	1.00	0.163	pCi/L Unit	Prepared 09/23/24 08:35 Prepared 09/23/24 08:35	Matrix <u>Analyzed</u> 10/15/24 09:21 <u>Analyzed</u> 10/15/24 09:21	Dil Fac 1 Dil Fac 1
Date Collected: 09/2 Date Received: 09/2 Method: EPA 903.0 Analyte Radium-226 Carrier Ba Carrier Method: EPA 904.0 Analyte	18/24 00:00 20/24 08:50 0 - Radium- <u>Result</u> 0.0492 <u>%Yield</u> 85.4 0 - Radium- <u>Result</u> 0.123	-226 (GFP(Qualifier U -228 (GFP(Qualifier	C) Count Uncert. (2σ+/-) 0.0921 Limits 30 - 110 C) Count Uncert. (2σ+/-)	Uncert. (2σ+/-) 0.0922 Total Uncert. (2σ+/-)	1.00 RL	0.163 MDC	pCi/L Unit	Prepared 09/23/24 08:35 Prepared 09/23/24 08:35	Matrix	Dil Fac 1 Dil Fac 1 Dil Fac
Date Collected: 09/2 Date Received: 09/2 Method: EPA 903.0 Analyte Radium-226 Carrier Ba Carrier Method: EPA 904.0 Analyte Radium-228	18/24 00:00 20/24 08:50 0 - Radium- <u>Result</u> 0.0492 <u>%Yield</u> 85.4 0 - Radium- <u>Result</u> 0.123	-226 (GFP(Qualifier U -228 (GFP(Qualifier U	C) Count Uncert. (2σ+/-) 0.0921 Limits 30 - 110 C) Count Uncert. (2σ+/-) 0.412	Uncert. (2σ+/-) 0.0922 Total Uncert. (2σ+/-)	1.00 RL	0.163 MDC	pCi/L Unit	Prepared 09/23/24 08:35 Prepared 09/23/24 08:35 Prepared 09/23/24 08:40	Matrix	Dil Fac 1 <i>Dil Fac</i> 1 Dil Fac 1

• • •		o 117	Uncert.	Uncert.						
Analyte Combined Radium 226 + 228	0.172	Qualifier U	(2σ+/-) 0.422	(2σ+/-) 0.422	RL 5.00	0.738	Unit pCi/L	Prepared	Analyzed 10/16/24 13:17	Dil Fac 1

Eurofins St. Louis

QC Sample Results

Job ID: 160-55532-1

10

Method: 903.0 - Radium-226 (GFPC)

Lab Sample		60-6805	62/1-A						Clie		ole ID: Method	
Matrix: Wat											Prep Type: To	
Analysis Ba	atch: 6835	63									Prep Batch:	680562
				Count	Total							
		MB		Uncert.	Uncert.							
Analyte			Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC		P	repared	Analyzed	Dil Fac
Radium-226		-0.04758	U	0.0626	0.0628	1.00	0.154	pCi/L	09/2	23/24 08:35	10/15/24 09:20	
		МВ	МВ									
Carrier		%Yield	Qualifier	Limits					P	repared	Analyzed	Dil Fae
Ba Carrier		97.0		30 - 110					09/2	23/24 08:35	10/15/24 09:20	
Lab Sample		160-680	562/2-4					Clie	ent Sa	mnle ID [.]	Lab Control	Sample
Matrix: Wat								- Chi			Prep Type: To	
Analysis Ba		63									Prep Batch:	
		•••				Total						
			Spike	LCS	LCS	Uncert.					%Rec	
Analyte			Added	Result		(2σ+/-)	RL	MDC	Unit	%Rec	Limits	
Radium-226			9.58	9.265		1.04	1.00		pCi/L	97	75 - 125	
	LCS	109										
Carrier		Qualifier	Limits									
Carrier	70 HEIU	Quanner		_								
lethod: 90 Lab Sample Matrix: Wate	e ID: MB 1 er	60-6805							Clie	ent Samp	ole ID: Method Prep Type: To	otal/NA
lethod: 90 Lab Sample Matrix: Wate)4.0 - Ra 9 ID: MB 1 er	60-6805	228 (GFPC	2)	Total				Clie	ent Samp		otal/NA
lethod: 90 Lab Sample Matrix: Wate)4.0 - Ra 9 ID: MB 1 er	60-6805 32	228 (GFPC 63/1-A	Count	Total Uncert.				Clie	ent Samp	Prep Type: To	otal/NA
lethod: 90 Lab Sample Matrix: Wate Analysis Ba)4.0 - Ra 9 ID: MB 1 er	60-6805 32 MB	228 (GFPC 63/1-А мв	Count Uncert.	Uncert.	RI	MDC	Unit			Prep Type: To Prep Batch:	otal/NA 680563
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte)4.0 - Ra 9 ID: MB 1 er	60-6805 32 MB	228 (GFPC 63/1-A MB Qualifier	Count Uncert. (2σ+/-)			MDC 0.531		P	ent Samp repared 13/24 08:40	Prep Type: To Prep Batch: Analyzed	otal/NA 680563 Dil Fac
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte)4.0 - Ra 9 ID: MB 1 er	60-6805 32 MB <u>Result</u> -0.2115	228 (GFPC 63/1-A MB Qualifier U	Count Uncert.	Uncert. (2σ+/-)		MDC 0.531		P	repared	Prep Type: To Prep Batch: Analyzed	otal/NA 680563 Dil Fac
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte Radium-228)4.0 - Ra 9 ID: MB 1 er	60-6805 32 MB Result -0.2115 <i>MB</i>	228 (GFPC 63/1-A MB Qualifier U MB	Count Uncert. (2σ+/-) 0.247	Uncert. (2σ+/-)				P 09/2	repared 3/24 08:40	Prep Type: To Prep Batch: Analyzed 10/11/24 12:06	otal/NA 680563 Dil Fac
Analyte Radium-228)4.0 - Ra 9 ID: MB 1 er	60-6805 32 MB Result -0.2115 MB %Yield	228 (GFPC 63/1-A MB Qualifier U	Count Uncert. (2σ+/-) 0.247 Limits	Uncert. (2σ+/-)				P	repared 3/24 08:40	Prep Type: To Prep Batch: Analyzed 10/11/24 12:06 Analyzed	Dil Fac
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte Radium-228 Carrier Ba Carrier)4.0 - Ra 9 ID: MB 1 er	60-6805 32 MB Result -0.2115 <i>MB</i>	228 (GFPC 63/1-A MB Qualifier U MB	Count Uncert. (2σ+/-) 0.247	Uncert. (2σ+/-)				— P 09/2 	repared 3/24 08:40 Prepared 33/24 08:40	Prep Type: To Prep Batch: Analyzed 10/11/24 12:06 Analyzed	Dil Fac
Analyte Radium-228 Carrier Ba Carrier Y Carrier	94.0 - Ra e ID: MB 1 er atch: 6832	60-6805 32 MB Result -0.2115 MB %Yield 97.0 80.4	228 (GFPC 63/1-A MB Qualifier U MB Qualifier	Count Uncert. (2σ+/-) 0.247 Limits 30 - 110	Uncert. (2σ+/-)			pCi/L	P 09/2 P 09/2 09/2	repared 3/24 08:40 Prepared 33/24 08:40 33/24 08:40	Analyzed 10/11/24 12:06 Analyzed 10/11/24	Dil Fac
Analyte Matrix: Wate Matrix: Wate Matrix: Wate Matrix: Wate Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample	94.0 - Ra e ID: MB 1 er atch: 6832	60-6805 32 MB Result -0.2115 MB %Yield 97.0 80.4	228 (GFPC 63/1-A MB Qualifier U MB Qualifier	Count Uncert. (2σ+/-) 0.247 Limits 30 - 110	Uncert. (2σ+/-)			pCi/L	P 09/2 P 09/2 09/2	repared 33/24 08:40 repared 23/24 08:40 23/24 08:40 mple ID:	Analyzed 10/11/24 12:06 10/11/24 12:06 10/11/24 12:06 10/11/24 12:06 10/11/24 12:06 10/11/24 12:06 10/11/24 12:06 10/11/24 12:06	Dil Fac
Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wate	94.0 - Ra e ID: MB 1 er atch: 6832	60-6805 32 MB Result -0.2115 MB %Yield 97.0 80.4 160-680	228 (GFPC 63/1-A MB Qualifier U MB Qualifier	Count Uncert. (2σ+/-) 0.247 Limits 30 - 110	Uncert. (2σ+/-)			pCi/L	P 09/2 P 09/2 09/2	repared 33/24 08:40 repared 23/24 08:40 23/24 08:40 mple ID:	Analyzed 10/11/24 12:06 Analyzed 10/11/24 10/11/24 12:06 Lab Control S Prep Type: To	Dil Fac Dil Fac Dil Fac Dil Fac
Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wate	94.0 - Ra e ID: MB 1 er atch: 6832	60-6805 32 MB Result -0.2115 MB %Yield 97.0 80.4 160-680	228 (GFPC 63/1-A MB Qualifier U MB Qualifier	Count Uncert. (2σ+/-) 0.247 Limits 30 - 110	Uncert. (2σ+/-)	1.00		pCi/L	P 09/2 P 09/2 09/2	repared 33/24 08:40 repared 23/24 08:40 23/24 08:40 mple ID:	Analyzed 10/11/24 12:06 10/11/24 12:06 10/11/24 12:06 10/11/24 12:06 10/11/24 12:06 10/11/24 12:06 10/11/24 12:06 10/11/24 12:06	Dil Fac
Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wate	94.0 - Ra e ID: MB 1 er atch: 6832	60-6805 32 MB Result -0.2115 MB %Yield 97.0 80.4 160-680	228 (GFPC 63/1-A MB Qualifier U MB Qualifier 563/2-A	Count Uncert. (2σ+/-) 0.247 Limits 30 - 110 30 - 110	Uncert. (2σ+/-) 0.247	1.00		pCi/L	P 09/2 P 09/2 09/2	repared 33/24 08:40 repared 23/24 08:40 23/24 08:40 mple ID:	Analyzed 10/11/24 12:06 Analyzed 10/11/24 10/11/24 12:06 10/11/24 12:06 10/11/24 12:06 Prep Type: To Prep Type: To Prep Batch: To	Dil Fac
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Y Carrier Lab Sample Matrix: Wate Analysis Ba	94.0 - Ra e ID: MB 1 er atch: 6832	60-6805 32 MB Result -0.2115 MB %Yield 97.0 80.4 160-680	228 (GFPC 63/1-A MB Qualifier U MB Qualifier 563/2-A Spike	Count Uncert. (2σ+/-) 0.247 Limits 30 - 110 30 - 110	Uncert. (2σ+/-) 0.247	Total Uncert.	0.531	pCi/L Clie	P 09/2 P 09/2 09/2 ent Sa	repared 23/24 08:40 23/24 08:40 23/24 08:40 23/24 08:40 mple ID:	Analyzed 10/11/24 12:06 Analyzed 10/11/24 10/11/24 12:06 10/11/24 12:06 10/11/24 12:06 Prep Type: To Prep Type: To Prep Batch: %Rec	Dil Fac Dil Fac Dil Fac Dil Fac
lethod: 90 Lab Sample Matrix: Wate Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wate Analysis Ba	94.0 - Ra e ID: MB 1 er atch: 6832	60-6805 32 MB Result -0.2115 MB %Yield 97.0 80.4 160-680	228 (GFPC 63/1-A MB Qualifier U MB Qualifier 563/2-A	Count Uncert. (2σ+/-) 0.247 Limits 30 - 110 30 - 110	Uncert. (2σ+/-) 0.247	1.00		pCi/L	— P 09/2 P 09/2 09/2 ent Sau	repared 33/24 08:40 repared 23/24 08:40 23/24 08:40 mple ID:	Analyzed 10/11/24 12:06 Analyzed 10/11/24 10/11/24 12:06 10/11/24 12:06 10/11/24 12:06 Prep Type: To Prep Type: To Prep Batch: To	Dil Fac Dil Fac Dil Fac Dil Fac
Analyte Analyte Matrix: Wate Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wate Analysis Ba Analyte	94.0 - Ra a ID: MB 1 er atch: 6832 b ID: LCS er atch: 6832 	60-6805 32 MB Result -0.2115 MB %Yield 97.0 80.4 160-680 32	228 (GFPC 63/1-A MB Qualifier U MB Qualifier 563/2-A Spike Added	Count Uncert. (2σ+/-) 0.247 Limits 30 - 110 30 - 110 30 - 110 LCS Result	Uncert. (2σ+/-) 0.247	1.00 Total Uncert. (2σ+/-)	0.531 RL	pCi/L Clie	— P 09/2 P 09/2 09/2 ent Sau	repared 3/24 08:40 23/24 08:40 23/24 08:40 23/24 08:40 mple ID:	Prep Type: To Prep Batch: <u>Analyzed</u> 10/11/24 12:06 <u>Analyzed</u> 10/11/24 12:06 10/11/24 12:06 Lab Control S Prep Type: To Prep Batch: %Rec Limits	Dil Fac
Ba Carrier Actional Sample Matrix: Wate Matrix: Wate Analysis Ba Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wate Analysis Ba Analysis Ba Analyte Radium-228 Carrier	94.0 - Ra e ID: MB 1 er atch: 6832 e ID: LCS er atch: 6832	60-6805 32 MB Result -0.2115 MB %Yield 97.0 80.4 160-680 32	228 (GFPC 63/1-A MB Qualifier U MB Qualifier 563/2-A Spike Added 8.44	Count Uncert. (2σ+/-) 0.247 Limits 30 - 110 30 - 110 30 - 110 LCS Result	Uncert. (2σ+/-) 0.247	1.00 Total Uncert. (2σ+/-)	0.531 RL	pCi/L Clie	— P 09/2 P 09/2 09/2 ent Sau	repared 3/24 08:40 23/24 08:40 23/24 08:40 23/24 08:40 mple ID:	Prep Type: To Prep Batch: <u>Analyzed</u> 10/11/24 12:06 <u>Analyzed</u> 10/11/24 12:06 10/11/24 12:06 Lab Control S Prep Type: To Prep Batch: %Rec Limits	otal/NA 680563 1 1 <i>Dil Fac</i> 1 5 Sample otal/NA
Analyte Radium-228 Carrier Ba Carrier Y Carrier Lab Sample Matrix: Wate Analysis Ba Analysis Ba Analyte Radium-228	94.0 - Ra a ID: MB 1 er atch: 6832 atch: 6832 er atch: 6832 er atch: 6832	60-6805 32 MB Result -0.2115 MB %Yield 97.0 80.4 160-680 32	228 (GFPC 63/1-A MB Qualifier U MB Qualifier 563/2-A Spike Added 8.44	Count Uncert. (2σ+/-) 0.247 Limits 30 - 110 30 - 110 30 - 110 30 - 110	Uncert. (2σ+/-) 0.247	1.00 Total Uncert. (2σ+/-)	0.531 RL	pCi/L Clie	— P 09/2 P 09/2 09/2 ent Sau	repared 3/24 08:40 23/24 08:40 23/24 08:40 23/24 08:40 mple ID:	Prep Type: To Prep Batch: <u>Analyzed</u> 10/11/24 12:06 <u>Analyzed</u> 10/11/24 12:06 10/11/24 12:06 Lab Control S Prep Type: To Prep Batch: %Rec Limits	Dil Fac

Client: Colorado Springs Utilities Project/Site: CCR Landfill

11

Rad

Prep Batch: 680562

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-55532-1	507197 SC_13	Total/NA	Water	PrecSep-21	
60-55532-2	507198 SC_14	Total/NA	Water	PrecSep-21	
60-55532-3	507199 FIELD_DUP	Total/NA	Water	PrecSep-21	
/IB 160-680562/1-A	Method Blank	Total/NA	Water	PrecSep-21	
CS 160-680562/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
rep Batch: 680563				·	
rep Batch: 680563	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
rep Batch: 680563 Lab Sample ID		Prep Type Total/NA	Matrix Water	Method PrecSep_0	Prep Batch
rep Batch: 680563 ab Sample ID 60-55532-1	Client Sample ID				Prep Batch
rep Batch: 680563 .ab Sample ID 60-55532-1 60-55532-2	Client Sample ID 507197 SC_13	Total/NA	Water	PrecSep_0	Prep Batch
	Client Sample ID 507197 SC_13 507198 SC_14	Total/NA Total/NA	Water Water	PrecSep_0 PrecSep_0	Prep Batch

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

			Percent Yield (Acceptance Limits)	
		Ва		
Lab Sample ID	Client Sample ID	(30-110)		
160-55532-1	507197 SC_13	88.6		
160-55532-2	507198 SC_14	84.6		
160-55532-3	507199 FIELD_DUP	85.4		
LCS 160-680562/2-A	Lab Control Sample	89.8		
MB 160-680562/1-A	Method Blank	97.0		
Tracer/Carrier Legen	d			
Ba = Ba Carrier				
lethod: 904.0 - F	Radium-228 (GFPC)			
latrix: Water			Prep Type: Total/NA	

				Percent Yield (Acceptance Limits)	
		Ва	Y		
Lab Sample ID	Client Sample ID	(30-110)	(30-110)		
160-55532-1	507197 SC_13	88.6	78.9		1
160-55532-2	507198 SC_14	84.6	80.4		
160-55532-3	507199 FIELD_DUP	85.4	82.6		
LCS 160-680563/2-A	Lab Control Sample	89.8	81.1		
MB 160-680563/1-A	Method Blank	97.0	80.4		

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Prep Type: Total/NA

2



Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Wendy Asay Colorado Springs Utilities Laboratory Services Section 701 E. Las Vegas St., MC 1465 Colorado Springs, Colorado 80903 Generated 10/17/2024 6:06:02 PM

JOB DESCRIPTION

CCR Landfill

JOB NUMBER

160-55533-1

Eurofins St. Louis 13715 Rider Trail North Earth City MO 63045





Eurofins St. Louis

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization

Zhorda Ridenhouer

Generated 10/17/2024 6:06:02 PM

5

Authorized for release by Rhonda Ridenhower, Business Unit Manager <u>Rhonda.Ridenhower@et.eurofinsus.com</u> Designee for Micha Korrinhizer, Project Manager <u>Micha.Korrinhizer@et.eurofinsus.com</u> (314)298-8566

Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Chain of Custody	6
Receipt Checklists	7
Definitions/Glossary	8
Method Summary	9
Sample Summary	10
Client Sample Results	11
QC Sample Results	17
QC Association Summary	20
Tracer Carrier Summary	21

Job ID: 160-55533-1

CASE NARRATIVE

Client: Colorado Springs Utilities

Project: Radiochemistry Analysis

Report Number: 160-55533-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition, all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method.

Eurofins Environment Testing attests to the validity of the laboratory data generated by Eurofins facilities reported herein. All analyses performed by Eurofins Environment Testing facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins Environment Testing's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report.

Calculations are performed before rounding to avoid round-off errors in calculated results.

Proper preservation was noted for the methods performed on these samples, unless otherwise detailed below.

All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client.

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Reference the chain of custody and receipt report for any variations on receipt conditions.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

Receipt

The samples were received on 9/20/2024 8:50 AM. Unless otherwise noted below, the samples arrived in good condition and properly preserved. The temperatures of the 2 coolers at receipt time were 15.1°C and 17.7°C.

Receipt Exceptions

Samplers name is not on the COC: 507188 CC_1 (160-55533-1), 507189 FC_1 (160-55533-2), 507190 FC_2 (160-55533-3), 507191 FC_3A (160-55533-4), 507192 FC_3B (160-55533-5), 507193 EQUIP_BLK (160-55533-6), 507194 SC_10 (160-55533-7), 507195 SC_11 (160-55533-8) and 507196 SC_12 (160-55533-9)

Method 903.0 - Radium-226 (GFPC)

Samples 507188 CC_1 (160-55533-1), 507189 FC_1 (160-55533-2), 507190 FC_2 (160-55533-3), 507191 FC_3A (160-55533-4), 507192 FC_3B (160-55533-5), 507193 EQUIP_BLK (160-55533-6), 507194 SC_10 (160-55533-7), 507195 SC_11 (160-55533-8) and 507196 SC_12 (160-55533-9) were analyzed for Radium-226 (GFPC). The samples were prepared on 9/23/2024 and 9/24/2024 and analyzed on 10/15/2024 and 10/16/2024.

Method 904.0 - Radium-228 (GFPC)

Samples 507188 CC_1 (160-55533-1), 507189 FC_1 (160-55533-2), 507190 FC_2 (160-55533-3), 507191 FC_3A (160-55533-4), 507192 FC_3B (160-55533-5), 507193 EQUIP_BLK (160-55533-6), 507194 SC_10 (160-55533-7), 507195 SC_11 (160-55533-8) and 507196 SC_12 (160-55533-9) were analyzed for Radium-228 (GFPC). The samples were prepared on 9/23/2024 and 9/24/2024 and analyzed on 10/10/2024 and 10/11/2024.

Radium 228 Batch 680769

Eurofins St. Louis

Job ID: 160-55533-1 (Continued)

The Radium-228 laboratory control sample (LCS) associated with the following samples recovered at 127%: 507191 FC_3A (160-55533-4), 507192 FC_3B (160-55533-5), 507193 EQUIP_BLK (160-55533-6), 507194 SC_10 (160-55533-7), 507195 SC_11 (160-55533-8), 507196 SC_12 (160-55533-9), (LCS 160-680769/2-A), (MB 160-680769/1-A), (310-291015-D-5-C), (310-291015-D-5-D MS) and (310-291015-E-5-B MSD). The limits in our LIMS system at 75%-125% reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of 69%-145%. The LCS is within criteria and no further action is required.

Radium-228 batch 680563

The detection goal was not met for the sample duplicate. However the purpose of the DUP is to demonstrate batch precision. The precision was within control limits demonstrating no adverse effect from the discrepancy. (160-55533-A-1-B DU)

Radium-228 batch 680563

Although the sample was prepped at full volume, the detection goal was not met for the following samples. 507189 FC_1 (160-55533-2). However the activity in the sample is above the detection limit achieved. No further action is required. Original results will be reported

Method Ra226_Ra228 - Combined Radium-226 and Radium-228

Samples 507188 CC_1 (160-55533-1), 507189 FC_1 (160-55533-2), 507190 FC_2 (160-55533-3), 507191 FC_3A (160-55533-4), 507192 FC_3B (160-55533-5), 507193 EQUIP_BLK (160-55533-6), 507194 SC_10 (160-55533-7), 507195 SC_11 (160-55533-8) and 507196 SC_12 (160-55533-9) were analyzed for Combined Radium-226 and Radium-228. The samples were analyzed on 10/17/2024.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins St. Louis

10/17/2024

Louis	
TestAmerica St.	13715 Rider Trail North

Chain of Custody Record



Client Contact	Project M	ject Manager: Wendy A:	1 2	>	s	Site Contact:	act:		Date:	Date:		COC No	OC No:
Colorado Springs Utilities	Tel/Fax: 7	Tel/Fax: 719-668-4603	13			ab Cont	act: Rhoi	Lab Contact: Rhonda Ridenhower		Carrier:			of COCs
701 E. Las Vegas St.		Analysis Turi	Irnaround Time	Time	┢	E		E				Sampler	
Colorado Springs, CO 80903	CALEN	CALENDAR DAYS	WOR	WORKING DAYS		0						For La	For Lab Use Only:
(719) 668-4603 Phone	TAT	TAT if different from	om Below									Walk-ir	Walk-in Client:
(xxx) xxx-xxxx FAX	5	2	2 weeks		(N	17						Lab Sa	ab Sampling
Project Name: CCR Landfill		1	1 week		1/ 1	.) (
Site:	IC.	2	2 days		() Ə	asv							
PO#		1	1 day		Iami	N / S							
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	C # 규 역 Filtered Sa	Perform M Total Radi	Total Radi Combined]	Sample Specific Notes
507188 CC_1	9/17/24	13:52	υ	gw	Z N	× ≻	××						
507189 FC_1	9/17/24	09:32	υ	ß	Z ~	×	××						
507190 FC_2	9/17/24	10:35	υ	GW	2 7	×	××						
507191 FC_3A	9/18/24	08:20	9	GW	2 7	× ≻	××				+ + +	+	
507192 FC_3B	9/18/24	09:28	e	GW	2	×	××			+			
507193 EQUIP_BLK	9/18/24	09:56	υ	GW	Z N	×	××						
507194 SC_10	9/18/24	16:50	σ	GW	Z N	×	××			₩	160-55533 Chain of Custody	of Custody	
507195 SC_11	9/18/24	15:30	G	GW	2 N	×	××						
507196 SC_12	9/18/24	14:20	υ	GW	2	×	××						
Preservation Used: 1= Ice 2= HCI: 3= H2SO4: 4=HNO3: 5=h	5=MaOH·6= Othor	ther											
entification: n a listed EPA Hazardous Waste?	Dease I ist any FDA Waste Codes for the completin the	Waste Co	de for the	i olamea	4	Sample	Dispos	al (A fee	may be as	sessed if	samples are	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	than 1 month)
Comments Section if the lab is to dispose of the sample.					a								
 Non-Hazard Flammable Skin Irritant 	Poison B	8	Unknown	٨n		Re	Return to Client	ant	Dispo	Disposal by Lab	Arc	Archive for	Months
Special Instructions/QC Requirements & Comments: Please be sure to use the second structions/QC Requirements & Comments: Please be sure to use the second structure of the sec	e be sur	<u>e to use</u>	the listed method numbers	d met	nu pou	mber	رما						
Custody Seals Intact:YesNo	Custody Seal No.:	al No.:					Coole	r Temp. (Cooler Temp. (^o C): Obs'd:		Corr'd:	Therm ID No	D No.
Upr (Company: COLOGOCIA	Springs	LHHHO	Date/Time 9/ig/24	SH-II	Received by:	d by:	2		Com	Company:	Date/Time:	me:
	Company:			Date/Time		Rec	- Add	į	0110	Com	Company:	7571 SEP	72 DSEPmos 0 2024 089
	Company:			Date/Time:		Receive	Received in Laboratory	oratory by		Company:	any:	Date/Time:	me:
7/20/											Form	No. CA-C-WI-00	Form No. CA-C-WI-002, Rev. 4.18, dated 9/5/2018

Client: Colorado Springs Utilities

Login Number: 55533 List Number: 1 Creator: Pinette, Meadow L

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Samplers name is not on the COC
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 160-55533-1

List Source: Eurofins St. Louis

6

Qualifiers

Ra	
1.0	

Rad Qualifier	Qualifier Description	
G	The Sample MDC is greater than the requested RL.	
U	Result is less than the sample detection limit.	5

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
 ¢	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Colorado Springs Utilities Project/Site: CCR Landfill

Method	Method Description	Protocol	Laborator
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
None = No	Environmental Protection Agency one		
EPA = US None = No	Environmental Protection Agency		

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Eurofins St. Louis

Sample Summary

Client: Colorado Springs Utilities Project/Site: CCR Landfill

Job ID:	160-55533-1
---------	-------------

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-55533-1	507188 CC_1	Water	09/17/24 13:52	09/20/24 08:50
160-55533-2	507189 FC_1	Water	09/17/24 09:32	09/20/24 08:50
160-55533-3	507190 FC_2	Water	09/17/24 10:35	09/20/24 08:50
160-55533-4	507191 FC_3A	Water	09/18/24 08:20	09/20/24 08:50
160-55533-5	507192 FC_3B	Water	09/18/24 09:28	09/20/24 08:50
160-55533-6	507193 EQUIP_BLK	Water	09/18/24 09:56	09/20/24 08:50
160-55533-7	507194 SC_10	Water	09/18/24 16:50	09/20/24 08:50
160-55533-8	507195 SC_11	Water	09/18/24 15:30	09/20/24 08:50
160-55533-9	507196 SC 12	Water	09/18/24 14:20	09/20/24 08:50

Client Sample ID: 507188 CC_1 Date Collected: 09/17/24 13:52 Date Received: 09/20/24 08:50

Lab Sample ID: 160-55533-1 Matrix: Water

Lab Sample ID: 160-55533-2

Matrix: Water

latrix: Water

5 6

9

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.546		0.199	0.205	1.00	0.210	pCi/L	09/23/24 08:35	10/15/24 09:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.3		30 - 110					09/23/24 08:35	10/15/24 09:21	

			Uncert.	Uncert.							ł
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac	
Radium-228	1.49		0.699	0.712	1.00	0.951	pCi/L	09/23/24 08:40	10/11/24 14:07	1	
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac	
Ba Carrier	91.3		30 - 110					09/23/24 08:40	10/11/24 14:07	1	
Y Carrier	83.0		30 - 110					09/23/24 08:40	10/11/24 14:07	1	

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

			Count Uncert.	Total Uncert.						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.04		0.727	0.741	5.00	0.951	pCi/L		10/17/24 15:06	1

Client Sample ID: 507189 FC_1

Date Collected: 09/17/24 09:32

Date Received: 09/20/24 08:50

Method:	EPA	903.0 -	Radium-226	(GFPC)

			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.286		0.177	0.178	1.00	0.245	pCi/L	09/23/24 08:35	10/15/24 09:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.6		30 - 110					09/23/24 08:35	10/15/24 09:21	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analvzed	Dil Fac
		Quanner	<u> </u>	<u> </u>						Dirrac
Radium-228	1.73	G	0.779	0.795	1.00	1.03	pCi/L	09/23/24 08:40	10/11/24 14:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.6		30 - 110					09/23/24 08:40	10/11/24 14:07	1
Y Carrier	72.9		30 - 110					09/23/24 08:40	10/11/24 14:07	1

Client Sample Results

lient: Colorado Sprin roject/Site: CCR Lan		3	Clier	nt Samp	le Res	ults			Job ID: 160-5	5533-1
Client Sample ID:		FC_1						Lab Sample	e ID: 160-55	533-2
Date Collected: 09/17 Date Received: 09/20									Matrix	Water
Method: TAL-STL R	a226_Ra	228 - Coml			d Radiun	n-228				
			Count	Total						
			Uncert.	Uncert.						
Analyte		Qualifier	<u>(2σ+/-)</u>	<u>(2σ+/-)</u>		MDC		Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.02		0.799	0.815	5.00	1.03	pCi/L		10/17/24 15:06	1
Client Sample ID:	507190	FC_2						Lab Sample	e ID: 160-55	533-3
Date Collected: 09/17 Date Received: 09/20	7/24 10:35	5 -								: Water
Method: EPA 903.0										
Welliou. EFA 503.0	- Raululli	-220 (GFP)	Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0558		0.101	0.102	1.00	0.178		09/23/24 08:35	10/15/24 09:21	1
				-		2	•			D '' -
Carrier		Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	81.9		30 - 110					09/23/24 08:35	10/15/24 09:21	1
Method: EPA 904.0	- Radium	-228 (GFP								
			Count	Total						
Analista	Desult	Ovellifier	Uncert.	Uncert.	DI.	MDO	11	Durana and	A	
Analyte Radium-228	0.321	Qualifier	<u>(2σ+/-)</u> 0.435	<u>(2σ+/-)</u> 0.436	RL 1.00	0.729		Prepared 09/23/24 08:40	Analyzed 10/11/24 14:07	Dil Fac
Raulull-220	0.321	0	0.435	0.430	1.00	0.729	pCI/L	09/23/24 08.40	10/11/24 14.07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	81.9		30 - 110					09/23/24 08:40	10/11/24 14:07	1
Y Carrier	80.7		30 - 110					09/23/24 08:40	10/11/24 14:07	1
Method: TAL-STL R	a226_Ra2	228 - Coml		ium-226 an	d Radiun	n-228				
			Count	Total						
		o	Uncert.	Uncert.						
Analyte Combined Radium 226	0.377	Qualifier	<u>(2σ+/-)</u> 0.447	<u>(2σ+/-)</u>	RL	MDC 0.729		Prepared	Analyzed 10/17/24 15:06	Dil Fac
+ 228	0.377	0	0.447	0.448	5.00	0.729	pCI/L		10/17/24 15:00	1
- Client Sample ID:	507191	FC 3A						Lab Sample	D: 160-55	533-4
Date Collected: 09/18										Water
Date Received: 09/20										
_			<u></u>							
Method: EPA 903.0	- rauium	-220 (GFP	C) Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.143		0.103	0.104	1.00	0.152		<u> </u>	10/16/24 23:19	
	0.140	-	0.100	0.104	1.00	0.102	P 0 " L	00/2 1/24 00:00	. 5, 10,24 20.10	
Corrier	0/Viold	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Carrier	% riela	Quanner	Ennits					riepureu	Analyzea	Dirruc

Client Sample ID: 507191 FC_3A Date Collected: 09/18/24 08:20 Date Received: 09/20/24 08:50

Lab Sample ID: 160-55533-4 **Matrix: Water**

Lab Sample ID: 160-55533-5

Matrix: Water

1

1

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.00258	U	0.334	0.334	1.00	0.626	pCi/L	09/24/24 08:33	10/10/24 15:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.0		30 - 110					09/24/24 08:33	10/10/24 15:20	1
Y Carrier	77.0		30 - 110					09/24/24 08:33	10/10/24 15:20	1

Client Sample ID: 507192 FC_3B Date Collected: 09/18/24 09:28 Date Received: 09/20/24 08:50

+ 228

Method: EPA 903.0 - Radium-226 (GFPC) Count Total Uncert. Uncert. Analyte **Result Qualifier** (2σ+/-) (2**σ**+/-) RL MDC Unit Prepared Analyzed Dil Fac Radium-226 0.267 0.117 0.119 1.00 0.138 pCi/L 09/24/24 08:30 10/16/24 23:19 Carrier %Yield Qualifier Limits Prepared Analyzed Dil Fac 30 - 110 09/24/24 08:30 10/16/24 23:19 Ba Carrier 88.1

Method: EPA 904.0 - Radium-228 (GFPC)

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2 σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0329	U	0.350	0.350	1.00	0.674	pCi/L	09/24/24 08:33	10/10/24 15:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.1		30 - 110					09/24/24 08:33	10/10/24 15:20	1
Y Carrier	75.5		30 - 110					09/24/24 08:33	10/10/24 15:20	1

Method: TAL-STL Ra226 Ra228 - Combined Radium-226 and Radium-228

	_		Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.234	U	0.369	0.370	5.00	0.674	pCi/L		10/17/24 15:03	1

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Total

Uncert.

