



2020 Annual Groundwater Monitoring and Corrective Action Report

for Compliance with the Coal Combustion
Residuals (CCR) Rule

Hayden Station

Public Service Company of Colorado

January 29, 2021

Table of Contents

1.0	Introduction	1
2.0	Facility Description	1
2.1	Hydrogeology	1
2.2	Monitoring Well Network	2
3.0	Monitoring	6
3.1	Frequency	6
3.2	Water Levels and Sample Collection	7
4.0	Data Validation and Data Management	8
5.0	Monitoring Results	8
5.1	Water Levels and Groundwater Flow Direction	8
5.2	Water Quality	9
6.0	Summary	10
7.0	References	11

List of Tables

Table 1.	Groundwater quality parameters	6
Table 2.	Number and dates of groundwater samples collected in 2020 for each well and the required monitoring programs (257.90(e)(3))	7
Table 3.	Groundwater Protection Standards for Detected Appendix IV COIs for the Landfill 257.95(d)(3)	10

List of Figures

Figure 1.	Vicinity map for Hayden Station.	4
Figure 2.	Hayden Station – CCR unit and monitoring well location map.	5

List of Appendices

Appendix A: Groundwater Potentiometric Maps

Appendix B: Laboratory Reports



Table of Abbreviations and Acronyms

Abbreviation	Definition
BTV	background threshold value
CCR	Coal Combustion Residuals
COI	constituent of interest
EPA	Environmental Protection Agency
LCS	Laboratory Control Samples
MS/MSD	Matrix Spike/Duplicate
QC	quality control
RPD	relative percent difference
SOP	Standard Operating Procedure
SSI	statistically significant increase
TDS	Total Dissolved Solids
TSS	Total Suspended Solids

Certification

2020 Groundwater Monitoring Annual Report for Hayden Station

I hereby certify to the best of my knowledge that this groundwater monitoring annual report is designed to meet the performance standard in 40 CFR Part 257 of the Federal Coal Combustion Residuals (CCR) Rule.

I am duly licensed Professional Engineer under the laws of the State of Colorado.

Matthew Rohr, PE
Colorado PE License 0053467
License renewal date October 31, 2021





Summary of 40 CFR Section § 257.90(e)(6) Groundwater Monitoring System Requirements and Site-Specific Compliance at Hayden Station		
§ 257.90(e)(6) A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:		Landfill Status
§257.90(e)(6)(i)	At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95.	Assessment Monitoring Program
§257.90(e)(6)(ii)	At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95.	Assessment Monitoring Program
§257.90(e)(6)(iii)	If it was determined that there was a statistically significant increase over background for one or more constituents listed in appendix III to this part pursuant to § 257.94(e):	Yes
§257.90(e)(6)(iii)(A)	Identify those constituents listed in appendix III to this part and the names of the monitoring wells associated with such an increase. These SSIs are from the original triggering event.	•W-2 – boron •W-4 - chloride, sulfate, TDS
§257.90(e)(6)(iii)(B)	Provide the date when the assessment monitoring program was initiated for the CCR unit.	September 25-26, 2019
§257.90(e)(6)(iv)	If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in appendix IV to this part pursuant to § 257.95(g) include all of the following:	No
§257.90(e)(6)(iv)(A)	Identify those constituents listed in appendix IV to this part and the names of the monitoring wells associated with such an increase.	N/A
§257.90(e)(6)(iv)(B)	Provide the date when the assessment of corrective measures was initiated for the CCR unit.	N/A
§257.90(e)(6)(iv)(C)	Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit.	N/A
§257.90(e)(6)(iv)(D)	Provide the date when the assessment of corrective measures was completed for the CCR unit.	N/A
§257.90(e)(6)(v)	Whether a remedy was selected pursuant to § 257.97 during the current annual reporting period, and if so, the date of remedy selection.	N/A
§257.90(e)(6)(vi)	(vi) Whether remedial activities were initiated or are ongoing pursuant to § 257.98 during the current annual reporting period.	N/A

1.0 Introduction

The U.S. Environmental Protection Agency's (EPA's) final Coal Combustion Residuals (CCR) Rule establishes a comprehensive set of requirements for the management and disposal of CCR (or coal ash) in landfills and surface impoundments by electric utilities. Hayden Station, located in Routt County, Colorado (**Figure 1**), has an ash disposal facility subject to the CCR Rule (**Figure 2**). Hayden Station is operated by Public Service Company of Colorado (PSCo), an Xcel Energy Company.

The original certified CCR monitoring well network for the Hayden CCR landfill consisted of four wells completed in the colluvium that underlies the landfill; one upgradient of the landfill and three at the downgradient waste boundary. Upgradient colluvial monitoring well, MW-5, has continued to be dry since program implementation and comparison of upgradient and downgradient groundwater chemistry in the colluvial wells has not been possible. The colluvium under the landfill discharges to the adjacent alluvial aquifer of Sage Creek. Therefore, four existing monitoring wells in the adjacent alluvial aquifer were added to the certified monitoring network for the landfill. These four alluvial wells are located both upgradient and downgradient of the CCR landfill and are used to supplement the colluvial landfill monitoring wells. It is not appropriate to compare alluvial water quality to colluvial water quality; however, collecting samples from the alluvial well network will provide background groundwater that has not been impacted by the CCR unit, as well as groundwater downgradient of the CCR unit in compliance with the CCR Rule. The colluvial wells were sampled for CCR constituents of interest (COIs) background water quality between December 2, 2015 and July 11, 2017. The alluvial wells were sampled for background water quality between April 11, 2018 and April 15, 2019 and background threshold values (BTVs) were developed. In addition, detection monitoring samples were collected and compared against the BTVs as specified under CCR Rule Part 257.94 and assessment monitoring was initiated as specified under Part 257.95. This Annual Groundwater Monitoring Report presents the sampling and analysis completed in 2020:

- The status of the groundwater monitoring program for the landfill at the end of 2020 is assessment monitoring.

2.0 Facility Description

Hayden Station is a coal-fired, steam turbine electric generating station; the fuel source for the existing coal-fired units is sub-bituminous, low-sulfur coal supplied by several mines in western Colorado. Hayden Station uses water from the Yampa River and does not discharge water offsite. Hayden Station began operating in 1965 (Unit 1), with the addition of Unit 2 in 1976. CCR generated at the Station is permanently disposed in the landfill (**Figure 2**). Wastes disposed at the landfill consist of coal ash, air emission control byproducts, water intake silt, excavation soils, and coal impurities.

2.1 Hydrogeology

The landfill is located on a west-facing hillslope that drains to Sage Creek and the alluvial aquifer (**Figure 2**). Sage Creek flows to the north. The soil underlying the landfill is colluvium

consisting of silty clay or clay to a depth of 9 to 24 feet, which is underlain by shale bedrock of the Lewis Shale Formation (Walsh, 2001). The Lewis Shale Formation surface slopes downward to the west/northwest toward Sage Creek (Walsh, 2001). The Lewis Shale Formation is several hundred feet thick in the area and is recognized as an aquiclude that inhibits vertical movement of water (Xcel, 2001). Eight monitoring wells were installed in 1984 in the vicinity of the landfill, prior to landfill construction. All wells were dry (and remained dry throughout the multi-year period in which they were monitored) with the exception of HD-1 in the northwest near County Road 27. Well HD-1 was observed to be wet at the top of bedrock. These observations indicate that the background hydrologic condition associated with the landfill was predominantly dry colluvium. Limited perched groundwater may be present beneath the landfill from infiltrated precipitation above the bedrock, which would flow along the bedrock surface northwest and ultimately discharge to the Sage Creek alluvial aquifer immediately west of the landfill (**Figure 2**).

Within approximately 100 feet west of the landfill, the uppermost aquifer is within the alluvium of Sage Creek valley. Monitoring wells W-1 through W-7 were drilled to depths of 15 to 20 feet and encountered layers of sand and gravel alternating with finer-grained layers of sand, silt and clay. Groundwater in the Sage Creek alluvial aquifer is 5 to 10 feet below surface (Xcel, 2001). Groundwater present in the Sage Creek valley bottom alluvium flows to the north.

2.2 Monitoring Well Network

Four monitoring wells (MW-5, MW-6, MW-7, and MW-8) were drilled and installed in 2015 around the perimeter of the landfill and are monitored for compliance with the CCR Rule. All four wells were completed in the colluvium. The well locations are shown on **Figure 2**. The upgradient well (MW-5) is located to the southeast of the ash landfill. The three downgradient wells (MW-6, MW-7, and MW-8) are located on the western waste boundary of the landfill. The three downgradient wells are spaced along the length of the landfill. Upgradient well MW-5 has been consistently dry since monitoring began in 2015 and therefore background water quality could not be established in the colluvial system of wells.

HDR has reviewed site conditions on multiple occasions to evaluate potential locations for a new upgradient colluvial monitoring well. Based upon the documented consistently dry colluvium conditions, locations east of the landfill are expected to also be dry. Locations along the south end of the landfill are inappropriate due to possible stormwater runoff from the landfill and potential contributions from the adjacent property owner. The most appropriate location for an upgradient well is along the south edge of the landfill and west of CR-27. However, a well installed west of CR-27 would likely intercept the alluvial aquifer and would not be representative of the colluvium that is monitored in downgradient CCR wells at the waste boundary. No options for an upgradient well in the colluvium exist, and since the colluvium discharges to the alluvial aquifer, existing monitoring wells in the alluvial aquifer can be used to supplement the colluvial monitoring well network.

In 2018, PSCo began sampling four existing monitoring wells (W-1 to W-4) in the adjacent alluvial aquifer for CCR constituents of interest (COIs) and the wells were added to the certified monitoring network (HDR 2019). These four wells are screened in the alluvial aquifer west of the

landfill (**Figure 2**). Based on the site hydrogeology and westerly sloping bedrock surface, impacts to groundwater in colluvium under the landfill should be observable in the alluvial aquifer downgradient of the landfill waste boundary. One upgradient alluvial well (W-3) is located southwest of the landfill to represent background water quality conditions and three downgradient wells (W-1, W-2, and W-4) are located west and northwest of the landfill (**Figure 2**). No wells were installed or abandoned in 2019.

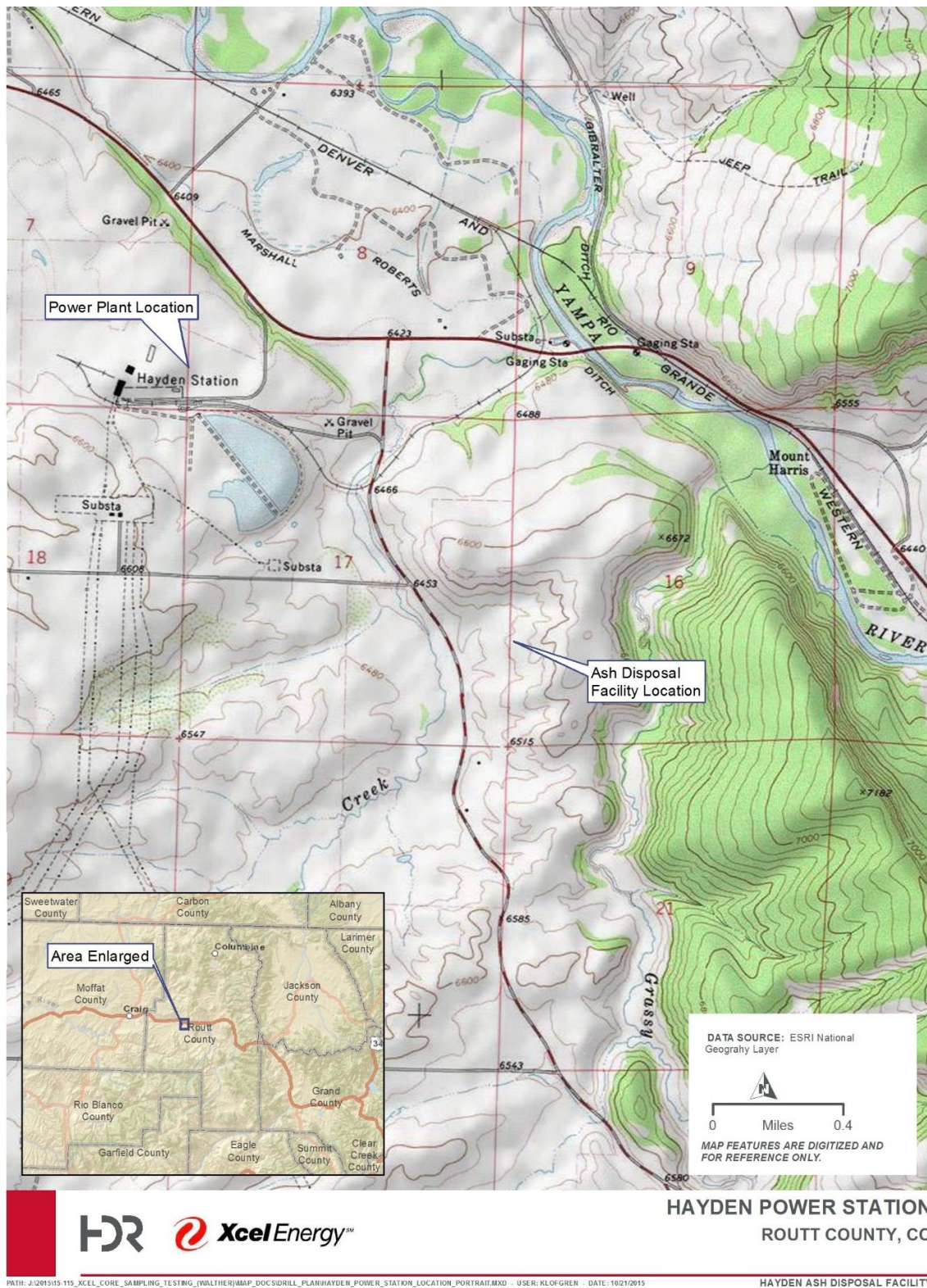


Figure 1. Vicinity map for Hayden Station.

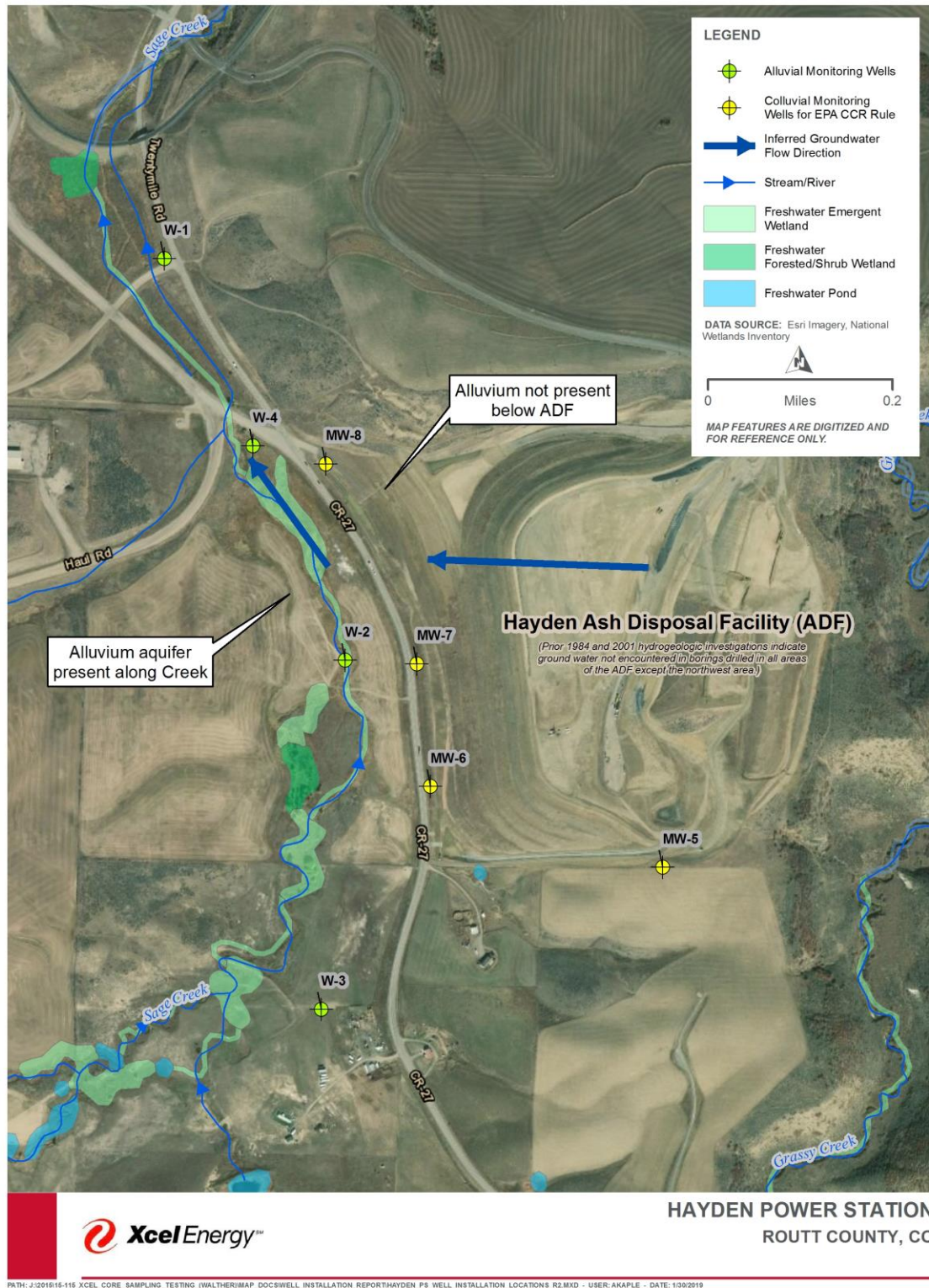


Figure 2. Hayden Station – CCR unit and monitoring well location map.

3.0 Monitoring

3.1 Frequency

In 2020, each well in the monitoring network was sampled on a semi-annual basis for assessment monitoring. On June 16-17, 2020 monitoring was conducted and samples were analyzed for Appendix III and Appendix IV COIs (**Table 1**). On December 15-16, 2020 monitoring was conducted and samples were analyzed for Appendix III and Appendix IV COIs that were detected in the June sample event (**Table 1**). **Table 2** provides the well identification, number of samples collected, dates samples were collected in 2020, and whether the sample was required by the detection monitoring or assessment monitoring programs (per (257.90(e)(3))).

Table 1. Groundwater quality parameters	
Appendix III Constituents	Appendix IV Constituents
Boron	Antimony
Calcium	Arsenic
Chloride	Barium*
Fluoride	Beryllium
pH	Cadmium*
Sulfate	Chromium
Total Dissolved Solids (TDS)	Cobalt*
Additional Parameters	Fluoride*
Total Suspended Solids (TSS)	Lead
	Lithium*
	Mercury
	Molybdenum*
	Selenium*
	Thallium
	Radium 226 and 228 combined*

*Detected Appendix IV COIs from June 2020 sample event.

Table 2. Number and dates of groundwater samples collected in 2020 for each well and the required monitoring programs (257.90(e)(3))			
Monitoring Well I.D.	Well Location	Dates Monitored	CCR Rule Monitoring Purpose
MW-5 (Colluvial)	Upgradient	June 16, 2020*	Annual Assessment Monitoring
		December 15, 2020*	Semi-Annual Assessment Monitoring
MW-6 (Colluvial)	Downgradient	June 17, 2020	Annual Assessment Monitoring
		December 16, 2020	Semi-Annual Assessment Monitoring
MW-7 (Colluvial)	Downgradient	June 17, 2020	Annual Assessment Monitoring
		December 16, 2020	Semi-Annual Assessment Monitoring
MW-8 (Colluvial)	Downgradient	June 16, 2020	Annual Assessment Monitoring
		December 16, 2020	Semi-Annual Assessment Monitoring
W-1 (Alluvial)	Downgradient	June 16, 2020	Annual Assessment Monitoring
		December 15, 2020	Semi-Annual Assessment Monitoring
W-2 (Alluvial)	Downgradient	June 16, 2020	Annual Assessment Monitoring
		December 15, 2020	Semi-Annual Assessment Monitoring
W-3 (Alluvial)	Upgradient	June 16, 2020	Annual Assessment Monitoring
		December 15, 2020	Semi-Annual Assessment Monitoring
W-4 (Alluvial)	Downgradient	June 16, 2020	Annual Assessment Monitoring
		December 16, 2020	Semi-Annual Assessment Monitoring

*Well was monitored and found to be dry, no sample was collected

3.2 Water Levels and Sample Collection

Water levels were collected in each well prior to sample collection. Groundwater quality samples were collected in all monitoring wells listed in Table 2 unless wells were dry. Groundwater sample collection protocols follow the Groundwater Sample Collection Standard Operating Procedure (SOP) (HDR, 2016). The water samples were collected using a peristaltic pump. downhole reusable equipment was decontaminated between wells. Each well was purged until

field parameters stabilized. In accordance with the CCR Rule, groundwater samples were not field filtered. Field parameters (i.e. conductivity, dissolved oxygen, oxidation reduction potential, pH, turbidity and temperature) were measured using a YSI Professional Plus (or an equivalent) portable water quality instrument that was calibrated prior to use each day of sampling. The results of field measurements were recorded on a field data form, which are maintained as part of the field sampling records. Quality control (QC) samples include one field duplicate sample and one field equipment blank sample collected during each sample event. Water samples were delivered under Chain of Custody to Eurofins TestAmerica in Denver, Colorado.