(2**σ+/-**)

0.0350

RL

1.00

MDC Unit

0.119 pCi/L

Prepared

09/24/24 08:30 10/16/24 23:21

Lab Sample ID: 160-55533-7

Matrix: Water

Analyte

Carrier

Ba Carrier

Radium-226

Client Sample ID: 507193 EQUIP BLK Date Collected: 09/18/24 09:56 Date Received: 09/20/24 08:50

Result Qualifier

%Yield Qualifier

-0.0567 U

82.9

Method: EPA 903.0 - Radium-226 (GFPC)

Analyzed

9

Dil Fac

1

Lab Sample ID: 160-55533-6 Matrix: Water	
	5
Prepared Analyzed Dil Fac 09/24/24 08:30 10/16/24 23:21 1	

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.708	U	0.561	0.565	1.00	0.874	pCi/L	09/24/24 08:33	10/10/24 15:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.9		30 - 110					09/24/24 08:33	10/10/24 15:20	1
Y Carrier	73.6		30 - 110					09/24/24 08:33	10/10/24 15:20	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Count

Uncert.

(20+/-)

0.0347

Limits

30 - 110

			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2 σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.652	U	0.562	0.566	5.00	0.874	pCi/L		10/17/24 15:03	1

Client Sample ID: 507194 SC_10 Date Collected: 09/18/24 16:50

Date Received: 09/20/24 08:50

Method: EPA 903.0 - Radium-226 (GFPC)

		·	Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.116	U	0.0994	0.0999	1.00	0.147	pCi/L	09/24/24 08:30	10/16/24 23:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.3		30 - 110					09/24/24 08:30	10/16/24 23:21	1

Method: EPA 904.0 - Radium-228 (GFPC)

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.233	U	0.551	0.551	1.00	0.962	pCi/L	09/24/24 08:33	10/10/24 15:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.3		30 - 110					09/24/24 08:33	10/10/24 15:20	1
Y Carrier	80.4		30 - 110					09/24/24 08:33	10/10/24 15:20	1

Client Sample Results

ient: Colorado Sprin	as Utilities	s	Client Sample Results					Job ID: 160-55533-1			
roject/Site: CCR Lan		,							000 ID. 100-0	0000-1	
Client Sample ID: ate Collected: 09/18								Lab Sample		533-7 : Water	
ate Received: 09/20)/24 08:50)									
Method: TAL-STL R	a226_Ra	228 - Comb	ined Radi	um-226 an	d Radiun	n-228					
			Count	Total							
			Uncert.	Uncert.							
Analyte		Qualifier	<u>(2σ+/-)</u>	<u>(2σ+/-)</u>	RL	MDC		Prepared	Analyzed	Dil Fac	
Combined Radium 226 + 228	0.350	U	0.560	0.560	5.00	0.962	pCi/L		10/17/24 15:03	1	
Client Sample ID:	507195	SC_11						Lab Sample	D: 160-55	533-8	
Date Collected: 09/18										: Water	
Date Received: 09/20)/24 08:50)									
Method: EPA 903.0	- Radium	-226 (GFPC	;)								
			Count	Total							
			Uncert.	Uncert.							
Analyte		Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC		Prepared	Analyzed	Dil Fac	
Radium-226	0.0162	U	0.0675	0.0675	1.00	0.131	pCi/L	09/24/24 08:30	10/16/24 23:21	1	
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac	
Ba Carrier	81.9		30 - 110					09/24/24 08:30		1	
	Decell	0	Count Uncert.	Total Uncert.			11-14	Provid	Amelanad	D'I 5	
Analyte Radium-228	0.328	Qualifier	<u>(2σ+/-)</u> 0.459	<u>(2σ+/-)</u> 0.460	RL 1.00	0.772		Prepared 09/24/24 08:33	Analyzed 10/10/24 15:20	Dil Fac	
Raulum-220	0.320	0	0.459	0.400	1.00	0.772	poi/L	09/24/24 00.33	10/10/24 15.20	1	
Carrier		Qualifier	Limits					Prepared	Analyzed	Dil Fac	
Ba Carrier	81.9		30 - 110					09/24/24 08:33		1	
Y Carrier	81.9		30 - 110					09/24/24 08:33	10/10/24 15:20	1	
Method: TAL-STL R	a226_Ra	228 - Comb		um-226 an	d Radiun	n-228					
			Count	Total							
A start of a	.	0	Uncert.	Uncert.			11		A I	B 11 -	
Analyte Combined Radium 226	0.344	Qualifier	(2σ+/-) 0.464	<u>(2σ+/-)</u> 0.465	RL 5.00	MDC 0.772		Prepared	Analyzed 10/17/24 15:03	Dil Fac	
+ 228	0.344	0	0.404	0.405	5.00	0.112	ροι/L		10/17/24 13.03	1	
Client Sample ID:	507196	SC 12						Lab Sample	D: 160-55	533-9	
Date Collected: 09/18	8/24 14:20) –								: Water	
	/24 08:50	<u> </u>									
Date Received: 09/20		-226 (GFP(
-	- Radium		Count	Total							
-	- Radium										
Method: EPA 903.0			Uncert.	Uncert.				_ ·	A •	B.: F	
Method: EPA 903.0	Result	Qualifier	Uncert. (2σ+/-)	(2σ+/-)	RL	MDC		Prepared	Analyzed	Dil Fac	
Analyte Radium-226		Qualifier	Uncert.		RL 1.00	MDC 0.112		Prepared 09/24/24 08:30		Dil Fac	
Method: EPA 903.0	Result 0.0837	Qualifier	Uncert. (2σ+/-)	(2σ+/-)							

Carrier

Ba Carrier

Y Carrier

Analyte

+ 228

Combined Radium 226

Client Sample ID: 507196 SC_12 Date Collected: 09/18/24 14:20 Date Received: 09/20/24 08:50

%Yield Qualifier

Result Qualifier

-0.100 U

93.5

79.3

Limits

30 - 110

30 - 110

Count

Uncert.

(2**σ**+/-)

0.333

Total

Uncert.

(2**σ**+/-)

0.333

RL

5.00

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Date Collected: 09/18/24 14:20									Matrix	Water
Date Received: 09	/20/24 08:50)								
Method: EPA 904	1.0 - Radium	-228 (GFP	C)							
			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2 σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.184	U	0.325	0.325	1.00	0.662	pCi/L	09/24/24 08:33	10/10/24 15:21	1

MDC Unit

0.662 pCi/L

	Ę
Dil Fac	
Dil Fac	
1 1	8
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D'' 5	
Dil Fac 1	

Job ID: 160-55533-1

Lab Sample ID: 160-55533-9

Analyzed

Analyzed

10/17/24 15:03

Prepared

Prepared

09/24/24 08:33 10/10/24 15:21

09/24/24 08:33 10/10/24 15:21

10/17/2024

QC Sample Results

Job ID: 160-55533-1

10

Method: 903.0 - Radium-226 (GFPC)

Lab Sample Matrix: Wate		60-6805	62/1-A						Client Sam	ple ID: Method E Prep Type: Tot	
Analysis Ba		563								Prep Batch: 68	
				Count	Total						
		MB	МВ	Uncert.	Uncert.						
Analyte		Result	Qualifier	(2 σ+/-)	(2 σ+/-)	RL	MDC	Unit	Prepared	Analyzed I	Dil F
Radium-226		-0.04758	<u> </u>	0.0626	0.0628	1.00	0.154	pCi/L	09/23/24 08:3		
		МВ	МВ								
Carrier				Limits					Prepared	Analyzed	Dil F
Ba Carrier		97.0	Quanner	30 - 110						5 10/15/24 09:20	
.ab Sample	ID: LCS	1 <mark>60-6</mark> 80	562/2-A					Cli	ent Sample ID	: Lab Control Sa	mp
Aatrix: Wate	ər									Prep Type: Tot	al/M
Analysis Ba	tch: 6835	563								Prep Batch: 68	305
						Total					
			Spike		LCS	Uncert.				%Rec	
nalyte			Added	Result	Qual	<u>(2σ+/-)</u>	RL	MDC		Limits	
adium-226			9.58	9.265		1.04	1.00	0.168	pCi/L 97	75 - 125	
	LCS	LCS									
Carrier	%Yield	Qualifier	Limits								
a Carrier	89.8		30 - 110	-							
	ID. 400.4		D								~~
ab Sample		55533-1	DU						Client Sar	nple ID: 507188	
latrix: Wate		6 4								Prep Type: Tot Prep Batch: 68	
nalysis Ba	ICH. 0035	04				Total				Fiep Batch. 00	000
	Sample	e Sample	`	ווס	DU	Uncert.					R
nalyte		t Qual		Result	-	(2σ+/-)	RL	MDC	Unit	RER	Li
adium-226	0.54			0.5916		0.223	1.00	0.224			
		DU									
Carrier		Qualifier		_							
a Carrier	77.7		30 - 110								
ab Sample	ID: MB 1	60-6807	′68/1-A						Client Sam	ple ID: Method E	Bla
hatrix: Wate										Prep Type: Tot	
Analysis Ba	tch: 6838	842								Prep Batch: 68	
-				Count	Total						
		MB	МВ	Uncert.	Uncert.						
nalyte			Qualifier	(2 σ +/-)	(2σ+/-)	RL	MDC		Prepared	Analyzed I	Dil F
adium-226	-	0.005139	U	0.0649	0.0649	1.00	0.135	pCi/L	09/24/24 08:3	0 10/16/24 10:16	
		MB	МВ								
Carrier			Qualifier	Limits					Prepared	Analyzed	Dil F
a Carrier		94.8		30 - 110					09/24/24 08:3		
				-							
ab Sample	ID: LCS	1 <mark>60-6</mark> 80	768/2-A					Cli	ent Sample ID	: Lab Control Sa	mp
latrix: Wate	ər									Prep Type: Tot	al/I
nalysis Ba	tch: 6838	342								Prep Batch: 68	307
						Total					
			Spike		LCS	Uncert.				%Rec	
Analyte			Added	Result	Qual	(2σ+/-)	RL	MDC		Limits	
Radium-226			9.58	9.392		1.04	1.00	0.145	pCi/L 98	75 - 125	

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QC Sample Results

Job ID: 160-55533-1

10

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample II Matrix: Water Analysis Bate			768/2-A					Cli	ent Sar	nple ID:	Lab Control S Prep Type: To Prep Batch:	otal/N
	LCS	1.05										
Carrier		Qualifier	Limits									
Ba Carrier	78.9	Quaimer	30 - 110	-								
lethod: 904		dium (<u> </u>								
ietnou. 904	. U - K a	uium-4		•)								
Lab Sample II Matrix: Water		60-6805	63/1-A						Clie	ent Samp	ole ID: Method Prep Type: To	
Analysis Bate	ch: <mark>6832</mark>	32									Prep Batch:	68056
				Count	Total							
		MB		Uncert.	Uncert.				_			
Analyte			Qualifier	(2σ+/-)	(2σ+/-)	RL		Unit		repared	Analyzed	Dil Fa
Radium-228		-0.2115	U	0.247	0.247	1.00	0.531	pCi/L	09/2	3/24 08:40	10/11/24 12:06	
<u>Dennien</u>			MB	l insite						vo no vo d	Archinged	
Carrier Ba Carrier		97.0	Qualifier	Limits 30 - 110						repared 3/24 08:40	Analyzed 10/11/24 12:06	Dil Fa
Y Carrier		97.0 80.4		30 - 110 30 - 110							10/11/24 12:06	
Carrier		00.4		50-110					03/2	5/24 00.40	10/11/24 12:00	
Lab Sample II Matrix: Water			563/2-A					Cli	ent Sar	nple ID:	Lab Control S Prep Type: To	otal/N
Analysis Bato	:n: 6832	32				Total					Prep Batch:	08050
			Spike	LCS	LCS	Uncert.					%Rec	
Analyte			Added	Result		(2σ+/-)	RL	MDC	Unit	%Rec	Limits	
Radium-228			8.44	8.707		1.25	1.00	0.609		103	75 - 125	
0	LCS											
Carrier Ba Carrier	89.8	Qualifier	Limits 30 - 110	-								
Y Carrier	89.8 81.1		30 - 110									
Camer	01.1		001110									
Lab Sample II	D: 160-5	5533-1	DU						Cli	ent Sam	ple ID: 50718	8 CC_
Matrix: Water											Prep Type: To	
Analysis Bato	ch: 6832	31									Prep Batch:	68056
						Total						
		Sample)		DU	Uncert.		MDO	11		DEF	RE
Analyte Radium-228	1.49			2.662		<u>(2σ+/-)</u> 0.974	RL 1.00		Unit pCi/L		REF	
				2.002	5	0.074	1.00	1.10	P01/L		0.70	
_	DU											
Carrier		Qualifier		_								
Ba Carrier	77.7		30 - 110									
' Carrier	79.3		30 - 110									
_ab Sample II	D: MB 1	60-6807	'69/1-A						Clie	ent Same	ole ID: Method	d Blan
Matrix: Water										- -	Prep Type: To	
	ch: 6829	13									Prep Batch:	
Analysis Dalo				Count	Total						-	
Analysis ball												
Analysis Ball		МВ	МВ	Uncert.	Uncert.							
Analyte Radium-228			Qualifier	Uncert. (2σ+/-) 0.316	Uncert. (2σ+/-) 0.317	RL 1.00		Unit pCi/L		repared 4/24 08:33	Analyzed	Dil Fa

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QC Sample Results

5

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-680769/1-A **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA Analysis Batch: 682913 Prep Batch: 680769 MB MB %Yield Qualifier Dil Fac Carrier Limits Prepared Analyzed Ba Carrier 94.8 30 - 110 09/24/24 08:33 10/10/24 13:56 1 Y Carrier 80.7 30 - 110 09/24/24 08:33 10/10/24 13:56 1 Lab Sample ID: LCS 160-680769/2-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA Analysis Batch: 682913 Prep Batch: 680769 Total %Rec Spike LCS LCS Uncert. Analyte Added Result Qual (2**σ**+/-) RL MDC Unit %Rec Limits 10 Radium-228 8.44 10.70 1.53 1.00 0.723 pCi/L 75 - 125 127 LCS LCS Carrier %Yield Qualifier Limits Ba Carrier 78.9 30 - 110 30 - 110 Y Carrier 75.5

QC Association Summary

Job ID: 160-55533-1

Rad

Prep Batch: 680562

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-55533-1 507188 CC_1		Total/NA	Water	PrecSep-21	
160-55533-2	507189 FC_1	Total/NA	Water	PrecSep-21	
160-55533-3	507190 FC_2	Total/NA	Water	PrecSep-21	
MB 160-680562/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-680562/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
160-55533-1 DU	507188 CC_1	Total/NA	Water	PrecSep-21	
rep Batch: 680563					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-55533-1	507188 CC_1	Total/NA	Water	PrecSep_0	
160-55533-2	507189 FC_1	Total/NA	Water	PrecSep_0	
160-55533-3	507190 FC_2	Total/NA	Water	PrecSep_0	
MB 160-680563/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-680563/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
160-55533-1 DU	507188 CC_1	Total/NA	Water	PrecSep_0	
rep Batch: 680768					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
160-55533-4	507191 FC_3A	Total/NA	Water	PrecSep-21	
160-55533-5	507192 FC_3B	Total/NA	Water	PrecSep-21	
160-55533-6	507193 EQUIP_BLK	Total/NA	Water	PrecSep-21	
160-55533-7	507194 SC_10	Total/NA	Water	PrecSep-21	
160-55533-8	507195 SC_11	Total/NA	Water	PrecSep-21	
160-55533-9	507196 SC_12	Total/NA	Water	PrecSep-21	
MB 160-680768/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-680768/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
rep Batch: 680769					
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
160-55533-4	507191 FC_3A	Total/NA	Water	PrecSep_0	
160-55533-5	507192 FC_3B	Total/NA	Water	PrecSep_0	
160-55533-6	507193 EQUIP_BLK	Total/NA	Water	PrecSep_0	
160-55533-7	507194 SC_10	Total/NA	Water	PrecSep_0	
160-55533-8	507195 SC_11	Total/NA	Water	PrecSep_0	
160-55533-9	507196 SC_12	Total/NA	Water	PrecSep_0	
MB 160-680769/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-680769/2-A	Lab Control Sample	Total/NA	Water	PrecSep 0	
	Lab Control Campio	10101/101			

Method: 903.0 - Radium-226 (GFPC) Matrix: Water

12

Prep Type: Total/NA

Prep Type: Total/NA

			Percent Yield (Acceptance Limits)	
		Ва		
Lab Sample ID	Client Sample ID	(30-110)		
160-55533-1	507188 CC_1	91.3		1
160-55533-1 DU	507188 CC_1	77.7		
160-55533-2	507189 FC_1	88.6		
160-55533-3	507190 FC_2	81.9		
160-55533-4	507191 FC_3A	98.0		
160-55533-5	507192 FC_3B	88.1		
160-55533-6	507193 EQUIP_BLK	82.9		
160-55533-7	507194 SC_10	90.3		
160-55533-8	507195 SC_11	81.9		
160-55533-9	507196 SC_12	93.5		
LCS 160-680562/2-A	Lab Control Sample	89.8		
LCS 160-680768/2-A	Lab Control Sample	78.9		
MB 160-680562/1-A	Method Blank	97.0		
MB 160-680768/1-A	Method Blank	94.8		
Tracer/Carrier Legen		94.8		

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC) Matrix: Water

			Percent Yield (Acceptance
	Ва	Y	
Lab Sample ID Client Sample ID	(30-110)	(30-110)	
160-55533-1 507188 CC_1	91.3	83.0	
160-55533-1 DU 507188 CC_1	77.7	79.3	
160-55533-2 507189 FC_1	88.6	72.9	
160-55533-3 507190 FC_2	81.9	80.7	
160-55533-4 507191 FC_3A	98.0	77.0	
160-55533-5 507192 FC_3B	88.1	75.5	
160-55533-6 507193 EQUIP_BLK	K 82.9	73.6	
160-55533-7 507194 SC_10	90.3	80.4	
160-55533-8 507195 SC_11	81.9	81.9	
160-55533-9 507196 SC_12	93.5	79.3	
LCS 160-680563/2-A Lab Control Sample	89.8	81.1	
LCS 160-680769/2-A Lab Control Sample	78.9	75.5	
MB 160-680563/1-A Method Blank	97.0	80.4	
MB 160-680769/1-A Method Blank	94.8	80.7	

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

APPENDIX D

Statistical Analysis Report

Statistical Analysis Report for CSU Clear Spring Ranch

2024 CCR Program, Annual Update, Ash Landfill Network

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Table of contents

1	Introduction	2			
2	Statistical Analysis Approach: Appendix III Parameters 2.1 Background Statistical Models and Prediction Limits	8			
3	 3 Statistical Analysis Approach: Appendix IV Parameters 3.1 Developing and Computing Groundwater Protection Standards (GWPS) 3.2 Computing Trend Lines and Confidence Interval Bands				
4	References	15			
-	ppendix A: Exploratory Plots Time Series Plots Box Plots Stacked Time Series Plots Stacked Time Series Plots ppendix B: Supporting Graphics Prediction Limit Outcome Plots, Appendix III Parameters Confidence Interval Band Plots, Appendix IV Parameters	61 82			
At		107			

Background	Downgradient
CC-1	SC-10
FC-1	SC-11
FC-2	SC-12
FC-3A	SC-13
FC-3B	SC-14

Table 1: CCR Rule Monitoring Network

1 Introduction

This report summarizes the statistical analysis performed on groundwater quality constituents monitored during 2024 of the Coal Combustion Residuals (CCR) Rule's groundwater monitoring program at the Colorado Springs Utilities (CSU) Clear Spring Ranch Ash Landfill (CSR).

The Clear Spring Ranch Ash Landfill CCR unit is currently in Assessment Monitoring, necessitating monitoring of both the Appendix III and IV constituents listed in **Table 2**. As part of this year's efforts (i.e., 2024), the baseline data sets collected since the first year of the CCR-Rule Program were evaluated in order to establish updated groundwater protection standards (GWPS) on upgradient background data representing Appendix IV constituents, and then to compare 2024 compliance measurements against these statistical limits to assess any statistically significant increases (SSI) above the GWPS. The analysis also established updated prediction limits on upgradient background data for Appendix III constituents, and compared 2024 compliance measurements against these statistical limits to assess any SUSI above background. Summaries of all the statistical test results are provided in subsequent sections of this report.

At the Clear Spring Ranch Ash Landfill network, the sampling results used to compute the background statistics and to identify potential SSIs were obtained from a set of designated background wells (CC-1, FC-1, FC-2, FC-3A, FC-3B) using data collected from June 2016 until September 2024.

As required by the USEPA's Coal Combustion Residuals (CCR) Rule section describing the Assessment Monitoring Program (§257.95), test results for the 2024 Appendix IV Assessment Monitoring events were compared to the GWPS for determination of any exceedances. Also, test results for the Appendix III parameters were compared against the updated background prediction limits.

Included in this report are 'Traffic Light' matrices to facilitate an at-a-glance identification of any statistically significant exceedances and to promote intra-company follow-up assessments of the possible causes and to plan for mitigation actions, whenever warranted. Sample analytical results of CCR-Rule Appendix III and Appendix IV constituents obtained from each of the monitoring wells and events were used to perform the statistical analysis and generate the graphs shown in this report. The current CCR Rule groundwater monitoring network, as Certified by a Professional Engineer, is presented in **Table 1**.

The 'R' Statistical Analysis package (www.r-project.org) in conjunction with R-Studio (www.rstudio.com), both popular public domain software products, were used in the production of the statistical values and graphs. Data dumps from CSU's Database were used to populate the R-based statistical analyses.

For this year's efforts, the baseline datasets of the CCR-Rule groundwater monitoring program were augmented with routine monitoring samples in order to update the background data set. The background data were then utilized to develop both updated prediction limits and statisticallyderived GWPS in those cases where site-specific background levels naturally exceed published regulatory limits. Finally, data from the compliance wells were statistically compared either to prediction limits for Appendix III parameters or to the GWPS for Appendix IV parameters to determine whether any statistical limits or standards were exceeded.

At the Clear Spring Ranch Ash Landfill CCR network, the sampling results used to compute the background statistics were obtained only from designated background wells using historical data that were first screened for possible trends or shifts in concentration levels over time. Any early data exhibiting a substantially different pattern or average concentration level than more recent data were excluded from the calculations. The cutoff date used for selecting background data was determined on a constituent by constituent basis, but was designed to include as much data as possible reflecting current groundwater conditions (see **Table 2**).

As summarized in **Attachment A**, this screening process was applied both to the background and downgradient data. Visual checks of the time series plots were made for possible seasonality. In addition, possible trends were also tested using weighted linear regression. Cases with statistically significant slopes (i.e., 'Up' or 'Down') are listed in **Attachment A**. Note that the presence of a statistically significant trend does not always indicate that the data need to be truncated. In some instances, the slope may be significant but of small magnitude, thus suggesting modest change over time. Also, with multiple background wells, the grouped background data may not be trending as a whole or in the same direction, even when individual background wells are trending.

Groundwater samples were analyzed for 21 distinct constituents as required under Appendix III and Appendix IV of the CCR Rule (listed in **Table 2**). Fluoride is monitored under both Appendices. Descriptive graphical summaries of all the data are presented in **Appendix A**. Time series plots of each well-constituent pair display the individual measurement results, while side-by-side boxplots, colored by gradient, allow visual comparisons between upgradient or background wells versus downgradient locations. In addition, 'stacked' time series plots, with all network wells graphed on the same set of axes for each constituent, offer another visual summary of the same data.

USEPA's Unified Guidance document on the statistical analysis of groundwater monitoring data (USEPA, 2009) discusses recommended strategies for statistical evaluations during Detection and Assessment Monitoring. Of note, it is a 'best-practice' when using prediction limits to always implement some form of retesting, in order to avoid potential false positive results and to confirm real changes in groundwater quality. Under this framework, a statistically significant increase (SSI) is identified only when both the routine observation and any resamples exceed the prediction limit.

In Assessment Monitoring, confidence-interval (CI) bands are a recommended technique for performing statistical comparisons to GWPS. In particular, trends at downgradient wells in analytical concentrations of required parameters can be plotted and used to estimate CI bands, which in turn can be compared against their respective GWPS. A statistically significant increase (SSI) is found if and only if the lower limit of the CI band exceeds the GWPS for the most recent Assessment Monitoring sampling event.

Constituent	Begin Date	End Date	Appendix
Antimony	2016-06-22	2024-09-18	IV
Arsenic	2016-06-22	2024-09-18	IV
Barium	2016-06-22	2024-09-18	IV
Beryllium	2016-06-22	2024-09-18	IV
Boron	2016-06-22	2024-09-18	III
Cadmium	2016-06-22	2024-09-18	IV
Calcium	2016-06-22	2024-09-18	III
Chloride	2016-06-22	2024-09-18	III
Chromium	2016-06-22	2024-09-18	IV
Cobalt	2016-06-22	2024-09-18	IV
Fluoride	2016-06-22	2024-09-18	III, IV
Lead	2016-06-22	2024-09-18	IV
Lithium	2016-06-22	2024-09-18	IV
Mercury	2016-06-22	2024-09-18	IV
Molybdenum	2016-06-22	2024-09-18	IV
pН	2016-06-22	2024-09-18	III
Rad226 + 228	2016-06-22	2024-09-18	IV
Selenium	2016-06-22	2024-09-18	IV
Sulfate	2016-06-22	2024-09-18	III
TDS	2016-06-22	2024-09-18	III
Thallium	2016-06-22	2024-09-18	IV

 Table 2: CCR Rule Monitored Constituents

2 Statistical Analysis Approach: Appendix III Parameters

CSU has established a statistical testing approach within its CCR detection monitoring program using the following decision logic:

- 1. For each Appendix III parameter and compliance well location, a comparison is made between each routinely collected sample and a site-specific upper prediction limit (UPL) computed from upgradient background data (or for pH, against a site-specific prediction interval).
- 2. If the routine observation exceeds the upper prediction limit (or for pH, is lower than the lower prediction limit), a potential SSI is identified. If the routine observation is within the bounds of the UPL or prediction interval, the test passes.
- 3. In the event of a potential SSI, one resample is compared against the UPL or prediction interval. If the resample falls within the bounds of prediction limit/interval, the test passes. If instead the resample exceeds the bounds of the limit/interval, an SSI is confirmed for that well and constituent.

2.1 Background Statistical Models and Prediction Limits

When computing each prediction limit (UPL) or prediction interval, the following steps were conducted:

1. All baseline data from designated upgradient or background wells collected through September 2024 were grouped and initially screened for possible outliers. This outlier screening was performed visually on time series plots of the data, as well as systematically via the following procedure:

Probable outliers were flagged by first fitting a broad, non-linear, spline trend to each COC-well pair (Cameron, 2024). By taking the standard error (SE) from each trend, computed from the mean square of the residuals:

$$s_e^2 = \sum_{i=1}^n e_i^2/(n-2) = \sum_{i=1}^n {(y_i - \hat{y}_i)^2}/{(n-2)}$$

the internally studentized residual (Draper & Smith, 1998) distance (i.e., gap) between each reported value and its trend estimate was computed with the formula:

$$t_i = (y_i - \hat{y})/s_e(1 - h_{ii})^{1/2}$$

where h_{ii} is the *i*th diagonal element of the 'hat' matrix H in regression theory. The studentized residuals t_i thus account for the typical variation exhibited by the observed data as well as the leverage (i.e., x-position) of the point being estimated.

These studentized residuals follow a standard scale similar to a standard logistic distribution (see Cameron, 2024). As a consequence, any studentized residual larger than 4 may be deemed a probable outlier, and residuals larger than 8 may be deemed extreme outliers (relative to the local trend).

Any flagged outliers were then *down-weighted* using a tri-cube weighting function, such that the further the point from its trend estimate, the smaller its statistical weight (w_i) . Outlier residuals furthest from the trend thus received the smallest weights, while those closer to the trend were given larger weights. Further, any observations not classified as residual outliers were given the maximum weight of 1.

Handling outliers in this manner is beneficial, especially since flagging outliers always involves a mixture of art (i.e., professional judgment) and statistical science. In some cases, disputes can arise among stakeholders as to whether specific values ought to be treated as outliers and/or eliminated from statistical analysis. This can especially be true when there is no known physical cause of the apparent outliers (e.g., laboratory or sampling error). Down-weighting in this manner is consistent, non-subjective, and does not exclude any data; yet minimizes the impact of true outliers on subsequent UPL estimates.

At the Clear Spring Ranch Ash Landfill network, 6 extreme outliers were flagged in the background data, along with 48 probable outliers. Further, 11 extreme outliers were were flagged at downgradient wells, along with 34 probable outliers.

Any extreme background outliers are listed in **Table 3** below. These values were down-weighted using the values shown in the Weight column. Note that non-outliers have weights equal to 1. Extreme downgradient outliers are listed in **Table 4**.

COC	Well	Result	ND.Flag	Date	Outlier	Weight
Antimony	CC-1	15	1	2023-09-25	OUT	0.0236
Antimony	FC-1	15	1	2023-09-25	OUT	0.0237
Antimony	FC-3B	15	1	2023-09-25	OUT	0.00302
Calcium	FC-3A	711000	0	2020-04-06	OUT	0.0166
Selenium	FC-2	1	1	2016-10-12	OUT	0.0202
Sulfate	CC-1	29000	0	2023-09-25	OUT	0.00709

Table 3: Down-Weighted Extreme Background Outliers

Table 4: Down-Weighted	Extreme	Downgradient	Outliers

COC	Well	Result	ND.Flag	Date	Outlier	Weight
Antimony	SC-10	15	1	2023-09-26	OUT	0.0229
Antimony	SC-11	15	1	2023-09-26	OUT	0.0227
Antimony	SC-12	15	1	2023-09-26	OUT	0.0227
Antimony	SC-13	15	1	2023-09-26	OUT	0.016
Barium	SC-11	40.5	0	2022-09-26	OUT	0.0202
Barium	SC-14	79.8	0	2022-09-26	OUT	0.00389
Chloride	SC-10	790	0	2023-09-26	OUT	0.0256
Mercury	SC-10	0.036	0	2016-06-22	OUT	0.0235
Mercury	SC-11	0.067	0	2016-06-22	OUT	0.0221
TDS	SC-13	6040	0	2018-02-15	OUT	0.0126
TDS	SC-14	26700	0	2016-11-16	OUT	0.00379

2. The grouped baseline data were analyzed to determine whether they could be fit to a known statistical model. If so, a quasi-parametric bootstrap-t prediction limit/interval was computed; if not, a nonparametric prediction limit/interval was constructed.

Any possible outliers, as described above, were down-weighted. Any observations not classified as outliers were given the maximum weight of 1. These weights (w_i) were subsequently utilized in computing each prediction limit/interval (or tolerance limit below).

To account for non-normal data, a range of possible mathematical transformations was applied to each background dataset, in order to identify the statistical model that maximized the weighted correlation between the observed values and normal z-scores on a probability plot. The final statistical model for each parameter was used to compute a bootstrap-t background prediction limit, if appropriate.

3. The best-fitting statistical model for each COC was used to compute a prediction limit or interval.

When a parametric model is appropriate, on the normalized scale, a prediction interval is computed using the standard normal theory equation:

$$PL = \bar{x} \pm \kappa s$$

where \bar{x} and s represent the mean and standard deviation of the (transformed) observations, and κ is a prediction limit multiplier. If the data have been transformed, the final prediction limit/interval is derived by back-transforming the scaled limit/interval. The prediction limit multiplier is computed as function of several inputs, including the background sample size, the targeted site-wide false positive risk (SWFPR), the configuration of the monitoring network (i.e., number of wells and number of COIs per well), and the retesting strategy implemented at the site (e.g., 1-of-2, etc.).

To account for possible outliers and the statistical weighting described above, a slightly different strategy was implemented to compute an estimate of the prediction limit multiplier, $\hat{\kappa}$. Specifically, a large number of *bootstrap* samples were drawn from the observed data (each bootstrap sample representing a random resampling of the original data, with each sample element being selected with replacement). For each bootstrap sample, the weighted mean and weighted standard deviation of the resample were computed to form the following ratio:

$$\left(\frac{x_i-\bar{x}_w}{s_w}\right)$$

where x_i is a random value drawn from the background data. Ultimately, an upper percentile of these ratios gave an estimate of the appropriate prediction limit multiplier, $\hat{\kappa}$, and the bootstrap-t prediction interval was computed as:

$$PL = \bar{x}_w \pm \hat{\kappa} s_w$$

The PLs computed under this methodology utilize all the data, including any possible extreme values, are reasonably robust (i.e., minimally impacted) in the presence of actual outliers, but are *quasi-parametric* — instead of nonparametric — despite the use of the bootstrap technique. This last characteristic implies that the bootstrap-t will result in an accurate PL only when the bulk of the background data can be closely fit to a known statistical model. In cases where a good model fit cannot be identified, a nonparametric PL must be computed instead.

COI	Ν	ND.Pct	Model	1-of-m	FPR	Units	LPL	UPL
Boron	115	0	NP	2	0.0145	$\mathrm{ug/L}$	NA	1690
Calcium	102	0	NP	2	0.0117	$\mathrm{ug/L}$	NA	479879
Chloride	110	0	NP	2	0.0099	$\mathrm{mg/L}$	NA	1690
Fluoride	115	0	NP	2	0.0091	$\mathrm{mg/L}$	NA	0.748
$_{\rm pH}$	115	0	NP	2	0.0089	SU	6.8	7.74
Sulfate	105	0	NP	2	0.0111	$\mathrm{mg/L}$	NA	20696
TDS	110	0	NP	2	0.0101	$\mathrm{mg/L}$	NA	35095

Table 5: Clear Spring Ranch Ash Landfill Interwell Prediction Limits

The probability plot correlations mentioned earlier were utilized in testing this method on a large series of datasets to derive an empirical cutoff value of 0.95 for deciding when the bootstrap-t could be applied. Further, the bootstrap-t does not work very well when the dataset is *multi-modal* (i.e., it has multiple peaks or 'humps'), for instance when multiple background wells are grouped together but have substantially different average concentration levels (perhaps due to a heterogenous aquifer). If a test for unimodality (i.e., single peak like the normal distribution) passed, then correlations of 0.95 and above led to use of the bootstrap-t, while multi-modality or correlations below this cutoff led to calculation of a nonparametric prediction limit/interval. For nonparametric models, the prediction limit was selected as a weighted interpolation of the largest sample values.

For the Clear Spring Ranch Ash Landfill CCR network, **Table 5** lists the calculated UPLs (and LPL for pH) established for this particular Unit.

2.2 Comparing Compliance Data Against Prediction Limits

To assess whether any SSIs occurred during 2024 Detection Monitoring at the Clear Spring Ranch Ash Landfill CCR site, the first routine sampling event from each parameter-well pair was compared against its respective prediction limit. Under a 1-of-2 retesting strategy, the next consecutive sampling round was reserved as a possible resample. This enabled sufficient lag time between any of the routine and resample measurements to assume approximate statistical independence.

If the routine observation exceeded the upper prediction limit (UPL), or for pH, was outside the bounds of the prediction interval on either side, a potential SSI was flagged. Then the reserved resample associated with the routine event was compared against the same limit or interval (when available). Only if the routine observation and its associated resample both were outside the bounds of the prediction limit/interval was a confirmed SSI identified.

Table 6 summarizes any confirmed or potential SSIs that occurred at the Clear Spring Ranch Ash Landfill CCR unit in 2024. Plots of the 2024 sampling data overlaid with the constituent-specific prediction limits are shown in **Appendix B**. In these figures, any confirmed SSIs are shown by coloring the routine measurement exceedance in orange and the resample confirmatory exceedance in purple. Potential SSIs (i.e., initial exceedances without an associated resample) are shown by coloring the routine measurement in yellow.

Table 6: 2024 Confirmed or Potential Prediction Limit SSIs at Clear Spring Ranch Ash Landfill CCR Site

COC	Well	Date	Result	Units	Stage	LPL	UPL	\mathbf{SSI}
Boron	SC-11	2024-03-19	2570	$\mathrm{ug/L}$	Sample	NA	1690	YES
Boron	SC-11	2024-09-18	2710	$\rm ug/L$	Resample	NA	1690	YES
Boron	SC-12	2024-03-19	4400	$\rm ug/L$	Sample	NA	1690	YES
Boron	SC-12	2024-09-18	4600	$\rm ug/L$	Resample	NA	1690	YES
Fluoride	SC-12	2024-03-19	0.88	mg/L	Sample	NA	0.748	YES
Fluoride	SC-12	2024-09-18	0.88	$\mathrm{mg/L}$	Resample	NA	0.748	YES

2.3 Summary of Appendix III Statistical Analysis

To facilitate an 'at-a-glance' summary of the prediction limit statistical comparison results, **Table 7** is a 'traffic light' matrix, showing a compact representation of each well location matched against each constituent in Appendix III. This summary is useful in planning for mitigation actions. Green cells indicate that no SSI was observed in 2024. Red cells indicate the opposite: an SSI was flagged during 2024. Yellow cells indicate *potential* SSIs, pending confirmatory resamples.

At the Clear Spring Ranch Ash Landfill CCR network in 2024, a total of 3 confirmed Appendix III SSIs were identified at Program network wells, along with 0 *potential* Appendix III SSIs.

	Well Locations								
COC	SC-10	SC-11	SC-12	SC-13	SC-14				
Boron	GRN	RED	RED	GRN	GRN				
Calcium	\mathbf{GRN}	GRN	\mathbf{GRN}	GRN	GRN				
Chloride	\mathbf{GRN}	GRN	GRN	GRN	GRN				
Fluoride	\mathbf{GRN}	GRN	RED	GRN	GRN				
\mathbf{pH}	\mathbf{GRN}	GRN	\mathbf{GRN}	\mathbf{GRN}	GRN				
Sulfate	\mathbf{GRN}	GRN	\mathbf{GRN}	GRN	GRN				
TDS	\mathbf{GRN}	GRN	\mathbf{GRN}	GRN	GRN				

Table 7: Appendix III Traffic Light Matrix for Clear Spring Ranch Ash Landfill CCR Site

Color-Coding Key:

RED = Results outside prediction limit bounds;

GRN = Results within prediction limit bounds;

YLW = Initial results outside bounds (potential SSI)

3 Statistical Analysis Approach: Appendix IV Parameters

The basic steps in the Assessment Monitoring analysis included the following:

- 1. Developing groundwater protection standards (GWPS) for each Appendix IV constituent, using published MCLs and/or water quality limits, along with baseline data from upgradient and background well locations at each CCR site;
- 2. Computing trends and associated confidence interval (CI) bands for each well location and Appendix IV constituent (i.e., for each well-constituent pair); and
- 3. Comparing each CI band against its respective GWPS to assess whether or not a statistically significant level (SSL) occurred.

To accomplish these steps, the background data were first summarized and modeled, as described in **Section 2**.

3.1 Developing and Computing Groundwater Protection Standards (GWPS)

USEPA has published maximum contaminant limits (MCL) or alternate regulatory limits for each of the Appendix IV constituents. Consequently, in most cases the Groundwater Protection Standard (GWPS) is equal to the MCL. However, there may be cases where background levels of a constituent exceed the MCL. In these instances, an alternate GWPS must be derived from on-site background levels.

CSU has established GWPS across its CCR program using the following decision logic:

- For each Appendix IV parameter where a GWPS must be established, a comparison is made between the promulgated regulatory limit and a site-specific limit computed from background data.
- If the background-based limit is larger than the promulgated limit, the GWPS is set to the background limit. If the promulgated limit is larger, the GWPS is set to the published value.

In cases where a background limit must be computed, USEPA's Unified Guidance recommends different strategies for computing a background-based GWPS (USEPA, 2009, sec. 7.5). One of these strategies — a 95% confidence, 95% coverage upper tolerance limit (UTL) on background — was selected and used to compute the UTL on site-specific background data for each Appendix IV parameter. Then these UTLs were compared against the promulgated regulatory limits to determine the site-specific GWPS.

Each tolerance limit (UTL) was computed in the following manner, using steps similar to those applied in computating the prediction limits for Appendix III parameters:

1. All baseline data from designated upgradient or background wells collected through September 2024 were grouped and initially screened for possible outliers. This outlier screening was performed as described in **Section 2.1**. Apparent outliers were not formally tested or removed from the data analysis, but instead were *down-weighted* in the statistical calculations, in order to minimize the impact of such values on the UTL estimates.

2. The grouped baseline data were analyzed to determine whether they could be fit to a known statistical model. If so, a quasi-parametric bootstrap-t UTL was computed; if not, a non-parametric UTL was constructed. Datasets which could not be sufficiently normalized were therefore analyzed by nonparametric means.

To account for non-normal data, a range of possible mathematical transformations was applied to each background dataset, in order to identify the statistical model that maximized the weighted correlation between pairs on the probability plot. The statistical weights described earlier were utilized to not only fit the best models, but also to compute the UTLs.

3. The best-fitting statistical model for each COI was used to compute an upper tolerance limit (UTL) with 95% coverage and 95% confidence.

When a parametric model is appropriate, on the normalized scale, a UTL is computed using the standard normal theory equation:

$$UTL=\bar{x}+\kappa s$$

where \bar{x} and s represent the mean and standard deviation of the (transformed) observations, and κ is a tolerance limit multiplier. If the data have been transformed, the final UTL is derived by back-transforming the scaled UTL. The tolerance limit multiplier (or *tolerance factor*) is drawn from a standard table of such values.

To account for possible outliers and the statistical weighting described above, a different strategy was implemented to compute an estimate of the tolerance factor, $\hat{\kappa}$. Specifically, a large number of *bootstrap* samples were drawn from the observed data (each bootstrap sample representing a random resampling of the original data, with each sample element being selected at random *with* replacement). For each bootstrap sample, a weighted mean and weighted standard deviation were computed to form the following ratio:

$$\left(\frac{x_i-\bar{x}_w}{s_w}\right)$$

where x_i is a random value drawn from the background data. Ultimately, an upper percentile of these ratios gave an estimate of the appropriate tolerance factor, $\hat{\kappa}$, and the bootstrap-t upper tolerance limit was computed as:

$$UTL = \bar{x}_w + \hat{\kappa} s_w$$

The UTLs computed under this methodology utilize all the data, including any possible extreme values, are reasonably robust (i.e., minimally impacted) in the presence of actual outliers, but are *quasi-parametric* — instead of nonparametric — despite the use of the bootstrap technique. This last characteristic implies that the bootstrap-t will result in an accurate UTL only when the bulk of the background data can be closely fit to a known statistical model. In cases where an adequate statistical model could not be identified, a weighted nonparametric UTL was computed instead, similar to the nonparametric prediction limits described earlier.

For the Clear Spring Ranch Ash Landfill CCR unit, **Table 8** lists the calculated GWPS limits established for this monitoring network.

COI	Model	Ν	Coverage	Confidence	UTL	RegLimit	GWPS	Units
Antimony	NP	115	0.95	0.976	4.13	6	6	$\rm ug/L$
Arsenic	TBOOT-Cube Root	115	0.95	0.95	11	10	11	$\rm ug/L$
Barium	TBOOT-Log	115	0.95	0.95	27.6	2000	2000	$\mathrm{ug/L}$
Beryllium	NP	115	0.95	0.981	2	4	4	$\rm ug/L$
Cadmium	NP	115	0.95	0.981	5	5	5	$\rm ug/L$
Chromium	NP	115	0.95	0.95	10	100	100	$\rm ug/L$
Cobalt	NP	115	0.95	0.981	11.8	6	11.8	$\mathrm{ug/L}$
Fluoride	NP	115	0.95	0.979	0.837	4	4	$\mathrm{mg/L}$
Lead	TBOOT-Fourth Root	115	0.95	0.95	5.2	15	15	$\mathrm{ug/L}$
Lithium	NP	115	0.95	0.981	1166	40	1166	$\rm ug/L$
Mercury	NP	115	0.95	0.98	0.009	2	2	$\mathrm{ug/L}$
Molybdenum	TBOOT-Seventh Root	115	0.95	0.95	11	100	100	$\rm ug/L$
Rad226 + 228	NP	115	0.95	0.98	4.8	5	5	pCi/L
Selenium	NP	115	0.95	0.979	224	50	224	$\mathrm{ug/L}$
Thallium	TBOOT-Log	115	0.95	0.95	4.18	2	4.18	$\mathrm{ug/L}$

Table 8: 2024 Clear Spring Ranch Ash Landfill CCR Unit GWPS Limits

3.2 Computing Trend Lines and Confidence Interval Bands

USEPA's Unified Guidance recommends comparing some type of confidence interval (CI) against a groundwater protection standard (GWPS) in order to assess whether or not the limit has been exceeded with statistical significance. If the entire interval exceeds the GWPS, a statistically significant level (SSL) is identified. If none of the interval, or only part, exceeds the GWPS, no SSL is recorded.

Since groundwater data are collected over time, and not all at once, some or most of the variation in the measurements may be due to a trend. To better account for this possibility, USEPA also recommends a variation on the confidence interval method known as a confidence interval band around a trend line. In this case, a (linear) trend line is first fit to the data, then a confidence band is constructed around the trend line. The confidence interval band can be compared against a GWPS in much the same fashion as a confidence interval, only now a comparison can be made at different points in time by comparing the 'cross-section' of the band for a given sampling date. If the interval represented by the confidence band cross-section fully exceeds the GWPS, an SSL is identified for that sampling event.

At the CSU CCR site, CI bands were constructed for each well-constituent pair using the weighted sample data. Cross-sections of each band were then compared to the GWPS for the most recent Assessment Monitoring event for the purpose of identifying any SSLs.

3.2.1 Trend Lines Using Linear Regression

Unless there are extreme outliers and/or curvature in the data, linear regression provides a standard and well-tested method for estimating the linear portion of a trend. The slope of the regression line points to the magnitude and direction of the trend. There is also a standard method for computing a confidence band around a linear regression trend line. For instance, equations [21.24] and [21.25] of Section 21.3 in the *Unified Guidance* can be compactly written as

$$CB_{1-\alpha} = \hat{x}_0 \pm \sqrt{2s_e^2 F_{1-\alpha,n-2} \left[\frac{1}{n} + \frac{(t_0 - \bar{t})^2}{(n-1)s_t^2}\right]}$$

where CB = confidence band, \hat{x}_0 is the regression line estimate at time t_0 , s_e^2 is the mean squared error of the regression line, F is a quantile from the F-distribution with 2 and n-2 degrees of freedom, and \bar{t} and s_t^2 represent the mean and standard deviation of the sampling dates.

For well-constituent pairs with no non-detects, linear regression and the formula above were used to construct each confidence band with 98% overall confidence, corresponding to a lower confidence limit with 99% confidence. For pairs with any non-detects, Monte Carlo imputation was used to substitute a random value between 0 and the reporting limit (RL) for each non-detect prior to computing the linear regression and confidence band. Then this process was repeated many times and the results averaged to determine the final regression and confidence band confidence band confidence.

3.3 Comparing Confidence Interval Bands Against GWPS

To assess whether any SSLs have occurred during the 2024 Assessment Monitoring at the CSU CCR site, the confidence interval (CI) bands described in **Section 3.2** were compared against the constituent-specific groundwater protection standards (GWPS) described in **Section 3.1**. Of note, an SSL was identified if and only if the CI band fully exceeded the GWPS at the most recent sampling event.

Plots of the CI band comparisons for each well-constituent pair are presented in Appendix B.

3.4 Summary of Appendix IV Statistical Analysis

To facilitate an 'at-a-glance' summary of the statistical comparison results, **Table 9** is a 'traffic light' matrix, showing a compact representation of each well location matched against each constituent in Appendix IV. This summary is useful in planning for mitigation actions. Green cells indicate that no SSL was observed. Red cells indicate the opposite: an SSL was flagged at the most recent sampling event. Yellow cells are warnings which indicate that a well-constituent pair should be watched. These cases have a CI band whose lower limit is at least two-thirds of the GWPS, or the CI band cross-section straddles the GWPS.

At the Clear Spring Ranch Ash Landfill CCR unit, a total of 0 SSL(s) were identified during the 2024 annual Assessment Monitoring analysis.

	Well Locations						
COC	SC-10	SC-11	SC-12	SC-13	SC-14		
Antimony	GRN	GRN	GRN	GRN	GRN		
Arsenic	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}		
Barium	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}		
Beryllium	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}		
Cadmium	GRN	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}		
Chromium	\mathbf{GRN}	\mathbf{GRN}	GRN	\mathbf{GRN}	\mathbf{GRN}		
Cobalt	GRN	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}		
Fluoride	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}		
Lead	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}		
Lithium	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}		
Mercury	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}		
Molybdenum	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}		
Rad226+228	\mathbf{GRN}	\mathbf{GRN}	\mathbf{GRN}	GRN	\mathbf{GRN}		
Selenium	YLW	YLW	GRN	\mathbf{GRN}	\mathbf{GRN}		
Thallium	GRN	GRN	GRN	GRN	GRN		

Table 9: Appendix IV Traffic Light Matrix for Clear Spring Ranch Ash Landfill CCR Unit

Color-Coding Key:

RED = CI Band above GWPS;

GRN = CI Band below GWPS;

YLW = CI Straddles GWPS or Lower Bound at least 2/3 of GWPS

4 References

Cameron, K. (2024). Outlier accommodation in censored time series. 2024 JSM Proceedings. https://doi.org/https://doi.org/10.5281/zenodo.13994247

Draper, N. R., & Smith, H. (1998). Applied regression analysis, 3rd edition. Wiley: NY.

USEPA. (2009). Statistical analysis of groundwater monitoring data at RCRA facilities: Unified guidance. USEPA: Office of Resource Conservation & Recovery, EPA 530-R-09-007.

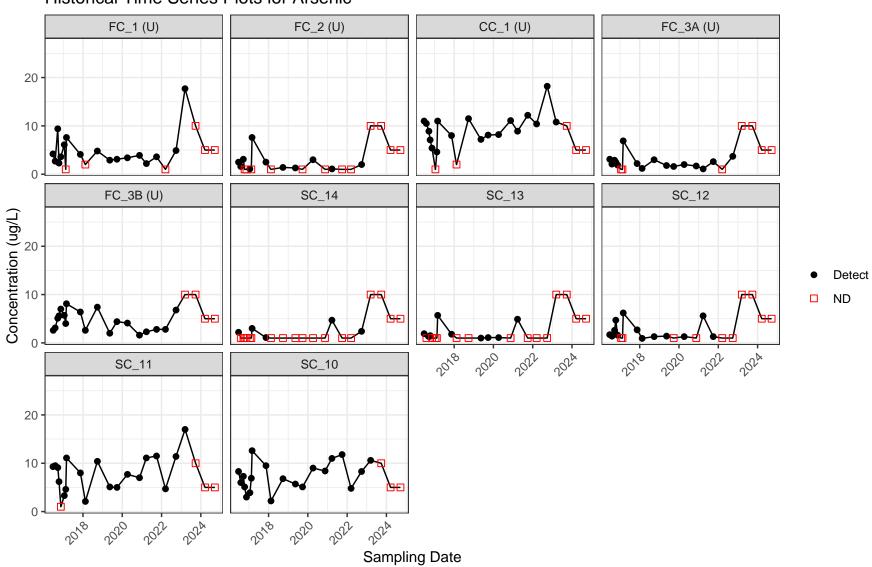
Appendix A: Exploratory Plots

- 1. Time Series Plots of Each Parameter
- 2. Box Plots of Each Parameter

Time Series Plots



Figure 1: Time Series Plots



Historical Time Series Plots for Arsenic

Figure 2: Time Series Plots

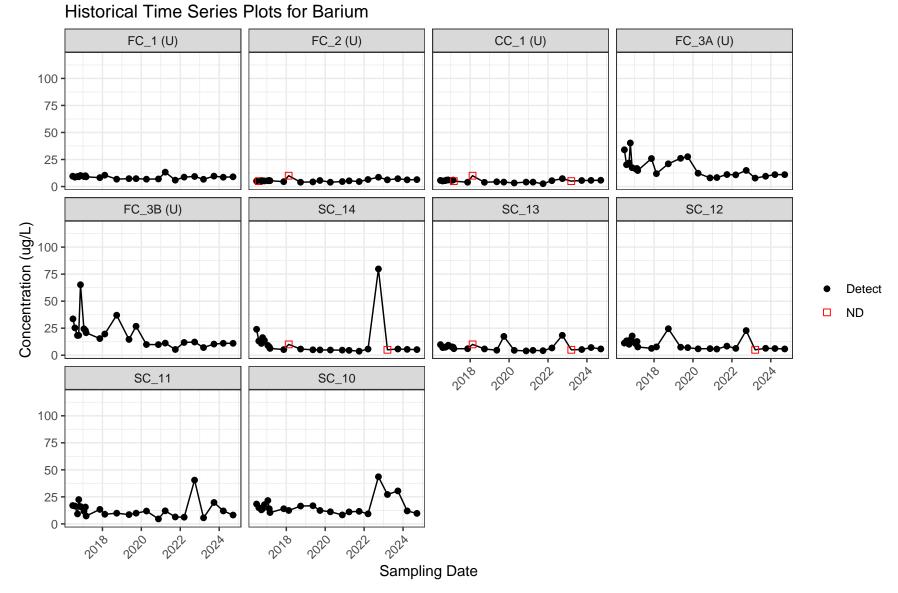


Figure 3: Time Series Plots

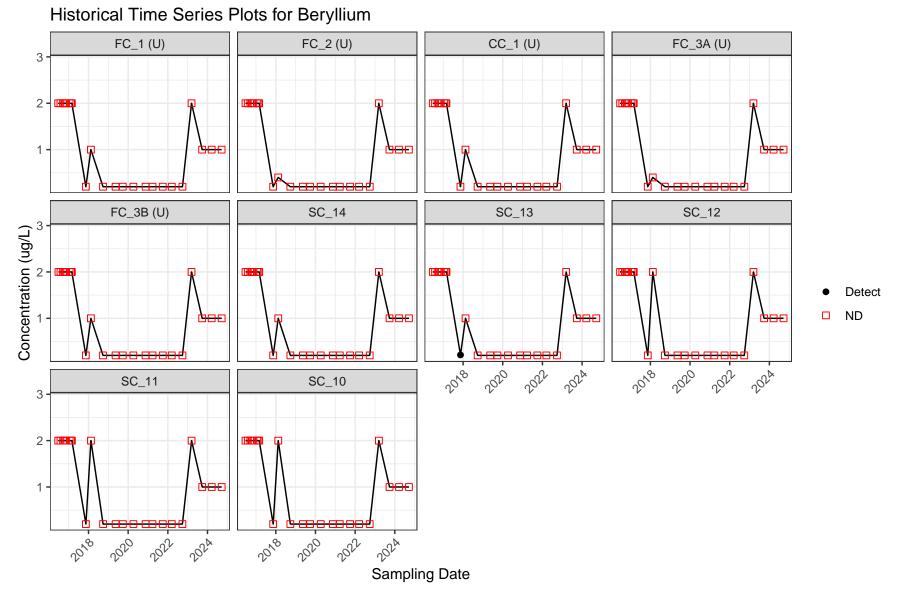


Figure 4: Time Series Plots

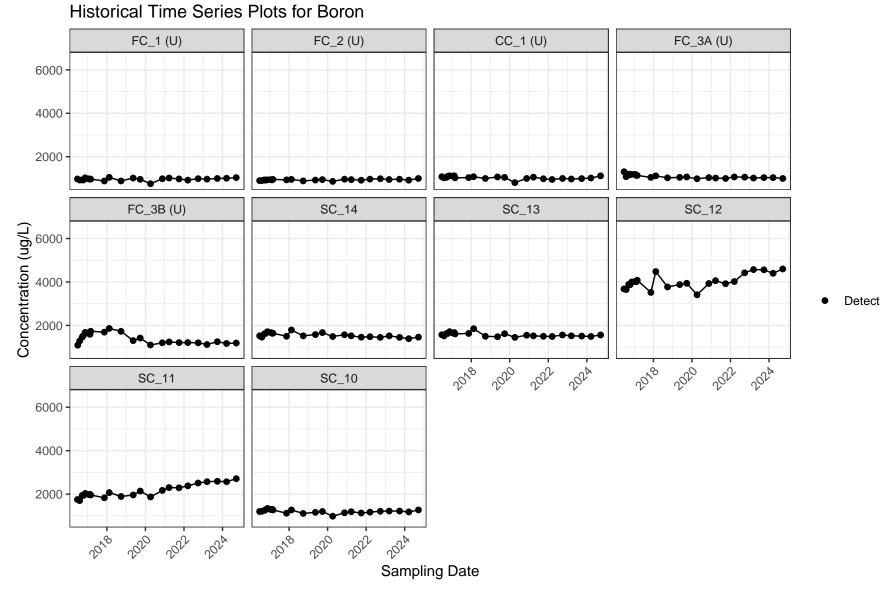
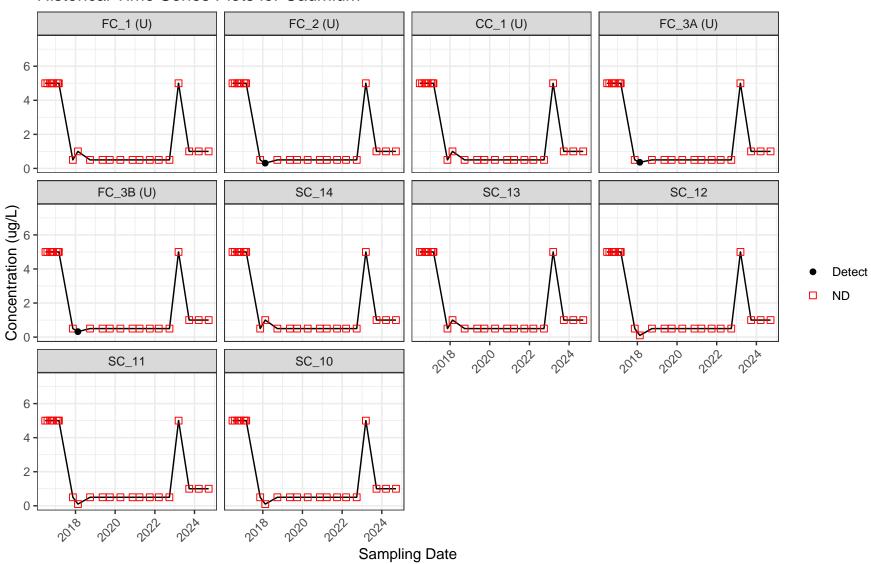