4.0 Data Validation and Data Management

Data validation was conducted to eliminate data that did not meet validation criteria and designate a data qualifier for any data quality limitation discovered. All data validation and data management tasks were performed per the Data Management and Statistical Procedures Plan for Compliance with the Coal Combustion Residuals Rule (HDR, 2019).

All samples and quality control (QC) were reviewed and evaluated, and no samples were rejected. Most QC analyses were within reportable limits; however, when QC was outside control limits, samples were reported as estimated. Relative percent difference (RPD) results for field duplicate and lab duplicate analyses were generally within the control limit criterion of 20%. Laboratory Control Sample (LCS)/LCS duplicates and Matrix Spike/Duplicate (MS/MSD) recoveries and RPDs were all within control limits. Data analyses required minimal qualifications, and all data were usable, even when qualified.

5.0 Monitoring Results

5.1 Water Levels and Groundwater Flow Direction

The water levels at monitoring wells were recorded during monitoring events. Groundwater elevations from June 2020 are displayed on the potentiometric contour map in **Appendix A**, and the flow direction was consistent in the December 2020 event. In 2020, groundwater flow direction was to the northwest under the landfill and north in the alluvial aquifer, consistent with the flow of Sage Creek, consistent with previous conceptual models. The potentiometric contour map confirms well W-3 as being upgradient of the influence of the landfill and is appropriate to represent background water quality for the landfill in the alluvial aquifer.

Upgradient well MW-5 has been consistently dry since monitoring began in 2015, reflecting the normally dry background conditions in the colluvium under the landfill and above the Lewis Shale aquitard. However, groundwater is observed in the colluvium downgradient wells MW-6, MW-7 and MW-8 at the waste boundary. Because the colluvium is otherwise dry, the water in these wells is likely seepage from within the footprint of the landfill, which is collecting as perched groundwater, flowing along the top of bedrock and discharging to the northwest into the alluvial aquifer of Sage Creek.

5.2 Water Quality

As stipulated in the CCR Rule, eight rounds of background groundwater sampling and detection monitoring were completed in 2019 for the landfill. The background sampling was described in detail in the *Background Water Quality Statistical Certification* (HDR, 2020). In the August 20, 2019 PSCo memorandum, *Determination of Statistically Significant Increases over Background per 257.93(h)(2)*, concentrations of Appendix III COIs from each downgradient monitoring well at the landfill were compared against the BTVs and several COIs were shown to have SSIs over BTVs (upper prediction limit). These SSIs triggered the assessment monitoring program for the landfill.

The initial assessment monitoring sampling event was completed in December 2019, but results were not received in time to include in the 2019 annual groundwater report. In accordance with CCR Rule 257.95(h), GPS were established for each detected Appendix IV COI. For each detected COI, **Table 3** lists the EPA established MCL from 40 CFR 141.62 and 141.66, the BTV (upper tolerance limit) for the Hayden landfill, and the GPS.

The laboratory report for the December 2019 sample event is provided in **Appendix C**. In accordance with CCR Rule 257.95(e), downgradient well concentrations from the December 2019 assessment monitoring event was compared against background values, and some concentrations were found to be above background values. In accordance with CCR Rule 257.95(f), detected Appendix IV COI concentrations in downgradient wells were compared against GPS and one well had a single slight exceedance of GPS. Therefore, in accordance with CCR Rule 257.95(g), statistical evaluation was completed to determine if any concentrations are at a statistically significant level (SSL) over GPS. No SSLs were observed.

Laboratory reports for 2020 sample events are provided in **Appendix C**. In accordance with CCR Rule 257.95(e), downgradient well concentrations from the June 2020 assessment monitoring event was compared against background values, and some concentrations were found to be above background values. In accordance with CCR Rule 257.95(f), detected Appendix IV COI concentrations in downgradient wells were compared against GPS and none were found to exceed GPS. Therefore, in accordance with CCR Rule 257.95(f), assessment monitoring status continued.

In accordance with CCR Rule 257.95(e), downgradient well concentrations from the December 2020 assessment monitoring event were compared against background values, and some concentrations were found to be above background values. In accordance with CCR Rule 257.95(f), detected Appendix IV COI concentrations in downgradient wells were compared against GPS some concentrations were found to exceed GPS. Therefore, in accordance with CCR Rule 257.95(g), statistical evaluation will be completed to determine if any concentrations are at an SSL over GPS. Because laboratory reports from the December 2020 sample event were received in January 2021, statistics are still being completed at the time of this report. After the statistical evaluation is complete, any applicable requirements of the CCR Rule will be followed, and the statistical evaluation findings will be reported in the 2021 annual report. In accordance with CCR Rule 257.95(f) the assessment monitoring status continued.

Table 3. Groundwater Protection Standards for Detected Appendix IV COIs for the Landfill 257.95(d)(3)

Constituent	Unit	MCL	BTV (UTL)	GPS
Barium	mg/l	2.00	0.00918	2.00
Cadmium	mg/l	0.00500	0.00120	0.005
Cobalt	mg/l	0.00600*	0.00616	0.00616
Fluoride	mg/l	4.00	0.862	4.00
Lithium	mg/l	0.0400*	1.80	1.80
Molybdenum	mg/l	0.100*	0.00402	0.100
Radium-226-228	pci/l	5.0^	1.01	5.0
Selenium	mg/l	0.0500	0.0246	0.0500

*EPA adopted health-based value in place of MCL

^Colorado Water Quality Regulation

In 2021, PSCo will continue to monitor groundwater at the landfill in accordance with the assessment monitoring program and consistent with 257.95.

6.0 Summary

In 2020 PSCo continued assessment monitoring in the CCR monitoring well network. Monitoring well MW-5 has been consistently dry since monitoring began in 2015, reflecting the normally dry background conditions in the colluvium under the landfill and above the Lewis Shale. Therefore, no background water quality is available in the colluvium to develop BTVs. Groundwater is observed in the colluvium downgradient wells MW-6, MW-7 and MW-8 located at the waste boundary, which likely represents seepage from within the footprint of the landfill collecting as perched groundwater in these wells, flowing along the top of bedrock and discharging to the northwest into the alluvial aquifer of Sage Creek. Existing monitoring wells in the Sage Creek aquifer were added to the groundwater certified network for the landfill in 2018.

Under the separate State groundwater monitoring system of wells in the alluvial aquifer, State SSIs over background were identified in downgradient well W-2. PSCo initiated assessment monitoring under the State program in 2017 and initiated a dewatering corrective action program in 2018, which is functionally equivalent to that which is outlined in the CCR Rule. The dewatering of the colluvium under the landfill continued in 2020.

The following observations are based on CCR Rule compliance data collected in 2020:

- Groundwater flow direction under the CCR landfill is generally to the northwest and discharges to the Sage Creek alluvial aquifer. Groundwater flow direction in the Sage Creek alluvial aquifer is to the north.

- The colluvium in the area of the landfill has been documented to be dry under baseline conditions and upgradient of the landfill. Therefore, no background water quality is available to develop BTVs for the colluvium.
- All four of the alluvial and three of the colluvial CCR monitoring wells were sampled in April and December 2020 for assessment monitoring. Consistent with historic observations, colluvial well MW-5 located upgradient of the landfill was dry in both monitoring events.
- Assessment monitoring data from the downgradient alluvial wells was compared to background data and some concentrations were above BTVs. Some concentrations were also above the site GPS; however, none were present at a statistically significant level (SSL) over GPS.
- The Hayden landfill status continues to be in assessment monitoring.
- No wells were installed or abandoned in 2020.

7.0 References

AECOM, 2016. Hayden Station Ash Disposal Facility Semi-Annual Groundwater Monitoring Report December 28, 2016.

HDR, 2019. Groundwater Monitoring System Certification - Compliance with the Coal Combustion Residuals Rule Hayden Station. February 26, 2019.

HDR, 2019. Data Management and Statistical Procedures Plan for Compliance with the Coal Combustion Residuals Rule. Updated July 19, 2019.

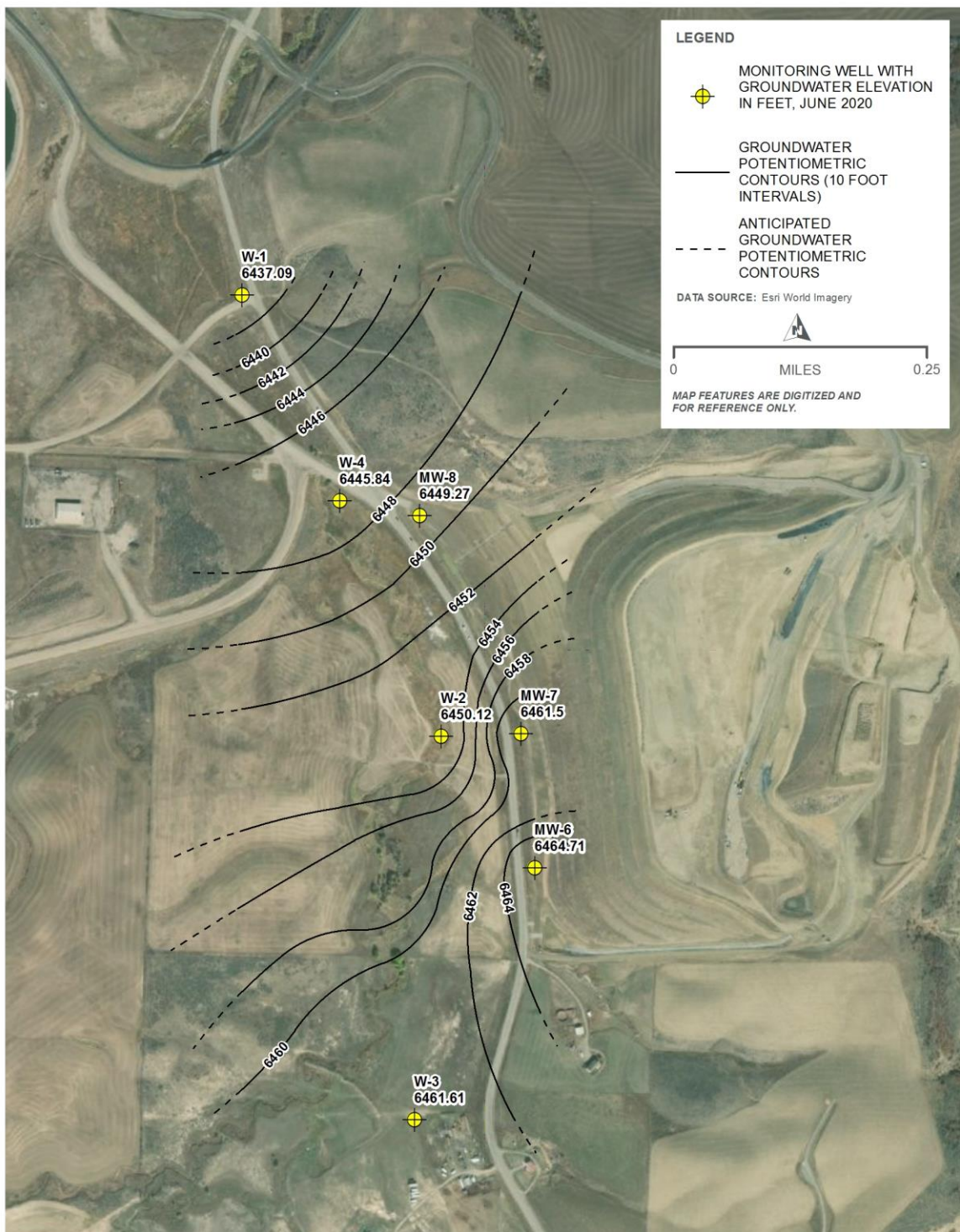
HDR, 2020. Background Water Quality Statistical Certification. January 31, 2020.

Walsh (Walsh Environmental Scientists and Engineers), 2013. Hayden Station Coal Ash Disposal Facility Engineering and Design and Operation Plan. Xcel Energy, Hayden, Colorado. November 2013.

Xcel Energy, 2001. Hayden Ash Disposal Facility Environmental Monitoring System (EMS) Work Plan, August 23, 2001.

Appendix A

Potentiometric Surface Map



HAYDEN POWER STATION
ROUTT COUNTY, CO

Appendix B

Laboratory Reports

ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-137752-1

Client Project/Site: Xcel Energy GW CCR Monitoring - Hayden
Revision: 1

For:

HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves



Authorized for release by:
8/6/2020 10:48:13 AM

Darlene Bandy, Project Manager I
(303)736-0188
Darlene.Bandy@Eurofinset.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1

Table of Contents 2

Definitions 3

Case Narrative 4

Detection Summary 7

Method Summary 11

Sample Summary 12

Client Sample Results 13

QC Sample Results 26

QC Association 32

Chronicle 36

Certification Summary 41

Chain of Custody 43

Receipt Checklists 47

Tracer Carrier Summary 49



Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Rad

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Job ID: 280-137752-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Hayden

Report Number: 280-137752-1

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. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Revision 1 - 8/5/2020

This revision was created in order to add the remaining analytes for APP IV, as these samples require all of the APP III and APP IV analytes instead of the historical analytes for these samples. The narrative for 6020A has been updated.

RECEIPT

The samples were received on 6/17/2020 3:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.4° C, 5.0° C and 5.3° C.

TOTAL RECOVERABLE METALS

Samples W-1 (280-137752-1), W-1D (280-137752-2), W-2 (280-137752-3), W-2EB (280-137752-4), W-3 (280-137752-5), W-4 (280-137752-6), MW-6 (280-137752-7), MW-7 (280-137752-8) and MW-8 (280-137752-9) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 06/23/2020 and analyzed on 06/24/2020 and 06/25/2020.

Samples MW-6 (280-137752-7)[5X] and MW-7 (280-137752-8)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

TOTAL RECOVERABLE METALS (ICPMS)

Samples W-1 (280-137752-1), W-1D (280-137752-2), W-2 (280-137752-3), W-2EB (280-137752-4), W-3 (280-137752-5), W-4 (280-137752-6), MW-6 (280-137752-7), MW-7 (280-137752-8) and MW-8 (280-137752-9) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 06/23/2020 and analyzed on 06/24/2020.

Thallium was detected in method blank MB 240-439603/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

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

TOTAL MERCURY

Samples W-1 (280-137752-1), W-1D (280-137752-2), W-2 (280-137752-3), W-2EB (280-137752-4), W-3 (280-137752-5), W-4 (280-137752-6), MW-6 (280-137752-7), MW-7 (280-137752-8) and MW-8 (280-137752-9) were analyzed for total mercury in accordance

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Job ID: 280-137752-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

with EPA SW-846 Methods 7470A. The samples were prepared on 06/29/2020 and analyzed on 06/30/2020.

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

TOTAL DISSOLVED SOLIDS

Samples W-1 (280-137752-1), W-1D (280-137752-2), W-2 (280-137752-3), W-2EB (280-137752-4), W-3 (280-137752-5), W-4 (280-137752-6), MW-6 (280-137752-7), MW-7 (280-137752-8) and MW-8 (280-137752-9) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 06/18/2020.

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

TOTAL SUSPENDED SOLIDS

Samples W-1 (280-137752-1), W-1D (280-137752-2), W-2 (280-137752-3), W-2EB (280-137752-4), W-3 (280-137752-5), W-4 (280-137752-6), MW-6 (280-137752-7), MW-7 (280-137752-8) and MW-8 (280-137752-9) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 06/18/2020.

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

CORROSIVITY (PH)

Samples W-1 (280-137752-1), W-1D (280-137752-2), W-2 (280-137752-3), W-2EB (280-137752-4), W-3 (280-137752-5), W-4 (280-137752-6), MW-6 (280-137752-7), MW-7 (280-137752-8) and MW-8 (280-137752-9) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 06/17/2020 and 06/18/2020.

The following sample did not equilibrate to 0.05 pH units after three measurements: W-2EB (280-137752-4). This was observed in a previous pH analysis thus the sample was not rerun.

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

ANIONS (28 DAYS)

Samples W-1 (280-137752-1), W-1D (280-137752-2), W-2 (280-137752-3), W-2EB (280-137752-4), W-3 (280-137752-5), W-4 (280-137752-6), MW-6 (280-137752-7), MW-7 (280-137752-8) and MW-8 (280-137752-9) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 07/08/2020, 07/09/2020 and 07/10/2020.

Samples W-1 (280-137752-1)[20X], W-1D (280-137752-2)[20X], W-2 (280-137752-3)[50X], W-3 (280-137752-5)[100X], W-3 (280-137752-5)[2X], W-4 (280-137752-6)[100X], W-4 (280-137752-6)[20X], MW-6 (280-137752-7)[20X], MW-7 (280-137752-8)[20X], MW-8 (280-137752-9)[100X] and MW-8 (280-137752-9)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

RADIUM-226 (GFPC)

Samples W-1 (280-137752-1), W-1D (280-137752-2), W-2 (280-137752-3), W-2EB (280-137752-4), W-3 (280-137752-5), W-4 (280-137752-6), MW-6 (280-137752-7), MW-7 (280-137752-8) and MW-8 (280-137752-9) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 06/23/2020 and analyzed on 07/15/2020.

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 following samples were prepared at a reduced aliquot to insure sufficient volume remains if needed for analysis: W-1 (280-137752-1), W-1D (280-137752-2), W-2 (280-137752-3), W-2EB (280-137752-4), W-3 (280-137752-5), W-4 (280-137752-6), MW-6 (280-137752-7), MW-7 (280-137752-8) and MW-8 (280-137752-9).

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

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Job ID: 280-137752-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

RADIUM-228

Samples W-1 (280-137752-1), W-1D (280-137752-2), W-2 (280-137752-3), W-2EB (280-137752-4), W-3 (280-137752-5), W-4 (280-137752-6), MW-6 (280-137752-7), MW-7 (280-137752-8) and MW-8 (280-137752-9) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 06/23/2020 and analyzed on 07/01/2020.

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 following samples were prepared at a reduced aliquot to insure sufficient volume remains if needed for analysis: W-1 (280-137752-1), W-1D (280-137752-2), W-2 (280-137752-3), W-2EB (280-137752-4), W-3 (280-137752-5), W-4 (280-137752-6), MW-6 (280-137752-7), MW-7 (280-137752-8) and MW-8 (280-137752-9).

The detection goal was not met for the following samples due to insufficient sample available for analysis: MW-6 (280-137752-7). 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.