Figure 5: Time Series Plots



Historical Time Series Plots for Cadmium

Figure 6: Time Series Plots

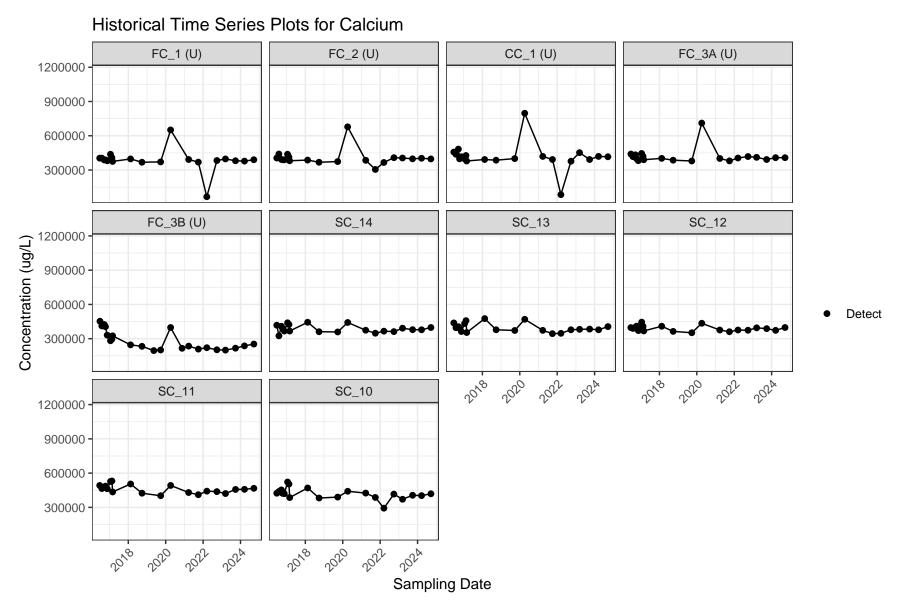


Figure 7: Time Series Plots

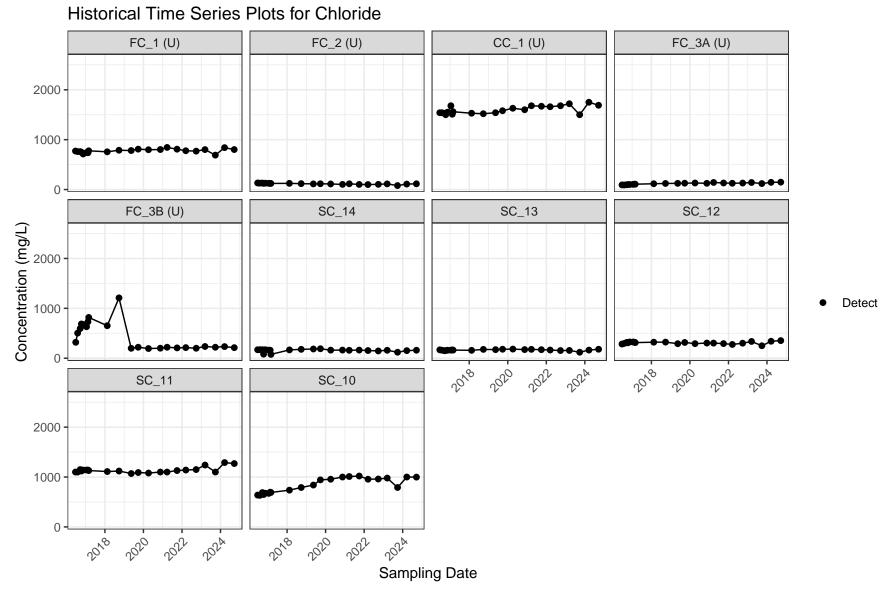


Figure 8: Time Series Plots

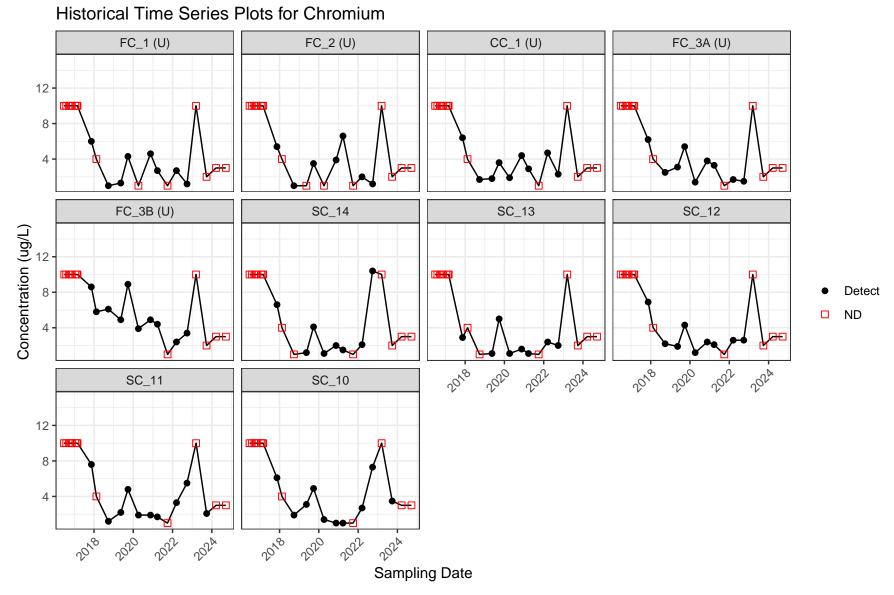


Figure 9: Time Series Plots

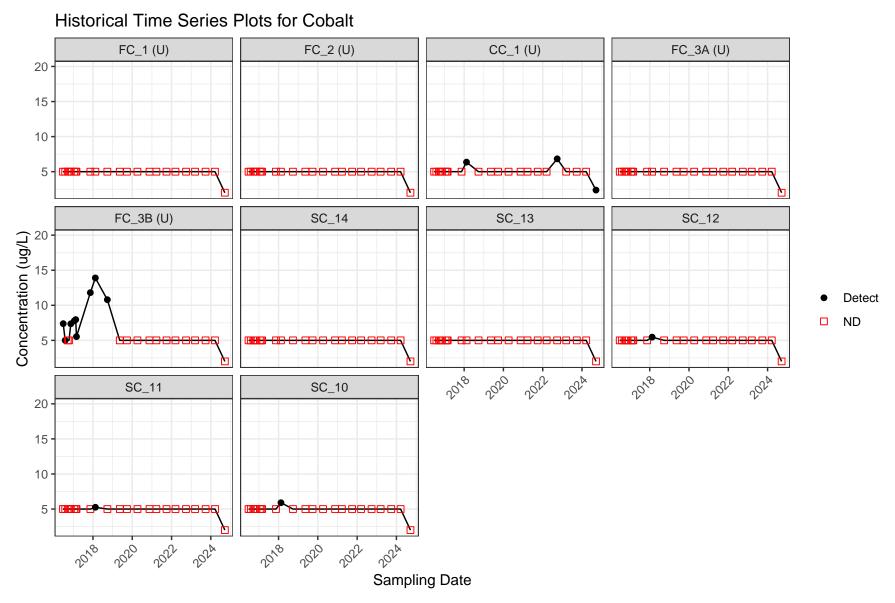


Figure 10: Time Series Plots

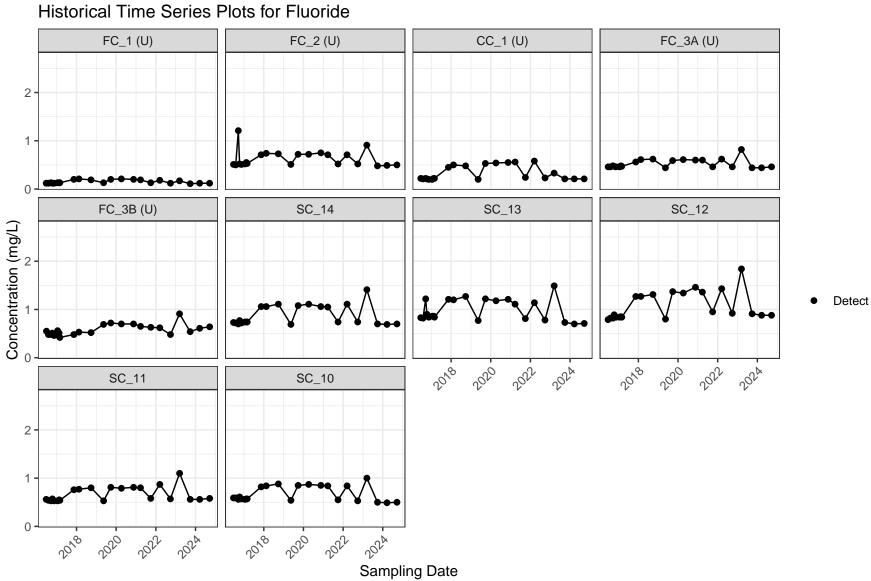


Figure 11: Time Series Plots

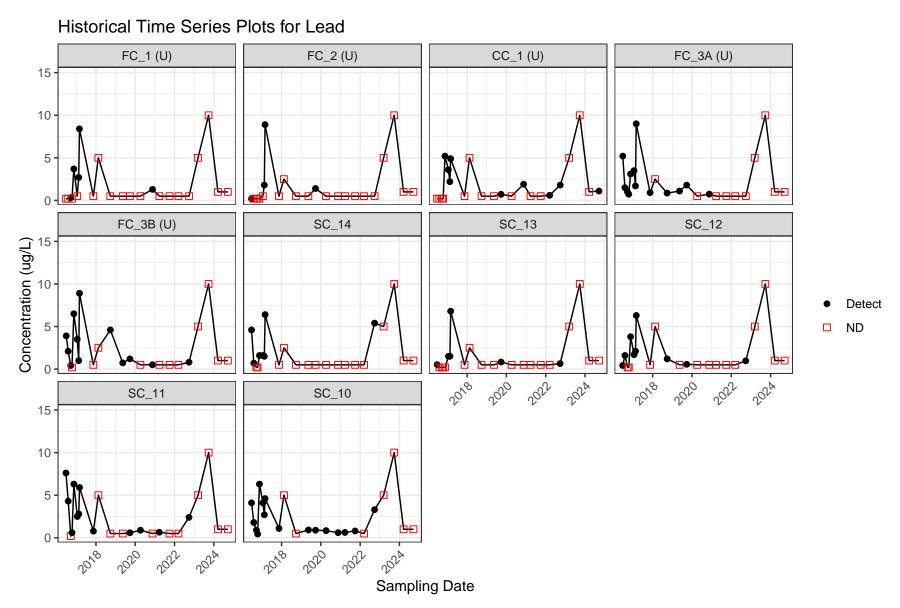


Figure 12: Time Series Plots

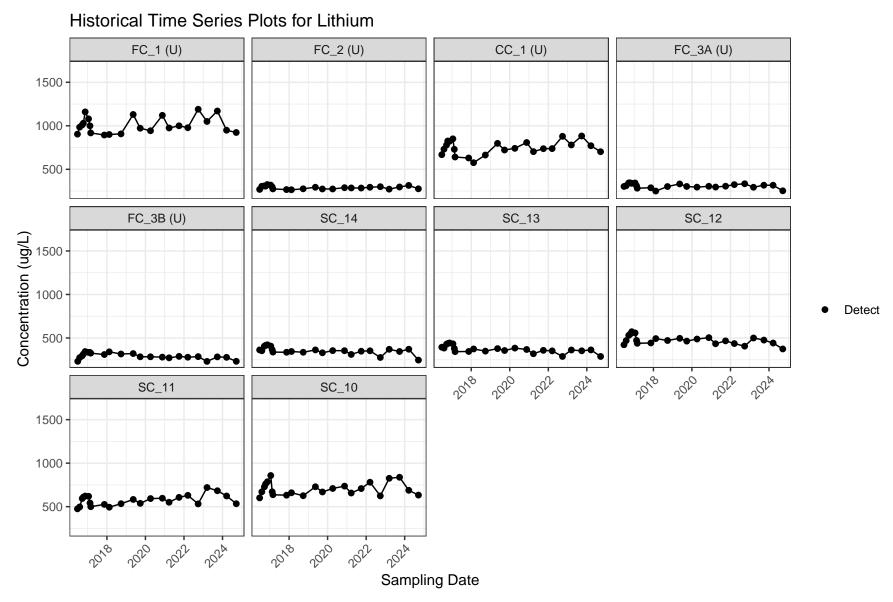
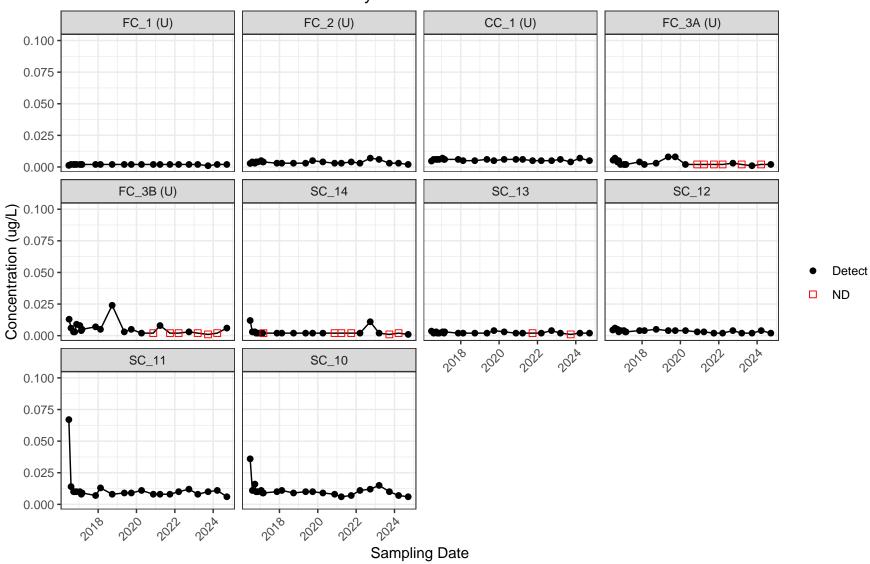
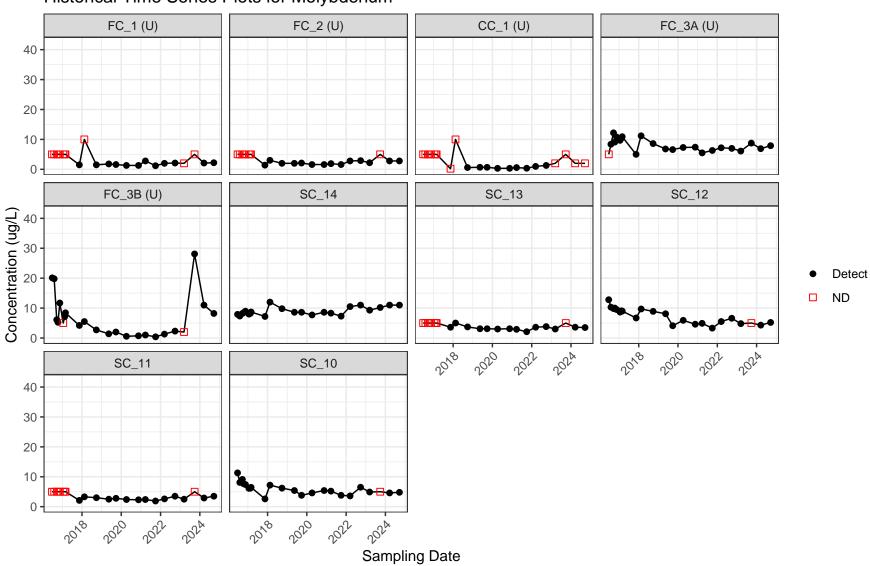


Figure 13: Time Series Plots



Historical Time Series Plots for Mercury

Figure 14: Time Series Plots



Historical Time Series Plots for Molybdenum

Figure 15: Time Series Plots

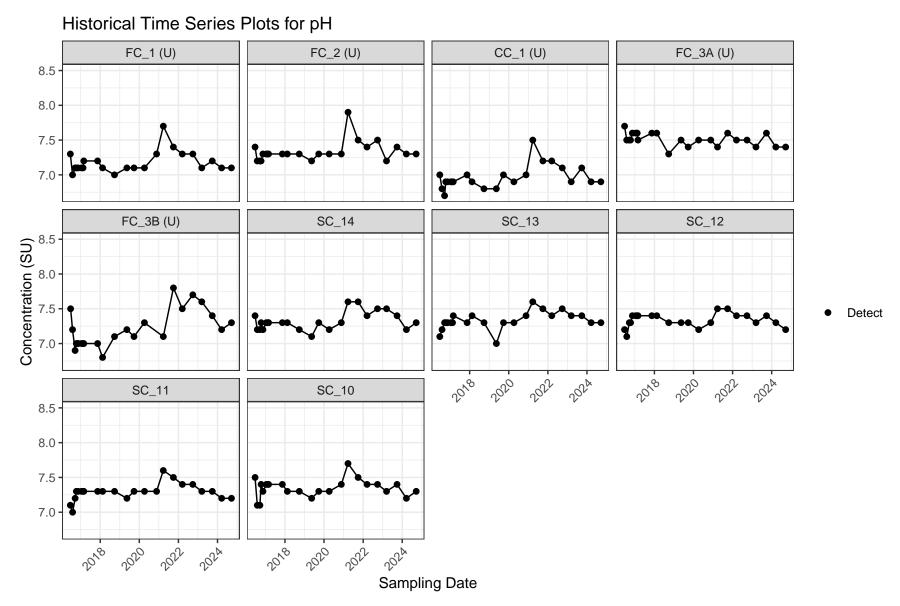


Figure 16: Time Series Plots

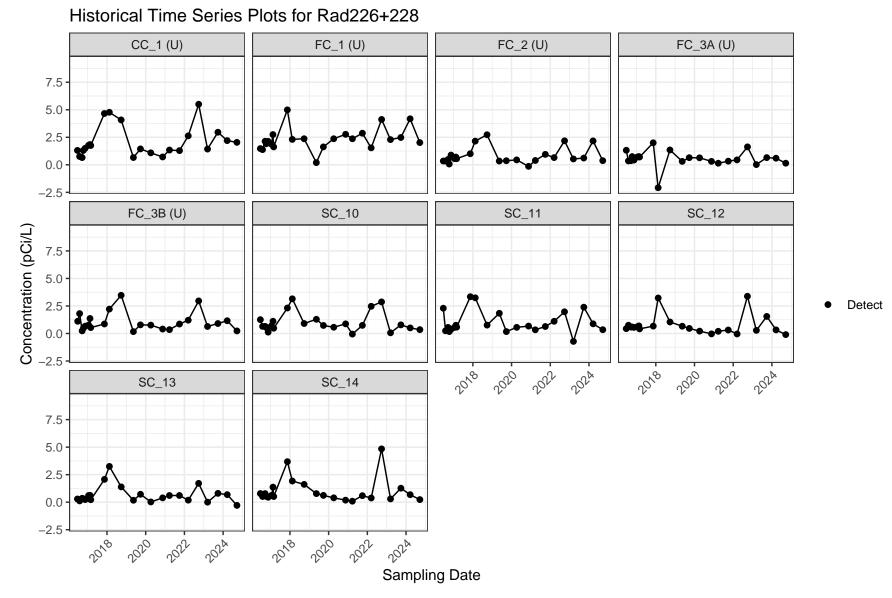
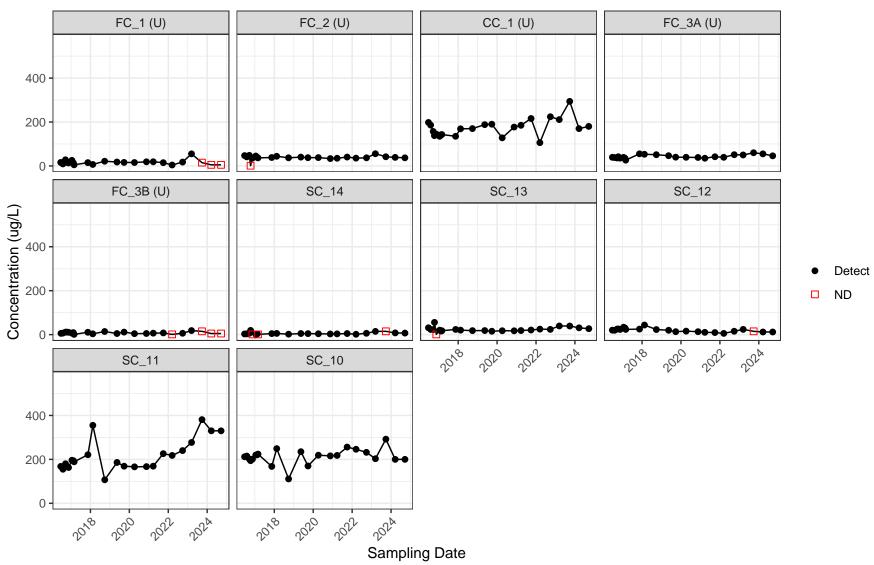
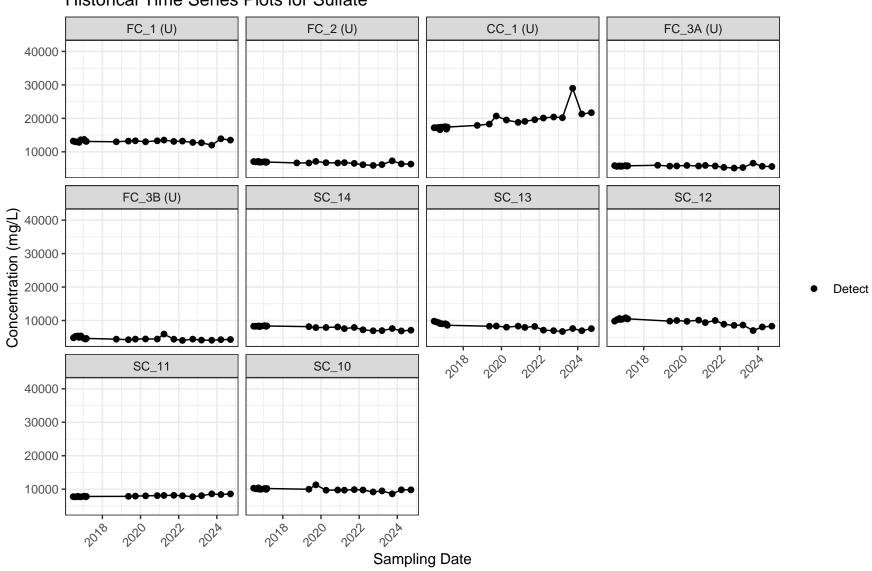


Figure 17: Time Series Plots



Historical Time Series Plots for Selenium

Figure 18: Time Series Plots



Historical Time Series Plots for Sulfate

Figure 19: Time Series Plots

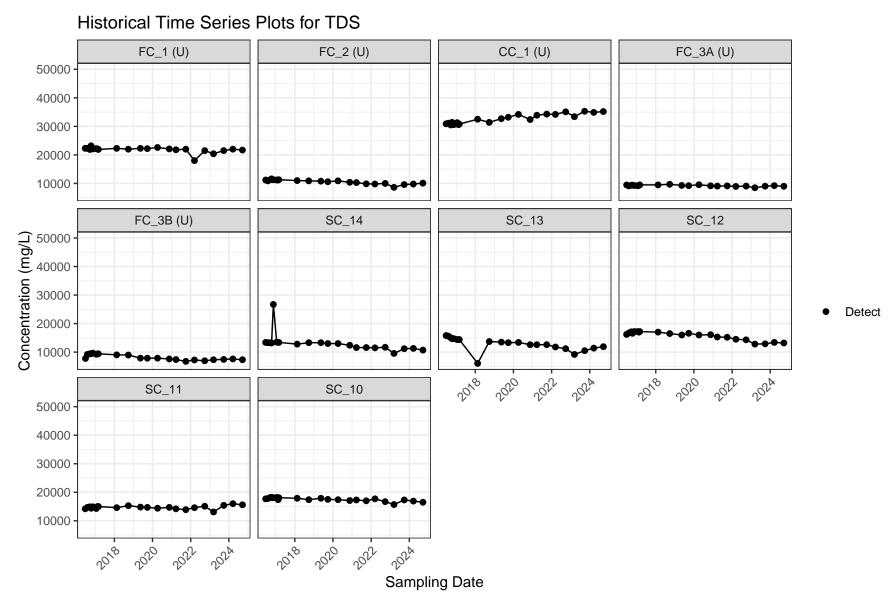
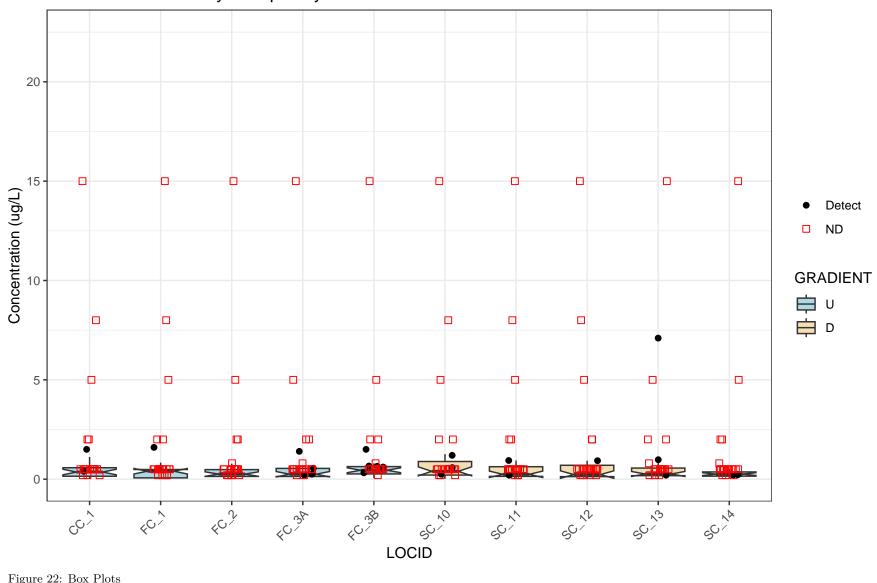


Figure 20: Time Series Plots



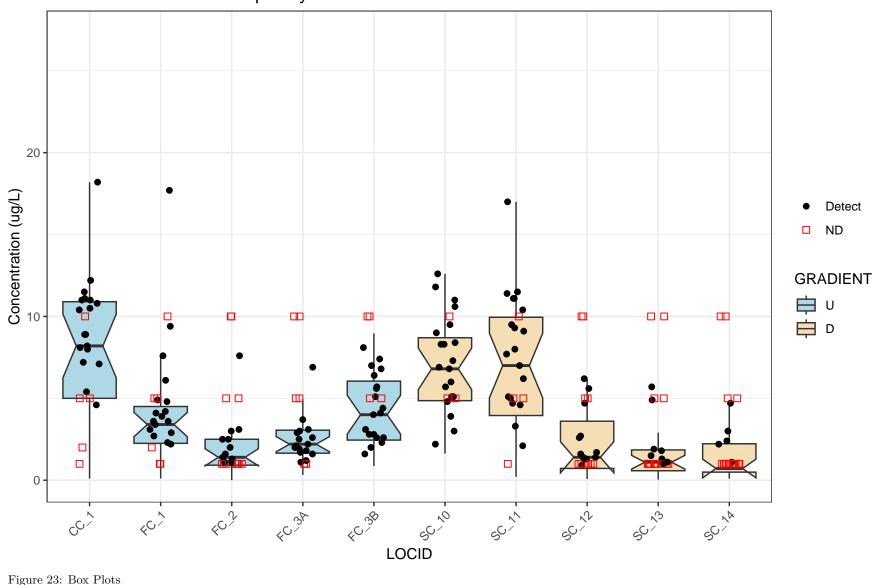
Figure 21: Time Series Plots

Box Plots



Box Plots for Antimony Grouped by Gradient

Figure 22: Box Plots



Box Plots for Arsenic Grouped by Gradient

Figure 23: Box Plots

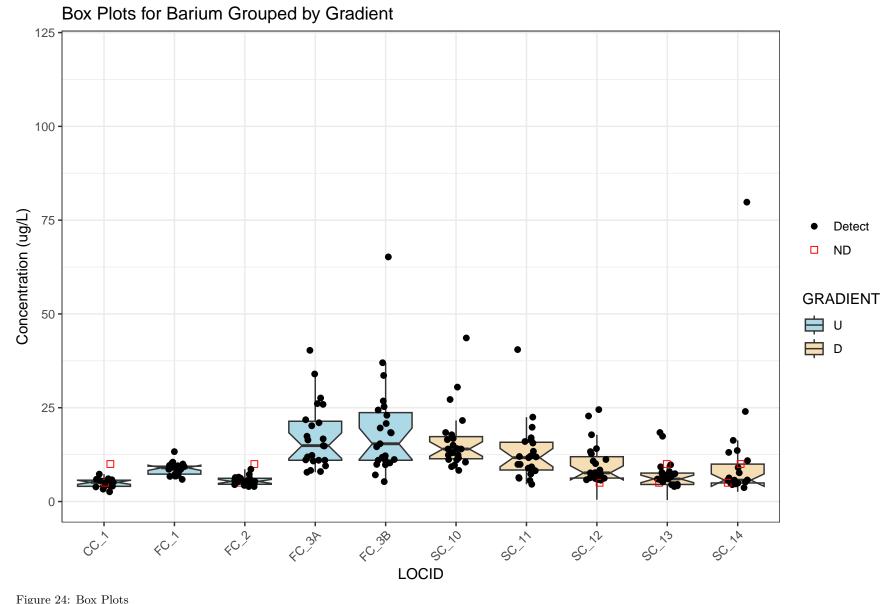
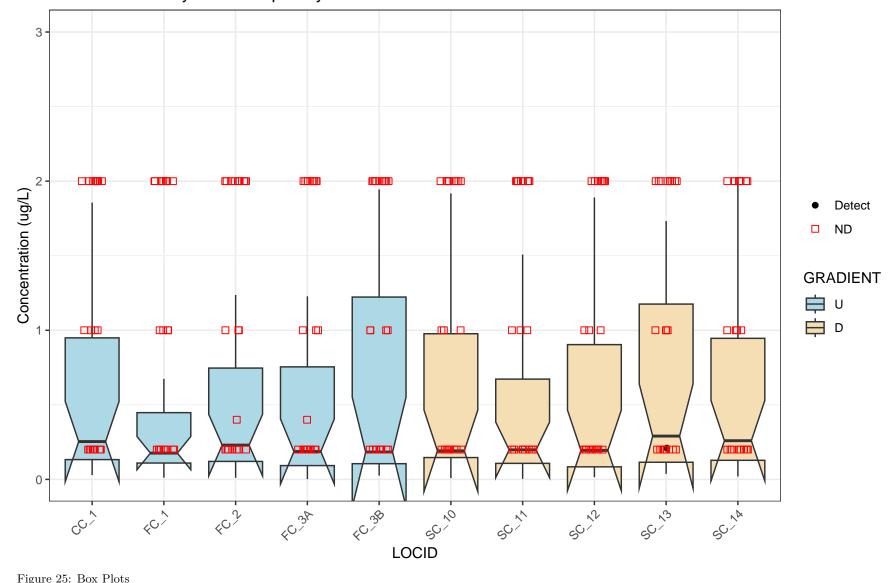


Figure 24: Box Plots



Box Plots for Beryllium Grouped by Gradient

Figure 25: Box Plots

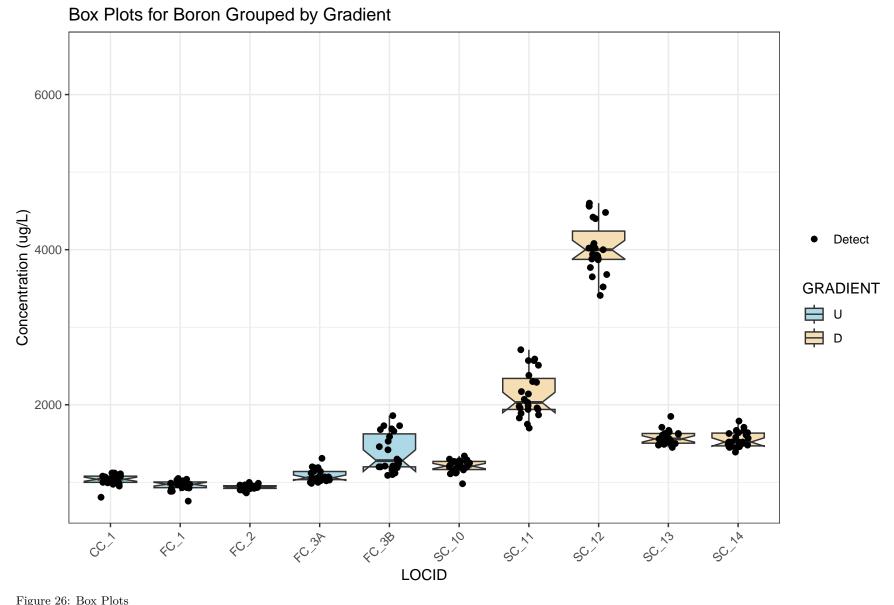
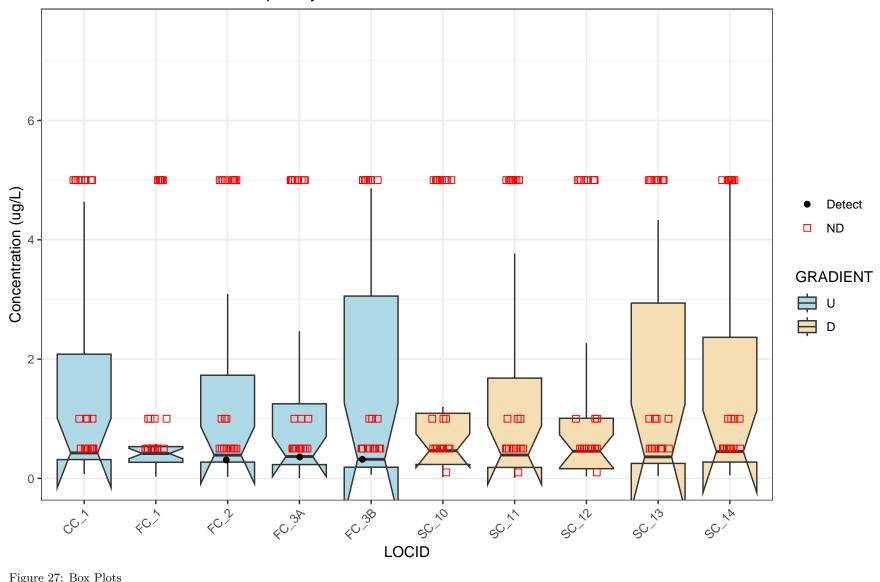
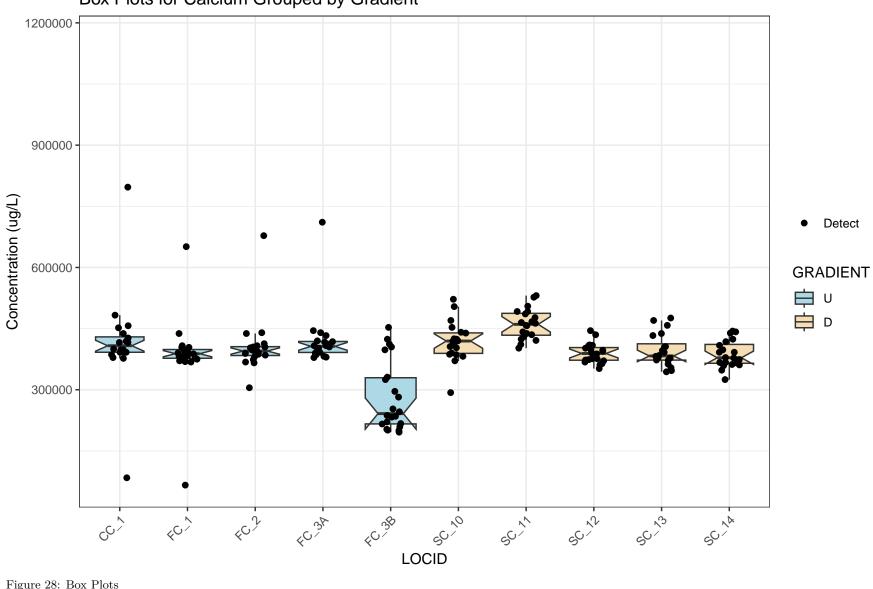


Figure 26: Box Plots



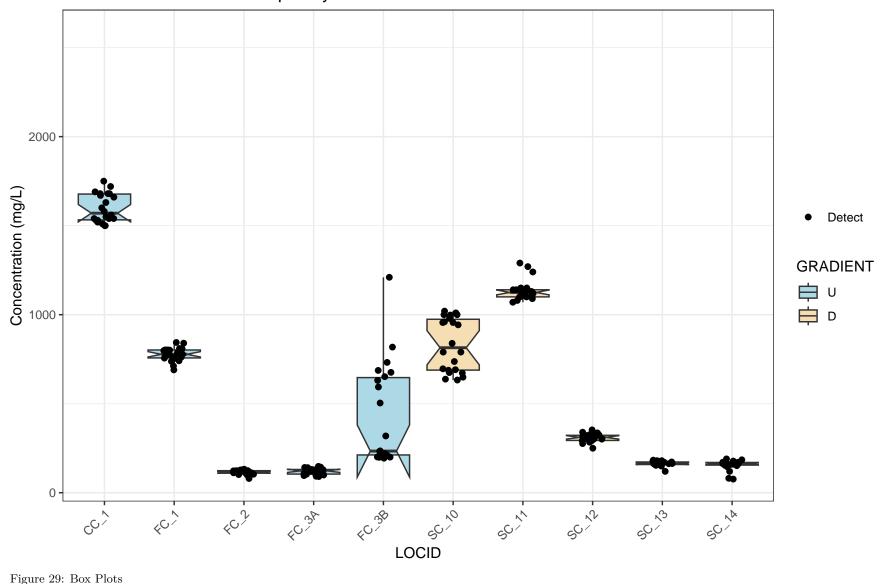
Box Plots for Cadmium Grouped by Gradient

Figure 27: Box Plots



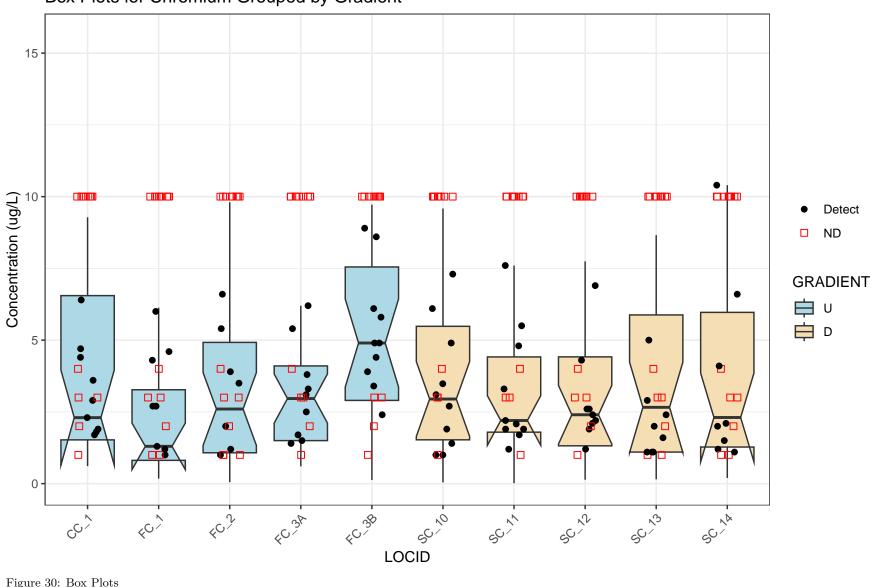
Box Plots for Calcium Grouped by Gradient

Figure 28: Box Plots



Box Plots for Chloride Grouped by Gradient

Figure 29: Box Plots



Box Plots for Chromium Grouped by Gradient

Figure 30: Box Plots

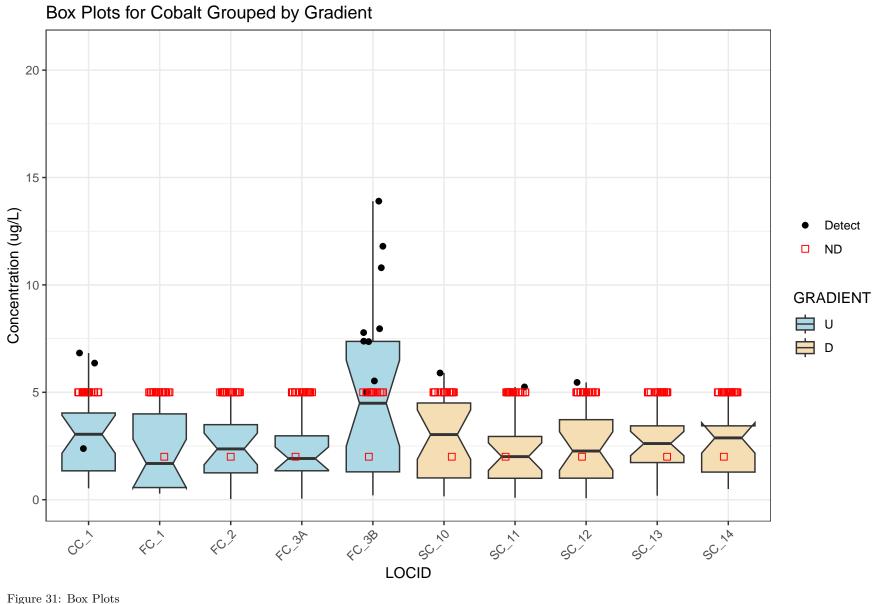
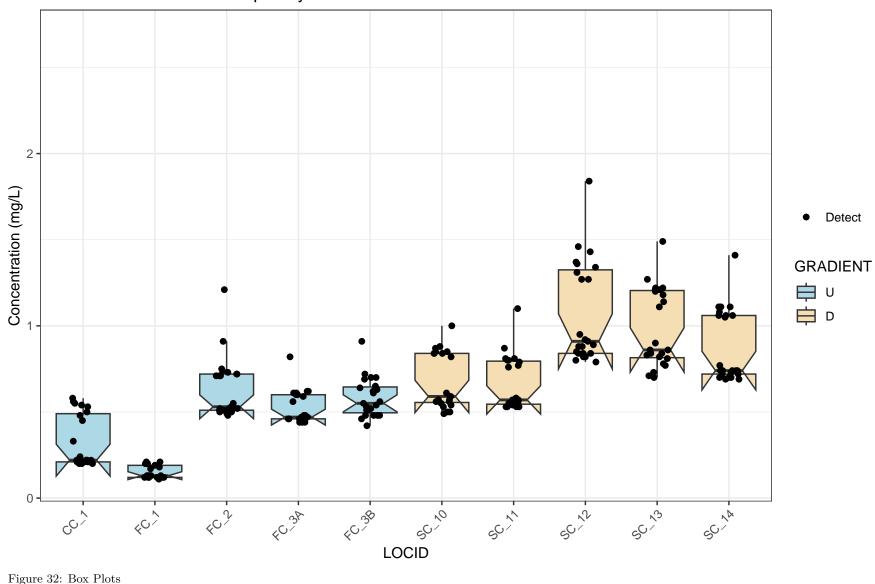


Figure 31: Box Plots



Box Plots for Fluoride Grouped by Gradient

Figure 32: Box Plots

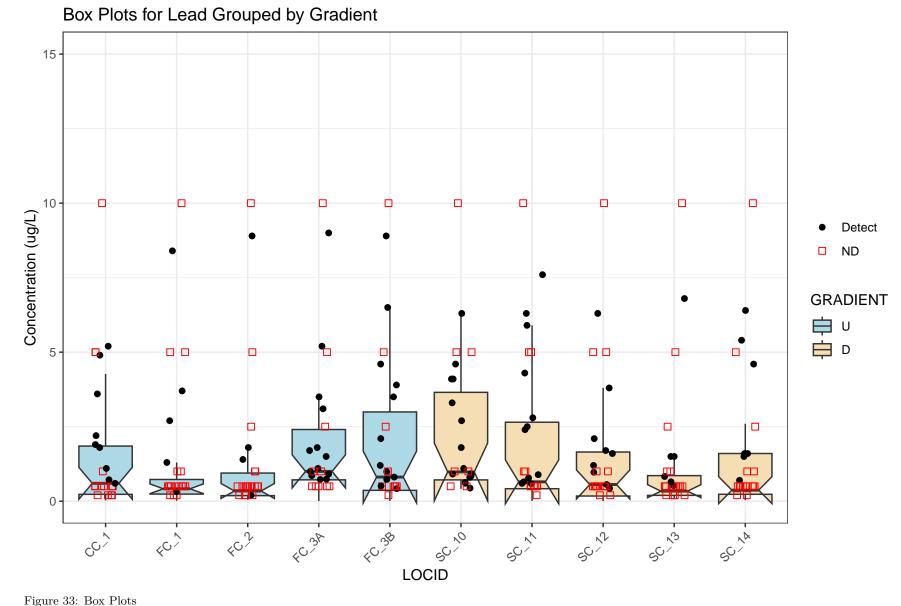
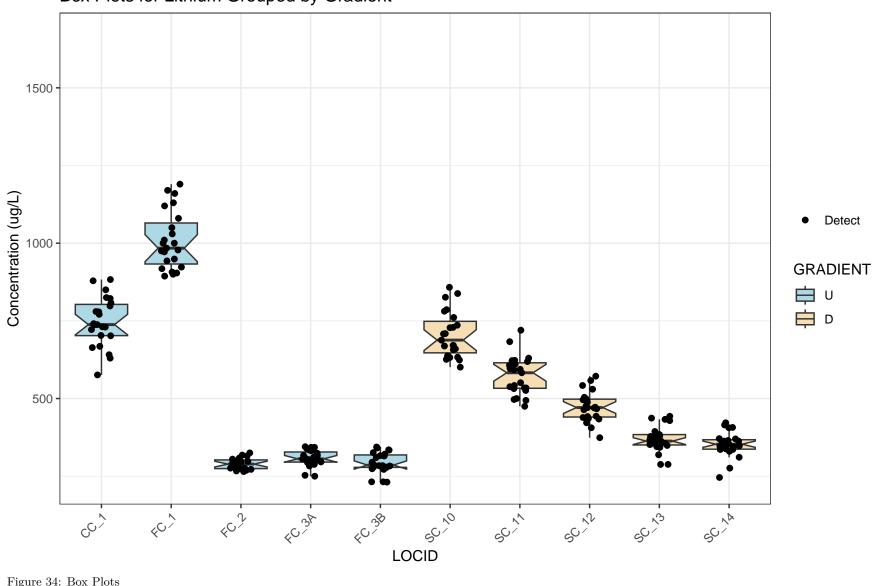
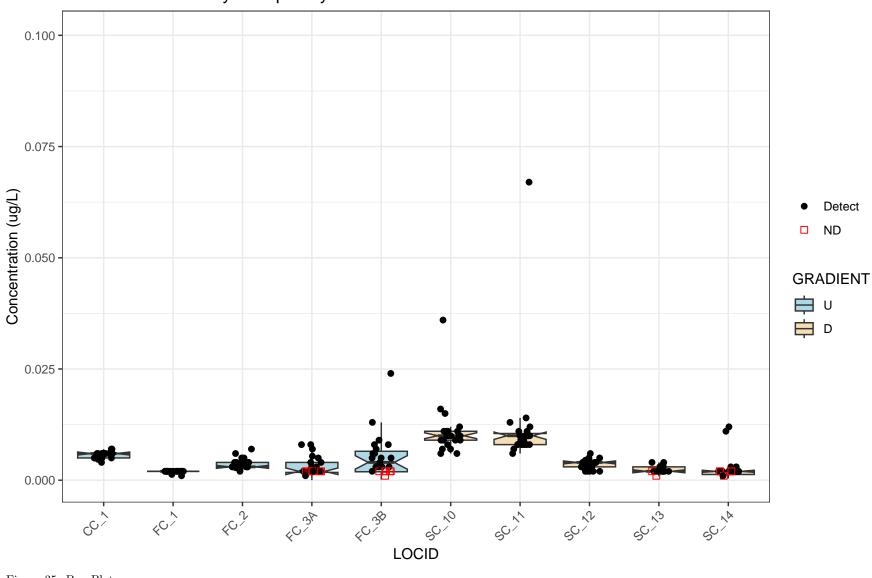


Figure 33: Box Plots



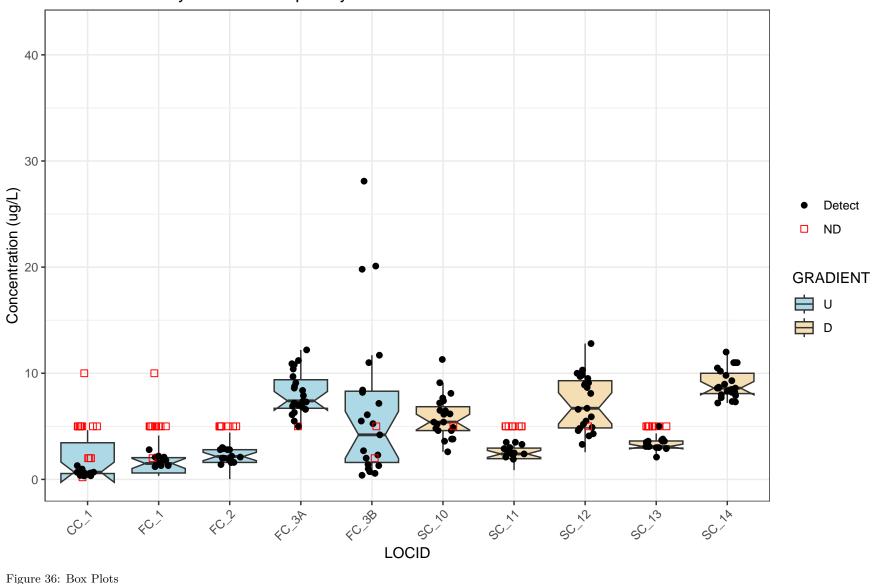
Box Plots for Lithium Grouped by Gradient

Figure 34: Box Plots



Box Plots for Mercury Grouped by Gradient

Figure 35: Box Plots



Box Plots for Molybdenum Grouped by Gradient

Figure 36: Box Plots

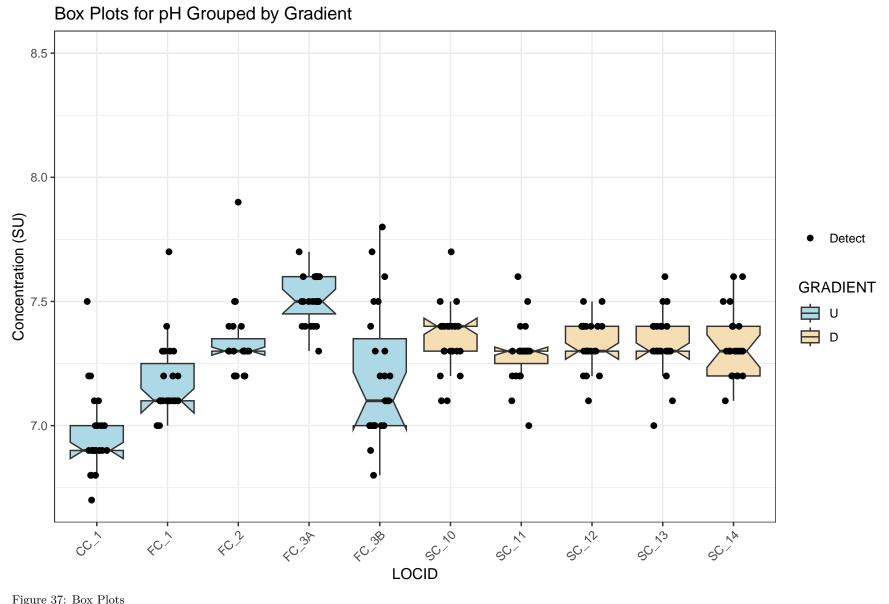
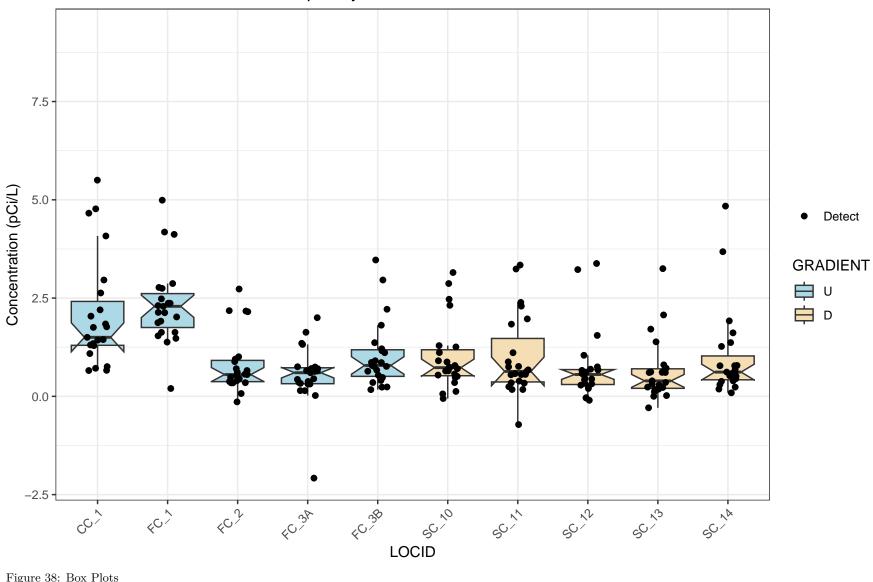
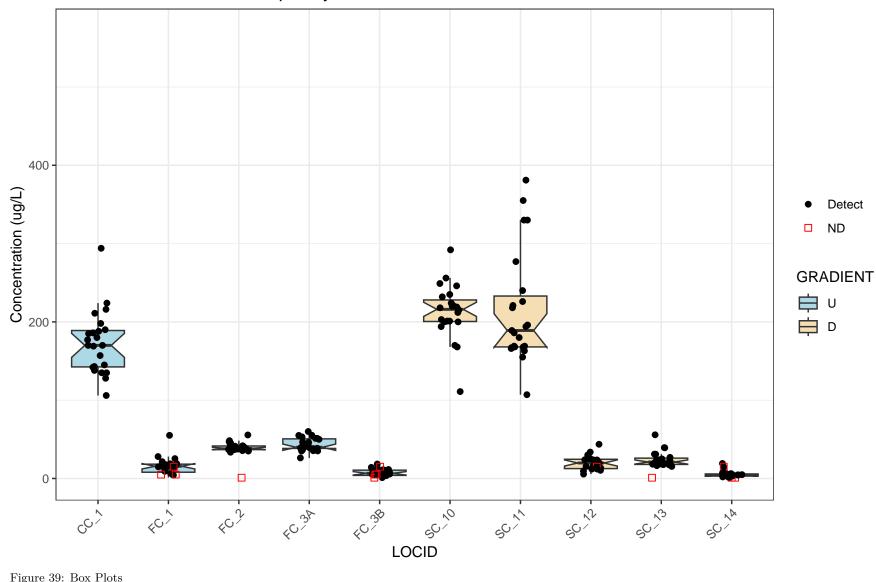


Figure 37: Box Plots



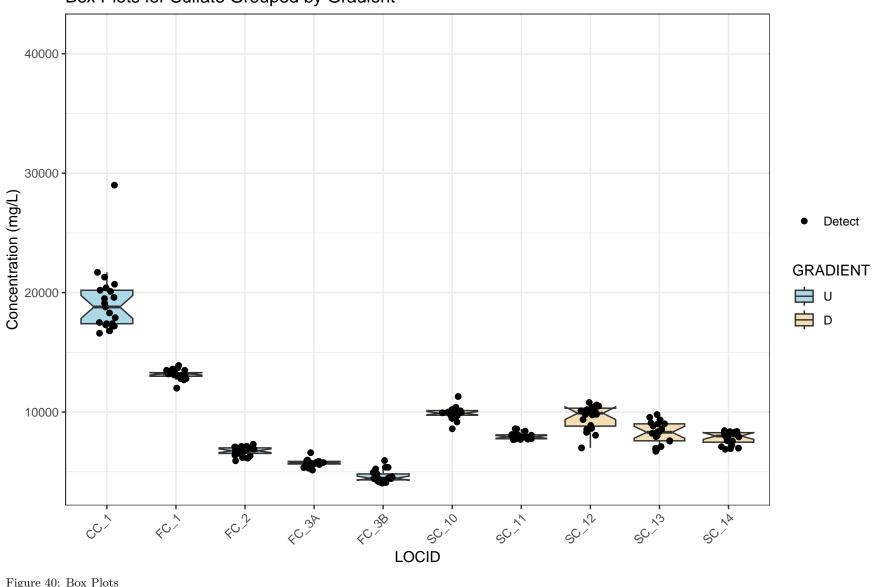
Box Plots for Rad226+228 Grouped by Gradient

Figure 38: Box Plots



Box Plots for Selenium Grouped by Gradient

Figure 39: Box Plots



Box Plots for Sulfate Grouped by Gradient

Figure 40: Box Plots

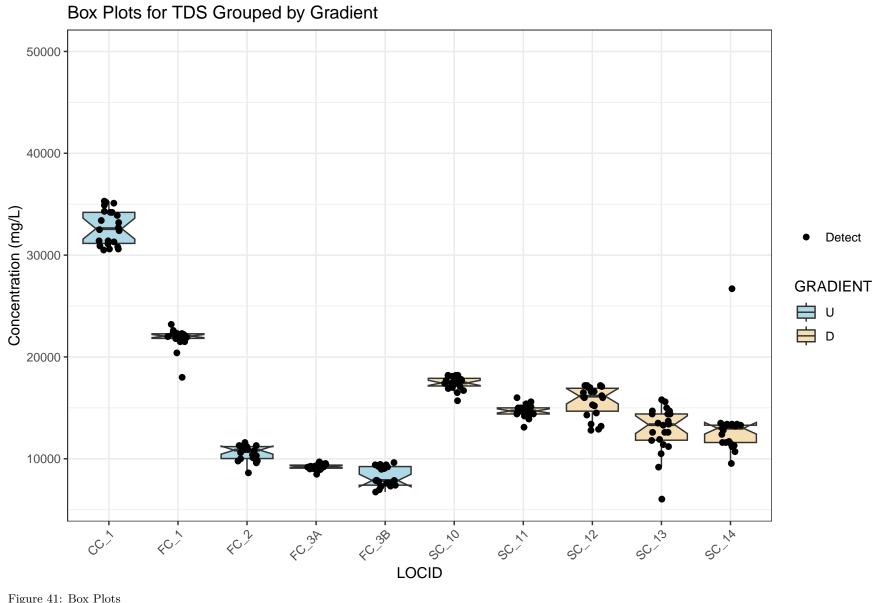
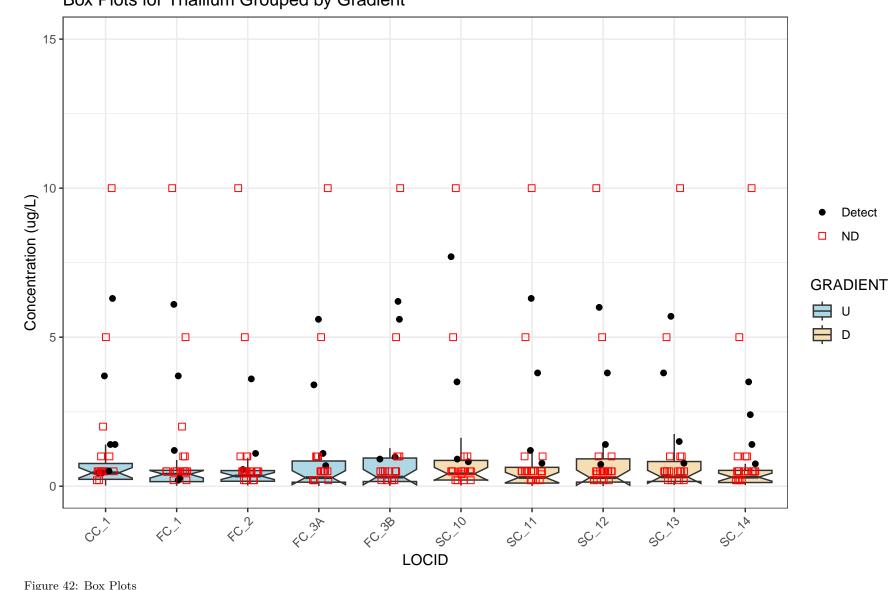


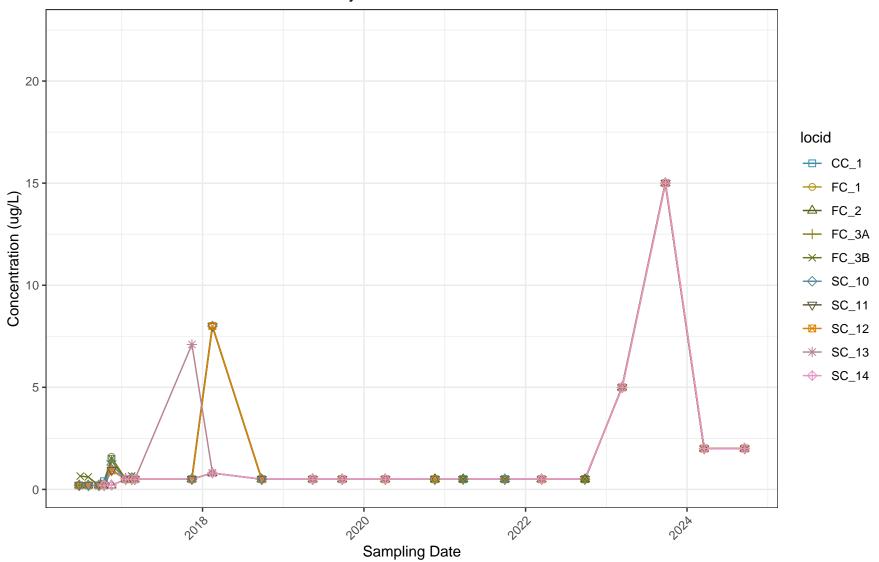
Figure 41: Box Plots



Box Plots for Thallium Grouped by Gradient

Figure 42: Box Plots

Stacked Time Series Plots



Stacked Time Series Plots for Antimony

Figure 43: Stacked Time Series Plots

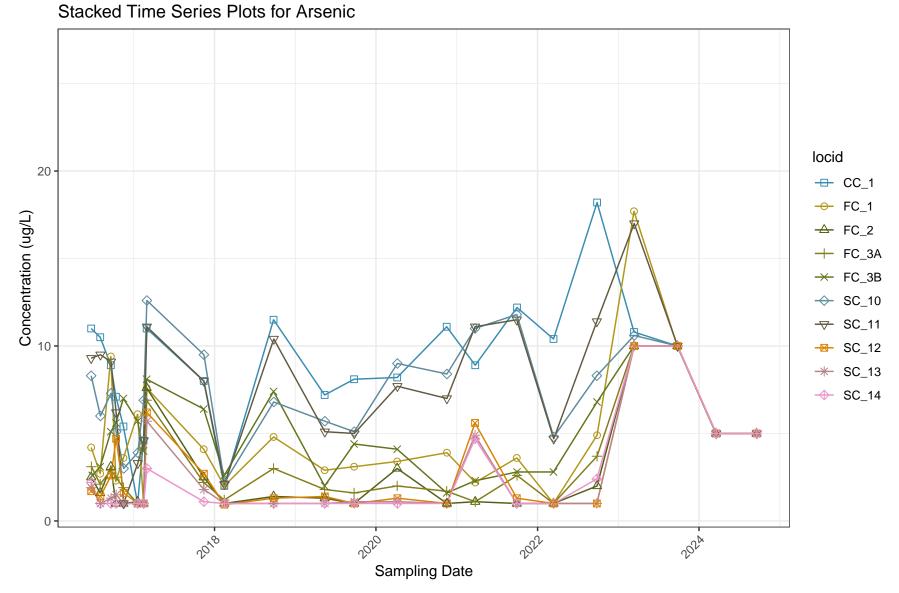
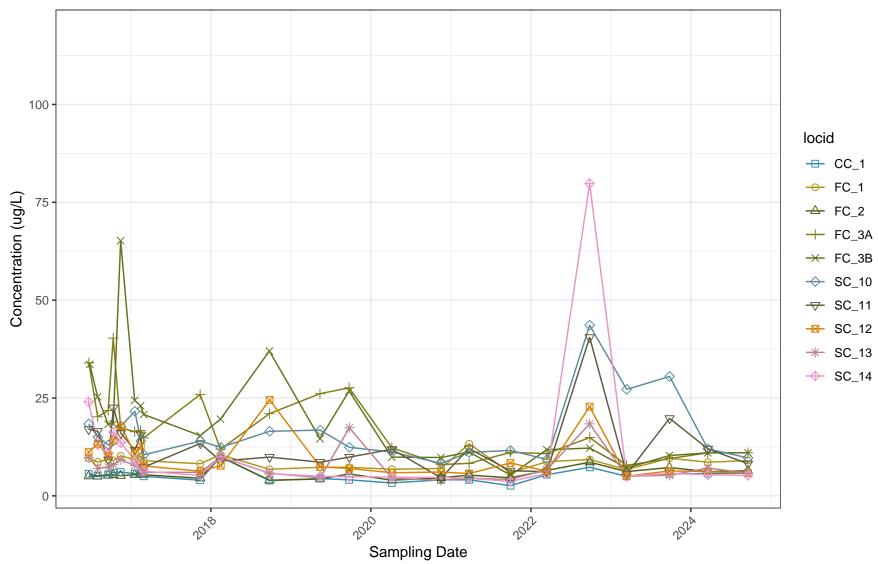
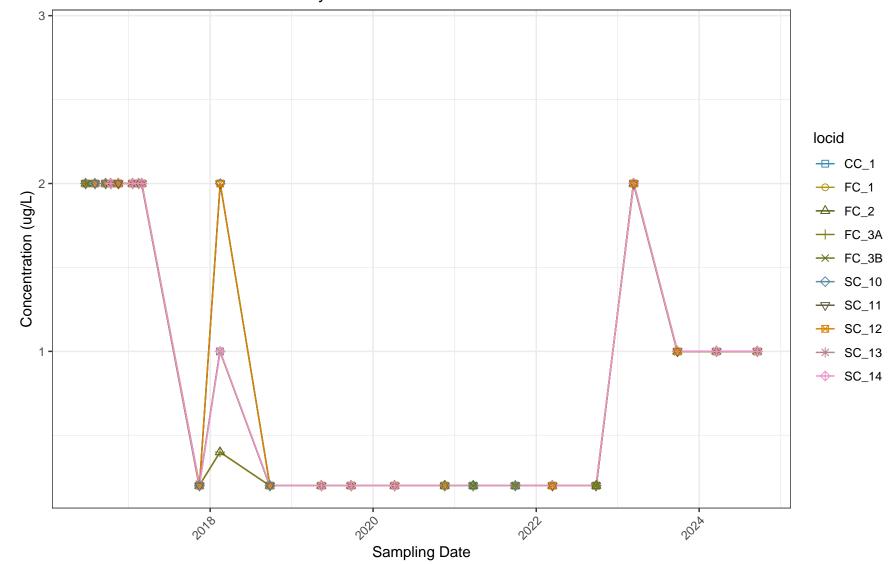