RADIUM-226/RADIUM-228 (GFPC)

Samples W-1 (280-137752-1), W-1D (280-137752-2), W-2 (280-137752-3), W-2EB (280-137752-4), W-3 (280-137752-5), W-4 (280-137752-6), MW-6 (280-137752-7), MW-7 (280-137752-8) and MW-8 (280-137752-9) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 07/17/2020.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Client Sample ID: W-1

Lab Sample ID: 280-137752-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.64		0.10	0.023	mg/L	1		6010C	Total
Barium	0.0089		0.0050	0.0022	mg/L	1		6020A	Recoverable
Calcium	330		1.0	0.58	mg/L	1		6020A	Total
Cobalt	0.00080	J	0.0010	0.00019	mg/L	1		6020A	Recoverable
Lithium	0.29		0.0080	0.0017	mg/L	1		6020A	Total
Molybdenum	0.0029	J	0.010	0.0011	mg/L	1		6020A	Recoverable
Selenium	0.012		0.0050	0.00089	mg/L	1		6020A	Total
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Recoverable
Temperature	21.6	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	22		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	3.4		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	2800		100	21	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	4200		40	19	mg/L	1		SM 2540C	Total/NA

Client Sample ID: W-1D

Lab Sample ID: 280-137752-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.56		0.10	0.023	mg/L	1		6010C	Total
Barium	0.0078		0.0050	0.0022	mg/L	1		6020A	Recoverable
Calcium	290		1.0	0.58	mg/L	1		6020A	Total
Cobalt	0.00070	J	0.0010	0.00019	mg/L	1		6020A	Recoverable
Lithium	0.25		0.0080	0.0017	mg/L	1		6020A	Total
Molybdenum	0.0025	J	0.010	0.0011	mg/L	1		6020A	Recoverable
Selenium	0.010		0.0050	0.00089	mg/L	1		6020A	Total
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Recoverable
Temperature	20.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	22		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	3.3		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	2800		100	21	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	3800		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	4.4		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: W-2

Lab Sample ID: 280-137752-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	9.3		0.10	0.023	mg/L	1		6010C	Total
Barium	0.0058		0.0050	0.0022	mg/L	1		6020A	Recoverable
Calcium	350		1.0	0.58	mg/L	1		6020A	Total

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Client Sample ID: W-2 (Continued)

Lab Sample ID: 280-137752-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0034		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.62		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0035	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.0034	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.8	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	85		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	5.4		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	4100		250	52	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	6300		100	47	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	2.4	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: W-2EB

Lab Sample ID: 280-137752-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Total Dissolved Solids (TDS)	28		10	4.7	mg/L	1		SM 2540C	Total/NA

Client Sample ID: W-3

Lab Sample ID: 280-137752-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.87		0.10	0.023	mg/L	1		6010C	Total Recoverable
Barium	0.0079		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Cadmium	0.00031	J	0.0010	0.00020	mg/L	1		6020A	Total Recoverable
Calcium	340		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0026		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	1.2		0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0035	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.014		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.6	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	200		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	13		1.0	0.33	mg/L	2		9056A	Total/NA
Sulfate	7500		500	100	mg/L	100		9056A	Total/NA
Total Dissolved Solids (TDS)	11000		200	94	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	6.4		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: W-4

Lab Sample ID: 280-137752-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.1		0.10	0.023	mg/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Client Sample ID: W-4 (Continued)

Lab Sample ID: 280-137752-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0077		0.0050	0.0022	mg/L	1		6020A	Total
Cadmium	0.00021	J	0.0010	0.00020	mg/L	1		6020A	Recoverable Total
Calcium	320		1.0	0.58	mg/L	1		6020A	Recoverable Total
Cobalt	0.0066		0.0010	0.00019	mg/L	1		6020A	Recoverable Total
Lithium	0.72		0.0080	0.0017	mg/L	1		6020A	Recoverable Total
Molybdenum	0.0027	J	0.010	0.0011	mg/L	1		6020A	Recoverable Total
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	280		60	20	mg/L	20		9056A	Total/NA
Fluoride	26		10	3.3	mg/L	20		9056A	Total/NA
Sulfate	13000		500	100	mg/L	100		9056A	Total/NA
Total Dissolved Solids (TDS)	16000		1000	470	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	4.4		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-6

Lab Sample ID: 280-137752-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	44		0.50	0.12	mg/L	5		6010C	Total
Barium	0.0052		0.0050	0.0022	mg/L	1		6020A	Recoverable Total
Calcium	380		1.0	0.58	mg/L	1		6020A	Recoverable Total
Lithium	0.11		0.0080	0.0017	mg/L	1		6020A	Recoverable Total
Molybdenum	1.0		0.010	0.0011	mg/L	1		6020A	Recoverable Total
Selenium	0.011		0.0050	0.00089	mg/L	1		6020A	Recoverable Total
pH adj. to 25 deg C	8.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.8	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	38		3.0	1.0	mg/L	1		9056A	Total/NA
Sulfate	3000		100	21	mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	4100		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	2.4	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-7

Lab Sample ID: 280-137752-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	46		0.50	0.12	mg/L	5		6010C	Total
Barium	0.0051		0.0050	0.0022	mg/L	1		6020A	Recoverable Total
Calcium	390		1.0	0.58	mg/L	1		6020A	Recoverable Total
Lithium	0.26		0.0080	0.0017	mg/L	1		6020A	Recoverable Total
Molybdenum	0.83		0.010	0.0011	mg/L	1		6020A	Recoverable Total

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Client Sample ID: MW-7 (Continued)

Lab Sample ID: 280-137752-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Selenium	0.0072		0.0050	0.00089	mg/L	1			6020A	Total Recoverable
pH adj. to 25 deg C	8.8	HF	0.1	0.1	SU	1			9040B	Total/NA
Temperature	20.7	HF	1.0	1.0	Degrees C	1			9040B	Total/NA
Chloride	160		3.0	1.0	mg/L	1			9056A	Total/NA
Fluoride	0.35	J	0.50	0.17	mg/L	1			9056A	Total/NA
Sulfate	3300		100	21	mg/L	20			9056A	Total/NA
Total Dissolved Solids (TDS)	4300		100	47	mg/L	1			SM 2540C	Total/NA
Total Suspended Solids	2.0	J	4.0	1.1	mg/L	1			SM 2540D	Total/NA

Client Sample ID: MW-8

Lab Sample ID: 280-137752-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Boron	1.3		0.10	0.023	mg/L	1			6010C	Total Recoverable
Barium	0.0062		0.0050	0.0022	mg/L	1			6020A	Total Recoverable
Calcium	420		1.0	0.58	mg/L	1			6020A	Total Recoverable
Chromium	0.0012	J	0.0020	0.00098	mg/L	1			6020A	Total Recoverable
Cobalt	0.00036	J	0.0010	0.00019	mg/L	1			6020A	Total Recoverable
Lithium	0.78		0.0080	0.0017	mg/L	1			6020A	Total Recoverable
Molybdenum	0.0042	J	0.010	0.0011	mg/L	1			6020A	Total Recoverable
Selenium	0.026		0.0050	0.00089	mg/L	1			6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1			9040B	Total/NA
Temperature	21.0	HF	1.0	1.0	Degrees C	1			9040B	Total/NA
Chloride	190		3.0	1.0	mg/L	1			9056A	Total/NA
Fluoride	16		10	3.3	mg/L	20			9056A	Total/NA
Sulfate	7800		500	100	mg/L	100			9056A	Total/NA
Total Dissolved Solids (TDS)	10000		1000	470	mg/L	1			SM 2540C	Total/NA
Total Suspended Solids	2.8	J	4.0	1.1	mg/L	1			SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL CAN
6020A	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL DEN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CAN
7470A	Preparation, Mercury	SW846	TAL DEN
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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

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

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
280-137752-1	W-1	Water	06/16/20 11:40	06/17/20 15:00	
280-137752-2	W-1D	Water	06/16/20 11:40	06/17/20 15:00	
280-137752-3	W-2	Water	06/16/20 14:20	06/17/20 15:00	
280-137752-4	W-2EB	Water	06/16/20 14:40	06/17/20 15:00	
280-137752-5	W-3	Water	06/16/20 15:40	06/17/20 15:00	
280-137752-6	W-4	Water	06/16/20 13:05	06/17/20 15:00	
280-137752-7	MW-6	Water	06/17/20 08:45	06/17/20 15:00	
280-137752-8	MW-7	Water	06/17/20 09:50	06/17/20 15:00	
280-137752-9	MW-8	Water	06/16/20 17:20	06/17/20 15:00	

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: W-1
Date Collected: 06/16/20 11:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.64		0.10	0.023	mg/L	—	06/23/20 14:00	06/24/20 21:09	1

Client Sample ID: W-1D
Date Collected: 06/16/20 11:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.56		0.10	0.023	mg/L	—	06/23/20 14:00	06/24/20 21:04	1

Client Sample ID: W-2
Date Collected: 06/16/20 14:20
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	9.3		0.10	0.023	mg/L	—	06/23/20 14:00	06/24/20 21:14	1

Client Sample ID: W-2EB
Date Collected: 06/16/20 14:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.023	mg/L	—	06/23/20 14:00	06/24/20 21:19	1

Client Sample ID: W-3
Date Collected: 06/16/20 15:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.87		0.10	0.023	mg/L	—	06/23/20 14:00	06/24/20 21:23	1

Client Sample ID: W-4
Date Collected: 06/16/20 13:05
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.1		0.10	0.023	mg/L	—	06/23/20 14:00	06/24/20 21:28	1

Client Sample ID: MW-6
Date Collected: 06/17/20 08:45
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	44		0.50	0.12	mg/L	—	06/23/20 14:00	06/25/20 08:32	5

Client Sample ID: MW-7
Date Collected: 06/17/20 09:50
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	46		0.50	0.12	mg/L	—	06/23/20 14:00	06/25/20 08:37	5

Client Sample ID: MW-8
Date Collected: 06/16/20 17:20
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.3		0.10	0.023	mg/L	—	06/23/20 14:00	06/24/20 21:42	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: W-1
Date Collected: 06/16/20 11:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		06/23/20 14:00	06/24/20 11:37	1
Arsenic	ND		0.0050	0.00075	mg/L		06/23/20 14:00	06/24/20 11:37	1
Barium	0.0089		0.0050	0.0022	mg/L		06/23/20 14:00	06/24/20 11:37	1
Beryllium	ND		0.0010	0.00031	mg/L		06/23/20 14:00	06/24/20 11:37	1
Cadmium	ND		0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:37	1
Calcium	330		1.0	0.58	mg/L		06/23/20 14:00	06/24/20 11:37	1
Chromium	ND		0.0020	0.00098	mg/L		06/23/20 14:00	06/24/20 11:37	1
Cobalt	0.00080	J	0.0010	0.00019	mg/L		06/23/20 14:00	06/24/20 11:37	1
Lead	ND		0.0010	0.00045	mg/L		06/23/20 14:00	06/24/20 11:37	1
Lithium	0.29		0.0080	0.0017	mg/L		06/23/20 14:00	06/24/20 11:37	1
Molybdenum	0.0029	J	0.010	0.0011	mg/L		06/23/20 14:00	06/24/20 11:37	1
Selenium	0.012		0.0050	0.00089	mg/L		06/23/20 14:00	06/24/20 11:37	1
Thallium	ND		0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:37	1

Client Sample ID: W-1D
Date Collected: 06/16/20 11:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		06/23/20 14:00	06/24/20 11:29	1
Arsenic	ND		0.0050	0.00075	mg/L		06/23/20 14:00	06/24/20 11:29	1
Barium	0.0078		0.0050	0.0022	mg/L		06/23/20 14:00	06/24/20 11:29	1
Beryllium	ND		0.0010	0.00031	mg/L		06/23/20 14:00	06/24/20 11:29	1
Cadmium	ND		0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:29	1
Calcium	290		1.0	0.58	mg/L		06/23/20 14:00	06/24/20 11:29	1
Chromium	ND		0.0020	0.00098	mg/L		06/23/20 14:00	06/24/20 11:29	1
Cobalt	0.00070	J	0.0010	0.00019	mg/L		06/23/20 14:00	06/24/20 11:29	1
Lead	ND		0.0010	0.00045	mg/L		06/23/20 14:00	06/24/20 11:29	1
Lithium	0.25		0.0080	0.0017	mg/L		06/23/20 14:00	06/24/20 11:29	1
Molybdenum	0.0025	J	0.010	0.0011	mg/L		06/23/20 14:00	06/24/20 11:29	1
Selenium	0.010		0.0050	0.00089	mg/L		06/23/20 14:00	06/24/20 11:29	1
Thallium	ND		0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:29	1

Client Sample ID: W-2
Date Collected: 06/16/20 14:20
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		06/23/20 14:00	06/24/20 11:39	1
Arsenic	ND		0.0050	0.00075	mg/L		06/23/20 14:00	06/24/20 11:39	1
Barium	0.0058		0.0050	0.0022	mg/L		06/23/20 14:00	06/24/20 11:39	1
Beryllium	ND		0.0010	0.00031	mg/L		06/23/20 14:00	06/24/20 11:39	1
Cadmium	ND		0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:39	1
Calcium	350		1.0	0.58	mg/L		06/23/20 14:00	06/24/20 11:39	1
Chromium	ND		0.0020	0.00098	mg/L		06/23/20 14:00	06/24/20 11:39	1
Cobalt	0.0034		0.0010	0.00019	mg/L		06/23/20 14:00	06/24/20 11:39	1
Lead	ND		0.0010	0.00045	mg/L		06/23/20 14:00	06/24/20 11:39	1
Lithium	0.62		0.0080	0.0017	mg/L		06/23/20 14:00	06/24/20 11:39	1
Molybdenum	0.0035	J	0.010	0.0011	mg/L		06/23/20 14:00	06/24/20 11:39	1
Selenium	0.0034	J	0.0050	0.00089	mg/L		06/23/20 14:00	06/24/20 11:39	1
Thallium	ND		0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:39	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: W-2EB
Date Collected: 06/16/20 14:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		06/23/20 14:00	06/24/20 11:42	1
Arsenic	ND		0.0050	0.00075	mg/L		06/23/20 14:00	06/24/20 11:42	1
Barium	ND		0.0050	0.0022	mg/L		06/23/20 14:00	06/24/20 11:42	1
Beryllium	ND		0.0010	0.00031	mg/L		06/23/20 14:00	06/24/20 11:42	1
Cadmium	ND		0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:42	1
Calcium	ND		1.0	0.58	mg/L		06/23/20 14:00	06/24/20 11:42	1
Chromium	ND		0.0020	0.00098	mg/L		06/23/20 14:00	06/24/20 11:42	1
Cobalt	ND		0.0010	0.00019	mg/L		06/23/20 14:00	06/24/20 11:42	1
Lead	ND		0.0010	0.00045	mg/L		06/23/20 14:00	06/24/20 11:42	1
Lithium	ND		0.0080	0.0017	mg/L		06/23/20 14:00	06/24/20 11:42	1
Molybdenum	ND		0.010	0.0011	mg/L		06/23/20 14:00	06/24/20 11:42	1
Selenium	ND		0.0050	0.00089	mg/L		06/23/20 14:00	06/24/20 11:42	1
Thallium	ND		0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:42	1

Client Sample ID: W-3
Date Collected: 06/16/20 15:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		06/23/20 14:00	06/24/20 11:44	1
Arsenic	ND		0.0050	0.00075	mg/L		06/23/20 14:00	06/24/20 11:44	1
Barium	0.0079		0.0050	0.0022	mg/L		06/23/20 14:00	06/24/20 11:44	1
Beryllium	ND		0.0010	0.00031	mg/L		06/23/20 14:00	06/24/20 11:44	1
Cadmium	0.00031	J	0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:44	1
Calcium	340		1.0	0.58	mg/L		06/23/20 14:00	06/24/20 11:44	1
Chromium	ND		0.0020	0.00098	mg/L		06/23/20 14:00	06/24/20 11:44	1
Cobalt	0.0026		0.0010	0.00019	mg/L		06/23/20 14:00	06/24/20 11:44	1
Lead	ND		0.0010	0.00045	mg/L		06/23/20 14:00	06/24/20 11:44	1
Lithium	1.2		0.0080	0.0017	mg/L		06/23/20 14:00	06/24/20 11:44	1
Molybdenum	0.0035	J	0.010	0.0011	mg/L		06/23/20 14:00	06/24/20 11:44	1
Selenium	0.014		0.0050	0.00089	mg/L		06/23/20 14:00	06/24/20 11:44	1
Thallium	ND		0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:44	1

Client Sample ID: W-4
Date Collected: 06/16/20 13:05
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		06/23/20 14:00	06/24/20 11:47	1
Arsenic	ND		0.0050	0.00075	mg/L		06/23/20 14:00	06/24/20 11:47	1
Barium	0.0077		0.0050	0.0022	mg/L		06/23/20 14:00	06/24/20 11:47	1
Beryllium	ND		0.0010	0.00031	mg/L		06/23/20 14:00	06/24/20 11:47	1
Cadmium	0.00021	J	0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:47	1
Calcium	320		1.0	0.58	mg/L		06/23/20 14:00	06/24/20 11:47	1
Chromium	ND		0.0020	0.00098	mg/L		06/23/20 14:00	06/24/20 11:47	1
Cobalt	0.0066		0.0010	0.00019	mg/L		06/23/20 14:00	06/24/20 11:47	1
Lead	ND		0.0010	0.00045	mg/L		06/23/20 14:00	06/24/20 11:47	1
Lithium	0.72		0.0080	0.0017	mg/L		06/23/20 14:00	06/24/20 11:47	1
Molybdenum	0.0027	J	0.010	0.0011	mg/L		06/23/20 14:00	06/24/20 11:47	1
Selenium	ND		0.0050	0.00089	mg/L		06/23/20 14:00	06/24/20 11:47	1
Thallium	ND		0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:47	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-6
Date Collected: 06/17/20 08:45
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		06/23/20 14:00	06/24/20 11:49	1
Arsenic	ND		0.0050	0.00075	mg/L		06/23/20 14:00	06/24/20 11:49	1
Barium	0.0052		0.0050	0.0022	mg/L		06/23/20 14:00	06/24/20 11:49	1
Beryllium	ND		0.0010	0.00031	mg/L		06/23/20 14:00	06/24/20 11:49	1
Cadmium	ND		0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:49	1
Calcium	380		1.0	0.58	mg/L		06/23/20 14:00	06/24/20 11:49	1
Chromium	ND		0.0020	0.00098	mg/L		06/23/20 14:00	06/24/20 11:49	1
Cobalt	ND		0.0010	0.00019	mg/L		06/23/20 14:00	06/24/20 11:49	1
Lead	ND		0.0010	0.00045	mg/L		06/23/20 14:00	06/24/20 11:49	1
Lithium	0.11		0.0080	0.0017	mg/L		06/23/20 14:00	06/24/20 11:49	1
Molybdenum	1.0		0.010	0.0011	mg/L		06/23/20 14:00	06/24/20 11:49	1
Selenium	0.011		0.0050	0.00089	mg/L		06/23/20 14:00	06/24/20 11:49	1
Thallium	ND		0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:49	1

Client Sample ID: MW-7
Date Collected: 06/17/20 09:50
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		06/23/20 14:00	06/24/20 11:52	1
Arsenic	ND		0.0050	0.00075	mg/L		06/23/20 14:00	06/24/20 11:52	1
Barium	0.0051		0.0050	0.0022	mg/L		06/23/20 14:00	06/24/20 11:52	1
Beryllium	ND		0.0010	0.00031	mg/L		06/23/20 14:00	06/24/20 11:52	1
Cadmium	ND		0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:52	1
Calcium	390		1.0	0.58	mg/L		06/23/20 14:00	06/24/20 11:52	1
Chromium	ND		0.0020	0.00098	mg/L		06/23/20 14:00	06/24/20 11:52	1
Cobalt	ND		0.0010	0.00019	mg/L		06/23/20 14:00	06/24/20 11:52	1
Lead	ND		0.0010	0.00045	mg/L		06/23/20 14:00	06/24/20 11:52	1
Lithium	0.26		0.0080	0.0017	mg/L		06/23/20 14:00	06/24/20 11:52	1
Molybdenum	0.83		0.010	0.0011	mg/L		06/23/20 14:00	06/24/20 11:52	1
Selenium	0.0072		0.0050	0.00089	mg/L		06/23/20 14:00	06/24/20 11:52	1
Thallium	ND		0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:52	1

Client Sample ID: MW-8
Date Collected: 06/16/20 17:20
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		06/23/20 14:00	06/24/20 11:54	1
Arsenic	ND		0.0050	0.00075	mg/L		06/23/20 14:00	06/24/20 11:54	1
Barium	0.0062		0.0050	0.0022	mg/L		06/23/20 14:00	06/24/20 11:54	1
Beryllium	ND		0.0010	0.00031	mg/L		06/23/20 14:00	06/24/20 11:54	1
Cadmium	ND		0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:54	1
Calcium	420		1.0	0.58	mg/L		06/23/20 14:00	06/24/20 11:54	1
Chromium	0.0012	J	0.0020	0.00098	mg/L		06/23/20 14:00	06/24/20 11:54	1
Cobalt	0.00036	J	0.0010	0.00019	mg/L		06/23/20 14:00	06/24/20 11:54	1
Lead	ND		0.0010	0.00045	mg/L		06/23/20 14:00	06/24/20 11:54	1
Lithium	0.78		0.0080	0.0017	mg/L		06/23/20 14:00	06/24/20 11:54	1
Molybdenum	0.0042	J	0.010	0.0011	mg/L		06/23/20 14:00	06/24/20 11:54	1
Selenium	0.026		0.0050	0.00089	mg/L		06/23/20 14:00	06/24/20 11:54	1
Thallium	ND		0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 11:54	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Method: 7470A - Mercury (CVAA)

Client Sample ID: W-1
Date Collected: 06/16/20 11:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L	-	06/29/20 16:00	06/30/20 00:45	1

Client Sample ID: W-1D
Date Collected: 06/16/20 11:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L	-	06/29/20 16:00	06/30/20 00:48	1

Client Sample ID: W-2
Date Collected: 06/16/20 14:20
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L	-	06/29/20 16:00	06/30/20 00:51	1

Client Sample ID: W-2EB
Date Collected: 06/16/20 14:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L	-	06/29/20 16:00	06/30/20 00:53	1

Client Sample ID: W-3
Date Collected: 06/16/20 15:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L	-	06/29/20 16:00	06/30/20 00:56	1

Client Sample ID: W-4
Date Collected: 06/16/20 13:05
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L	-	06/29/20 16:00	06/30/20 00:58	1

Client Sample ID: MW-6
Date Collected: 06/17/20 08:45
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L	-	06/29/20 16:00	06/30/20 01:06	1

Client Sample ID: MW-7
Date Collected: 06/17/20 09:50
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L	-	06/29/20 16:00	06/30/20 01:08	1

Client Sample ID: MW-8
Date Collected: 06/16/20 17:20
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L	-	06/29/20 16:00	06/30/20 01:11	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

General Chemistry

Client Sample ID: W-1
Date Collected: 06/16/20 11:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			06/17/20 20:26	1
Temperature	21.6	HF	1.0	1.0	Degrees C			06/17/20 20:26	1
Chloride	22		3.0	1.0	mg/L			07/08/20 22:26	1
Fluoride	3.4		0.50	0.17	mg/L			07/08/20 22:26	1
Sulfate	2800		100	21	mg/L			07/08/20 22:42	20
Total Dissolved Solids (TDS)	4200		40	19	mg/L			06/18/20 09:45	1
Total Suspended Solids	ND		4.0	1.1	mg/L			06/18/20 09:48	1

Client Sample ID: W-1D
Date Collected: 06/16/20 11:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			06/17/20 20:36	1
Temperature	20.4	HF	1.0	1.0	Degrees C			06/17/20 20:36	1
Chloride	22		3.0	1.0	mg/L			07/08/20 23:31	1
Fluoride	3.3		0.50	0.17	mg/L			07/08/20 23:31	1
Sulfate	2800		100	21	mg/L			07/08/20 23:48	20
Total Dissolved Solids (TDS)	3800		40	19	mg/L			06/18/20 09:45	1
Total Suspended Solids	4.4		4.0	1.1	mg/L			06/18/20 09:48	1

Client Sample ID: W-2
Date Collected: 06/16/20 14:20
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			06/17/20 20:40	1
Temperature	20.8	HF	1.0	1.0	Degrees C			06/17/20 20:40	1
Chloride	85		3.0	1.0	mg/L			07/09/20 00:04	1
Fluoride	5.4		0.50	0.17	mg/L			07/09/20 00:04	1
Sulfate	4100		250	52	mg/L			07/09/20 22:38	50
Total Dissolved Solids (TDS)	6300		100	47	mg/L			06/18/20 09:45	1
Total Suspended Solids	2.4	J	4.0	1.1	mg/L			06/18/20 09:48	1

Client Sample ID: W-2EB
Date Collected: 06/16/20 14:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU			06/18/20 23:10	1
Temperature	22.1	HF	1.0	1.0	Degrees C			06/18/20 23:10	1
Chloride	ND		3.0	1.0	mg/L			07/09/20 00:37	1
Fluoride	ND		0.50	0.17	mg/L			07/09/20 00:37	1
Sulfate	ND		5.0	1.0	mg/L			07/09/20 00:37	1
Total Dissolved Solids (TDS)	28		10	4.7	mg/L			06/18/20 09:45	1
Total Suspended Solids	ND		4.0	1.1	mg/L			06/18/20 09:48	1

Client Sample ID: W-3
Date Collected: 06/16/20 15:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU			06/17/20 20:54	1
Temperature	21.6	HF	1.0	1.0	Degrees C			06/17/20 20:54	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

General Chemistry (Continued)

Client Sample ID: W-3
Date Collected: 06/16/20 15:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	200		3.0	1.0	mg/L			07/09/20 01:10	1
Fluoride	13		1.0	0.33	mg/L			07/10/20 20:38	2
Sulfate	7500		500	100	mg/L			07/09/20 23:10	100
Total Dissolved Solids (TDS)	11000		200	94	mg/L			06/18/20 09:45	1
Total Suspended Solids	6.4		4.0	1.1	mg/L			06/18/20 09:48	1

Client Sample ID: W-4
Date Collected: 06/16/20 13:05
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.5	HF	0.1	0.1	SU			06/17/20 21:00	1
Temperature	21.4	HF	1.0	1.0	Degrees C			06/17/20 21:00	1
Chloride	280		60	20	mg/L			07/09/20 01:59	20
Fluoride	26		10	3.3	mg/L			07/09/20 01:59	20
Sulfate	13000		500	100	mg/L			07/09/20 23:27	100
Total Dissolved Solids (TDS)	16000		1000	470	mg/L			06/18/20 09:45	1
Total Suspended Solids	4.4		4.0	1.1	mg/L			06/18/20 09:48	1

Client Sample ID: MW-6
Date Collected: 06/17/20 08:45
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.5	HF	0.1	0.1	SU			06/17/20 21:04	1
Temperature	20.8	HF	1.0	1.0	Degrees C			06/17/20 21:04	1
Chloride	38		3.0	1.0	mg/L			07/09/20 02:48	1
Fluoride	ND		0.50	0.17	mg/L			07/09/20 02:48	1
Sulfate	3000		100	21	mg/L			07/09/20 03:05	20
Total Dissolved Solids (TDS)	4100		40	19	mg/L			06/18/20 09:45	1
Total Suspended Solids	2.4	J	4.0	1.1	mg/L			06/18/20 09:48	1

Client Sample ID: MW-7
Date Collected: 06/17/20 09:50
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.8	HF	0.1	0.1	SU			06/17/20 21:08	1
Temperature	20.7	HF	1.0	1.0	Degrees C			06/17/20 21:08	1
Chloride	160		3.0	1.0	mg/L			07/09/20 03:21	1
Fluoride	0.35	J	0.50	0.17	mg/L			07/09/20 03:21	1
Sulfate	3300		100	21	mg/L			07/09/20 03:38	20
Total Dissolved Solids (TDS)	4300		100	47	mg/L			06/18/20 09:45	1
Total Suspended Solids	2.0	J	4.0	1.1	mg/L			06/18/20 09:48	1

Client Sample ID: MW-8
Date Collected: 06/16/20 17:20
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			06/17/20 21:12	1
Temperature	21.0	HF	1.0	1.0	Degrees C			06/17/20 21:12	1
Chloride	190		3.0	1.0	mg/L			07/09/20 03:54	1
Fluoride	16		10	3.3	mg/L			07/09/20 04:10	20

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

General Chemistry (Continued)

Client Sample ID: MW-8
Date Collected: 06/16/20 17:20
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	7800		500	100	mg/L			07/09/20 23:43	100
Total Dissolved Solids (TDS)	10000		1000	470	mg/L			06/18/20 09:45	1
Total Suspended Solids	2.8	J	4.0	1.1	mg/L			06/18/20 09:48	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: W-1
Date Collected: 06/16/20 11:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0833	U	0.0708	0.0712	1.00	0.103	pCi/L	06/23/20 09:13	07/15/20 11:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					06/23/20 09:13	07/15/20 11:57	1

Client Sample ID: W-1D
Date Collected: 06/16/20 11:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0957	U	0.0747	0.0751	1.00	0.106	pCi/L	06/23/20 09:13	07/15/20 13:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.7		40 - 110					06/23/20 09:13	07/15/20 13:48	1

Client Sample ID: W-2
Date Collected: 06/16/20 14:20
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.180		0.104	0.105	1.00	0.140	pCi/L	06/23/20 09:13	07/15/20 13:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.3		40 - 110					06/23/20 09:13	07/15/20 13:49	1

Client Sample ID: W-2EB
Date Collected: 06/16/20 14:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0460	U	0.0539	0.0540	1.00	0.0862	pCi/L	06/23/20 09:13	07/15/20 13:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					06/23/20 09:13	07/15/20 13:51	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: W-3
Date Collected: 06/16/20 15:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0849	U	0.0707	0.0712	1.00	0.102	pCi/L	06/23/20 09:13	07/15/20 13:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110					06/23/20 09:13	07/15/20 13:51	1

Client Sample ID: W-4
Date Collected: 06/16/20 13:05
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.171		0.0854	0.0868	1.00	0.0893	pCi/L	06/23/20 09:13	07/15/20 13:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		40 - 110					06/23/20 09:13	07/15/20 13:51	1

Client Sample ID: MW-6
Date Collected: 06/17/20 08:45
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.109	U	0.110	0.110	1.00	0.167	pCi/L	06/23/20 09:13	07/15/20 13:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	49.3		40 - 110					06/23/20 09:13	07/15/20 13:52	1

Client Sample ID: MW-7
Date Collected: 06/17/20 09:50
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0917		0.0653	0.0658	1.00	0.0836	pCi/L	06/23/20 09:13	07/15/20 13:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					06/23/20 09:13	07/15/20 13:52	1

Client Sample ID: MW-8
Date Collected: 06/16/20 17:20
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.103		0.0677	0.0683	1.00	0.0837	pCi/L	06/23/20 09:13	07/15/20 13:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					06/23/20 09:13	07/15/20 13:52	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: W-1
Date Collected: 06/16/20 11:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.993		0.352	0.363	1.00	0.477	pCi/L	06/23/20 09:42	07/01/20 09:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					06/23/20 09:42	07/01/20 09:17	1
Y Carrier	86.0		40 - 110					06/23/20 09:42	07/01/20 09:17	1

Client Sample ID: W-1D
Date Collected: 06/16/20 11:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.353	U	0.298	0.300	1.00	0.475	pCi/L	06/23/20 09:42	07/01/20 09:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.7		40 - 110					06/23/20 09:42	07/01/20 09:17	1
Y Carrier	86.0		40 - 110					06/23/20 09:42	07/01/20 09:17	1

Client Sample ID: W-2
Date Collected: 06/16/20 14:20
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.78		0.410	0.441	1.00	0.484	pCi/L	06/23/20 09:42	07/01/20 09:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.3		40 - 110					06/23/20 09:42	07/01/20 09:17	1
Y Carrier	88.6		40 - 110					06/23/20 09:42	07/01/20 09:17	1

Client Sample ID: W-2EB
Date Collected: 06/16/20 14:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.218	U	0.325	0.325	1.00	0.545	pCi/L	06/23/20 09:42	07/01/20 09:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					06/23/20 09:42	07/01/20 09:17	1
Y Carrier	80.4		40 - 110					06/23/20 09:42	07/01/20 09:17	1

Client Sample ID: W-3
Date Collected: 06/16/20 15:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.707		0.335	0.341	1.00	0.484	pCi/L	06/23/20 09:42	07/01/20 09:17	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Method: 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110	06/23/20 09:42	07/01/20 09:17	1
Y Carrier	86.0		40 - 110	06/23/20 09:42	07/01/20 09:17	1

Client Sample ID: W-4
Date Collected: 06/16/20 13:05
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-6
Matrix: Water

			Count	Total						
			Uncert.	Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.498	U	0.351	0.353	1.00	0.546	pCi/L	06/23/20 09:42	07/01/20 09:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		40 - 110					06/23/20 09:42	07/01/20 09:17	1
Y Carrier	83.4		40 - 110					06/23/20 09:42	07/01/20 09:17	1

Client Sample ID: MW-6
Date Collected: 06/17/20 08:45
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-7
Matrix: Water

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.643	U G	0.648	0.650	1.00	1.05	pCi/L	06/23/20 09:42	07/01/20 09:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	49.3		40 - 110					06/23/20 09:42	07/01/20 09:17	1
Y Carrier	81.1		40 - 110					06/23/20 09:42	07/01/20 09:17	1

Client Sample ID: MW-7
Date Collected: 06/17/20 09:50
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.348	U	0.287	0.289	1.00	0.454	pCi/L	06/23/20 09:42	07/01/20 09:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					06/23/20 09:42	07/01/20 09:17	1
Y Carrier	84.9		40 - 110					06/23/20 09:42	07/01/20 09:17	1

Client Sample ID: MW-8
Date Collected: 06/16/20 17:20
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-9
Matrix: Water

Data Received 06/17/20 10:05										
Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.274	U	0.293	0.294	1.00	0.478	pCi/L	06/23/20 09:42	07/01/20 09:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					06/23/20 09:42	07/01/20 09:17	1
Y Carrier	84.5		40 - 110					06/23/20 09:42	07/01/20 09:17	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

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

Client Sample ID: W-1
Date Collected: 06/16/20 11:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.08		0.359	0.370	5.00	0.477	pCi/L		07/17/20 07:37	1

Client Sample ID: W-1D
Date Collected: 06/16/20 11:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.449	U	0.307	0.309	5.00	0.475	pCi/L		07/17/20 07:37	1

Client Sample ID: W-2
Date Collected: 06/16/20 14:20
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.96		0.423	0.453	5.00	0.484	pCi/L		07/17/20 07:37	1

Client Sample ID: W-2EB
Date Collected: 06/16/20 14:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.264	U	0.329	0.329	5.00	0.545	pCi/L		07/17/20 07:37	1

Client Sample ID: W-3
Date Collected: 06/16/20 15:40
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.792		0.342	0.348	5.00	0.484	pCi/L		07/17/20 07:37	1

Client Sample ID: W-4
Date Collected: 06/16/20 13:05
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.669		0.361	0.364	5.00	0.546	pCi/L		07/17/20 07:37	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

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

Client Sample ID: MW-6
Date Collected: 06/17/20 08:45
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.751	U	0.657	0.659	5.00	1.05	pCi/L		07/17/20 07:37	1

Client Sample ID: MW-7
Date Collected: 06/17/20 09:50
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.440	U	0.294	0.296	5.00	0.454	pCi/L		07/17/20 07:37	1

Client Sample ID: MW-8
Date Collected: 06/16/20 17:20
Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-9
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.378	U	0.301	0.302	5.00	0.478	pCi/L		07/17/20 07:37	1

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-439603/1-A
Matrix: Water
Analysis Batch: 440020

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 439603

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.023	mg/L		06/23/20 14:00	06/24/20 19:39	1

Lab Sample ID: LCS 240-439603/2-A
Matrix: Water
Analysis Batch: 440020

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 439603

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.979		mg/L		98	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-439603/1-A
Matrix: Water
Analysis Batch: 439866

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 439603

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		06/23/20 14:00	06/24/20 10:45	1
Arsenic	ND		0.0050	0.00075	mg/L		06/23/20 14:00	06/24/20 10:45	1
Barium	ND		0.0050	0.0022	mg/L		06/23/20 14:00	06/24/20 10:45	1
Beryllium	ND		0.0010	0.00031	mg/L		06/23/20 14:00	06/24/20 10:45	1
Cadmium	ND		0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 10:45	1
Calcium	ND		1.0	0.58	mg/L		06/23/20 14:00	06/24/20 10:45	1
Chromium	ND		0.0020	0.00098	mg/L		06/23/20 14:00	06/24/20 10:45	1
Cobalt	ND		0.0010	0.00019	mg/L		06/23/20 14:00	06/24/20 10:45	1
Lead	ND		0.0010	0.00045	mg/L		06/23/20 14:00	06/24/20 10:45	1
Lithium	ND		0.0080	0.0017	mg/L		06/23/20 14:00	06/24/20 10:45	1
Molybdenum	ND		0.010	0.0011	mg/L		06/23/20 14:00	06/24/20 10:45	1
Selenium	ND		0.0050	0.00089	mg/L		06/23/20 14:00	06/24/20 10:45	1
Thallium	0.000266	J	0.0010	0.00020	mg/L		06/23/20 14:00	06/24/20 10:45	1

Lab Sample ID: LCS 240-439603/3-A
Matrix: Water
Analysis Batch: 439866

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 439603

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.0984		mg/L		98	80 - 120
Arsenic	1.00	0.925		mg/L		92	80 - 120
Barium	1.00	0.953		mg/L		95	80 - 120
Beryllium	0.500	0.482		mg/L		96	80 - 120
Cadmium	0.500	0.474		mg/L		95	80 - 120
Calcium	25.0	23.5		mg/L		94	80 - 120
Chromium	0.500	0.494		mg/L		99	80 - 120
Cobalt	0.500	0.484		mg/L		97	80 - 120
Lead	0.500	0.478		mg/L		96	80 - 120
Lithium	0.500	0.497		mg/L		99	80 - 120
Molybdenum	0.500	0.470		mg/L		94	80 - 120
Selenium	1.00	0.898		mg/L		90	80 - 120
Thallium	1.00	0.944		mg/L		94	80 - 120

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-500409/1-A
Matrix: Water
Analysis Batch: 500637

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 500409

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000027	mg/L		06/29/20 16:00	06/30/20 00:12	1

Lab Sample ID: LCS 280-500409/2-A
Matrix: Water
Analysis Batch: 500637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 500409

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00456		mg/L		91	84 - 120

Lab Sample ID: LCSD 280-500409/3-A
Matrix: Water
Analysis Batch: 500637

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 500409

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Mercury	0.00500	0.00428		mg/L		86	84 - 120	6	15

Method: 9040B - pH

Lab Sample ID: LCS 280-499301/4
Matrix: Water
Analysis Batch: 499301

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Lab Sample ID: 280-137752-1 DU
Matrix: Water
Analysis Batch: 499301

Client Sample ID: W-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
pH adj. to 25 deg C	7.4	HF	7.5		SU		2	5
Temperature	21.6	HF	21.0		Degrees C		3	10

Lab Sample ID: LCS 280-499383/30
Matrix: Water
Analysis Batch: 499383

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		100	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-501404/6
Matrix: Water
Analysis Batch: 501404

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			07/08/20 10:39	1
Sulfate	ND		5.0	1.0	mg/L			07/08/20 10:39	1

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 280-501404/4

Matrix: Water

Analysis Batch: 501404

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	93.9		mg/L		94	90 - 110
Sulfate	100	94.8		mg/L		95	90 - 110

Lab Sample ID: LCSD 280-501404/5

Matrix: Water

Analysis Batch: 501404

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	93.9		mg/L		94	90 - 110	0	10
Sulfate	100	94.8		mg/L		95	90 - 110	0	10

Lab Sample ID: MRL 280-501404/3

Matrix: Water

Analysis Batch: 501404

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.86		mg/L		97	50 - 150
Sulfate	5.00	4.80	J	mg/L		96	50 - 150

Lab Sample ID: MB 280-501408/6

Matrix: Water

Analysis Batch: 501408

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			07/08/20 10:40	1
Fluoride	ND		0.50	0.17	mg/L			07/08/20 10:40	1
Sulfate	ND		5.0	1.0	mg/L			07/08/20 10:40	1

Lab Sample ID: LCS 280-501408/4

Matrix: Water

Analysis Batch: 501408

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	94.7		mg/L		95	90 - 110
Fluoride	5.00	5.06		mg/L		101	90 - 110
Sulfate	100	95.8		mg/L		96	90 - 110

Lab Sample ID: LCSD 280-501408/5

Matrix: Water

Analysis Batch: 501408

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	94.4		mg/L		94	90 - 110	0	10
Fluoride	5.00	5.07		mg/L		101	90 - 110	0	10
Sulfate	100	95.4		mg/L		95	90 - 110	0	10

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-501408/3

Matrix: Water

Analysis Batch: 501408

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.14		mg/L		83	50 - 150
Fluoride	0.500	0.523		mg/L		105	50 - 150
Sulfate	5.00	4.48	J	mg/L		90	50 - 150

Lab Sample ID: MB 280-501799/6

Matrix: Water

Analysis Batch: 501799

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.50	0.17	mg/L			07/10/20 13:56	1

Lab Sample ID: LCS 280-501799/4

Matrix: Water

Analysis Batch: 501799

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	5.00	5.23		mg/L		105	90 - 110

Lab Sample ID: LCSD 280-501799/5

Matrix: Water

Analysis Batch: 501799

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	5.00	5.24		mg/L		105	90 - 110	0	10

Lab Sample ID: MRL 280-501799/3

Matrix: Water

Analysis Batch: 501799

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.500	0.520		mg/L		104	50 - 150

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-499225/1

Matrix: Water

Analysis Batch: 499225

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			06/18/20 09:45	1

Lab Sample ID: LCS 280-499225/2

Matrix: Water

Analysis Batch: 499225

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	472		mg/L		94	93 - 110

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 280-137752-9 DU
Matrix: Water
Analysis Batch: 499225

Client Sample ID: MW-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	10000		10700		mg/L		5	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-499226/1
Matrix: Water
Analysis Batch: 499226

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			06/18/20 09:48	1

Lab Sample ID: LCS 280-499226/2
Matrix: Water
Analysis Batch: 499226

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	87.2		mg/L		87	79 - 114

Lab Sample ID: LCSD 280-499226/3
Matrix: Water
Analysis Batch: 499226

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Suspended Solids	100	98.0		mg/L		98	79 - 114	12	20

Lab Sample ID: 280-137752-9 DU
Matrix: Water
Analysis Batch: 499226

Client Sample ID: MW-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	2.8	J	2.80	J	mg/L		0	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-474055/21-A
Matrix: Water
Analysis Batch: 476320

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 474055

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.005400	U	0.0284	0.0284	1.00	0.0683	pCi/L	06/23/20 09:13	07/15/20 18:20	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					06/23/20 09:13	07/15/20 18:20	1

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-474055/1-A

Matrix: Water

Analysis Batch: 476320

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 474055

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226		11.3	9.904		1.03	1.00	0.0879	pCi/L	87	75 - 125
	LCS	LCS								
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	91.7		40 - 110							