Figure 44: Stacked Time Series Plots



Stacked Time Series Plots for Barium

Figure 45: Stacked Time Series Plots



Stacked Time Series Plots for Beryllium

Figure 46: Stacked Time Series Plots

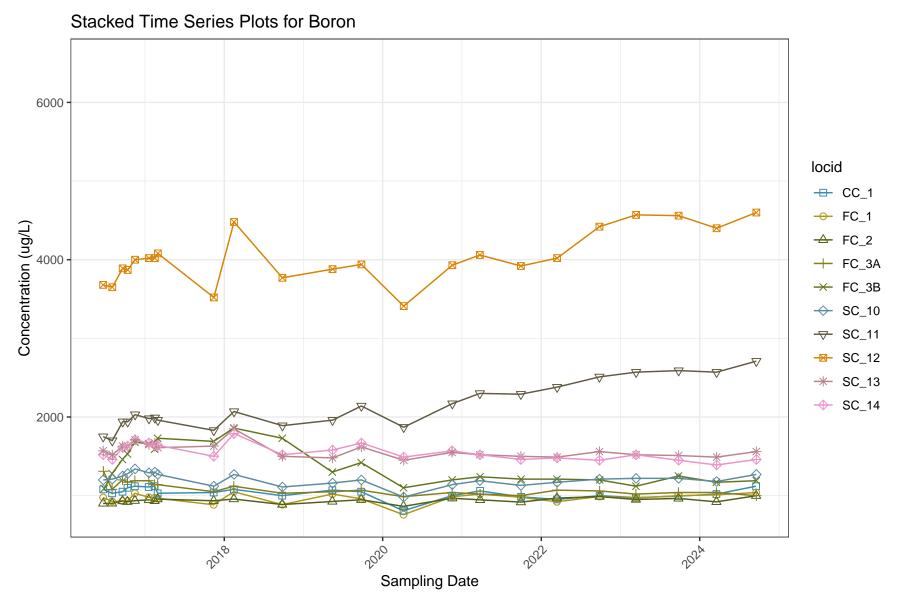
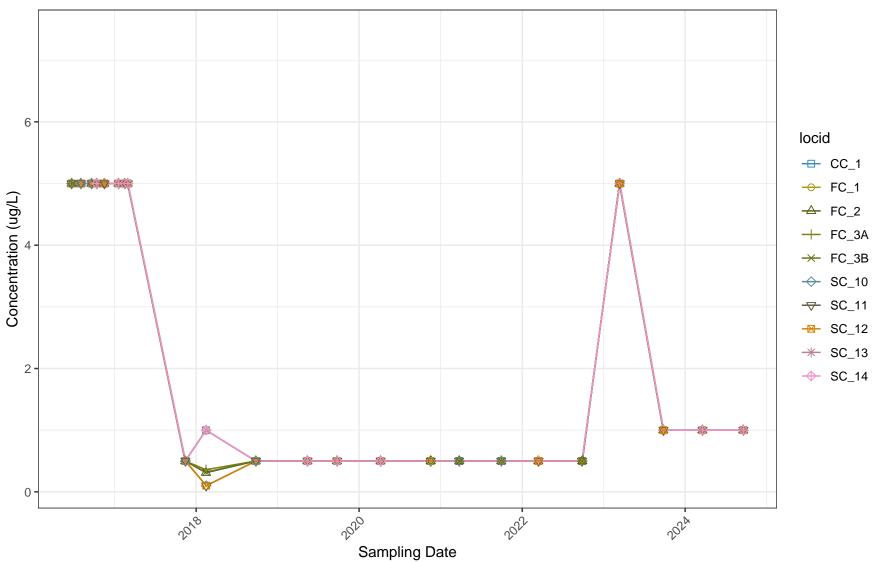
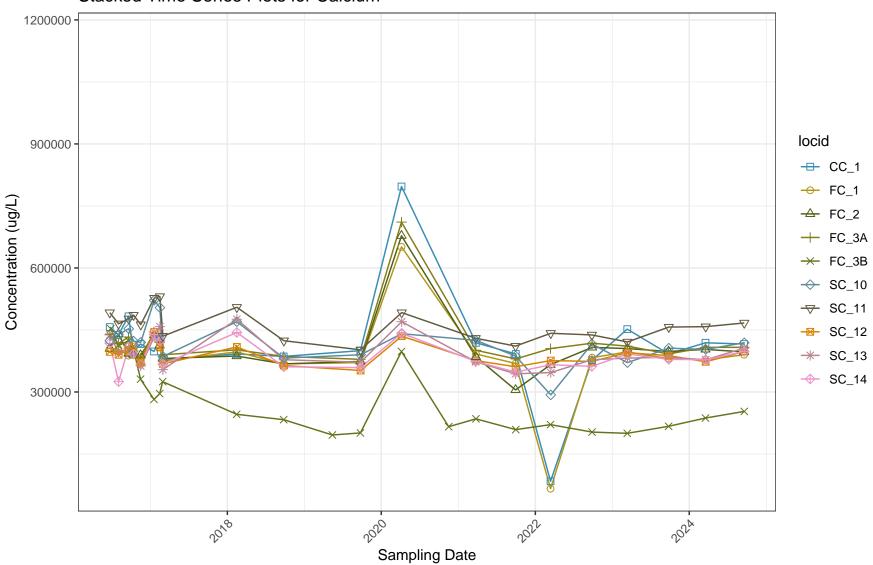


Figure 47: Stacked Time Series Plots



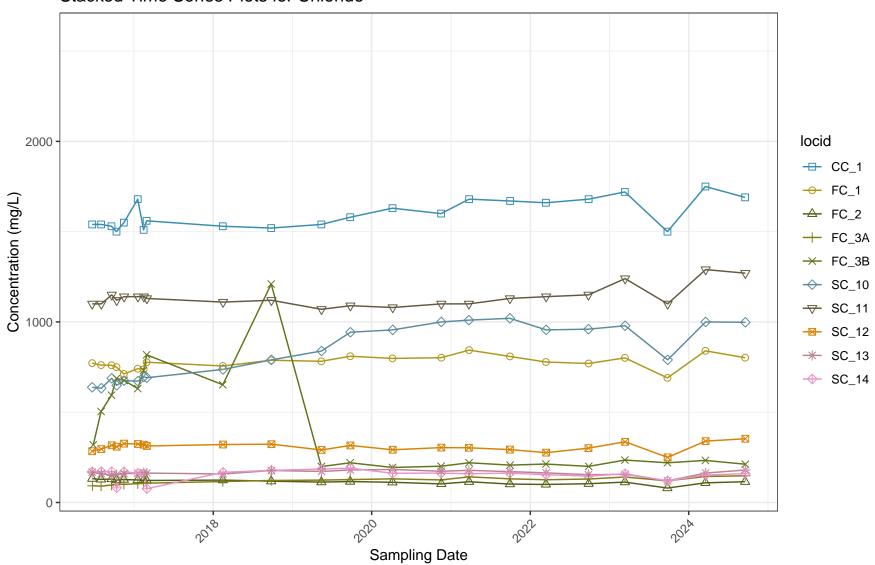
Stacked Time Series Plots for Cadmium

Figure 48: Stacked Time Series Plots



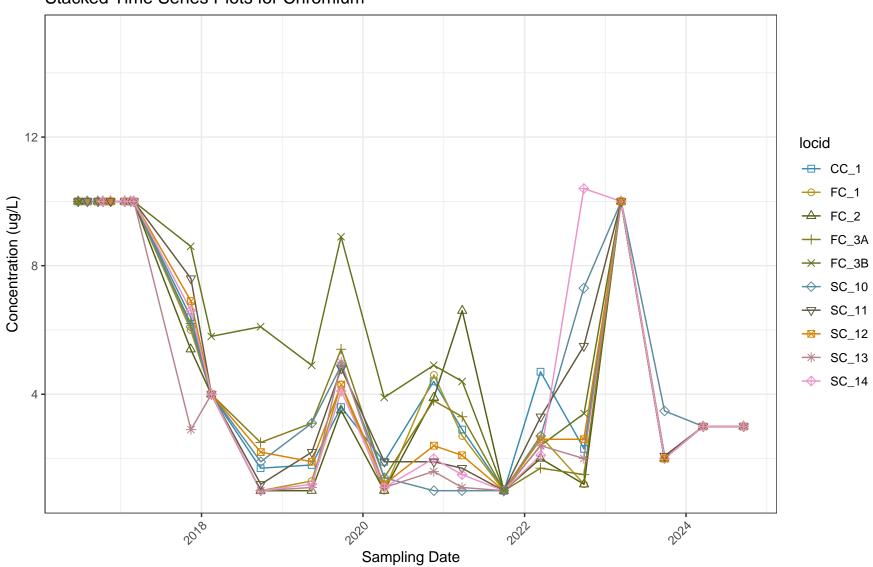
Stacked Time Series Plots for Calcium

Figure 49: Stacked Time Series Plots



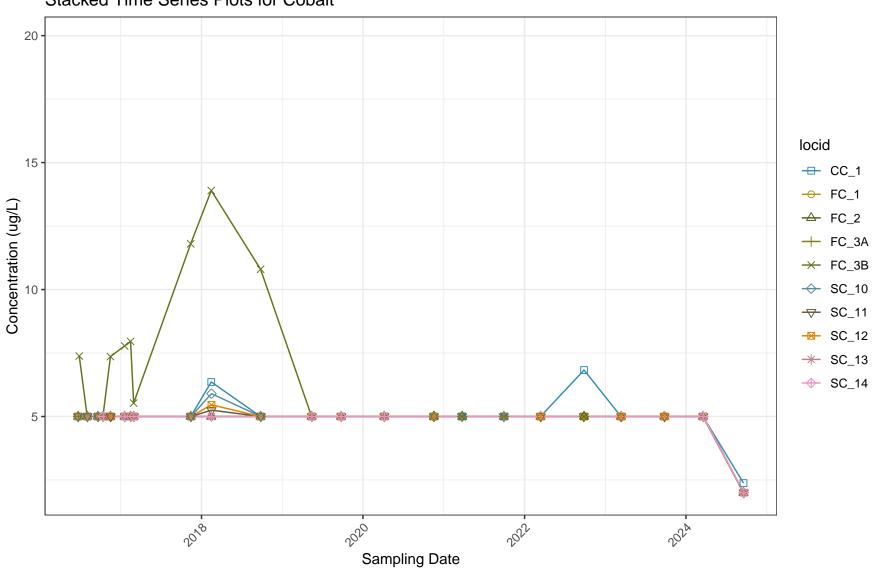
Stacked Time Series Plots for Chloride

Figure 50: Stacked Time Series Plots



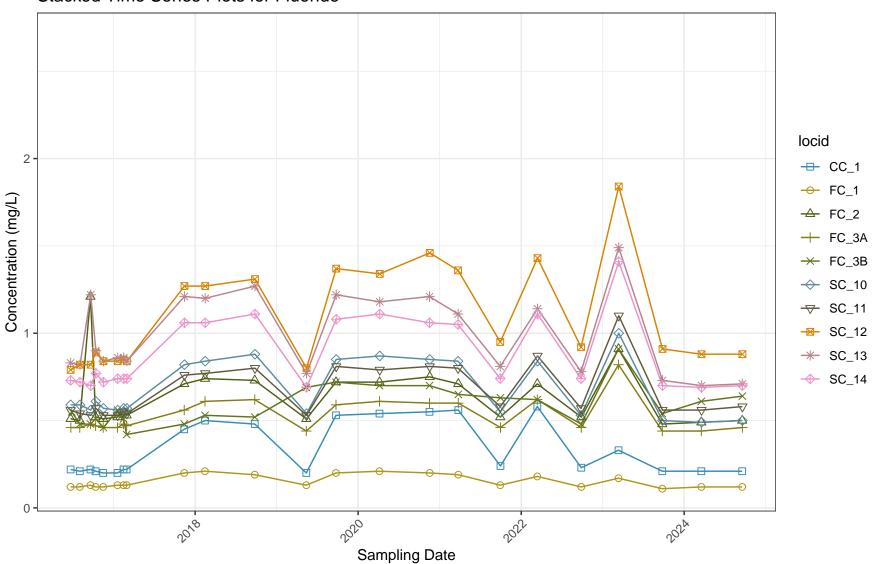
Stacked Time Series Plots for Chromium

Figure 51: Stacked Time Series Plots



Stacked Time Series Plots for Cobalt

Figure 52: Stacked Time Series Plots



Stacked Time Series Plots for Fluoride

Figure 53: Stacked Time Series Plots

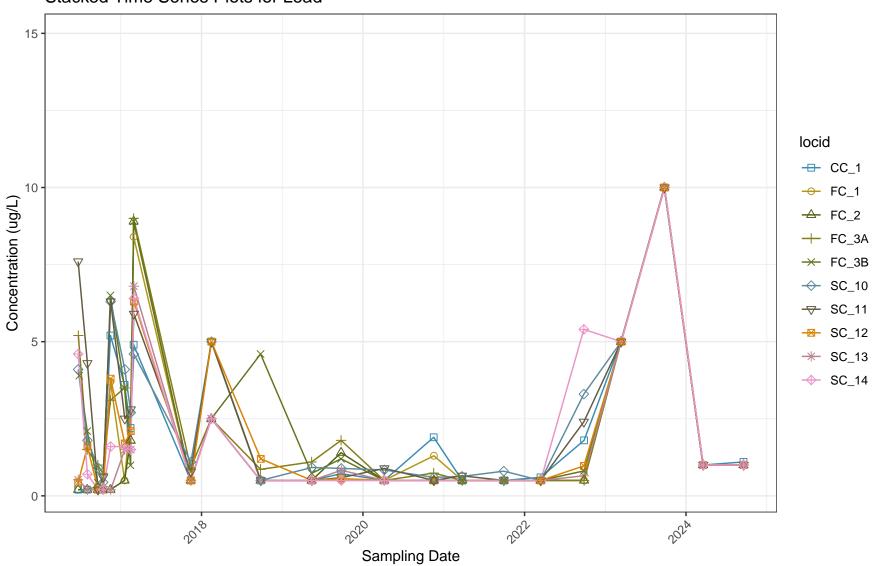


Figure 54: Stacked Time Series Plots

Stacked Time Series Plots for Lead

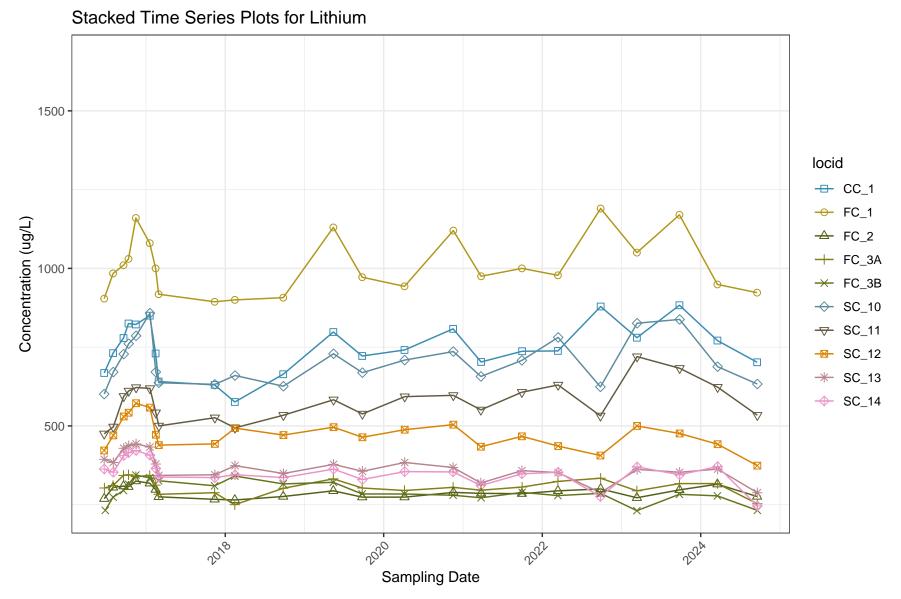


Figure 55: Stacked Time Series Plots

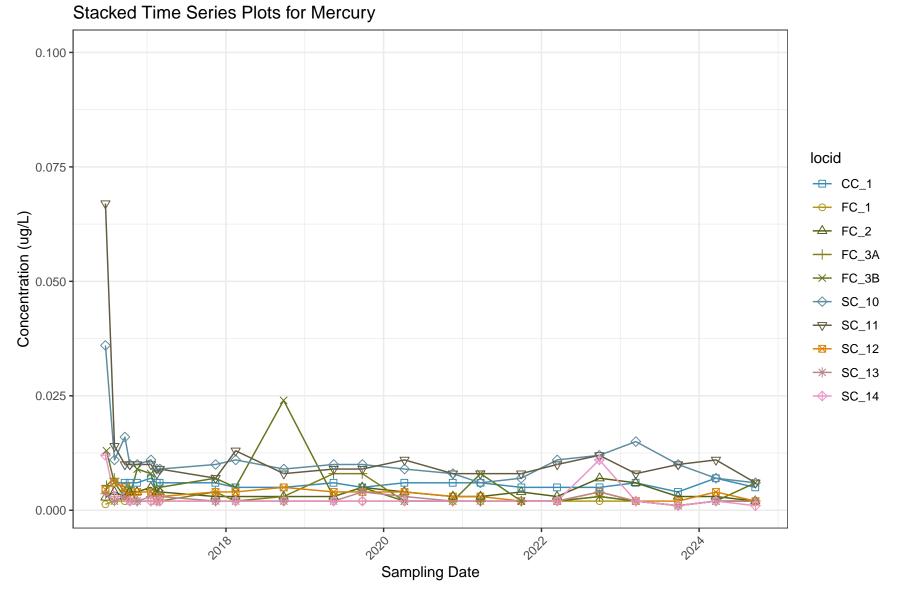


Figure 56: Stacked Time Series Plots

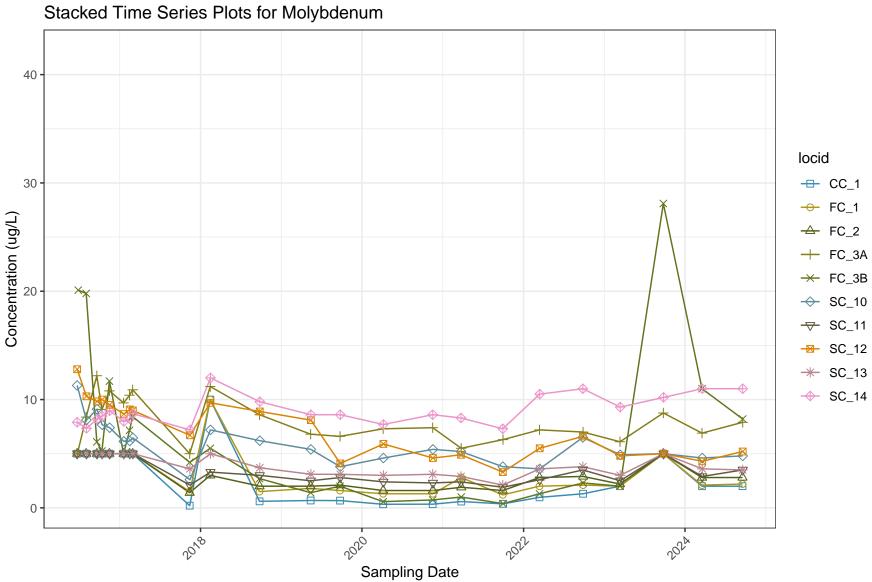


Figure 57: Stacked Time Series Plots

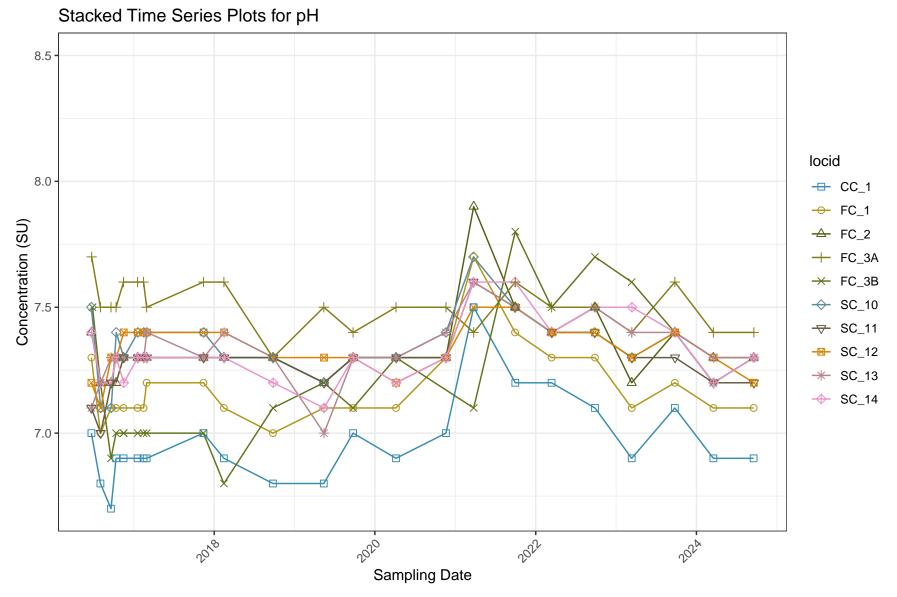
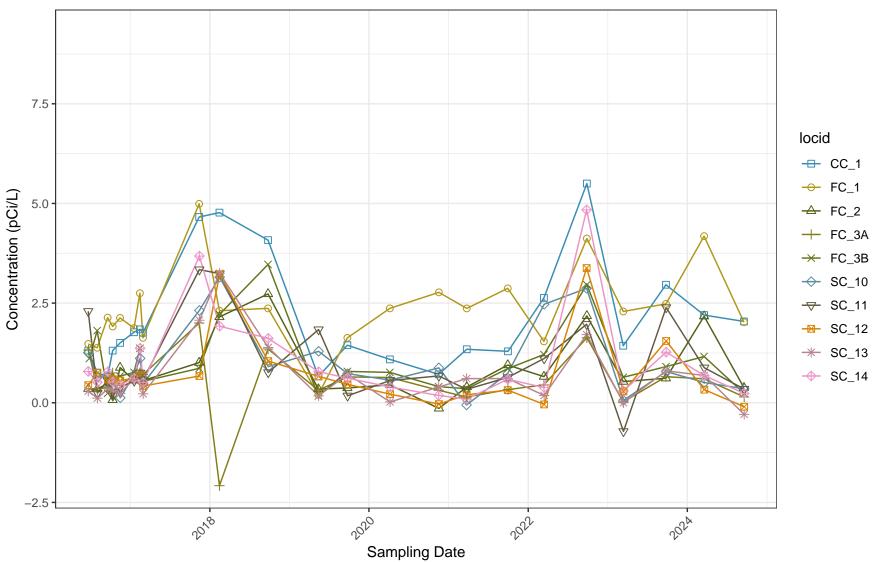
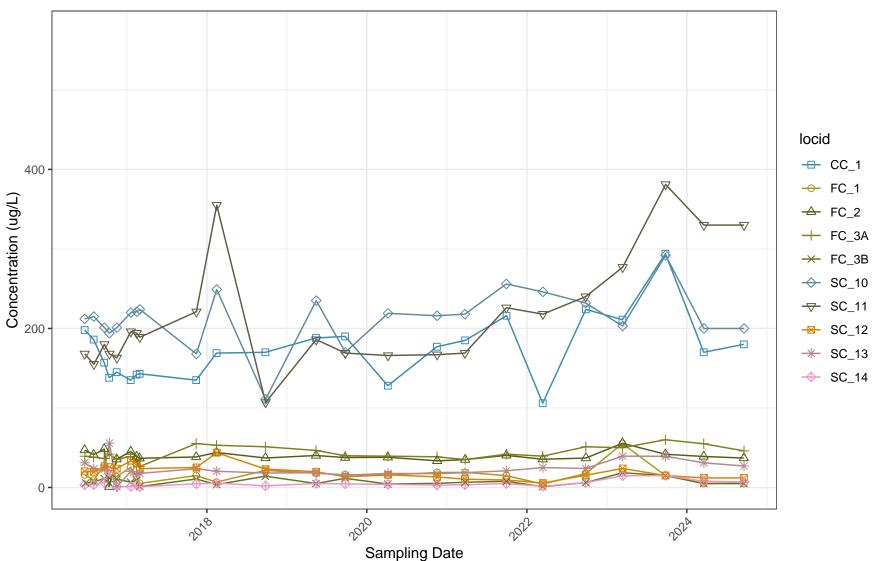


Figure 58: Stacked Time Series Plots



Stacked Time Series Plots for Rad226+228

Figure 59: Stacked Time Series Plots



Stacked Time Series Plots for Selenium

Figure 60: Stacked Time Series Plots

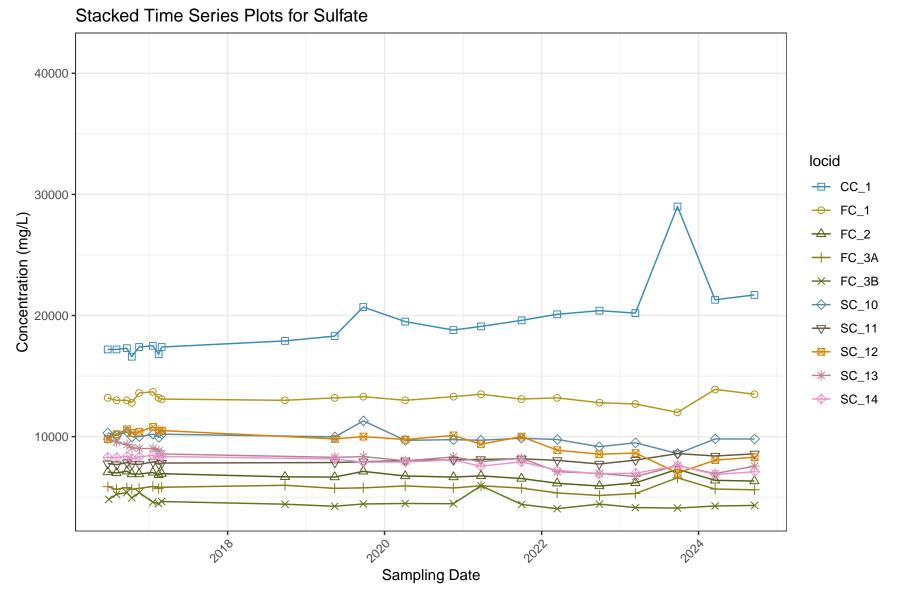


Figure 61: Stacked Time Series Plots

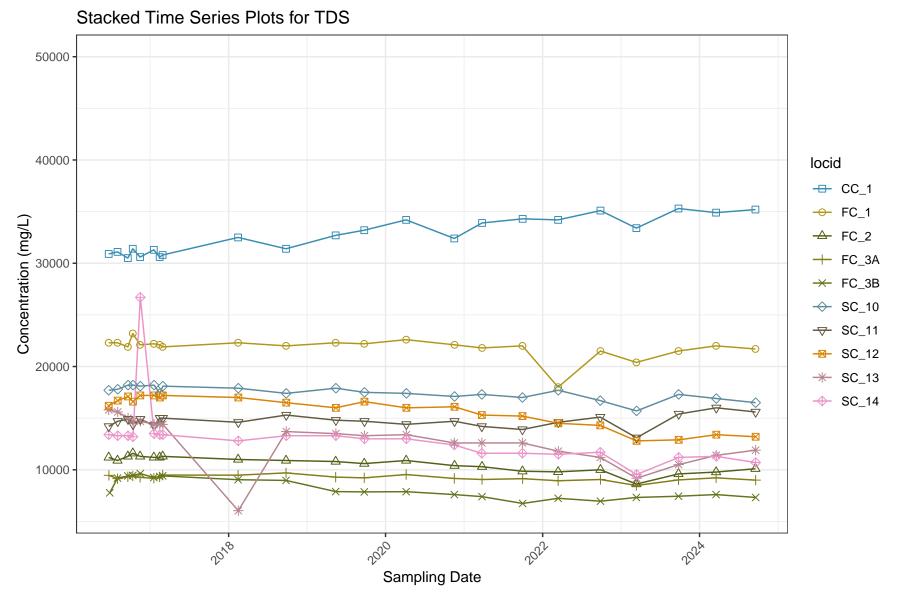
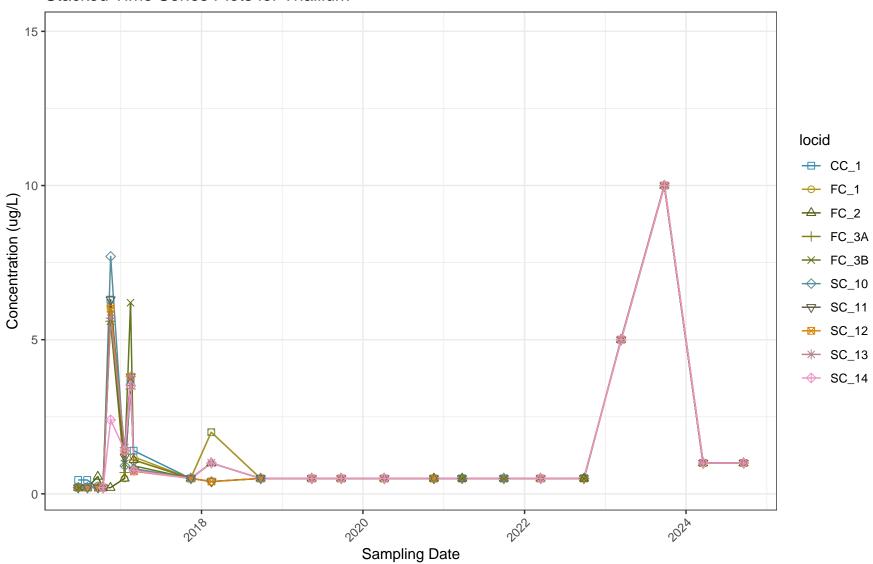


Figure 62: Stacked Time Series Plots



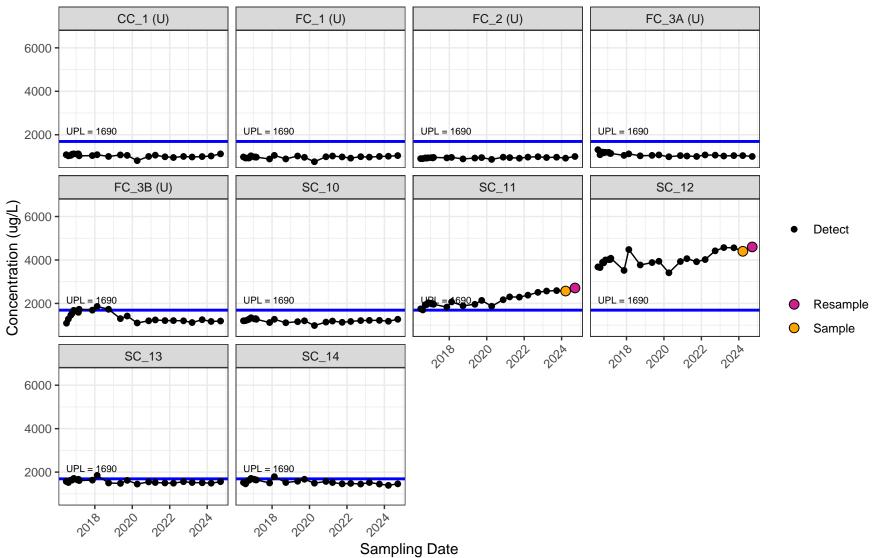
Stacked Time Series Plots for Thallium

Figure 63: Stacked Time Series Plots

Appendix B: Supporting Graphics

- 1. Appendix III Prediction Limit Outcome Plots
- 2. Confidence Interval Band Plots for Appendix IV Parameters

Prediction Limit Outcome Plots, Appendix III Parameters



2024 Interwell Robust Prediction Limit SSIs for Boron

Figure 64: Prediction Limit Outcome Plots

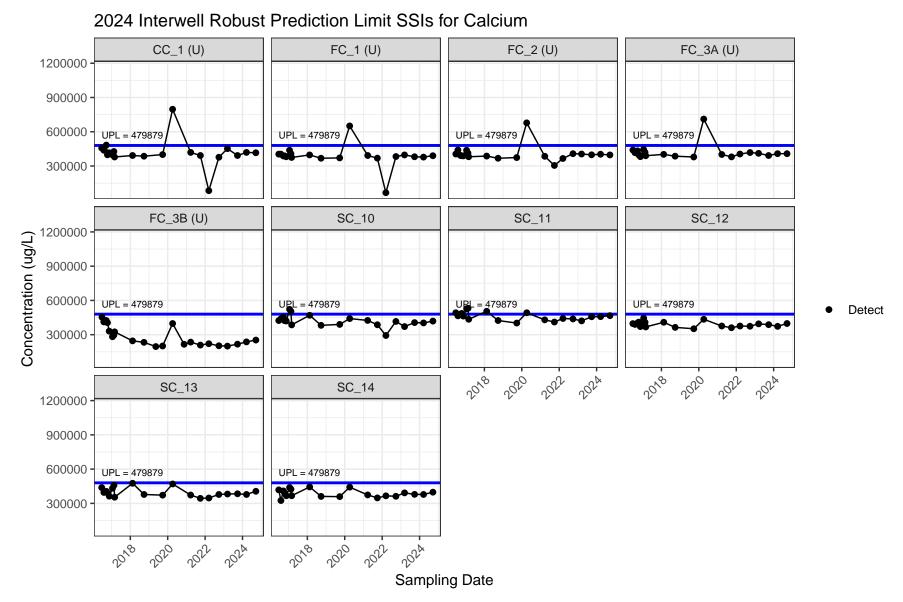
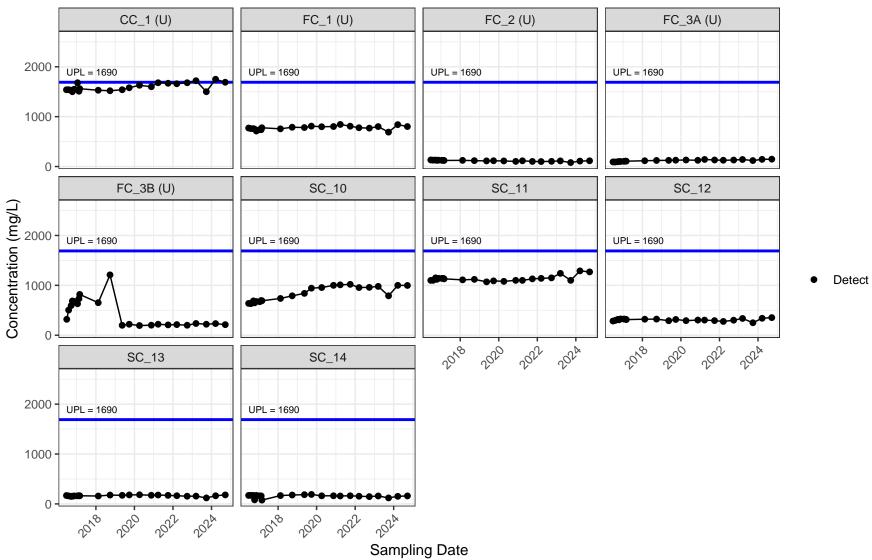
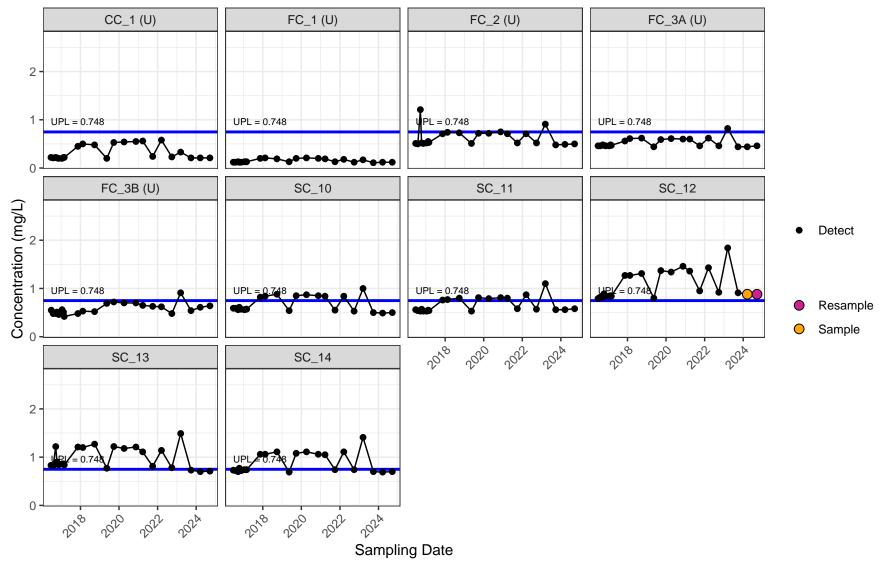