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-474060/21-A

Matrix: Water

Analysis Batch: 475062

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 474060

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3003	U	0.233	0.235	1.00	0.369	pCi/L	06/23/20 09:42	07/01/20 09:20	1
	MB	MB								
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	101		40 - 110							
Y Carrier	94.2		40 - 110							
								Prepared	Analyzed	Dil Fac
								06/23/20 09:42	07/01/20 09:20	1
								06/23/20 09:42	07/01/20 09:20	1

Lab Sample ID: LCS 160-474060/1-A

Matrix: Water

Analysis Batch: 475047

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 474060

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228		10.3	11.02		1.30	1.00	0.487	pCi/L	107	75 - 125
	LCS	LCS								
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	91.7		40 - 110							
Y Carrier	69.5		40 - 110							

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Metals

Prep Batch: 439603

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137752-1	W-1	Total Recoverable	Water	3005A	
280-137752-2	W-1D	Total Recoverable	Water	3005A	
280-137752-3	W-2	Total Recoverable	Water	3005A	
280-137752-4	W-2EB	Total Recoverable	Water	3005A	
280-137752-5	W-3	Total Recoverable	Water	3005A	
280-137752-6	W-4	Total Recoverable	Water	3005A	
280-137752-7	MW-6	Total Recoverable	Water	3005A	
280-137752-8	MW-7	Total Recoverable	Water	3005A	
280-137752-9	MW-8	Total Recoverable	Water	3005A	
MB 240-439603/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-439603/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-439603/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 439866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137752-1	W-1	Total Recoverable	Water	6020A	439603
280-137752-2	W-1D	Total Recoverable	Water	6020A	439603
280-137752-3	W-2	Total Recoverable	Water	6020A	439603
280-137752-4	W-2EB	Total Recoverable	Water	6020A	439603
280-137752-5	W-3	Total Recoverable	Water	6020A	439603
280-137752-6	W-4	Total Recoverable	Water	6020A	439603
280-137752-7	MW-6	Total Recoverable	Water	6020A	439603
280-137752-8	MW-7	Total Recoverable	Water	6020A	439603
280-137752-9	MW-8	Total Recoverable	Water	6020A	439603
MB 240-439603/1-A	Method Blank	Total Recoverable	Water	6020A	439603
LCS 240-439603/3-A	Lab Control Sample	Total Recoverable	Water	6020A	439603

Analysis Batch: 440020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137752-1	W-1	Total Recoverable	Water	6010C	439603
280-137752-2	W-1D	Total Recoverable	Water	6010C	439603
280-137752-3	W-2	Total Recoverable	Water	6010C	439603
280-137752-4	W-2EB	Total Recoverable	Water	6010C	439603
280-137752-5	W-3	Total Recoverable	Water	6010C	439603
280-137752-6	W-4	Total Recoverable	Water	6010C	439603
280-137752-7	MW-6	Total Recoverable	Water	6010C	439603
280-137752-8	MW-7	Total Recoverable	Water	6010C	439603
280-137752-9	MW-8	Total Recoverable	Water	6010C	439603
MB 240-439603/1-A	Method Blank	Total Recoverable	Water	6010C	439603
LCS 240-439603/2-A	Lab Control Sample	Total Recoverable	Water	6010C	439603

Prep Batch: 500409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137752-1	W-1	Total/NA	Water	7470A	
280-137752-2	W-1D	Total/NA	Water	7470A	
280-137752-3	W-2	Total/NA	Water	7470A	
280-137752-4	W-2EB	Total/NA	Water	7470A	
280-137752-5	W-3	Total/NA	Water	7470A	
280-137752-6	W-4	Total/NA	Water	7470A	
280-137752-7	MW-6	Total/NA	Water	7470A	
280-137752-8	MW-7	Total/NA	Water	7470A	

Eurofins TestAmerica, Denver

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Metals (Continued)

Prep Batch: 500409 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137752-9	MW-8	Total/NA	Water	7470A	
MB 280-500409/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-500409/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 280-500409/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	

Analysis Batch: 500637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137752-1	W-1	Total/NA	Water	7470A	500409
280-137752-2	W-1D	Total/NA	Water	7470A	500409
280-137752-3	W-2	Total/NA	Water	7470A	500409
280-137752-4	W-2EB	Total/NA	Water	7470A	500409
280-137752-5	W-3	Total/NA	Water	7470A	500409
280-137752-6	W-4	Total/NA	Water	7470A	500409
280-137752-7	MW-6	Total/NA	Water	7470A	500409
280-137752-8	MW-7	Total/NA	Water	7470A	500409
280-137752-9	MW-8	Total/NA	Water	7470A	500409
MB 280-500409/1-A	Method Blank	Total/NA	Water	7470A	500409
LCS 280-500409/2-A	Lab Control Sample	Total/NA	Water	7470A	500409
LCSD 280-500409/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	500409

General Chemistry

Analysis Batch: 499225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137752-1	W-1	Total/NA	Water	SM 2540C	
280-137752-2	W-1D	Total/NA	Water	SM 2540C	
280-137752-3	W-2	Total/NA	Water	SM 2540C	
280-137752-4	W-2EB	Total/NA	Water	SM 2540C	
280-137752-5	W-3	Total/NA	Water	SM 2540C	
280-137752-6	W-4	Total/NA	Water	SM 2540C	
280-137752-7	MW-6	Total/NA	Water	SM 2540C	
280-137752-8	MW-7	Total/NA	Water	SM 2540C	
280-137752-9	MW-8	Total/NA	Water	SM 2540C	
MB 280-499225/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-499225/2	Lab Control Sample	Total/NA	Water	SM 2540C	
280-137752-9 DU	MW-8	Total/NA	Water	SM 2540C	

Analysis Batch: 499226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137752-1	W-1	Total/NA	Water	SM 2540D	
280-137752-2	W-1D	Total/NA	Water	SM 2540D	
280-137752-3	W-2	Total/NA	Water	SM 2540D	
280-137752-4	W-2EB	Total/NA	Water	SM 2540D	
280-137752-5	W-3	Total/NA	Water	SM 2540D	
280-137752-6	W-4	Total/NA	Water	SM 2540D	
280-137752-7	MW-6	Total/NA	Water	SM 2540D	
280-137752-8	MW-7	Total/NA	Water	SM 2540D	
280-137752-9	MW-8	Total/NA	Water	SM 2540D	
MB 280-499226/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-499226/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-499226/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Eurofins TestAmerica, Denver

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

General Chemistry (Continued)

Analysis Batch: 499226 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137752-9 DU	MW-8	Total/NA	Water	SM 2540D	

Analysis Batch: 499301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137752-1	W-1	Total/NA	Water	9040B	
280-137752-2	W-1D	Total/NA	Water	9040B	
280-137752-3	W-2	Total/NA	Water	9040B	
280-137752-5	W-3	Total/NA	Water	9040B	
280-137752-6	W-4	Total/NA	Water	9040B	
280-137752-7	MW-6	Total/NA	Water	9040B	
280-137752-8	MW-7	Total/NA	Water	9040B	
280-137752-9	MW-8	Total/NA	Water	9040B	
LCS 280-499301/4	Lab Control Sample	Total/NA	Water	9040B	
280-137752-1 DU	W-1	Total/NA	Water	9040B	

Analysis Batch: 499383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137752-4	W-2EB	Total/NA	Water	9040B	
LCS 280-499383/30	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 501404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137752-3	W-2	Total/NA	Water	9056A	
280-137752-5	W-3	Total/NA	Water	9056A	
280-137752-6	W-4	Total/NA	Water	9056A	
280-137752-9	MW-8	Total/NA	Water	9056A	
MB 280-501404/6	Method Blank	Total/NA	Water	9056A	
LCS 280-501404/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-501404/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-501404/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 501408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137752-1	W-1	Total/NA	Water	9056A	
280-137752-1	W-1	Total/NA	Water	9056A	
280-137752-2	W-1D	Total/NA	Water	9056A	
280-137752-2	W-1D	Total/NA	Water	9056A	
280-137752-3	W-2	Total/NA	Water	9056A	
280-137752-4	W-2EB	Total/NA	Water	9056A	
280-137752-5	W-3	Total/NA	Water	9056A	
280-137752-6	W-4	Total/NA	Water	9056A	
280-137752-7	MW-6	Total/NA	Water	9056A	
280-137752-7	MW-6	Total/NA	Water	9056A	
280-137752-8	MW-7	Total/NA	Water	9056A	
280-137752-8	MW-7	Total/NA	Water	9056A	
280-137752-9	MW-8	Total/NA	Water	9056A	
280-137752-9	MW-8	Total/NA	Water	9056A	
MB 280-501408/6	Method Blank	Total/NA	Water	9056A	
LCS 280-501408/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-501408/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-501408/3	Lab Control Sample	Total/NA	Water	9056A	

Eurofins TestAmerica, Denver

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

General Chemistry

Analysis Batch: 501799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137752-5	W-3	Total/NA	Water	9056A	
MB 280-501799/6	Method Blank	Total/NA	Water	9056A	
LCS 280-501799/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-501799/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-501799/3	Lab Control Sample	Total/NA	Water	9056A	

Rad

Prep Batch: 474055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137752-1	W-1	Total/NA	Water	PrecSep-21	
280-137752-2	W-1D	Total/NA	Water	PrecSep-21	
280-137752-3	W-2	Total/NA	Water	PrecSep-21	
280-137752-4	W-2EB	Total/NA	Water	PrecSep-21	
280-137752-5	W-3	Total/NA	Water	PrecSep-21	
280-137752-6	W-4	Total/NA	Water	PrecSep-21	
280-137752-7	MW-6	Total/NA	Water	PrecSep-21	
280-137752-8	MW-7	Total/NA	Water	PrecSep-21	
280-137752-9	MW-8	Total/NA	Water	PrecSep-21	
MB 160-474055/21-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-474055/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 474060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137752-1	W-1	Total/NA	Water	PrecSep_0	
280-137752-2	W-1D	Total/NA	Water	PrecSep_0	
280-137752-3	W-2	Total/NA	Water	PrecSep_0	
280-137752-4	W-2EB	Total/NA	Water	PrecSep_0	
280-137752-5	W-3	Total/NA	Water	PrecSep_0	
280-137752-6	W-4	Total/NA	Water	PrecSep_0	
280-137752-7	MW-6	Total/NA	Water	PrecSep_0	
280-137752-8	MW-7	Total/NA	Water	PrecSep_0	
280-137752-9	MW-8	Total/NA	Water	PrecSep_0	
MB 160-474060/21-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-474060/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Client Sample ID: W-1

Date Collected: 06/16/20 11:40

Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-1

Matrix: Water

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	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			440020	06/24/20 21:09	WKD	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			439866	06/24/20 11:37	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	500409	06/29/20 16:00	AL	TAL DEN
Total/NA	Analysis	7470A		1			500637	06/30/20 00:45	AL	TAL DEN
Total/NA	Analysis	9040B		1			499301	06/17/20 20:26	CJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	501408	07/08/20 22:26	JAP	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	501408	07/08/20 22:42	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	499225	06/18/20 09:45	FRG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	499226	06/18/20 09:48	FRG	TAL DEN
Total/NA	Prep	PrecSep-21			750.28 mL	1.0 g	474055	06/23/20 09:13	RJD	TAL SL
Total/NA	Analysis	9315		1			476320	07/15/20 11:57	SCB	TAL SL
Total/NA	Prep	PrecSep_0			750.28 mL	1.0 g	474060	06/23/20 09:42	RJD	TAL SL
Total/NA	Analysis	9320		1			475047	07/01/20 09:17	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			476586	07/17/20 07:37	SMP	TAL SL

Client Sample ID: W-1D

Date Collected: 06/16/20 11:40

Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-2

Matrix: Water

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	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			440020	06/24/20 21:04	WKD	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			439866	06/24/20 11:29	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	500409	06/29/20 16:00	AL	TAL DEN
Total/NA	Analysis	7470A		1			500637	06/30/20 00:48	AL	TAL DEN
Total/NA	Analysis	9040B		1			499301	06/17/20 20:36	CJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	501408	07/08/20 23:31	JAP	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	501408	07/08/20 23:48	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	499225	06/18/20 09:45	FRG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	499226	06/18/20 09:48	FRG	TAL DEN
Total/NA	Prep	PrecSep-21			750.33 mL	1.0 g	474055	06/23/20 09:13	RJD	TAL SL
Total/NA	Analysis	9315		1			476320	07/15/20 13:48	SCB	TAL SL
Total/NA	Prep	PrecSep_0			750.33 mL	1.0 g	474060	06/23/20 09:42	RJD	TAL SL
Total/NA	Analysis	9320		1			475047	07/01/20 09:17	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			476586	07/17/20 07:37	SMP	TAL SL

Eurofins TestAmerica, Denver

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Client Sample ID: W-2

Date Collected: 06/16/20 14:20

Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-3

Matrix: Water

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	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			440020	06/24/20 21:14	WKD	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			439866	06/24/20 11:39	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	500409	06/29/20 16:00	AL	TAL DEN
Total/NA	Analysis	7470A		1			500637	06/30/20 00:51	AL	TAL DEN
Total/NA	Analysis	9040B		1			499301	06/17/20 20:40	CJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	501408	07/09/20 00:04	JAP	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	501404	07/09/20 22:38	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	499225	06/18/20 09:45	FRG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	499226	06/18/20 09:48	FRG	TAL DEN
Total/NA	Prep	PrecSep-21			749.94 mL	1.0 g	474055	06/23/20 09:13	RJD	TAL SL
Total/NA	Analysis	9315		1			476320	07/15/20 13:49	SCB	TAL SL
Total/NA	Prep	PrecSep_0			749.94 mL	1.0 g	474060	06/23/20 09:42	RJD	TAL SL
Total/NA	Analysis	9320		1			475047	07/01/20 09:17	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			476586	07/17/20 07:37	SMP	TAL SL

Client Sample ID: W-2EB

Date Collected: 06/16/20 14:40

Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-4

Matrix: Water

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	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			440020	06/24/20 21:19	WKD	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			439866	06/24/20 11:42	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	500409	06/29/20 16:00	AL	TAL DEN
Total/NA	Analysis	7470A		1			500637	06/30/20 00:53	AL	TAL DEN
Total/NA	Analysis	9040B		1			499383	06/18/20 23:10	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	501408	07/09/20 00:37	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	499225	06/18/20 09:45	FRG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	499226	06/18/20 09:48	FRG	TAL DEN
Total/NA	Prep	PrecSep-21			750.16 mL	1.0 g	474055	06/23/20 09:13	RJD	TAL SL
Total/NA	Analysis	9315		1			476320	07/15/20 13:51	SCB	TAL SL
Total/NA	Prep	PrecSep_0			750.16 mL	1.0 g	474060	06/23/20 09:42	RJD	TAL SL
Total/NA	Analysis	9320		1			475047	07/01/20 09:17	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			476586	07/17/20 07:37	SMP	TAL SL

Eurofins TestAmerica, Denver

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Client Sample ID: W-3

Date Collected: 06/16/20 15:40

Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-5

Matrix: Water

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	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			440020	06/24/20 21:23	WKD	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			439866	06/24/20 11:44	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	500409	06/29/20 16:00	AL	TAL DEN
Total/NA	Analysis	7470A		1			500637	06/30/20 00:56	AL	TAL DEN
Total/NA	Analysis	9040B		1			499301	06/17/20 20:54	CJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	501408	07/09/20 01:10	JAP	TAL DEN
Total/NA	Analysis	9056A		2	5 mL	5 mL	501799	07/10/20 20:38	JAP	TAL DEN
Total/NA	Analysis	9056A		100	5 mL	5 mL	501404	07/09/20 23:10	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	499225	06/18/20 09:45	FRG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	499226	06/18/20 09:48	FRG	TAL DEN
Total/NA	Prep	PrecSep-21			750.09 mL	1.0 g	474055	06/23/20 09:13	RJD	TAL SL
Total/NA	Analysis	9315		1			476320	07/15/20 13:51	SCB	TAL SL
Total/NA	Prep	PrecSep_0			750.09 mL	1.0 g	474060	06/23/20 09:42	RJD	TAL SL
Total/NA	Analysis	9320		1			475047	07/01/20 09:17	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			476586	07/17/20 07:37	SMP	TAL SL

Client Sample ID: W-4

Date Collected: 06/16/20 13:05

Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-6

Matrix: Water

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	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			440020	06/24/20 21:28	WKD	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			439866	06/24/20 11:47	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	500409	06/29/20 16:00	AL	TAL DEN
Total/NA	Analysis	7470A		1			500637	06/30/20 00:58	AL	TAL DEN
Total/NA	Analysis	9040B		1			499301	06/17/20 21:00	CJ	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	501408	07/09/20 01:59	JAP	TAL DEN
Total/NA	Analysis	9056A		100	5 mL	5 mL	501404	07/09/20 23:27	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	1 mL	100 mL	499225	06/18/20 09:45	FRG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	499226	06/18/20 09:48	FRG	TAL DEN
Total/NA	Prep	PrecSep-21			750.10 mL	1.0 g	474055	06/23/20 09:13	RJD	TAL SL
Total/NA	Analysis	9315		1			476320	07/15/20 13:51	SCB	TAL SL
Total/NA	Prep	PrecSep_0			750.10 mL	1.0 g	474060	06/23/20 09:42	RJD	TAL SL
Total/NA	Analysis	9320		1			475047	07/01/20 09:17	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			476586	07/17/20 07:37	SMP	TAL SL

Eurofins TestAmerica, Denver

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Client Sample ID: MW-6

Date Collected: 06/17/20 08:45

Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-7

Matrix: Water

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	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		5			440020	06/25/20 08:32	WKD	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			439866	06/24/20 11:49	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	500409	06/29/20 16:00	AL	TAL DEN
Total/NA	Analysis	7470A		1			500637	06/30/20 01:06	AL	TAL DEN
Total/NA	Analysis	9040B		1			499301	06/17/20 21:04	CJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	501408	07/09/20 02:48	JAP	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	501408	07/09/20 03:05	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	499225	06/18/20 09:45	FRG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	499226	06/18/20 09:48	FRG	TAL DEN
Total/NA	Prep	PrecSep-21			750.21 mL	1.0 g	474055	06/23/20 09:13	RJD	TAL SL
Total/NA	Analysis	9315		1			476320	07/15/20 13:52	SCB	TAL SL
Total/NA	Prep	PrecSep_0			750.21 mL	1.0 g	474060	06/23/20 09:42	RJD	TAL SL
Total/NA	Analysis	9320		1			475047	07/01/20 09:17	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			476586	07/17/20 07:37	SMP	TAL SL

Client Sample ID: MW-7

Date Collected: 06/17/20 09:50

Date Received: 06/17/20 15:00

Lab Sample ID: 280-137752-8

Matrix: Water

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	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		5			440020	06/25/20 08:37	WKD	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			439866	06/24/20 11:52	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	500409	06/29/20 16:00	AL	TAL DEN
Total/NA	Analysis	7470A		1			500637	06/30/20 01:08	AL	TAL DEN
Total/NA	Analysis	9040B		1			499301	06/17/20 21:08	CJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	501408	07/09/20 03:21	JAP	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	501408	07/09/20 03:38	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	499225	06/18/20 09:45	FRG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	499226	06/18/20 09:48	FRG	TAL DEN
Total/NA	Prep	PrecSep-21			750.06 mL	1.0 g	474055	06/23/20 09:13	RJD	TAL SL
Total/NA	Analysis	9315		1			476320	07/15/20 13:52	SCB	TAL SL
Total/NA	Prep	PrecSep_0			750.06 mL	1.0 g	474060	06/23/20 09:42	RJD	TAL SL
Total/NA	Analysis	9320		1			475047	07/01/20 09:17	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			476586	07/17/20 07:37	SMP	TAL SL

Eurofins TestAmerica, Denver

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Client Sample ID: MW-8

Lab Sample ID: 280-137752-9

Date Collected: 06/16/20 17:20

Matrix: Water

Date Received: 06/17/20 15:00

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	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			440020	06/24/20 21:42	WKD	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	439603	06/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			439866	06/24/20 11:54	RKT	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	500409	06/29/20 16:00	AL	TAL DEN
Total/NA	Analysis	7470A		1			500637	06/30/20 01:11	AL	TAL DEN
Total/NA	Analysis	9040B		1			499301	06/17/20 21:12	CJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	501408	07/09/20 03:54	JAP	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	501408	07/09/20 04:10	JAP	TAL DEN
Total/NA	Analysis	9056A		100	5 mL	5 mL	501404	07/09/20 23:43	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	1 mL	100 mL	499225	06/18/20 09:45	FRG	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	499226	06/18/20 09:48	FRG	TAL DEN
Total/NA	Prep	PrecSep-21			750.03 mL	1.0 g	474055	06/23/20 09:13	RJD	TAL SL
Total/NA	Analysis	9315		1			476320	07/15/20 13:52	SCB	TAL SL
Total/NA	Prep	PrecSep_0			750.03 mL	1.0 g	474060	06/23/20 09:42	RJD	TAL SL
Total/NA	Analysis	9320		1			475047	07/01/20 09:17	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			476586	07/17/20 07:37	SMP	TAL SL

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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

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

Accreditation/Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Laboratory: Eurofins TestAmerica, Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-21
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
9040B		Water	Temperature

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-20
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	07-31-20
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-20
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-24-21
Pennsylvania	NELAP	68-00340	08-31-20
Texas	NELAP	T104704517-18-10	08-31-20
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-20
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

Accreditation/Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Laboratory: Eurofins TestAmerica, St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-20
California	State	2886	06-30-21
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-21
Illinois	NELAP	004553	11-30-20
Iowa	State	373	09-17-20
Kansas	NELAP	E-10236	10-31-20
Kentucky (DW)	State	KY90125	12-31-20
Louisiana	NELAP	04080	07-01-21
Louisiana (DW)	State	LA011	12-31-20
Maryland	State	310	09-30-20
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-20
New Jersey	NELAP	MO002	06-30-21
New York	NELAP	11616	04-01-21
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-20
Pennsylvania	NELAP	68-00540	02-28-21
Texas	NELAP	T104704193-19-13	07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542019-11	07-31-20
Virginia	NELAP	10310	06-14-21
Washington	State	C592	08-30-20
West Virginia DEP	State	381	10-31-20

Denver
#280

Client Information		Lab PM: Bandy, Darlene F		Carrier Tracking No(s)		COC No:								
Client Contact: Molly Reeves		Phone: 720-933-7496		Page: 1 of 1										
Company: HDR Inc		E-Mail: darlene.bandy@testamericainc.com		Job #:										
Analysis Requested														
Due Date Requested:		TAT Requested (days):		Barcode 280-137752 Chain of Custody										
Address: 9781 S. Meridian Blvd Suite 400		City: Englewood		State, Zip: CO, 80112										
Phone: 734-263-7138(Tel)		RO #: DEN-018		WO #:										
Email: Molly.Reeves@hdrinc.com		Project #: 28014377		SSOW#:										
Project Name: Xcel Energy GW CCR Monitoring - Hayden		Site: Colorado												
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C Calcd - Total Dissolved Solids (TDS)	APIII + APIV Total Metals 6010C, 6020A, 7470A	pH 9040B, Anions (CL, F, SO4) 9056A, 280	2540D - Total Suspended Solids	9315, Ra226 / Ra228 Combined	Total Number of Containers	Special Instructions/Note:
W-1		6-16-20	1140	G	W	N	N	X	X	X	X	X	5	*Sub metals to Canton / Radchem to St. Louis
W-1D		6-16-20	1140	G	W	N	N	X	X	X	X	X	5	Please for
W-2		6-16-20	1420	G	W	N	N	X	X	X	X	X	5	analyze
W-2EB		6-16-20	1440	G	W	N	N	X	X	X	X	X	5	Appendix
W-3		6-16-20	1540	G	W	N	N	X	X	X	X	X	5	III &
W-4		6-16-20	1305	G	W	N	N	X	X	X	X	X	5	IV
MW-6		6-17-20	845	G	W	N	N	X	X	X	X	X	5	
MW-7		6-17-20	950	G	W	N	N	X	X	X	X	X	5	
MW-8		6-16-20	1720	G	W	N	N	X	X	X	X	X	5	
Rossible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological Deliverable Requested: I, II, III, IV, Other (specify) _____														
Empty Kit Relinquished by: _____ Relinquished by: TARA KENT Date: 6-17-2020 1500 Relinquished by: _____ Relinquished by: _____														
Method of Shipment: _____ Received by: J. Hughes Date/Time: 6-17-20 1500 Company: ETACOR Received by: _____ Received by: _____														
Cooler Temperature(s) °C and Other Remarks: 61.1, 47.1, 18.1, 10.6, 11.8, 6-17-20														

Chain of Custody Record



Environment Testing
America

Client Information (Sub Contract Lab)		Sampler:		Lab PM:		Carrier Tracking No(s):		COC No:	
Client Contact: Shipping/Receiving		Phone:		Bandy, Darlene F				280-529123.1	
Company: TestAmerica Laboratories, Inc.		E-Mail:		darlene.bandy@testamericainc.com		State of Origin:		Page: 1 of 1	
Address: 13715 Rider Trail North,		Due Date Requested: 7/14/2020		Accreditations Required (See note): DoD - A2LA		Job #:		280-137752-1	
City: Earth City		TAT Requested (days):		Analysis Requested		Preservation Codes:		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
State, Zip: MO, 63045		PO #:		Perform MS/MSD (Yes or No)		Total Number of Containers		Special Instructions/Note:	
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		WO #:		Field Filtered Sample (Yes or No)		Total Number of Containers			
Email:		Project #: 28014377		Preservation Code:		Total Number of Containers			
Site: Xcel Energy CCR - Hayden Station		SSOW#:		Matrix (W=water, S=solid, O=waste/oil, BT=tissue, A=air)		Total Number of Containers			
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)			
W-1 (280-137752-1)		6/16/20		11:40 Mountain		Water		1	
W-1D (280-137752-2)		6/16/20		11:40 Mountain		Water		1	
W-2 (280-137752-3)		6/16/20		14:20 Mountain		Water		1	
W-2EB (280-137752-4)		6/16/20		14:40 Mountain		Water		1	
W-3 (280-137752-5)		6/16/20		15:40 Mountain		Water		1	
W-4 (280-137752-6)		6/16/20		13:05 Mountain		Water		1	
MW-6 (280-137752-7)		6/17/20		08:45 Mountain		Water		1	
MW-7 (280-137752-8)		6/17/20		09:50 Mountain		Water		1	
MW-8 (280-137752-9)		6/16/20		17:20 Mountain		Water		1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Unconfirmed		☐ Return To Client ☐ Disposal By Lab ☐ Archive For Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Time:	
Relinquished by: <i>[Signature]</i>		Date: 6/18/2020	
Relinquished by: FED EX		Company: FED EX	
Relinquished by:		Date/Time: 6/16/2020	
Relinquished by:		Date/Time: 0847	
Custody Seals Intact: ☐ Yes ☐ No		Cooler Temperature(s) °C and Other Remarks:	

Chain of Custody Record



Environment Testing
America

Client Information (Sub Contract Lab)		Sampler:	Lab P/N:	CCO No:					
Client Contact:		Phone:	Bandy, Darlene F	280-529121.1					
Shipping/Receiving:		E-Mail:	darlene.bandy@testamericainc.com	Page 1 of 1					
Company:		Accreditations Required (See note):		Job #:					
TestAmerica Laboratories, Inc.		DOD - A2LA		280-137752-1					
Address:		Due Date Requested:	Preservation Codes:						
4101 Shufte Street NW,		7/10/2020	A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - NaOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2CO3 Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Z - other (Specify)						
City:		TAT Requested (days):	Analysis Requested						
North Canton									
State, Zip:		PO #:							
OH, 44720		WO #:							
Phone:									
330-497-9396(Tel) 330-497-0772(Fax)									
Email:									
Project Name:		Project #:							
Xcel Energy GW CCR Monitoring - Hayden		28014377							
Site:		SSOW#:							
Xcel Energy CCR - Hayden Station									
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (Water, Soil, Sewage, etc.)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers	Special Instructions/Note:
W-1 (280-137752-1)	6/16/20	11:40	Mountain	Water		X	X	1	Use Collision Cell
W-1D (280-137752-2)	6/16/20	11:40	Mountain	Water		X	X	1	Use Collision Cell
W-2 (280-137752-3)	6/16/20	14:20	Mountain	Water		X	X	1	Use Collision Cell
W-2EB (280-137752-4)	6/16/20	14:40	Mountain	Water		X	X	1	Use Collision Cell
W-3 (280-137752-5)	6/16/20	15:40	Mountain	Water		X	X	1	Use Collision Cell
W-4 (280-137752-6)	6/16/20	13:05	Mountain	Water		X	X	1	Use Collision Cell
MMW-6 (280-137752-7)	6/17/20	08:45	Mountain	Water		X	X	1	Use Collision Cell
MMW-7 (280-137752-8)	6/17/20	09:50	Mountain	Water		X	X	1	Use Collision Cell
MMW-8 (280-137752-9)	6/16/20	17:20	Mountain	Water		X	X	1	Use Collision Cell

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analysis & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/testing, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification

Unconfirmed

Deliverable Requested: I, II, III, IV, Other (Specify) _____ Primary Deliverable Rank: 4

Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment: _____

Relinquished by: *[Signature]* Date/Time: *6/18/2020 14:35* Company: _____ Received by: _____ Date/Time: _____ Company: _____

Relinquished by: _____ Date/Time: _____ Company: _____ Received by: *[Signature]* Date/Time: *6/19/20 10:10* Company: *ETA*

Custody Seals Intact: _____ Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks: _____

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/OC Requirements: _____

8/6/2020 (Rev. 1)

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-137752-1

Login Number: 137752

List Source: Eurofins TestAmerica, Denver

List Number: 1

Creator: Lubin, Julius C

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
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	
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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-137752-1

Login Number: 137752

List Number: 3

Creator: Mazariegos, Leonel A

List Source: Eurofins TestAmerica, St. Louis

List Creation: 06/19/20 04:30 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
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	
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.	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 $<6\text{mm}$ ($1/4''$).	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-137752-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (40-110)
280-137752-1	W-1	101
280-137752-2	W-1D	96.7
280-137752-3	W-2	97.3
280-137752-4	W-2EB	100
280-137752-5	W-3	95.3
280-137752-6	W-4	91.7
280-137752-7	MW-6	49.3
280-137752-8	MW-7	99.7
280-137752-9	MW-8	103
LCS 160-474055/1-A	Lab Control Sample	91.7
MB 160-474055/21-A	Method Blank	101

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
280-137752-1	W-1	101	86.0
280-137752-2	W-1D	96.7	86.0
280-137752-3	W-2	97.3	88.6
280-137752-4	W-2EB	100	80.4
280-137752-5	W-3	95.3	86.0
280-137752-6	W-4	91.7	83.4
280-137752-7	MW-6	49.3	81.1
280-137752-8	MW-7	99.7	84.9
280-137752-9	MW-8	103	84.5
LCS 160-474060/1-A	Lab Control Sample	91.7	69.5
MB 160-474060/21-A	Method Blank	101	94.2

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

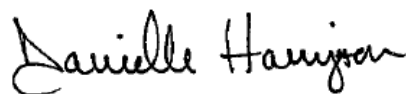
Laboratory Job ID: 280-143890-1

Client Project/Site: Xcel Energy GW CCR Monitoring - Hayden

For:

HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves



Authorized for release by:
1/14/2021 6:49:56 AM

Danielle Harrington, Project Manager II
(303)736-0176
Danielle.Harrington@Eurofinset.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:

www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions	3
Case Narrative	4
Detection Summary	6
Method Summary	10
Sample Summary	11
Client Sample Results	12
QC Sample Results	17
QC Association	24
Chronicle	28
Certification Summary	31
Chain of Custody	32
Receipt Checklists	35



Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Qualifiers

Metals

Qualifier	Qualifier Description
^	Continuing Calibration Verification (CCV) is outside acceptance limits, low biased.
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.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
E	Result exceeded calibration range.
F3	Duplicate RPD exceeds the control limit
H	Sample was prepped or analyzed beyond the specified holding time
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Job ID: 280-143890-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Hayden

Report Number: 280-143890-1

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. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 12/17/2020; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.1 C.

Please note, the radioactive analyses are reported under job 280-143890-2.

TOTAL RECOVERABLE METALS-Method 601C/6020A

Samples MW-6 and MW-7 required dilution prior to analysis for Method 6010C. The reporting limits have been adjusted accordingly.

The accuracy and precision of the Calcium MS/MSD performed on a sample W-1 could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The low level continuing calibration verification (CCVL) associated with batch 240-466952 recovered below the lower control limit for Lithium. The samples associated with this CCVL are greater than the CCV concentration for the affected analyte and more compatible with the CCV concentration; therefore, corrective action is deemed unnecessary.

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

GENERAL CHEMISTRY- VARIOUS

Several samples required a dilution prior to analysis for various methods. The reporting limits have been adjusted accordingly.

Due to a required dilution, sample W-4 was analyzed past the EPA-recommended holding time for method 2540C Total Dissolved Solids; the original analysis of the undiluted sample was performed within holding time. The out-of-hold, diluted result is confirmed by the undiluted result; only the diluted result has been reported.

Please note that the recoveries, for the Chloride and/or Sulfate laboratory generated MS/MSD, are within QC limits; however, these are estimated values as the concentrations exceeded the calibration range. Method precision and accuracy has been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

The accuracy and precision of the Chloride and/or Sulfate MS/MSD performed on a laboratory generated samples could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Job ID: 280-143890-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

Laboratory generated MS/MSD analysis data have been provided. The MS/MSD for Fluoride method 9056A exhibited spike compound recoveries outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The Total Suspended Solids sample duplicate analysis data associated with QC batch 280-521254 exhibited RPD data outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The Total Suspended Solids sample duplicate analysis performed on sample MW-8DU exhibited RPD data outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The Sulfate sample duplicate analysis data associated with QC batches 280-522818 and 280-523140 exhibited RPD data outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: W-1

Lab Sample ID: 280-143890-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.84		0.10	0.023	mg/L	1		6010C	Total Recoverable
Barium	0.0098		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	350		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0012		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.25	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0033	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.016		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	21		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.3		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	2700		250	52	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	4200		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	2.0	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: W-2

Lab Sample ID: 280-143890-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	10		0.10	0.023	mg/L	1		6010C	Total Recoverable
Barium	0.0079		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Cadmium	0.00022	J	0.0010	0.00020	mg/L	1		6020A	Total Recoverable
Calcium	390		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0049		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.55	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0045	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.0036	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	89		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	6.7		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	4400		250	52	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	7100		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	3.2	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: W-3

Lab Sample ID: 280-143890-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.4		0.10	0.023	mg/L	1		6010C	Total Recoverable
Barium	0.0080		0.0050	0.0022	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: W-3 (Continued)

Lab Sample ID: 280-143890-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.00027	J	0.0010	0.00020	mg/L	1		6020A	Total Recoverable
Calcium	200		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0023		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.97	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0029	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.011		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	170		15	5.1	mg/L	5		9056A	Total/NA
Fluoride	8.7		2.5	0.83	mg/L	5		9056A	Total/NA
Sulfate	7600		250	52	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	22000		1000	470	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	5.2		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: W-3D

Lab Sample ID: 280-143890-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.5		0.10	0.023	mg/L	1		6010C	Total Recoverable
Barium	0.014		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Cadmium	0.00041	J	0.0010	0.00020	mg/L	1		6020A	Total Recoverable
Calcium	390		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0072		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.98	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0042	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.012		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.6	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	170		15	5.1	mg/L	5		9056A	Total/NA
Fluoride	8.6		2.5	0.83	mg/L	5		9056A	Total/NA
Sulfate	7600		250	52	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	22000		1000	470	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	4.8		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: W-4

Lab Sample ID: 280-143890-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2.2		0.10	0.023	mg/L	1		6010C	Total Recoverable
Barium	0.0082		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	370		1.0	0.58	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: W-4 (Continued)

Lab Sample ID: 280-143890-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0070		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.56	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0030	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.7	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	360		30	10	mg/L	10		9056A	Total/NA
Fluoride	0.21	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	12000		500	100	mg/L	100		9056A	Total/NA
Total Dissolved Solids (TDS)	18000	H	100	47	mg/L	1		SM 2540C	Total/NA
Total Dissolved Solids (TDS)	18000	E	20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	20		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-6

Lab Sample ID: 280-143890-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	46		1.0	0.23	mg/L	10		6010C	Total Recoverable
Barium	0.0057		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Cadmium	0.00062	J	0.0010	0.00020	mg/L	1		6020A	Total Recoverable
Calcium	440		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.00047	J	0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.097	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	1.2		0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.013		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	65		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.26	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	2900		500	100	mg/L	100		9056A	Total/NA
Total Dissolved Solids (TDS)	4000		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	5.6		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-7

Lab Sample ID: 280-143890-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	49		1.0	0.23	mg/L	10		6010C	Total Recoverable
Barium	0.0053		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Cadmium	0.00037	J	0.0010	0.00020	mg/L	1		6020A	Total Recoverable
Calcium	440		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.00040	J	0.0010	0.00019	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: MW-7 (Continued)

Lab Sample ID: 280-143890-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.21	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.86		0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.0078		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.8	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	160		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.44	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	3100		500	100	mg/L	100		9056A	Total/NA
Total Dissolved Solids (TDS)	4600		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	4.0		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-8

Lab Sample ID: 280-143890-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.7		0.10	0.023	mg/L	1		6010C	Total Recoverable
Barium	0.0057		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	400		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.00066	J	0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.57	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0019	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.044		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	240		30	10	mg/L	10		9056A	Total/NA
Sulfate	7000		500	100	mg/L	100		9056A	Total/NA
Total Dissolved Solids (TDS)	20000		1000	470	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	18		4.0	1.1	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Method Summary

Client: HDR Inc

Job ID: 280-143890-1

Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL CAN
6020A	Metals (ICP/MS)	SW846	TAL CAN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CAN

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
280-143890-1	W-1	Water	12/15/20 13:15	12/17/20 13:55	
280-143890-2	W-2	Water	12/15/20 16:00	12/17/20 13:55	
280-143890-3	W-3	Water	12/15/20 14:30	12/17/20 13:55	
280-143890-4	W-3D	Water	12/15/20 14:30	12/17/20 13:55	
280-143890-5	W-4	Water	12/16/20 10:20	12/17/20 13:55	
280-143890-6	MW-6	Water	12/16/20 11:35	12/17/20 13:55	
280-143890-7	MW-7	Water	12/16/20 02:50	12/17/20 13:55	
280-143890-8	MW-8	Water	12/16/20 04:20	12/17/20 13:55	

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.84		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 15:05	1

Client Sample ID: W-2
Date Collected: 12/15/20 16:00
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	10		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 15:36	1

Client Sample ID: W-3
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.4		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 15:40	1

Client Sample ID: W-3D
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.5		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 15:45	1

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.2		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 15:49	1

Client Sample ID: MW-6
Date Collected: 12/16/20 11:35
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	46		1.0	0.23	mg/L		12/22/20 14:00	12/28/20 12:01	10

Client Sample ID: MW-7
Date Collected: 12/16/20 02:50
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	49		1.0	0.23	mg/L		12/22/20 14:00	12/28/20 12:05	10

Client Sample ID: MW-8
Date Collected: 12/16/20 04:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 16:03	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0098		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:21	1
Cadmium	ND		0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:21	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	350		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:21	1
Cobalt	0.0012		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:21	1
Lithium	0.25	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:21	1
Molybdenum	0.0033	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:21	1
Selenium	0.016		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:21	1

Client Sample ID: W-2
Date Collected: 12/15/20 16:00
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0079		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:36	1
Cadmium	0.00022	J	0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:36	1
Calcium	390		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:36	1
Cobalt	0.0049		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:36	1
Lithium	0.55	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:36	1
Molybdenum	0.0045	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:36	1
Selenium	0.0036	J	0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:36	1

Client Sample ID: W-3
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0080		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:43	1
Cadmium	0.00027	J	0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:43	1
Calcium	200		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:43	1
Cobalt	0.0023		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:43	1
Lithium	0.97	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:43	1
Molybdenum	0.0029	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:43	1
Selenium	0.011		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:43	1

Client Sample ID: W-3D
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.014		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:46	1
Cadmium	0.00041	J	0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:46	1
Calcium	390		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:46	1
Cobalt	0.0072		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:46	1
Lithium	0.98	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:46	1
Molybdenum	0.0042	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:46	1
Selenium	0.012		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:46	1

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0082		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:48	1
Cadmium	ND		0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:48	1
Calcium	370		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:48	1
Cobalt	0.0070		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:48	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.56	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:48	1
Molybdenum	0.0030	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:48	1
Selenium	ND		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:48	1

Client Sample ID: MW-6
Date Collected: 12/16/20 11:35
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0057		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:51	1
Cadmium	0.00062	J	0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:51	1
Calcium	440		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:51	1
Cobalt	0.00047	J	0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:51	1
Lithium	0.097	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:51	1
Molybdenum	1.2		0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:51	1
Selenium	0.013		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:51	1

Client Sample ID: MW-7
Date Collected: 12/16/20 02:50
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0053		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:53	1
Cadmium	0.00037	J	0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:53	1
Calcium	440		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:53	1
Cobalt	0.00040	J	0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:53	1
Lithium	0.21	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:53	1
Molybdenum	0.86		0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:53	1
Selenium	0.0078		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:53	1

Client Sample ID: MW-8
Date Collected: 12/16/20 04:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0057		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:56	1
Cadmium	ND		0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:56	1
Calcium	400		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:56	1
Cobalt	0.00066	J	0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:56	1
Lithium	0.57	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:56	1
Molybdenum	0.0019	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:56	1
Selenium	0.044		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:56	1