Figure 65: Prediction Limit Outcome Plots



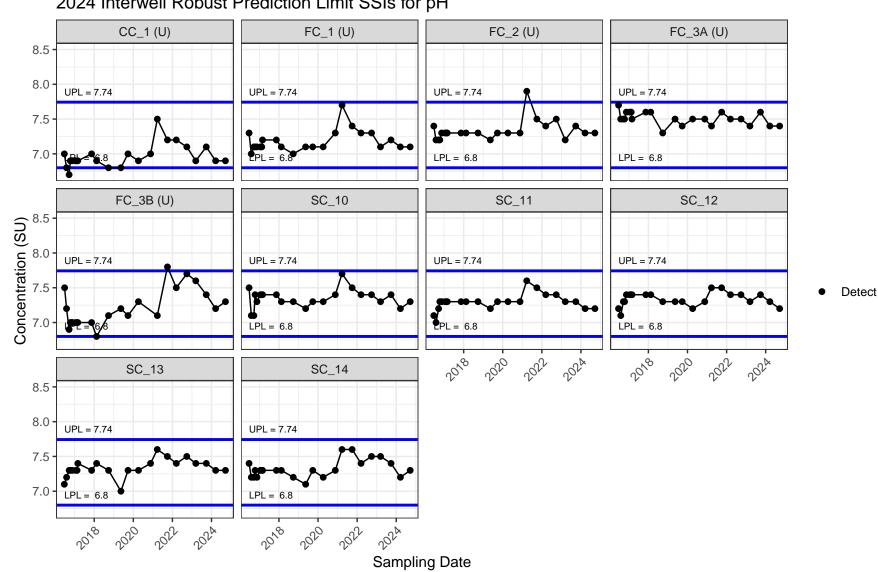
2024 Interwell Robust Prediction Limit SSIs for Chloride

Figure 66: Prediction Limit Outcome Plots



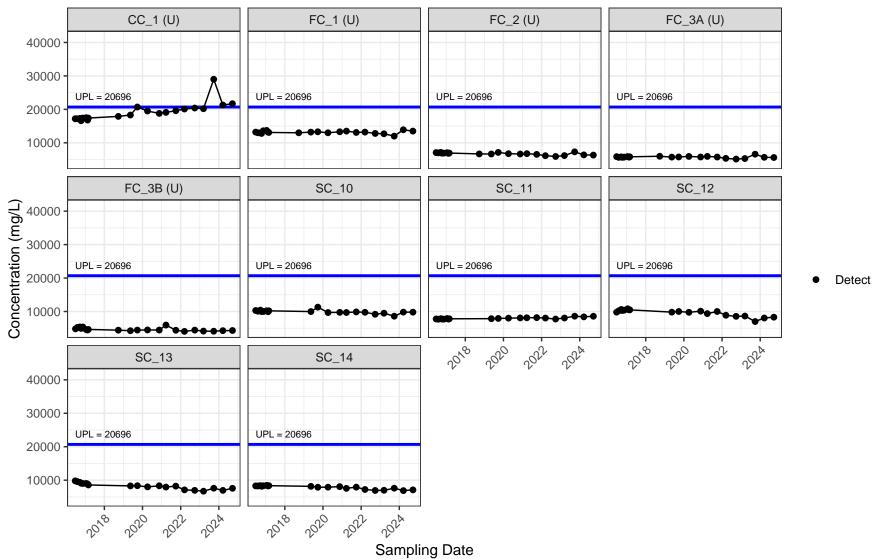
2024 Interwell Robust Prediction Limit SSIs for Fluoride

Figure 67: Prediction Limit Outcome Plots



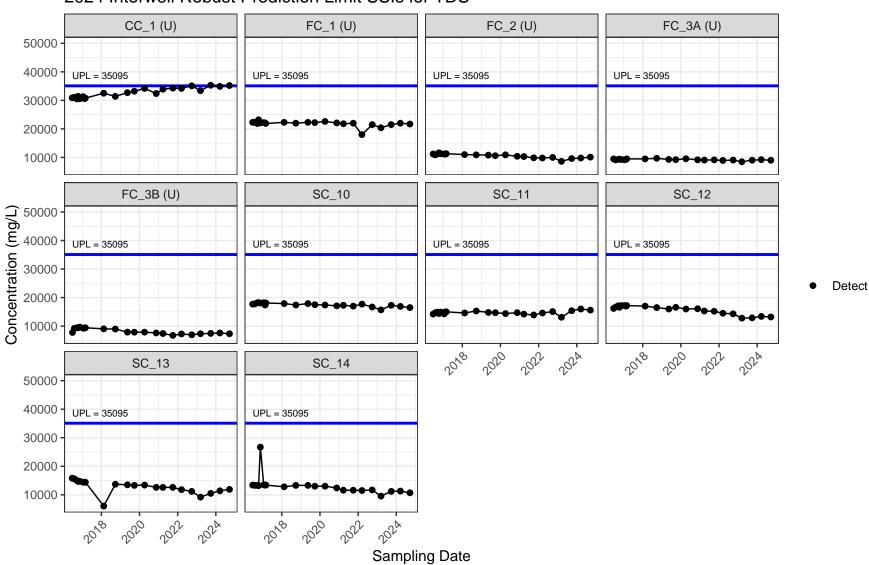
2024 Interwell Robust Prediction Limit SSIs for pH

Figure 68: Prediction Limit Outcome Plots



2024 Interwell Robust Prediction Limit SSIs for Sulfate

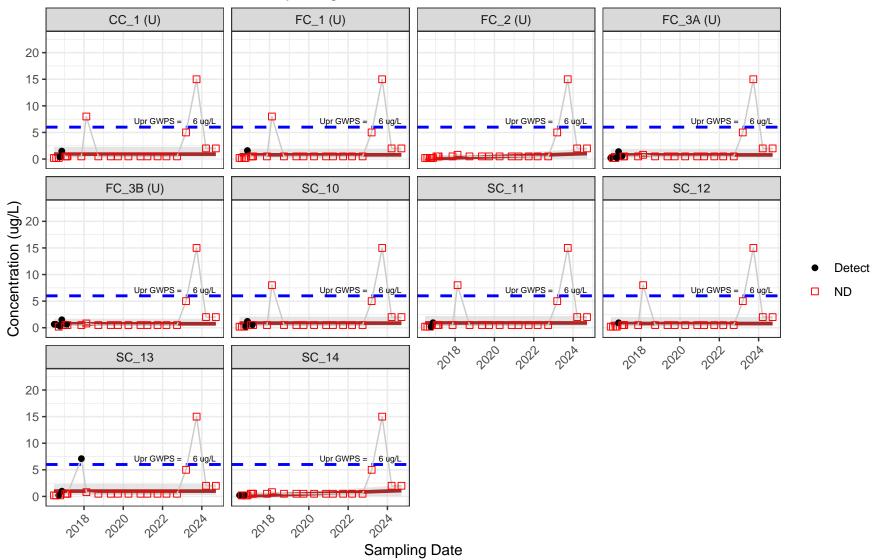
Figure 69: Prediction Limit Outcome Plots



2024 Interwell Robust Prediction Limit SSIs for TDS

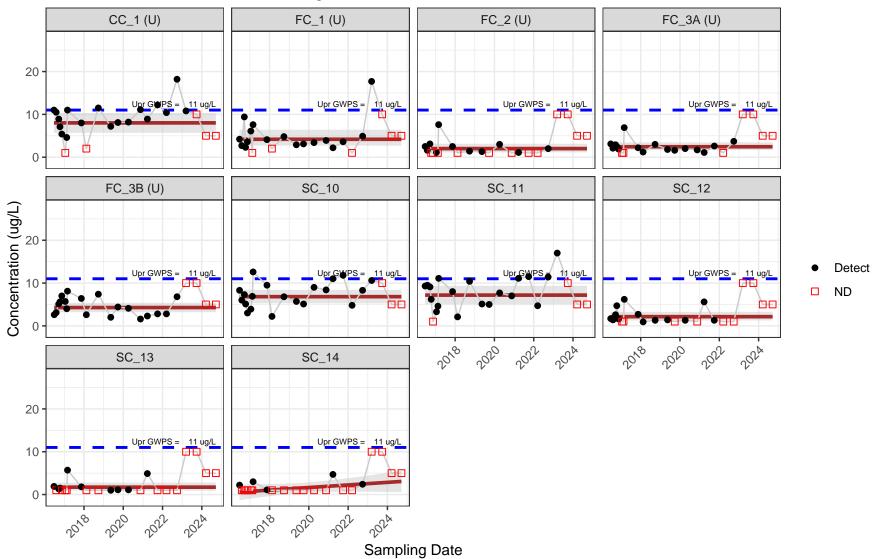
Figure 70: Prediction Limit Outcome Plots

Confidence Interval Band Plots, Appendix IV Parameters



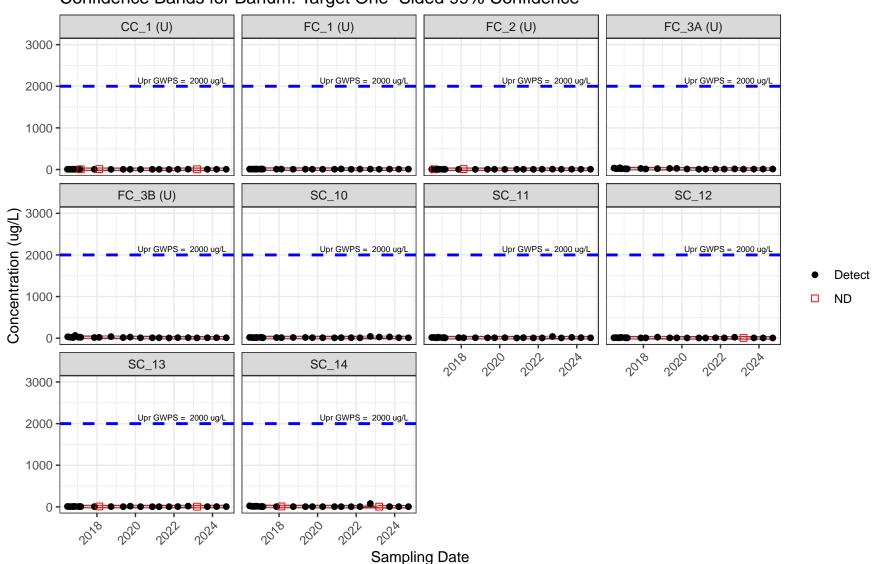
Confidence Bands for Antimony: Target One-Sided 99% Confidence

Figure 71: Confidence Band Plots



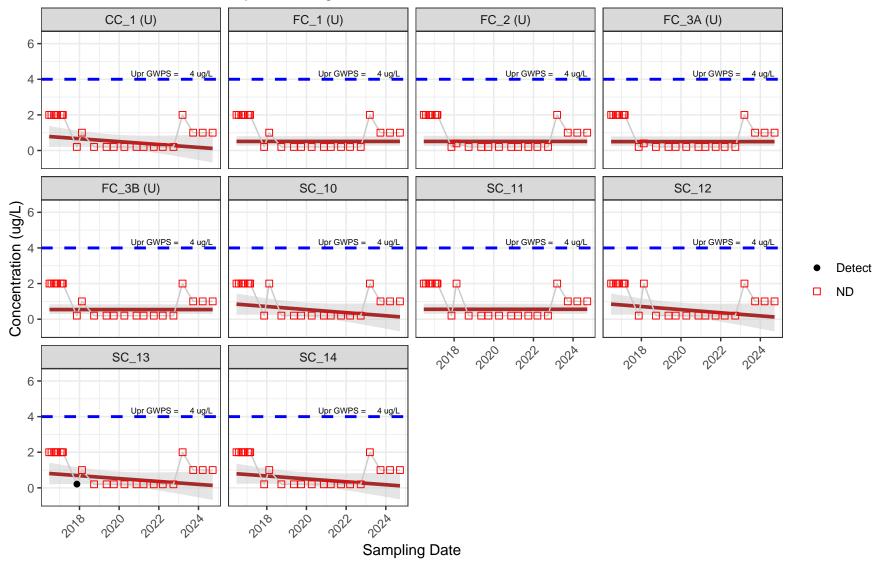
Confidence Bands for Arsenic: Target One–Sided 99% Confidence

Figure 72: Confidence Band Plots



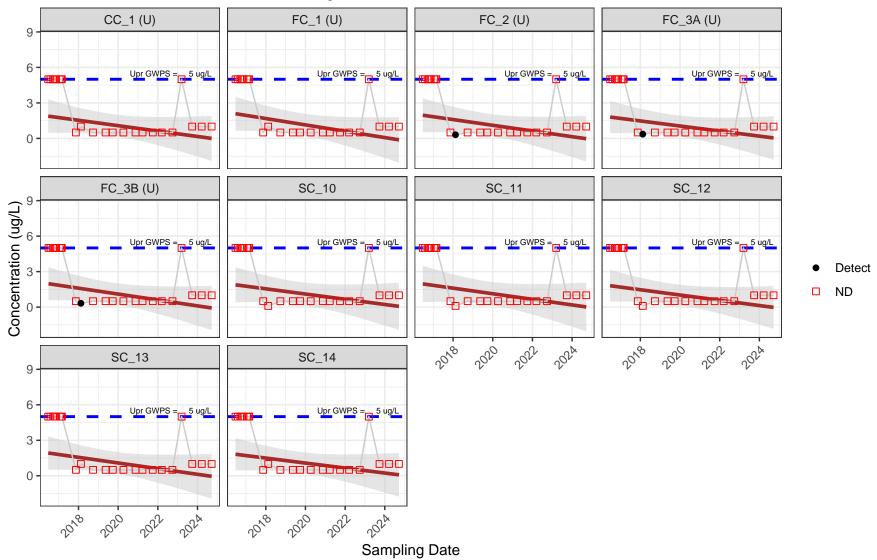
Confidence Bands for Barium: Target One-Sided 99% Confidence

Figure 73: Confidence Band Plots



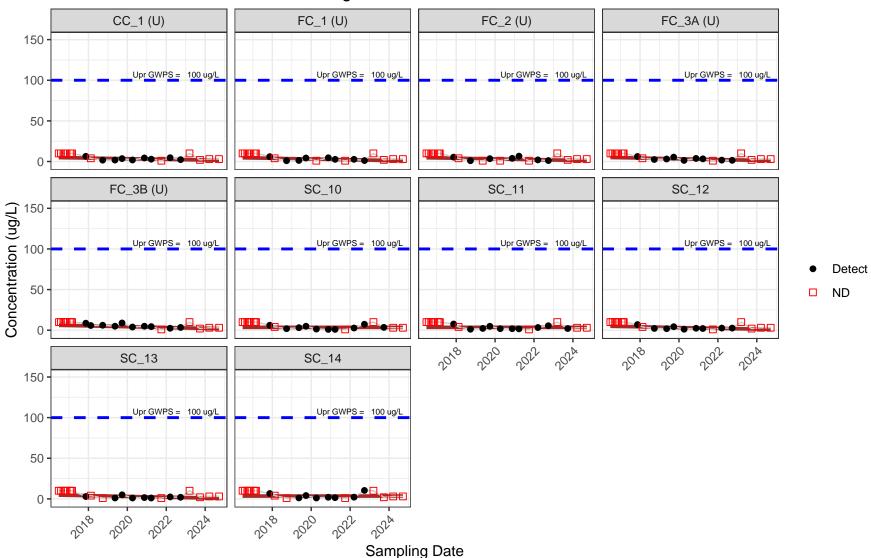
Confidence Bands for Beryllium: Target One-Sided 99% Confidence

Figure 74: Confidence Band Plots



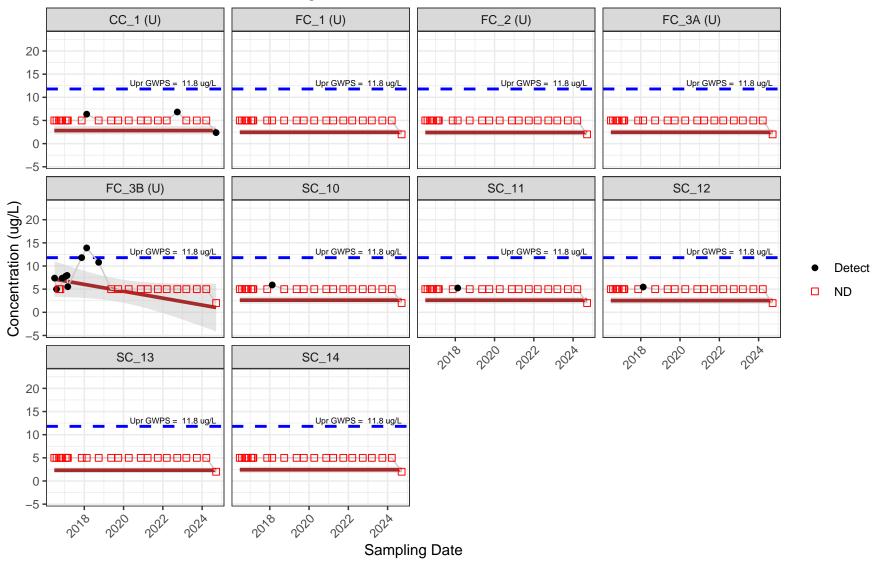
Confidence Bands for Cadmium: Target One-Sided 99% Confidence

Figure 75: Confidence Band Plots



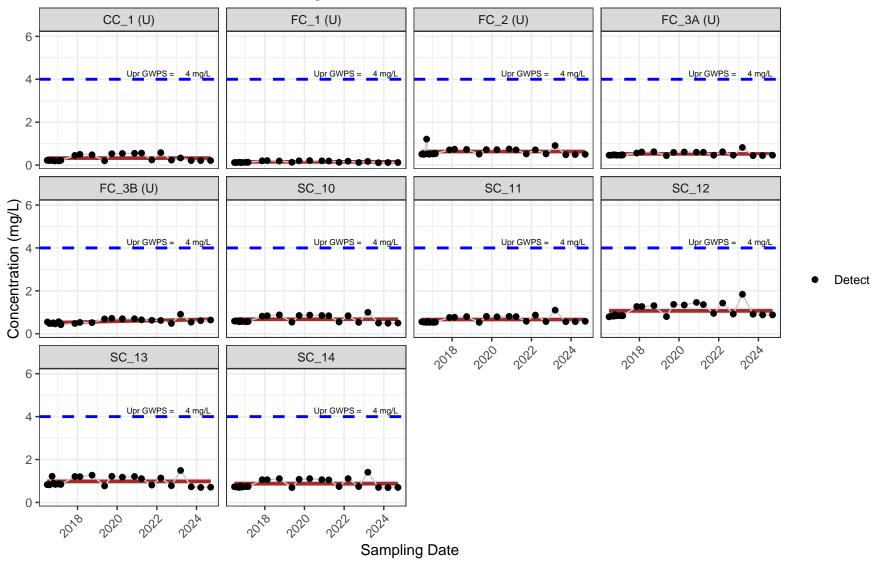
Confidence Bands for Chromium: Target One-Sided 99% Confidence

Figure 76: Confidence Band Plots



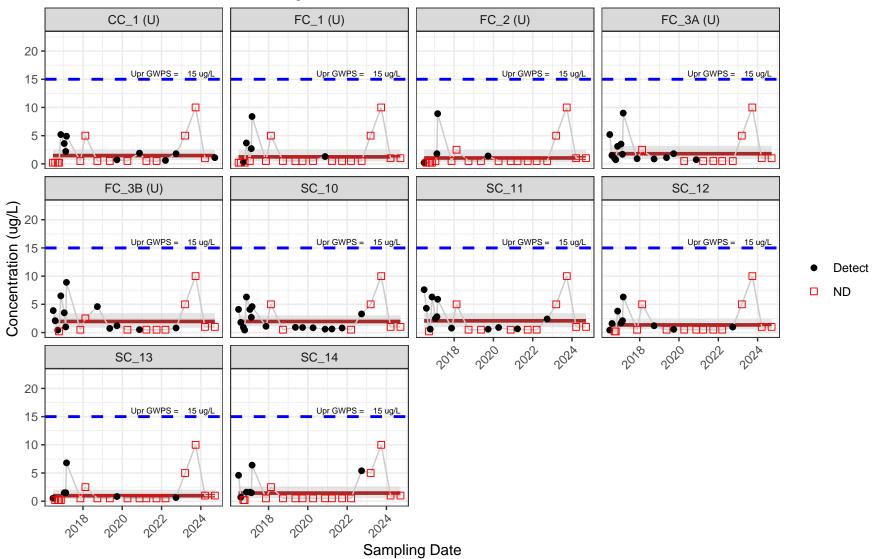
Confidence Bands for Cobalt: Target One-Sided 99% Confidence

Figure 77: Confidence Band Plots



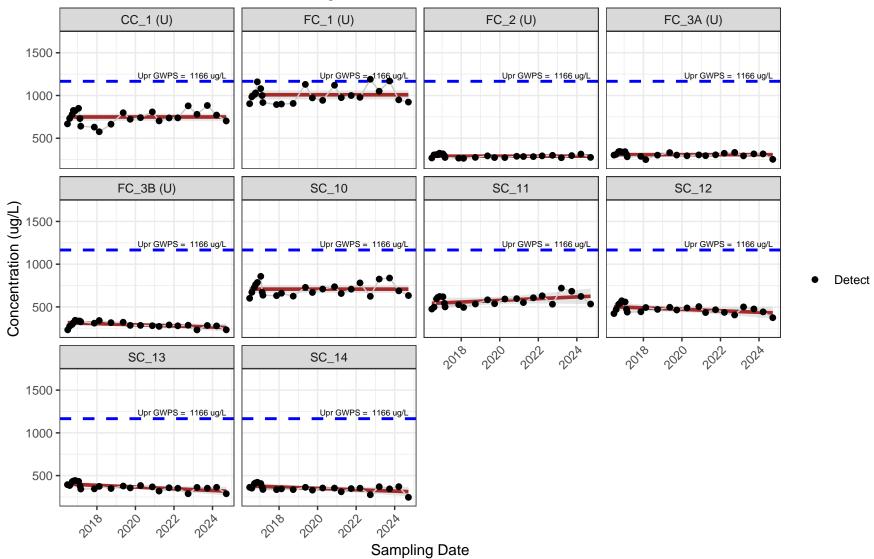
Confidence Bands for Fluoride: Target One–Sided 99% Confidence

Figure 78: Confidence Band Plots



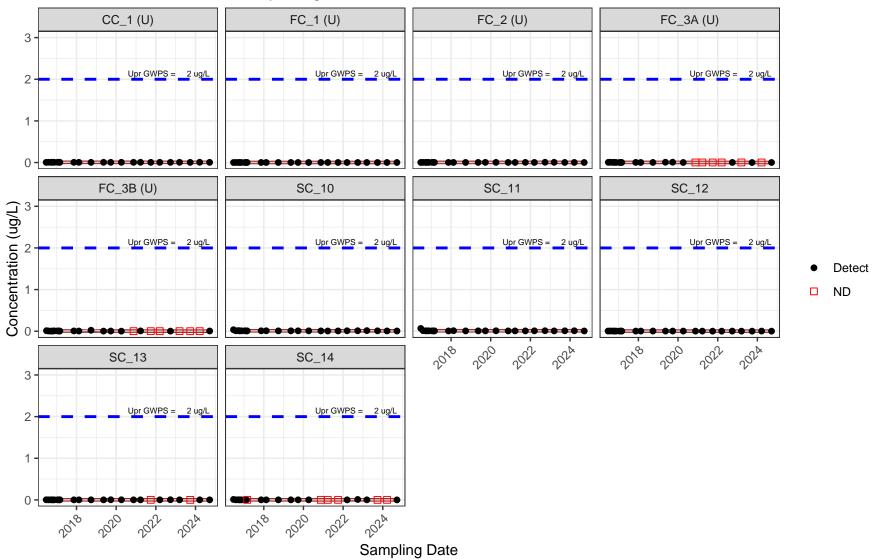
Confidence Bands for Lead: Target One–Sided 99% Confidence

Figure 79: Confidence Band Plots



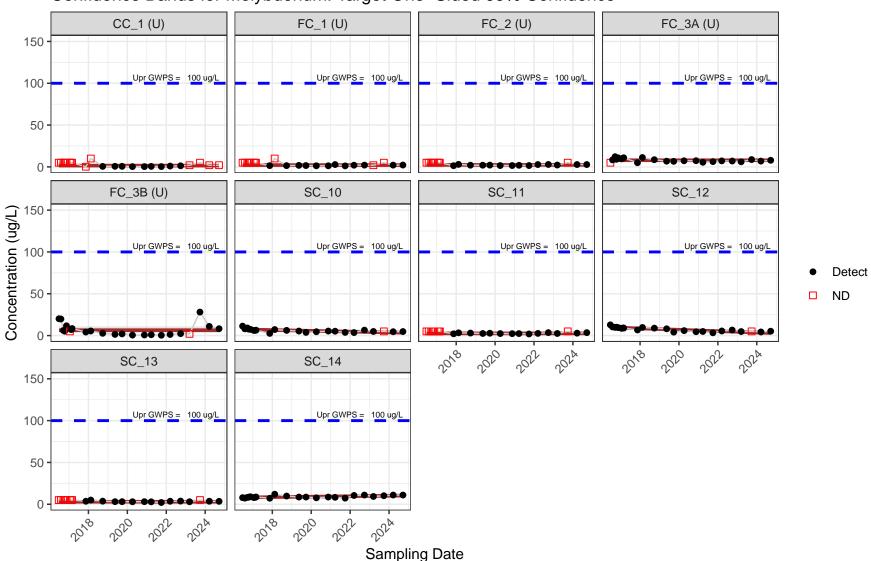
Confidence Bands for Lithium: Target One-Sided 99% Confidence

Figure 80: Confidence Band Plots



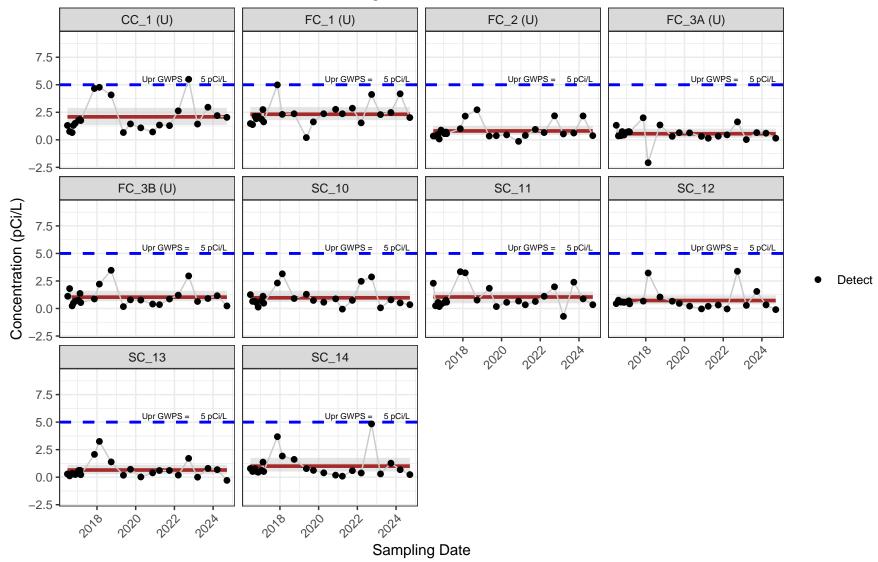
Confidence Bands for Mercury: Target One-Sided 99% Confidence

Figure 81: Confidence Band Plots



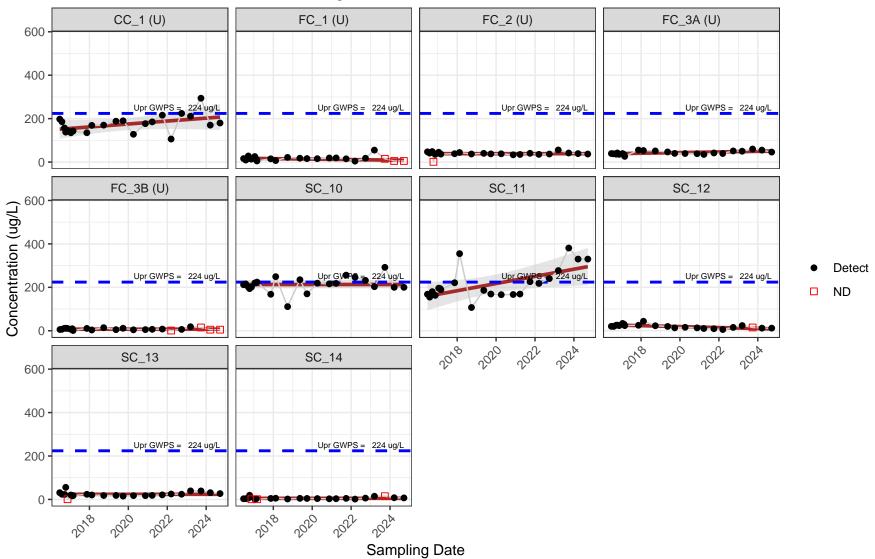
Confidence Bands for Molybdenum: Target One-Sided 99% Confidence

Figure 82: Confidence Band Plots



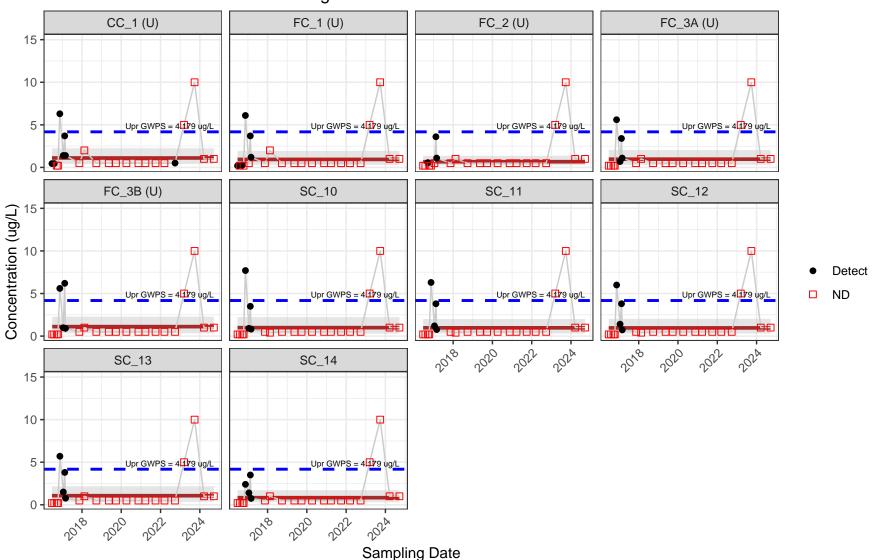
Confidence Bands for Rad226+228: Target One-Sided 99% Confidence

Figure 83: Confidence Band Plots



Confidence Bands for Selenium: Target One-Sided 99% Confidence

Figure 84: Confidence Band Plots



Confidence Bands for Thallium: Target One-Sided 99% Confidence

Figure 85: Confidence Band Plots

Attachment A: Statistical Summary

	Background Wells				Downgradient Wells					
Statistical Method/Test Down-weighted Extreme Outliers Seasonality	CC_1 2 None	FC_1 1 None	FC_2 1 None	FC_3A 1 None	FC_3B 1 None	SC_10 3 None	SC_11 3 None	SC_12 1 None	SC_13 2 None	SC_14 2 None
Trends/Time Series - Appendix III	Chloride - U; pH - U; Sulfate - U; TDS - U	Chloride - U; TDS - D	Boron - U; Chloride - D; Sulfate - D; TDS - D	Boron - D; Chloride - U; pH - D; TDS - D	Boron - D; Calcium - D; Chloride - D; Fluoride - U; pH - U; Sulfate - D; TDS - D	Calcium - D; Chloride - U; Sulfate - D; TDS - D	Boron - U; Chloride - U; Calcium - D; Sulfate - U	Boron - U; Sulfate - D; TDS - D	Boron - D; pH - U; Sulfate - D; TDS - D	Boron - D; Sulfate - D; TDS - D
Trends/Time Series - Appendix IV	Selenium - U		Barium - U	Barium - D; Mercury - D; Selenium - U	Barium - D; Cobalt - D; Fluoride - U; Lithium - D; Mercury - D; Molybdenum - D	Molybdenum - D	Lithium - U; Selenium - U	Cadmium - D; Chromium - D; Lithium - D; Mercury - D; Molybdenum - D; Selenium - D	Cadium - D; Chromium - D; Lithium - D	Antimony - U; Arsenic - U; Barium - D; Lithium - D; Molybdenum - U
Prediction Limit Apx III SSIs Confidence Band Apx IV SSLs	NA NA	NA NA	NA NA	NA NA	NA NA	0 0	1 0	2 0	0 0	0 0

Attachment A - 2024 Year-End CCR Ash Landfill Statistical Summary

Note: U = increasing; D = decreasing

APPENDIX E

August 23, 2023, Groundwater Monitoring Network Modification Letter

[External Email - Be careful! DO NOT open attachments or click links from unknown senders or unexpected email.]