General Chemistry

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			12/30/20 13:24	1
Temperature	21.0	HF	1.0	1.0	Degrees C			12/30/20 13:24	1
Chloride	21		3.0	1.0	mg/L			01/09/21 21:40	1
Fluoride	1.3		0.50	0.17	mg/L			01/09/21 21:40	1
Sulfate	2700		250	52	mg/L			01/12/21 00:15	50

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

General Chemistry (Continued)

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	4200		40	19	mg/L			12/19/20 10:33	1
Total Suspended Solids	2.0	J	4.0	1.1	mg/L			12/22/20 19:54	1

Client Sample ID: W-2
Date Collected: 12/15/20 16:00
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			12/30/20 13:20	1
Temperature	21.4	HF	1.0	1.0	Degrees C			12/30/20 13:20	1
Chloride	89		3.0	1.0	mg/L			01/09/21 22:13	1
Fluoride	6.7		0.50	0.17	mg/L			01/09/21 22:13	1
Sulfate	4400		250	52	mg/L			01/12/21 00:31	50
Total Dissolved Solids (TDS)	7100		40	19	mg/L			12/21/20 11:37	1
Total Suspended Solids	3.2	J	4.0	1.1	mg/L			12/22/20 19:54	1

Client Sample ID: W-3
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			01/06/21 12:39	1
Temperature	20.9	HF	1.0	1.0	Degrees C			01/06/21 12:39	1
Chloride	170		15	5.1	mg/L			01/09/21 23:18	5
Fluoride	8.7		2.5	0.83	mg/L			01/09/21 23:18	5
Sulfate	7600		250	52	mg/L			01/12/21 00:47	50
Total Dissolved Solids (TDS)	22000		1000	470	mg/L			12/21/20 11:37	1
Total Suspended Solids	5.2		4.0	1.1	mg/L			12/22/20 19:54	1

Client Sample ID: W-3D
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			01/06/21 12:46	1
Temperature	19.6	HF	1.0	1.0	Degrees C			01/06/21 12:46	1
Chloride	170		15	5.1	mg/L			01/10/21 00:41	5
Fluoride	8.6		2.5	0.83	mg/L			01/10/21 00:41	5
Sulfate	7600		250	52	mg/L			01/12/21 01:04	50
Total Dissolved Solids (TDS)	22000		1000	470	mg/L			12/21/20 11:37	1
Total Suspended Solids	4.8		4.0	1.1	mg/L			12/22/20 19:54	1

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			01/06/21 12:50	1
Temperature	19.7	HF	1.0	1.0	Degrees C			01/06/21 12:50	1
Chloride	360		30	10	mg/L			01/08/21 04:06	10
Fluoride	0.21	J	0.50	0.17	mg/L			01/08/21 03:50	1
Sulfate	12000		500	100	mg/L			01/08/21 04:23	100
Total Dissolved Solids (TDS)	18000	E	20	9.4	mg/L			12/21/20 11:40	1
Total Dissolved Solids (TDS)	18000	H	100	47	mg/L			01/05/21 10:17	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

General Chemistry (Continued)

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	20		4.0	1.1	mg/L			12/23/20 08:05	1

Client Sample ID: MW-6
Date Collected: 12/16/20 11:35
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.5	HF	0.1	0.1	SU			01/06/21 12:54	1
Temperature	20.1	HF	1.0	1.0	Degrees C			01/06/21 12:54	1
Chloride	65		3.0	1.0	mg/L			01/08/21 04:39	1
Fluoride	0.26	J	0.50	0.17	mg/L			01/08/21 04:39	1
Sulfate	2900		500	100	mg/L			01/08/21 05:12	100
Total Dissolved Solids (TDS)	4000		40	19	mg/L			12/23/20 13:55	1
Total Suspended Solids	5.6		4.0	1.1	mg/L			12/23/20 08:05	1

Client Sample ID: MW-7
Date Collected: 12/16/20 02:50
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.8	HF	0.1	0.1	SU			01/06/21 12:57	1
Temperature	20.9	HF	1.0	1.0	Degrees C			01/06/21 12:57	1
Chloride	160		3.0	1.0	mg/L			01/08/21 05:28	1
Fluoride	0.44	J	0.50	0.17	mg/L			01/08/21 05:28	1
Sulfate	3100		500	100	mg/L			01/08/21 06:01	100
Total Dissolved Solids (TDS)	4600		40	19	mg/L			12/23/20 13:55	1
Total Suspended Solids	4.0		4.0	1.1	mg/L			12/23/20 16:40	1

Client Sample ID: MW-8
Date Collected: 12/16/20 04:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			01/06/21 13:01	1
Temperature	21.2	HF	1.0	1.0	Degrees C			01/06/21 13:01	1
Chloride	240		30	10	mg/L			01/08/21 07:07	10
Fluoride	ND		0.50	0.17	mg/L			01/08/21 06:18	1
Sulfate	7000		500	100	mg/L			01/08/21 10:36	100
Total Dissolved Solids (TDS)	20000		1000	470	mg/L			12/23/20 13:55	1
Total Suspended Solids	18		4.0	1.1	mg/L			12/23/20 16:40	1

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-466550/1-A
Matrix: Water
Analysis Batch: 467130

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 466550

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 14:36	1

Lab Sample ID: LCS 240-466550/2-A
Matrix: Water
Analysis Batch: 467130

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 466550

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.962		mg/L		96	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-466550/1-A
Matrix: Water
Analysis Batch: 466952

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 466550

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:14	1
Cadmium	ND		0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:14	1
Calcium	ND		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:14	1
Cobalt	ND		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:14	1
Lithium	ND		0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:14	1
Molybdenum	ND		0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:14	1
Selenium	ND		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:14	1

Lab Sample ID: LCS 240-466550/3-A
Matrix: Water
Analysis Batch: 466952

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 466550

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	1.00	0.976		mg/L		98	80 - 120
Cadmium	0.500	0.469		mg/L		94	80 - 120
Calcium	25.0	25.4		mg/L		102	80 - 120
Cobalt	0.500	0.450		mg/L		90	80 - 120
Lithium	0.500	0.428		mg/L		86	80 - 120
Molybdenum	0.500	0.488		mg/L		98	80 - 120
Selenium	1.00	0.993		mg/L		99	80 - 120

Lab Sample ID: 280-143890-1 MS
Matrix: Water
Analysis Batch: 466952

Client Sample ID: W-1
Prep Type: Total Recoverable
Prep Batch: 466550

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.0098		1.00	1.04		mg/L		103	75 - 125
Cadmium	ND		0.500	0.467		mg/L		93	75 - 125
Calcium	350		25.0	375	4	mg/L		98	75 - 125
Cobalt	0.0012		0.500	0.481		mg/L		96	75 - 125
Lithium	0.25	^	0.500	0.668		mg/L		84	75 - 125
Molybdenum	0.0033	J	0.500	0.540		mg/L		107	75 - 125
Selenium	0.016		1.00	1.07		mg/L		106	75 - 125

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

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

Lab Sample ID: 280-143890-1 MSD

Matrix: Water

Analysis Batch: 466952

Client Sample ID: W-1

Prep Type: Total Recoverable

Prep Batch: 466550

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	0.0098		1.00	1.05		mg/L		104	75 - 125	1	20
Cadmium	ND		0.500	0.475		mg/L		95	75 - 125	2	20
Calcium	350		25.0	382	4	mg/L		128	75 - 125	2	20
Cobalt	0.0012		0.500	0.493		mg/L		98	75 - 125	2	20
Lithium	0.25	^	0.500	0.678		mg/L		86	75 - 125	1	20
Molybdenum	0.0033	J	0.500	0.550		mg/L		109	75 - 125	2	20
Selenium	0.016		1.00	1.10		mg/L		109	75 - 125	3	20

Method: 9040B - pH

Lab Sample ID: LCS 280-522262/4

Matrix: Water

Analysis Batch: 522262

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		101	99 - 101

Lab Sample ID: LCS 280-522737/4

Matrix: Water

Analysis Batch: 522737

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Lab Sample ID: 280-143890-3 DU

Matrix: Water

Analysis Batch: 522737

Client Sample ID: W-3

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH adj. to 25 deg C	7.4	HF	7.4		SU		0.3	5
Temperature	20.9	HF	20.0		Degrees C		4	10

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-522818/6

Matrix: Water

Analysis Batch: 522818

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			01/07/21 17:06	1
Fluoride	ND		0.50	0.17	mg/L			01/07/21 17:06	1
Sulfate	ND		5.0	1.0	mg/L			01/07/21 17:06	1

Lab Sample ID: LCS 280-522818/4

Matrix: Water

Analysis Batch: 522818

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	96.3		mg/L		96	90 - 110
Fluoride	5.00	4.88		mg/L		98	90 - 110

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 280-522818/4

Matrix: Water

Analysis Batch: 522818

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	100	96.3		mg/L		96	90 - 110

Lab Sample ID: LCSD 280-522818/5

Matrix: Water

Analysis Batch: 522818

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	96.5		mg/L		97	90 - 110	0	10
Fluoride	5.00	4.89		mg/L		98	90 - 110	0	10
Sulfate	100	95.9		mg/L		96	90 - 110	0	10

Lab Sample ID: MRL 280-522818/3

Matrix: Water

Analysis Batch: 522818

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.86		mg/L		97	50 - 150
Fluoride	0.500	0.448	J	mg/L		90	50 - 150
Sulfate	5.00	5.28		mg/L		106	50 - 150

Lab Sample ID: MB 280-523023/6

Matrix: Water

Analysis Batch: 523023

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			01/09/21 14:56	1
Fluoride	ND		0.50	0.17	mg/L			01/09/21 14:56	1

Lab Sample ID: LCS 280-523023/4

Matrix: Water

Analysis Batch: 523023

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	97.9		mg/L		98	90 - 110
Fluoride	5.00	4.72		mg/L		94	90 - 110

Lab Sample ID: LCSD 280-523023/5

Matrix: Water

Analysis Batch: 523023

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	98.2		mg/L		98	90 - 110	0	10
Fluoride	5.00	4.71		mg/L		94	90 - 110	0	10

Lab Sample ID: MRL 280-523023/3

Matrix: Water

Analysis Batch: 523023

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.20		mg/L		84	50 - 150

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-523023/3

Matrix: Water

Analysis Batch: 523023

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.500	0.476	J	mg/L		95	50 - 150

Lab Sample ID: MB 280-523140/13

Matrix: Water

Analysis Batch: 523140

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			01/11/21 18:30	1
Fluoride	ND		0.50	0.17	mg/L			01/11/21 18:30	1
Sulfate	ND		5.0	1.0	mg/L			01/11/21 18:30	1

Lab Sample ID: LCS 280-523140/11

Matrix: Water

Analysis Batch: 523140

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	97.5		mg/L		97	90 - 110
Fluoride	5.00	5.03		mg/L		101	90 - 110
Sulfate	100	97.7		mg/L		98	90 - 110

Lab Sample ID: LCSD 280-523140/12

Matrix: Water

Analysis Batch: 523140

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	97.5		mg/L		97	90 - 110	0	10
Fluoride	5.00	5.03		mg/L		101	90 - 110	0	10
Sulfate	100	97.9		mg/L		98	90 - 110	0	10

Lab Sample ID: MRL 280-523140/10

Matrix: Water

Analysis Batch: 523140

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	5.13		mg/L		103	50 - 150
Fluoride	0.500	0.587		mg/L		117	50 - 150
Sulfate	5.00	4.84	J	mg/L		97	50 - 150

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-521115/1

Matrix: Water

Analysis Batch: 521115

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/19/20 10:33	1

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 280-521115/2
Matrix: Water
Analysis Batch: 521115

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	488		mg/L		98	88 - 114

Lab Sample ID: MB 280-521248/1
Matrix: Water
Analysis Batch: 521248

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/21/20 11:37	1

Lab Sample ID: LCS 280-521248/2
Matrix: Water
Analysis Batch: 521248

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	479		mg/L		96	88 - 114

Lab Sample ID: MB 280-521251/1
Matrix: Water
Analysis Batch: 521251

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/21/20 11:40	1

Lab Sample ID: LCS 280-521251/2
Matrix: Water
Analysis Batch: 521251

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	486		mg/L		97	88 - 114

Lab Sample ID: MB 280-521603/1
Matrix: Water
Analysis Batch: 521603

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/23/20 13:55	1

Lab Sample ID: LCS 280-521603/2
Matrix: Water
Analysis Batch: 521603

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	487		mg/L		97	88 - 114

Lab Sample ID: LCSD 280-521603/3
Matrix: Water
Analysis Batch: 521603

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	501	484		mg/L		97	88 - 114	1	20

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-522574/1
Matrix: Water
Analysis Batch: 522574

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			01/05/21 10:17	1

Lab Sample ID: LCS 280-522574/2
Matrix: Water
Analysis Batch: 522574

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	525		mg/L		105	88 - 114

Lab Sample ID: LCSD 280-522574/3
Matrix: Water
Analysis Batch: 522574

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	501	488		mg/L		98	88 - 114	7	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-521500/2
Matrix: Water
Analysis Batch: 521500

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			12/22/20 19:54	1

Lab Sample ID: LCS 280-521500/1
Matrix: Water
Analysis Batch: 521500

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	106		mg/L		106	79 - 114

Lab Sample ID: MB 280-521524/1
Matrix: Water
Analysis Batch: 521524

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			12/23/20 08:05	1

Lab Sample ID: LCS 280-521524/2
Matrix: Water
Analysis Batch: 521524

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	93.6		mg/L		94	79 - 114

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: MB 280-521641/1

Matrix: Water

Analysis Batch: 521641

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			12/23/20 16:40	1

Lab Sample ID: LCS 280-521641/2

Matrix: Water

Analysis Batch: 521641

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	89.6		mg/L		90	79 - 114

Lab Sample ID: 280-143890-8 DU

Matrix: Water

Analysis Batch: 521641

Client Sample ID: MW-8

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	18		27.6	F3	mg/L		40	10

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Metals

Prep Batch: 466550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total Recoverable	Water	3005A	
280-143890-2	W-2	Total Recoverable	Water	3005A	
280-143890-3	W-3	Total Recoverable	Water	3005A	
280-143890-4	W-3D	Total Recoverable	Water	3005A	
280-143890-5	W-4	Total Recoverable	Water	3005A	
280-143890-6	MW-6	Total Recoverable	Water	3005A	
280-143890-7	MW-7	Total Recoverable	Water	3005A	
280-143890-8	MW-8	Total Recoverable	Water	3005A	
MB 240-466550/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-466550/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-466550/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-143890-1 MS	W-1	Total Recoverable	Water	3005A	
280-143890-1 MSD	W-1	Total Recoverable	Water	3005A	

Analysis Batch: 466952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total Recoverable	Water	6020A	466550
280-143890-2	W-2	Total Recoverable	Water	6020A	466550
280-143890-3	W-3	Total Recoverable	Water	6020A	466550
280-143890-4	W-3D	Total Recoverable	Water	6020A	466550
280-143890-5	W-4	Total Recoverable	Water	6020A	466550
280-143890-6	MW-6	Total Recoverable	Water	6020A	466550
280-143890-7	MW-7	Total Recoverable	Water	6020A	466550
280-143890-8	MW-8	Total Recoverable	Water	6020A	466550
MB 240-466550/1-A	Method Blank	Total Recoverable	Water	6020A	466550
LCS 240-466550/3-A	Lab Control Sample	Total Recoverable	Water	6020A	466550
280-143890-1 MS	W-1	Total Recoverable	Water	6020A	466550
280-143890-1 MSD	W-1	Total Recoverable	Water	6020A	466550

Analysis Batch: 467130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total Recoverable	Water	6010C	466550
280-143890-2	W-2	Total Recoverable	Water	6010C	466550
280-143890-3	W-3	Total Recoverable	Water	6010C	466550
280-143890-4	W-3D	Total Recoverable	Water	6010C	466550
280-143890-5	W-4	Total Recoverable	Water	6010C	466550
280-143890-8	MW-8	Total Recoverable	Water	6010C	466550
MB 240-466550/1-A	Method Blank	Total Recoverable	Water	6010C	466550
LCS 240-466550/2-A	Lab Control Sample	Total Recoverable	Water	6010C	466550

Analysis Batch: 467359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-6	MW-6	Total Recoverable	Water	6010C	466550
280-143890-7	MW-7	Total Recoverable	Water	6010C	466550

General Chemistry

Analysis Batch: 521115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	SM 2540C	
MB 280-521115/1	Method Blank	Total/NA	Water	SM 2540C	

Eurofins TestAmerica, Denver

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

General Chemistry (Continued)

Analysis Batch: 521115 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-521115/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 521248

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-2	W-2	Total/NA	Water	SM 2540C	
280-143890-3	W-3	Total/NA	Water	SM 2540C	
280-143890-4	W-3D	Total/NA	Water	SM 2540C	
MB 280-521248/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-521248/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 521251

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-5	W-4	Total/NA	Water	SM 2540C	
MB 280-521251/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-521251/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 521500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	SM 2540D	
280-143890-2	W-2	Total/NA	Water	SM 2540D	
280-143890-3	W-3	Total/NA	Water	SM 2540D	
280-143890-4	W-3D	Total/NA	Water	SM 2540D	
MB 280-521500/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-521500/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 521524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-5	W-4	Total/NA	Water	SM 2540D	
280-143890-6	MW-6	Total/NA	Water	SM 2540D	
MB 280-521524/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-521524/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 521603

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-6	MW-6	Total/NA	Water	SM 2540C	
280-143890-7	MW-7	Total/NA	Water	SM 2540C	
280-143890-8	MW-8	Total/NA	Water	SM 2540C	
MB 280-521603/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-521603/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-521603/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 521641

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-7	MW-7	Total/NA	Water	SM 2540D	
280-143890-8	MW-8	Total/NA	Water	SM 2540D	
MB 280-521641/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-521641/2	Lab Control Sample	Total/NA	Water	SM 2540D	
280-143890-8 DU	MW-8	Total/NA	Water	SM 2540D	

Eurofins TestAmerica, Denver

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

General Chemistry

Analysis Batch: 522262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	9040B	
280-143890-2	W-2	Total/NA	Water	9040B	
LCS 280-522262/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 522574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-5	W-4	Total/NA	Water	SM 2540C	
MB 280-522574/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-522574/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-522574/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 522737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-3	W-3	Total/NA	Water	9040B	
280-143890-4	W-3D	Total/NA	Water	9040B	
280-143890-5	W-4	Total/NA	Water	9040B	
280-143890-6	MW-6	Total/NA	Water	9040B	
280-143890-7	MW-7	Total/NA	Water	9040B	
280-143890-8	MW-8	Total/NA	Water	9040B	
LCS 280-522737/4	Lab Control Sample	Total/NA	Water	9040B	
280-143890-3 DU	W-3	Total/NA	Water	9040B	

Analysis Batch: 522818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-5	W-4	Total/NA	Water	9056A	
280-143890-5	W-4	Total/NA	Water	9056A	
280-143890-5	W-4	Total/NA	Water	9056A	
280-143890-6	MW-6	Total/NA	Water	9056A	
280-143890-6	MW-6	Total/NA	Water	9056A	
280-143890-7	MW-7	Total/NA	Water	9056A	
280-143890-7	MW-7	Total/NA	Water	9056A	
280-143890-8	MW-8	Total/NA	Water	9056A	
280-143890-8	MW-8	Total/NA	Water	9056A	
280-143890-8	MW-8	Total/NA	Water	9056A	
MB 280-522818/6	Method Blank	Total/NA	Water	9056A	
LCS 280-522818/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-522818/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-522818/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 523023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	9056A	
280-143890-2	W-2	Total/NA	Water	9056A	
280-143890-3	W-3	Total/NA	Water	9056A	
280-143890-4	W-3D	Total/NA	Water	9056A	
MB 280-523023/6	Method Blank	Total/NA	Water	9056A	
LCS 280-523023/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-523023/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-523023/3	Lab Control Sample	Total/NA	Water	9056A	

Eurofins TestAmerica, Denver

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

General Chemistry

Analysis Batch: 523140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	9056A	
280-143890-2	W-2	Total/NA	Water	9056A	
280-143890-3	W-3	Total/NA	Water	9056A	
280-143890-4	W-3D	Total/NA	Water	9056A	
MB 280-523140/13	Method Blank	Total/NA	Water	9056A	
LCS 280-523140/11	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-523140/12	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-523140/10	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: W-1

Date Collected: 12/15/20 13:15

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 15:05	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:21	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522262	12/30/20 13:24	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	523023	01/09/21 21:40	CJ	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	523140	01/12/21 00:15	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	521115	12/19/20 10:33	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521500	12/22/20 19:54	SVC	TAL DEN

Client Sample ID: W-2

Date Collected: 12/15/20 16:00

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 15:36	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:36	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522262	12/30/20 13:20	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	523023	01/09/21 22:13	CJ	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	523140	01/12/21 00:31	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	521248	12/21/20 11:37	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521500	12/22/20 19:54	SVC	TAL DEN