Hi Amber,

Thank you for sending the AECOM memo about the Groundwater Monitoring Network Modifications at Clear Spring Ranch for the Coal Combustions Residuals Landfill. The revisions look good and I don't have any additional questions or concerns at the moment.

Best,

Ashley

Ashley Lawrence Environmental Protection Specialist II Solid Waste Permitting Unit Solid Waste and Materials Management Program C 720.213.8028 P 630.442.9756 222 South 6th Street Grand Junction, CO ashley.lawrence@state.co.us | www.colorado.gov/cdphe

On Wed, Aug 23, 2023 at 9:36 AM Amber Holmberg <<u>aholmberg@csu.org</u>> wrote:

Hello Ashley and Jill,

Attached, you will find an AECOM memo about the Groundwater Monitoring Network Modifications at Clear Spring Ranch for the Coal Combustions Residuals Landfill.

Let me know if you need any additional information or have any questions.

Thanks,

Amber

Amber Holmberg | Environmental Engineer I

<u>Colorado Springs Utilities</u> |EVS Technical Services

121 S. Tejon Street, 4th Fl. | MC: 940 | Colorado Springs, CO 80903

O (719) 668-1822 | M (719) 318-8459

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AECOM 1601 Prospect Parkway Fort Collins, CO 80525 tel: (970) 493-8878

August 23, 2023

Ms. Amber Holmberg Colorado Springs Utilities 121 S. Tejon Street, 4th Floor Colorado Springs, CO 80947

Subject: Groundwater Monitoring Network Modification Coal Combustions Residuals Landfill Colorado Springs Utilities, Clear Spring Ranch El Paso County, Colorado

Dear Ms. Holmberg,

In response to the downgradient detection of selenium at concentrations representing a statistically significant level (SSL) above the groundwater protection standard (GWPS) at the Colorado Springs Utilities (UTILITIES) Clear Spring Ranch facility coal combustion residuals (CCR) landfill (Landfill), UTILITIES contracted AECOM Technical Services, Inc. (AECOM) to conduct an alternative source demonstration (ASD) to evaluate whether the selenium concentrations were due to the presence or operation of the CCR Landfill or to an alternative source. The ASD report dated April 2022 and Additional Information letter dated August 9, 2022 identified background conditions to the north of the CCR Landfill as an alternative source for the selenium.

To further evaluate the nature and location of the background conditions north of the CCR Landfill responsible for the selenium, three new monitoring wells (SC-15, SC-16, and SC-17) were installed and tested at the locations illustrated on **Figure 1**.

This purpose of this memorandum is to summarize AECOMs evaluation of the groundwater quality data collected from these wells during the November 2022 and March 2023 CCR groundwater monitoring events and to compare concentrations of constituents at each well to determine which of the three newly installed monitoring wells are representative of groundwater conditions upgradient of the CCR Landfill. This letter summarizes this evaluation and current conditions and provides a proposed path forward and recommended changes to the groundwater monitoring network.

Data Evaluation

Groundwater from the three new monitoring wells was sampled during the CCR Landfill's semiannual Assessment Monitoring events in November 2022 and March 2023. The data from these events are presented in **Table 1**.

Concentrations of selenium and nitrate at all three new wells in November 2022 were much lower than concentrations detected in the March 2023 samples (taking into account the different nitrate analyses performed in November versus March). This suggests the newly installed wells had not reached equilibrium with the groundwater environment. Data collected for the newly installed upgradient wells in March 2023 was utilized during this evaluation as it was deemed more representative of site conditions.

The data were evaluated with attention to representing groundwater quality upgradient of the north boundary of the CCR Landfill. Lines of evidence and findings from the ASD report included the following:

- Groundwater flow within the Piney Creek Alluvium Hydrostratigraphic Unit (PCA HSU) beneath the CCR Landfill is present within hydraulically separated buried paleo-alluvial valley drainages, two of which are separated by a bedrock high located beneath the landfill.



- Groundwater chemistry is significantly different in the North Paleo-Alluvial Valley as compared to the South Paleo-Alluvial Valley, but the current background data set for statistical evaluation is based only on wells located within the South Paleo-Alluvial Valley.
- Nitrate concentrations in groundwater samples from upgradient monitoring wells located in the North Paleo-Alluvial Valley are significantly higher than samples obtained from upgradient monitoring wells located in the South Paleo-Alluvial Valley. Concentrations of selenium are correspondingly significantly higher in upgradient monitoring wells located in the North Paleo-Alluvial Valley than upgradient monitoring wells located in the South Paleo-Alluvial Valley.
- Elevated concentrations of nitrate in groundwater can mobilize and transport selenium from naturally occurring geologic sources such as the Pierre Shale bedrock and alluvial sediments derived from the Pierre Shale in the Clear Spring Ranch region.
- Concentrations of boron in downgradient monitoring wells SC-11 and SC-12 triggered the transition from Detection to Assessment monitoring, but the concentration of boron in the selenium-affected northern well (SC-10) does not suggest impact from the Landfill.

The March 2023 data from the new upgradient monitoring wells installed north of the CCR Landfill confirm the groundwater flow direction and flow paths presented in the ASD and the presence of elevated concentrations of both selenium and nitrate in groundwater to the north of the CCR Landfill.

- Water levels measured in the new wells indicate higher groundwater elevations to the north of the CCR Landfill, indicating that groundwater flow direction is from northwest to southeast, following the downstream trend of the North Paleo-Alluvial Valley (Figure 1).
- Each Paleo-Alluvial Valley, has unique geochemistry attributes. The March 2023 data, shown in Table 1, indicate that there is additional variability within the North Paleo-Alluvial Valley that will be investigated as part of the recommended activities outlined below (Recommendations).
- One element of geochemical variability in the North Paleo-Alluvial Valley upgradient groundwater is the concentrations of nitrate and selenium.
- For the upgradient monitoring wells of the North Paleo-Alluvial Valley, concentrations of selenium are highest in wells SC-9 and SC-16 (0.578 and 0.56 mg/L, respectively), and lowest in wells SC-15 and SC-17 (0.0382 and 0.135 mg/L, respectively).
- In these same monitoring well pairs, concentrations of nitrate are elevated in well SC-9 and well SC-16 (340 and 460 mg/L, respectively), and lowest in wells SC-15 and SC-17 (110 and 130 mg/L, respectively). The highest nitrate concentration was detected in well SC-8 (740 mg/L).
- Groundwater chemistry in each of the new wells (SC-15, SC-16, and SC-17) is consistent with nearby wells in the North Paleo-Alluvial Valley. For example, groundwater chemistry at well SC-16 is very similar to groundwater collected at well SC-8, while SC-15 is similar to nearby WW-3A and SC-17 is similar to nearby SC-9.

The March 2023 data support the hydraulic separation of the North and South Paleo-Alluvial Valleys and support the interpretation that the selenium concentrations observed in downgradient monitoring wells SC-10 and SC-11 are affected by groundwater conditions originating upgradient to the northwest within the North Paleo-Alluvial Valley alignment.

Groundwater chemistry in the new wells supports the association of elevated selenium with elevated nitrate concentrations.

Status and Path Forward

The ASD lines of evidence are supported by data collected from three newly installed wells (SC-15, SC-16, and SC-17), suggesting two parallel paths for action moving forward.

- Modification of the groundwater monitoring program to account for the full diversity of background geochemical conditions of the North and South Paleo-Alluvial Valleys.



- Installation of additional wells as needed to more fully represent the effect of North Paleo-Alluvial Valley geochemistry on nitrate and selenium concentrations.

Recommendations

The recommended sequential steps to achieve the path forward for the Landfill groundwater monitoring program are as follows:

- Installation and testing of two additional monitoring wells (SC-18 and SC-19) at the locations designated on **Figure 2** to further define groundwater flow conditions in the North Paleo-Alluvial Valley HSU and to provide additional upgradient groundwater monitoring points for potential inclusion in the groundwater monitoring program. A brief work plan describing the planned monitoring well installation activities is included as **Attachment 1**.
- Performance of eight (8) bimonthly (every other month) monitoring events for the proposed background evaluation wells (shown in Table 2) to characterize background conditions and establish additional potential baseline conditions.
- Completion of one full round of groundwater monitoring to include 25 monitoring wells during one of the bimonthly monitoring event (Table 3). Groundwater elevations and water quality from this event will be utilized to update the potentiometric surface map and groundwater geochemistry for the CCR Landfill and surrounding area.
- Continue semi-annual groundwater monitoring of the 10 CCR program wells located upgradient and downgradient of the CCR Landfill as described in the current version of the Groundwater Monitoring Plan.
- Modification of the Groundwater Monitoring Plan to include new background monitoring wells for the Landfill. Background monitoring well selection will be based on the baseline sampling program outlined above and in Tables 2 through 4.
- Adjustment of the GWPS as appropriate based on the inclusion of additional background (upgradient) groundwater monitoring wells.
- Submittal of the modified Groundwater Monitoring Plan for CDPHE review / approval.
- Continuation of Assessment Monitoring for the CCR Landfill.

Sincerely,

M. Clem

Patrick Clem, PE Project Manager

Mart K. Levorsen

Mark Levorsen, PG Principal Hydrogeologist

Table 1											
								Selenium			Total
		Boron (Total	Calcium (Total		Fluoride	Iron (Total	Nitrite+Nitrate	(Total	Sodium (Total		Dissolved
		Recoverable)	Recoverable)	Chloride	(Total)	Recoverable)	as Nitrogen*	Recoverable)	Recoverable)	Sulfate	Solids
Well ID	Sample Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SC-15	3/15/2023	1.18	362	407	0.37	0.0363	110	0.038	3,410	11,200	16,000
SC-16	3/16/2023	2.01	501	1,260	0.70	0.0422	460	0.56	2,170	4,800	11,200
SC-17	3/16/2023	1.01	334	510	0.94	0.192	130	0.135	2,600	7,300	12,600
SC-8	3/16/2023	1.03	572	1,380	0.74	0.304	740	0.145	1,860	3,620	11,800
SC-9	3/16/2023	1.27	322	1,430	0.98	7.7	340	0.578	4,230	11,600	18,200
SC-15	11/30/2022	1.21	424	386	0.39	6.92	111.9	0.0026	4,110	11,300	17,400
SC-16	11/30/2022	2.13	340	1,270	0.56	5.38	99.6	0.499	2,570	4,640	11,900
SC-17	11/30/2022	0.985	424	505	0.72	7.54	37.09	0.111	2,820	7,580	11,500
SC-8	11/28/2022	1.17	569	1,410	0.68	0.512	800.36	0.0578	1,820	3,340	11,900
SC-9	11/28/2022	1.37	478	1,530	0.96	134	350.88	0.528	4,430	12,000	20,600
		A CONTRACTOR NO	trata as Nitragon	Correct Martha of ED	A 050 0						

Note*: March 2023 results are for Nitrite+Nitrate as Nitrogen from Method EPA 353.2 and the November 2022 results shown are the sum of results for Nitrate as Nitrogen and Nitrite as Nitrogen using Method EPA 353.2.

Table 2 - Proposed "Background Evaluation" CCR Lanfill Upgradient Wells - Bi-Monthly Monitoring (8X)

Well ID	HSU	CCR Monitoring Well	Location Relative to CCR Landfill	Appendix III Analytes	Appendix IV Analytes
SC-15	PCA-NPAV	Background Evaluation	Upgradient (North)	Х	Х
SC-16	PCA-NPAV	Background Evaluation	Upgradient (North)	Х	Х
SC-17	PCA-NPAV	Background Evaluation	Upgradient (North)	Х	Х
SC-18 (New Well Install)	PCA-SPAV	Background Evaluation	Upgradient (North)	Х	Х
SC-19 (New Well Install)	PCA-NPAV	Background Evaluation	Upgradient (North)	Х	Х
SC-8	PCA-NPAV	Background Evaluation	Upgradient (North)	Х	Х
SC-9	PCA-NPAV	Background Evaluation	Upgradient (North)	Х	Х

Notes:

HSU = Hydrostratigraphic Unit

PCA-NPAV = Piney Creek Alluvium-North Paleo-Alluvial Valley

PCA-NSAV = Piney Creek Alluvium-South Paleo-Alluvial Valley

Appendix III Analytes = Boron, Calcium, Chloride, Fluoride, Sulfate, pH, TDS

Appendix IV Analytes = Antimony, Arsenic, Barium, Berylium, Cadmium, Chromium, Cobalt, Fluoride, Lead,

Lithium, Mercury, Molybdenum, Rad226+228, Selenium, Thallium

Table 3 - List of Wells and Analytes for One-Time Monitoring Event (Water Levels and Water Chemistry)

Well ID	HSU	CCR Monitoring Well	Location Relative to CCR Landfill	Appendix III Analytes	Appendix IV Analytes	Additional Analytes (AA Below)
SC-15	PCA-NPAV	Background Evaluation	Upgradient (North)	Х	Х	AA
SC-16	PCA-NPAV	Background Evaluation	Upgradient (North)	Х	Х	AA
SC-17	PCA-NPAV	Background Evaluation	Upgradient (North)	Х	Х	AA
SC-18 (New Well Install)	PCA-NPAV	Background Evaluation	Upgradient (North)	Х	Х	AA
SC-19 (New Well Install)	PCA-NPAV	Background Evaluation	Upgradient (North)	Х	Х	AA
SC-8	PCA-NPAV	Background Evaluation	Upgradient (North)	Х	Х	AA
SC-9	PCA-NPAV	Background Evaluation	Upgradient (North)	Х	Х	AA
FC-1A	PCA-SPAV	No	Upgradient (Southwest)	Х	Х	AA
FC-2A	PCA-SPAV	No	Upgradient (Southwest)	Х	Х	AA
SC-2	PCA-SPAV	No	Downgradient	Х	Х	AA
SC-3	PCA-SPAV	No	Downgradient	Х	Х	AA
SC-7	PCA-NPAV	No	Downgradient	Х	Х	AA
WW-3A	Kp-NPAV	No	Upgradient (North)	Х	Х	AA
WW-5A	Kp-NEPAV	No	Cross-gradient	Х	Х	AA
WW-6A	Kp-NEPAV	No	Cross-gradient	Х	Х	AA
CC-1	PCA-SPAV	Current Background	Upgradient (Southwest)	Х	Х	AA
FC-1	PCA-SPAV	Current Background	Upgradient (Southwest)	Х	Х	AA
FC-2	PCA-SPAV	Current Background	Upgradient (Southwest)	Х	Х	AA
FC-3A	PCA-SPAV	Current Background	Upgradient (Southwest)	Х	Х	AA
FC-3B	Kp-SPAV	Current Background	Upgradient (Southwest)	Х	Х	AA
SC-10	PCA-NPAV	Current Downgradient	Downgradient (Northeast)	Х	Х	AA
SC-11	PCA-NPAV	Current Downgradient	Downgradient (Northeast)	Х	Х	AA
SC-12	PCA-SPAV	Current Downgradient	Downgradient (Southeast)	Х	Х	AA
SC-13	PCA-SPAV	Current Downgradient	Downgradient (Southeast)	Х	Х	AA
SC-14	PCA-SPAV	Current Downgradient	Downgradient (Southeast)	Х	Х	AA

Notes:

HSU = Hydrostratigraphic Unit

PCA-NPAV = Piney Creek Alluvium-North Paleo-Alluvial Valley

PCA-NSAV = Piney Creek Alluvium-South Paleo-Alluvial Valley

Kp-NPCA = Pierre Shale-North Paleo-Alluvial Valley

Kp-NEPCA = Pierre Shale-Northeast Paleo-Alluvial Valley

Kp-SPCA = Pierre Shale-Sorth Paleo-Alluvial Valley

Appendix III Analytes = Boron, Calcium, Chloride, Fluoride, Sulfate, pH, TDS

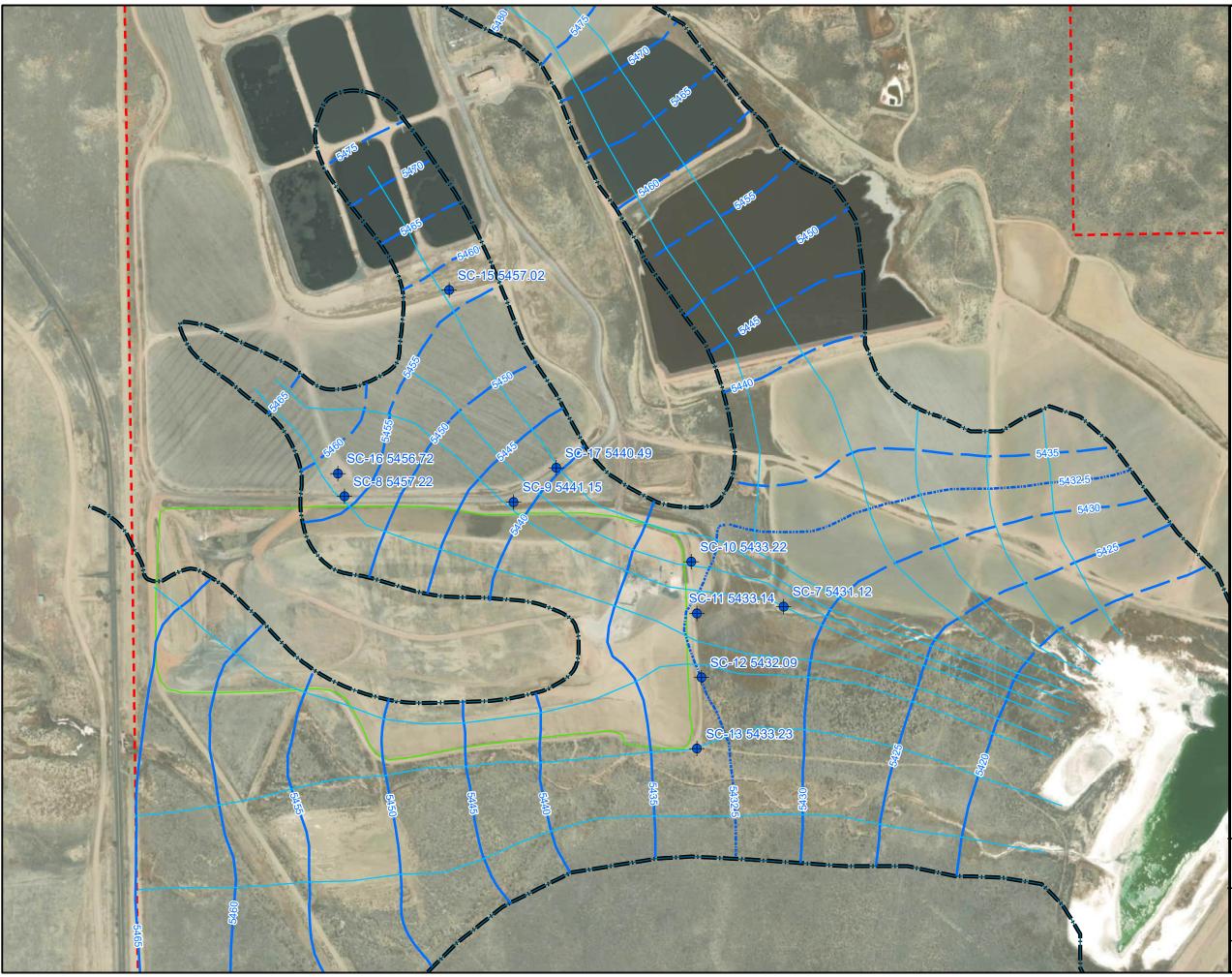
Appendix IV Analytes = Antimony, Arsenic, Barium, Berylium, Cadmium, Chromium, Cobalt, Fluoride, Lead,

Lithium, Mercury, Molybdenum, Rad226+228, Selenium, Thallium

AA - Additional Analytes = Sodium, Potassium, Magnesium, Manganese, Iron, Total Alkalinity, Bicarbonate Alkalinity, Ammonia, and Nitrate+Nitrite

Table 4 - Current CCR Rule Monitoring Well Network - Semi-Annual Monitoring

				Appendix	Appendix
			Location Relative to CCR	111	IV
Well ID	HSU	CCR Monitoring Well	Landfill	Analytes	Analytes
CC-1	PCA-SPAV	Current Background	Upgradient (West)	Х	Х
FC-1	PCA-SPAV	Current Background	Upgradient (West)	Х	Х
FC-2	PCA-SPAV	Current Background	Upgradient (West)	Х	Х
FC-3A	PCA-SPAV	Current Background	Upgradient (West)	Х	Х
FC-3B	Kp-SPAV	Current Background	Upgradient (West)	Х	Х
SC-10	PCA-NPAV	Current Downgradient	Downgradient (Northeast)	Х	Х
SC-11	PCA-NPAV	Current Downgradient	Downgradient (Northeast)	Х	Х
SC-12	PCA-SPAV	Current Downgradient	Downgradient (Southeast)	Х	Х
SC-13	PCA-SPAV	Current Downgradient	Downgradient (Southeast)	Х	Х
SC-14	PCA-SPAV	Current Downgradient	Downgradient (Southeast)	Х	Х



Legend

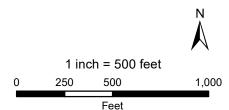
Groundwater Elevation Nov 2022

+ PCA Well November 2022

Groundwater Elevation

- Potentiometric Surface Contour (5-ft interval)
- Dashed Where Inferred
- 5432.5 Contour (half-interval)
- Groundwater Flow Line
- Boundary Piney Creek Alluvium HSU Approximate
- - Boundary Certificate of Designation
- Boundary CCR Landfill

Note: Groundwater elevations for November 2022 were obtained for 11 monitoring wells. This data was used to modify potentiometric contours from the February 2022 monitoring event where 20 wells were monitored.



Note: Groundwater elevations at monitoring wells completed predominantly in the Kp HSU used as general guidance for construction of PCA HSU elevation contours from February 2022



Title: Groundwater Potentiometric Surface Contours with Flow Lines November 2022 Sampling Event Combined with February 2022 Data Depth to Water Measured November 2022 and February 2022

Projec

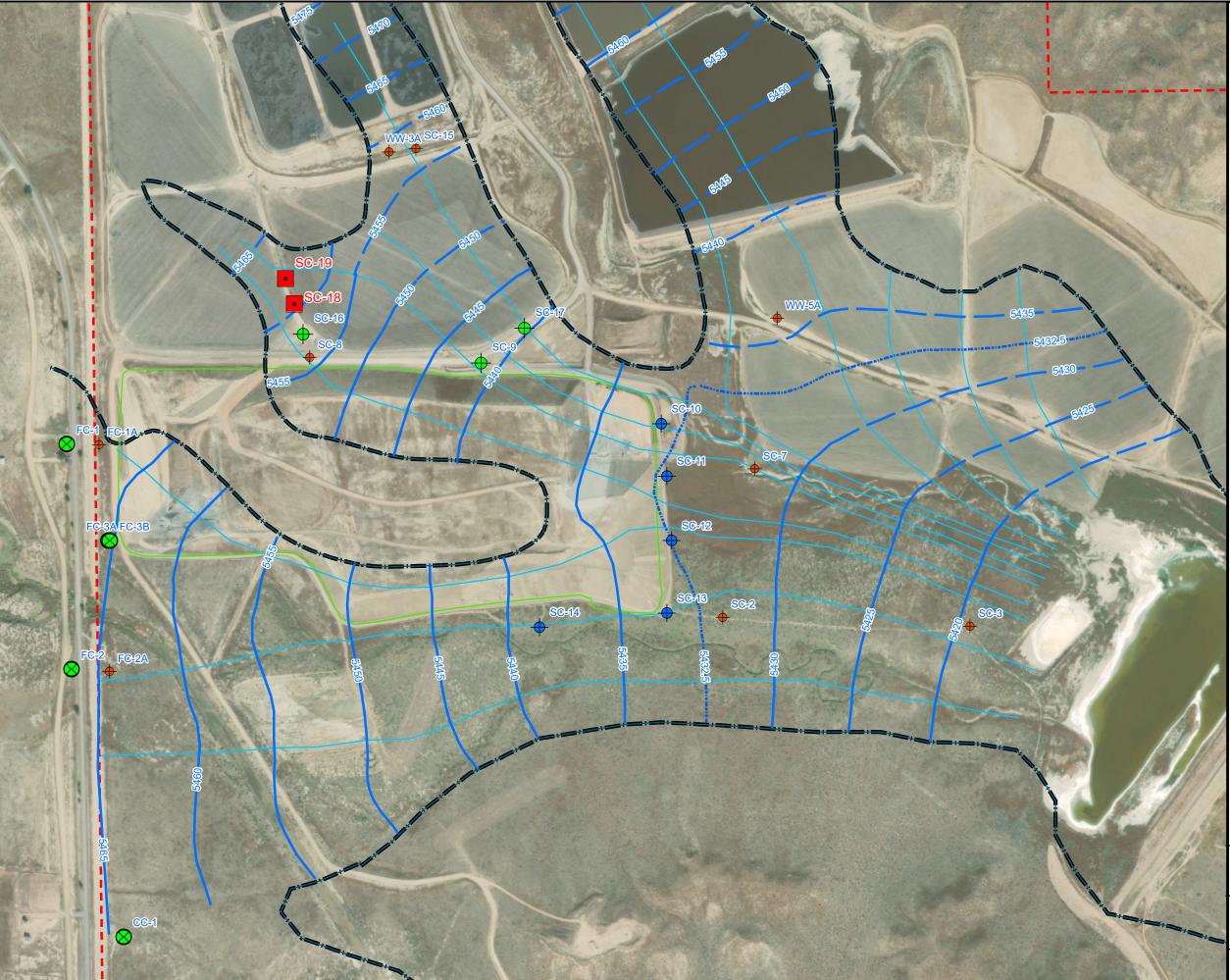
Revisions to the Groundwater Monitoring Plan - CCR Landfill

Location

Clear Spring Ranch El Paso County, CO

Project No.:	Date:	Figure:
60712294	7/28/2023	1





Legend CCR_Status Background - NPAV Background - SPAV \otimes Downgradient Compliance Other Monitoring Wells **Proposed Well Installations** • SC-18 • SC-19 — Boundary_PCA_HSU **Groundwater Elevation** Potentiometric Surface Contour (5-ft interval) - Dashed Where Inferred 5432.5 Contour (half-interval) Groundwater Flow Line - -- - Boundary Certificate of Designation Boundary CCR Landfill Boundary - Piney Creek Alluvium HSU Approximate 1 inch = 500 feet Ν 250 500 1,000 \bigwedge 0 Feet ΑΞϹΟΜ Title: Locations of Existing Wells and Proposed Background Monitoring Wells Project: Revisions to the Groundwater Monitoring Plan CCR Landfill

Location:

Clear Spring Ranch El Paso County, CO

Date:	Figure:
7/28/20	23 2
	Date: 7/28/20

Attachment 1 - Monitoring Well Installation Work Plan

This plan describes the activities that will take place at the Colorado Springs Utilities (UTILITIES) Clear Spring Ranch facility for installation of two new groundwater monitoring wells located north of the CCR Landfill to support revision of the Groundwater Monitoring Plan. The groundwater monitoring well installation activities will include the following.

Utility Locating / Clearance

The Utility Notification Center of Colorado ("UNCC") will be notified at least five business days prior to any excavation or earthwork activities to ensure proper location and clearance of utilities.

Monitoring Well Notifications

Monitoring well permit notifications will be prepared and submitted to the Colorado State Engineer's Office in accordance with Rule 6.3 of the Water Well Construction Rules (2 CCR 402-2). The Notice of Intent will be provided before drilling any groundwater monitoring well. Notice is accomplished by submitting Form GWS-51 (Monitoring and Observation Holes) to the Division of Water Resources at least three (3) days and no more than ninety (90) days prior to well construction.

Monitoring Well Installation

Monitoring wells will be drilled and installed by a Colorado licensed Water Well Construction Contractor. A hydrogeologist or geologist will oversee the field activities performed by the drilling subcontractor. The proposed monitoring wells will be drilled and boreholes will be advanced using continuous sampling with hollow stem augers. Monitoring wells will be constructed using 2-inch diameter flush-joint Schedule 40 PVC. Well screens will be fifteen (15) feet in length with 0.010-inch slot size (10-slot). The bottom of the screen interval will be set at or close to the bedrock-alluvium contact. Graded filtered silica sand (20-40 gradation) will extend from the bottom of the borehole to approximately two feet above the top of the well screen. Bentonite chips will be placed above the filter pack material up to approximately two feet below ground surface. The top portion of the hole will be sealed with cement. The wells will be completed at ground surface with above grade protective well covers / stick-ups in 2 foot x 2 foot x 4 inch concrete well pads. The wells will be surveyed by UTILITIES to determine the horizontal and vertical coordinates for the top of PVC casing and ground surface at the well head following well installation.

Monitoring Well Development

The monitoring wells will be developed to remove solids or other particulates that may have been deposited on the boring wall during drilling. Development will occur no sooner than 24 hours after well installation. Well development will be accomplished using methods commonly accepted by environmental professionals and approved will include one of more of the following - bailing, surging, and/or pumping. Temperature, pH, conductivity and turbidity will be monitored during well development. The well-development will continue until the groundwater's temperature, pH, turbidity (target <5 NTU) and conductivity have stabilized within 10% between successive readings, *or* a maximum of 10 borehole volumes of water has been removed from the well and at least three surging and bailing/pumping events have been performed. If the well goes dry during development and does not readily recharge, development will be deemed complete after a minimum of 3 well casing volumes have been removed and one surging event. Typically, a well is considered developed when free of visible sediment; however, previous well installations in this area have shown that turbidity doesn't readily clear up.

Field Documentation

Field personnel will document the field activities in a logbook and/or field logs. A daily field log will be kept documenting the timing of field activities and the content of any pertinent project communications. Each daily field log will be dated and signed by field personnel. Photographs will be taken to record the soil core samples and any other relevant field activities. The field geologist logging the soil cores will classify per the Unified Soil Classification System.

Monitoring Well Permits

Monitoring well permit applications will be submitted to the State Engineer's Office upon completion of the well installations. A Monitoring and Observation Well Permit Application (Form GWS-46) and Well Construction and Yield Estimate Report (Form GWS-31) will signed by the well driller to register the monitoring wells with the State Engineer's Office.