Client Sample ID: W-3

Date Collected: 12/15/20 14:30

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 15:40	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:43	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 12:39	SPG	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	523023	01/09/21 23:18	CJ	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	523140	01/12/21 00:47	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	1 mL	100 mL	521248	12/21/20 11:37	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521500	12/22/20 19:54	SVC	TAL DEN

Eurofins TestAmerica, Denver

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: W-3D

Date Collected: 12/15/20 14:30

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 15:45	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:46	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 12:46	SPG	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	523023	01/10/21 00:41	CJ	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	523140	01/12/21 01:04	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	1 mL	100 mL	521248	12/21/20 11:37	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521500	12/22/20 19:54	SVC	TAL DEN

Client Sample ID: W-4

Date Collected: 12/16/20 10:20

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 15:49	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:48	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 12:50	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	522818	01/08/21 03:50	CJ	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	522818	01/08/21 04:06	CJ	TAL DEN
Total/NA	Analysis	9056A		100	5 mL	5 mL	522818	01/08/21 04:23	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	521251	12/21/20 11:40	JMH	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	522574	01/05/21 10:17	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521524	12/23/20 08:05	LEB	TAL DEN

Client Sample ID: MW-6

Date Collected: 12/16/20 11:35

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		10			467359	12/28/20 12:01	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:51	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 12:54	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	522818	01/08/21 04:39	CJ	TAL DEN
Total/NA	Analysis	9056A		100	5 mL	5 mL	522818	01/08/21 05:12	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	521603	12/23/20 13:55	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521524	12/23/20 08:05	LEB	TAL DEN

Eurofins TestAmerica, Denver

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: MW-7

Date Collected: 12/16/20 02:50

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		10			467359	12/28/20 12:05	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:53	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 12:57	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	522818	01/08/21 05:28	CJ	TAL DEN
Total/NA	Analysis	9056A		100	5 mL	5 mL	522818	01/08/21 06:01	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	521603	12/23/20 13:55	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521641	12/23/20 16:40	LEB	TAL DEN

Client Sample ID: MW-8

Date Collected: 12/16/20 04:20

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 16:03	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:56	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 13:01	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	522818	01/08/21 06:18	CJ	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	522818	01/08/21 07:07	CJ	TAL DEN
Total/NA	Analysis	9056A		100	5 mL	5 mL	522818	01/08/21 10:36	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	1 mL	100 mL	521603	12/23/20 13:55	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521641	12/23/20 16:40	LEB	TAL DEN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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

Accreditation/Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Laboratory: Eurofins TestAmerica, Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-21
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
9040B		Water	Temperature

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-24-21
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

Chain of Custody Record



Denver
#280

Environment Testing
 TestAmerica

Client Information Client Contact: Molly Reeves Company: HDR Inc		Lab PM: Bandy, Darlene F E-Mail: darlene.bandy@testamericainc.com		Sample: Java Kent Phone: 7209337496		Lab PM: Bandy, Darlene F E-Mail: darlene.bandy@testamericainc.com	
Address: 9781 S. Meridian Blvd Suite 400 City: Englewood State, Zip: CO, 80112 Phone: 734-263-7138(Tel) Email: Molly.Reeves@hdrinc.com		Project #: 28014377 SOW#:		Due Date Requested: TAT Requested (days):		Analysis Requested: 9320_Ra228 - Standard Target List 9315_Ra226 - Standard Target List 25400 - Total Suspended Solids pH 9040B, Anions (CL, F, SO4) 9056A, 280 AP41 + AP1V Metals 6010C, 6020A 2540C, Calcd - Total Dissolved Solids (TDS) Perform MS/MSD (Yes or No)	
Field Filtered Sample (Yes or No)		Field Filtered Sample (Yes or No)		Field Filtered Sample (Yes or No)		Field Filtered Sample (Yes or No)	
Sample Identification W-1 W-2 W-3 W-3D W-4 MW-6 MW-7 MW-8		Sample Type (C=Comp, G=grab) G G G G G G G		Sample Date 12-15-20 12-15-20 12-15-20 12-15-20 12-16-20 12-16-20 12-16-20 12-16-20		Matrix (W=Water, S=Soil, O=Other) W W W W W W W W	
Preservation Code: (I=Ice, A=Ascorbic Acid, J=DI Water, K=EDTA, L=EDA, Other:)		Preservation Code: (I=Ice, A=Ascorbic Acid, J=DI Water, K=EDTA, L=EDA, Other:)		Preservation Code: (I=Ice, A=Ascorbic Acid, J=DI Water, K=EDTA, L=EDA, Other:)		Preservation Code: (I=Ice, A=Ascorbic Acid, J=DI Water, K=EDTA, L=EDA, Other:)	
Total Number of Containers		Total Number of Containers		Total Number of Containers		Total Number of Containers	
Special Instructions/Note: App E III IV		Special Instructions/Note: App E III IV		Special Instructions/Note: App E III IV		Special Instructions/Note: App E III IV	

280-143890 Chain of Custody

Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months	
Empty Kit Relinquished by: Relinquished by: Java Kent Relinquished by: Java Kent Relinquished by: Java Kent		Special Instructions/QC Requirements: Date: 17 Dec 2020 1355 Date: 17 Dec 2020 1355 Date: 17 Dec 2020 1355	
Custody Seals Intact: Yes ☒ No ☐		Cooler Temperature(s) °C and Other Remarks: 29, 4.4, 0.6, +0.2, 18.9 12.17.20	

Eurofins TestAmerica, Denver
 4955 Yarrow Street
 Arvada, CO 80002
 Phone: 303-736-0100 Fax: 303-431-7171



Chain of Custody Record

4.1/5.0



Client Information (Sub Contract Lab)		Sampler:		Lab PM:		Carrier Tracking No(s):		COC No:	
Client Contact:		Harrington, Danielle M		Harrington, Danielle M				280-551372.1	
Shipping/Receiving		Phone:		E-Mail:		State of Origin:		Page:	
Company:		TestAmerica Laboratories, Inc.		Danielle.Harrington@Eurofinset.com		Colorado		Page 1 of 1	
Address:		4101 Shuffel Street NW,		Accreditations Required (See note):		Job #:		280-143890-1	
City:		North Canton		DoD - A2LA					
State, Zip:		OH, 44720							
Phone:		330-497-9396(Tel) 330-497-0772(Fax)							
Email:									
Project Name:		Xcel Energy GW CCR Monitoring - Hayden							
Site:		Xcel Energy CCR - Hayden Station							
PO #:									
WO #:									
Project #:		28014377							
SSOW#:									
Due Date Requested:		1/19/2021							
TAT Requested (days):									
Analysis Requested									
Preservation Codes:									
A - HCL									
B - NaOH									
C - Zn Acetate									
D - Nitric Acid									
E - NaHSO4									
F - MeOH									
G - Amchlor									
H - Ascorbic Acid									
I - Ice									
J - DI Water									
K - EDTA									
L - EDA									
Z - other (specify)									
Other:									
M - Hexane									
N - None									
O - AsNaO2									
P - Na2O4S									
Q - Na2SO3									
R - Na2S2O3									
S - H2SO4									
T - TSP Dodecahydrate									
U - Acetone									
V - MCAA									
W - pH 4-5									
Total Number of Containers									
Special Instructions/Note:									
551									
Sample Identification - Client ID (Lab ID)									
Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=oil, BT=tissue, A=air)		Preservation Code:	
W-1 (280-143890-1)		12/15/20		13:15 Mountain		Water		X	
W-2 (280-143890-2)		12/15/20		16:00 Mountain		Water		X	
W-3 (280-143890-3)		12/15/20		14:30 Mountain		Water		X	
W-3D (280-143890-4)		12/15/20		14:30 Mountain		Water		X	
W-4 (280-143890-5)		12/16/20		10:20 Mountain		Water		X	
MW-6 (280-143890-6)		12/16/20		11:35 Mountain		Water		X	
MW-7 (280-143890-7)		12/16/20		02:50 Mountain		Water		X	
MW-8 (280-143890-8)		12/16/20		04:20 Mountain		Water		X	
Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.									
Possible Hazard Identification									
Unconfirmed									
Deliverable Requested: I, II, III, IV, Other (specify)		Primary Deliverable Rank: 4							
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Relinquished by:		12/18/2020 11:05		Company:		Received by:		12-19-20 1100	
Relinquished by:				Company:		Received by:		Company	
Relinquished by:				Company:		Received by:		Company	
Custody Seals Intact:		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:			
Δ Yes Δ No									

Eurofins TestAmerica Canton Sample Receipt Form/Narrative Login # : _____

Canton Facility

Client ETA Site Name _____ Cooler unpacked by: Yang Ray

Cooler Received on 12-19-20 Opened on 12-21-20

FedEx: 1st Grd Exp^r UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box _____ Client Cooler _____ Box _____ Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt 4.1 °C ☐ See Multiple Cooler Form
 IR GUN# IR-11 (CF +0.9 °C) Observed Cooler Temp. 4.1 °C Corrected Cooler Temp. 5.0 °C
 IR GUN #IR-12 (CF +0.5 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 -Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No
 4. Did custody papers accompany the sample(s)? Yes No
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
 10. Were correct bottle(s) used for the test(s) indicated? Yes No
 11. Sufficient quantity received to perform indicated analyses? Yes No
 12. Are these work share samples and all listed on the COC? Yes No

If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC907861
 14. Were VOAs on the COC? Yes No
 15. Were air bubbles >6 mm in any VOA vials? Yes Larger than this. Yes No NA
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
 17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page Samples processed by: _____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

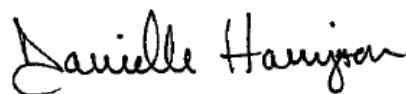
Laboratory Job ID: 280-143890-2

Client Project/Site: Xcel Energy GW CCR Monitoring - Hayden

For:

HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves



Authorized for release by:
1/15/2021 8:41:24 AM

Danielle Harrington, Project Manager II
(303)736-0176
Danielle.Harrington@Eurofinset.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:

www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1

Table of Contents 2

Definitions 3

Case Narrative 4

Detection Summary 6

Method Summary 7

Sample Summary 8

Client Sample Results 9

QC Sample Results 14

QC Association 16

Chronicle 17

Certification Summary 19

Chain of Custody 20

Receipt Checklists 21

Tracer Carrier Summary 23



Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Job ID: 280-143890-2

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Hayden

Report Number: 280-143890-2

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. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 12/17/2020; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.1 C.

Please note, this report only contains the radioactive analyses. All other analyses are reported under job 280-143890-1.

RADIUM-226 (GFPC)

The method 9315 MS/MSD could not be performed for this batch, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data.

The following samples contained a slight yellow discoloration: W-1 (280-143890-1), W-2 (280-143890-2), W-3 (280-143890-3), W-3D (280-143890-4), W-4 (280-143890-5), MW-6 (280-143890-6), MW-7 (280-143890-7) and MW-8 (280-143890-8).

The following samples were treated with barium seeding to facilitate precipitation: W-1 (280-143890-1), W-2 (280-143890-2), W-3 (280-143890-3), W-3D (280-143890-4), W-4 (280-143890-5), MW-6 (280-143890-6), MW-7 (280-143890-7) and MW-8 (280-143890-8). Inadvertently the analyst during the into ingrowth process added extra EDTA which required a pH adjustment and minor barium seeding. The seeding was successful and does not have adverse effect to the result.

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

RADIUM-228

The method 9320 MS/MSD could not be performed for this batch, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data.

The following samples contained a slight yellow discoloration: W-1 (280-143890-1), W-2 (280-143890-2), W-3 (280-143890-3), W-3D (280-143890-4), W-4 (280-143890-5), MW-6 (280-143890-6), MW-7 (280-143890-7) and MW-8 (280-143890-8).

The following samples were treated with barium seeding to facilitate precipitation: W-1 (280-143890-1), W-2 (280-143890-2), W-3 (280-143890-3), W-3D (280-143890-4), W-4 (280-143890-5), MW-6 (280-143890-6), MW-7 (280-143890-7) and MW-8 (280-143890-8). Inadvertently the analyst during the into ingrowth process added extra EDTA which required a pH adjustment and minor barium seeding. The seeding was successful and does not have adverse effect to the result.

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Job ID: 280-143890-2 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

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

RADIUM-226/RADIUM-228 (GFPC)

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Client Sample ID: W-1

Lab Sample ID: 280-143890-1

☐ No Detections.

Client Sample ID: W-2

Lab Sample ID: 280-143890-2

☐ No Detections.

Client Sample ID: W-3

Lab Sample ID: 280-143890-3

☐ No Detections.

Client Sample ID: W-3D

Lab Sample ID: 280-143890-4

☐ No Detections.

Client Sample ID: W-4

Lab Sample ID: 280-143890-5

☐ No Detections.

Client Sample ID: MW-6

Lab Sample ID: 280-143890-6

☐ No Detections.

Client Sample ID: MW-7

Lab Sample ID: 280-143890-7

☐ No Detections.

Client Sample ID: MW-8

Lab Sample ID: 280-143890-8

☐ No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

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

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

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

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
280-143890-1	W-1	Water	12/15/20 13:15	12/17/20 13:55	
280-143890-2	W-2	Water	12/15/20 16:00	12/17/20 13:55	
280-143890-3	W-3	Water	12/15/20 14:30	12/17/20 13:55	
280-143890-4	W-3D	Water	12/15/20 14:30	12/17/20 13:55	
280-143890-5	W-4	Water	12/16/20 10:20	12/17/20 13:55	
280-143890-6	MW-6	Water	12/16/20 11:35	12/17/20 13:55	
280-143890-7	MW-7	Water	12/16/20 02:50	12/17/20 13:55	
280-143890-8	MW-8	Water	12/16/20 04:20	12/17/20 13:55	

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0890	U	0.0915	0.0919	1.00	0.147	pCi/L	12/21/20 08:36	01/14/21 13:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110					12/21/20 08:36	01/14/21 13:59	1

Client Sample ID: W-2
Date Collected: 12/15/20 16:00
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0967	U	0.0769	0.0774	1.00	0.114	pCi/L	12/21/20 08:36	01/14/21 13:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		40 - 110					12/21/20 08:36	01/14/21 13:59	1

Client Sample ID: W-3
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00648	U	0.0719	0.0719	1.00	0.140	pCi/L	12/21/20 08:36	01/14/21 13:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.1		40 - 110					12/21/20 08:36	01/14/21 13:59	1

Client Sample ID: W-3D
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0720	U	0.0756	0.0759	1.00	0.121	pCi/L	12/21/20 08:36	01/14/21 13:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					12/21/20 08:36	01/14/21 13:59	1

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.135	U	0.0975	0.0982	1.00	0.145	pCi/L	12/21/20 08:36	01/14/21 14:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					12/21/20 08:36	01/14/21 14:00	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-6
Date Collected: 12/16/20 11:35
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0842	U	0.0834	0.0837	1.00	0.132	pCi/L	12/21/20 08:36	01/14/21 14:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.9		40 - 110					12/21/20 08:36	01/14/21 14:00	1

Client Sample ID: MW-7
Date Collected: 12/16/20 02:50
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00222	U	0.0710	0.0710	1.00	0.138	pCi/L	12/21/20 08:36	01/14/21 14:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					12/21/20 08:36	01/14/21 14:00	1

Client Sample ID: MW-8
Date Collected: 12/16/20 04:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.128		0.0794	0.0802	1.00	0.109	pCi/L	12/21/20 08:36	01/14/21 16:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					12/21/20 08:36	01/14/21 16:21	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.753		0.331	0.338	1.00	0.476	pCi/L	12/21/20 09:19	01/06/21 13:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110					12/21/20 09:19	01/06/21 13:17	1
Y Carrier	71.0		40 - 110					12/21/20 09:19	01/06/21 13:17	1

Client Sample ID: W-2
Date Collected: 12/15/20 16:00
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.487		0.297	0.300	1.00	0.449	pCi/L	12/21/20 09:19	01/06/21 13:18	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Method: 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		40 - 110	12/21/20 09:19	01/06/21 13:18	1
Y Carrier	74.8		40 - 110	12/21/20 09:19	01/06/21 13:18	1

Client Sample ID: W-3
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3
Matrix: Water

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.317	U	0.300	0.301	1.00	0.484	pCi/L	12/21/20 09:19	01/06/21 13:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.1		40 - 110					12/21/20 09:19	01/06/21 13:18	1
Y Carrier	73.3		40 - 110					12/21/20 09:19	01/06/21 13:18	1

Client Sample ID: W-3D
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4
Matrix: Water

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.249	U	0.299	0.300	1.00	0.495	pCi/L	12/21/20 09:19	01/06/21 13:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					12/21/20 09:19	01/06/21 13:18	1
Y Carrier	73.3		40 - 110					12/21/20 09:19	01/06/21 13:18	1

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0514	U	0.255	0.255	1.00	0.446	pCi/L	12/21/20 09:19	01/06/21 13:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					12/21/20 09:19	01/06/21 13:19	1
Y Carrier	73.6		40 - 110					12/21/20 09:19	01/06/21 13:19	1

Client Sample ID: MW-6
Date Collected: 12/16/20 11:35
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6
Matrix: Water

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	0.0927	U	0.224	0.224	1.00	0.388	pCi/L	12/21/20 09:19	01/06/21 13:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.9		40 - 110					12/21/20 09:19	01/06/21 13:19	1
Y Carrier	72.5		40 - 110					12/21/20 09:19	01/06/21 13:19	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-7
Date Collected: 12/16/20 02:50
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0637	U	0.211	0.211	1.00	0.372	pCi/L	12/21/20 09:19	01/06/21 13:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					12/21/20 09:19	01/06/21 13:19	1
Y Carrier	71.4		40 - 110					12/21/20 09:19	01/06/21 13:19	1

Client Sample ID: MW-8
Date Collected: 12/16/20 04:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.290	U	0.280	0.282	1.00	0.454	pCi/L	12/21/20 09:19	01/06/21 13:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					12/21/20 09:19	01/06/21 13:21	1
Y Carrier	71.4		40 - 110					12/21/20 09:19	01/06/21 13:21	1

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

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.842		0.343	0.350	5.00	0.476	pCi/L		01/14/21 21:59	1

Client Sample ID: W-2
Date Collected: 12/15/20 16:00
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.584		0.307	0.310	5.00	0.449	pCi/L		01/14/21 21:59	1

Client Sample ID: W-3
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.324	U	0.308	0.309	5.00	0.484	pCi/L		01/14/21 21:59	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

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

Client Sample ID: W-3D
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.321	U	0.308	0.309	5.00	0.495	pCi/L		01/14/21 21:59	1

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.186	U	0.273	0.273	5.00	0.446	pCi/L		01/14/21 21:59	1

Client Sample ID: MW-6
Date Collected: 12/16/20 11:35
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.177	U	0.239	0.239	5.00	0.388	pCi/L		01/14/21 21:59	1

Client Sample ID: MW-7
Date Collected: 12/16/20 02:50
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0659	U	0.223	0.223	5.00	0.372	pCi/L		01/14/21 21:59	1

Client Sample ID: MW-8
Date Collected: 12/16/20 04:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.418	U	0.291	0.293	5.00	0.454	pCi/L		01/14/21 21:59	1

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-492503/20-A

Matrix: Water

Analysis Batch: 495076

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 492503

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.002916	U	0.0733	0.0733	1.00	0.141	pCi/L	12/21/20 08:36	01/14/21 16:21	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.4		40 - 110					12/21/20 08:36	01/14/21 16:21	1

Lab Sample ID: LCS 160-492503/1-A

Matrix: Water

Analysis Batch: 495076

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 492503

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226		11.3	9.771		1.02	1.00	0.115	pCi/L	86	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	95.1		40 - 110							

Lab Sample ID: LCSD 160-492503/2-A

Matrix: Water

Analysis Batch: 495076

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 492503

Analyte		Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226		11.3	9.289		0.976	1.00	0.130	pCi/L	82	75 - 125	0.24	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits									
Ba Carrier	103		40 - 110									

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-492603/20-A

Matrix: Water

Analysis Batch: 494114

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 492603

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.08057	U	0.282	0.282	1.00	0.493	pCi/L	12/21/20 09:19	01/06/21 13:21	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.4		40 - 110					12/21/20 09:19	01/06/21 13:21	1
Y Carrier	72.1		40 - 110					12/21/20 09:19	01/06/21 13:21	1

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-492603/1-A

Matrix: Water

Analysis Batch: 494112

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 492603

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228		7.52	6.832		0.908	1.00	0.488	pCi/L	91	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	95.1		40 - 110
Y Carrier	72.5		40 - 110

Lab Sample ID: LCSD 160-492603/2-A

Matrix: Water

Analysis Batch: 494112

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 492603

Analyte		Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228		7.52	6.145		0.817	1.00	0.457	pCi/L	82	75 - 125	0.40	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	103		40 - 110
Y Carrier	74.8		40 - 110

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Rad

Prep Batch: 492503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	PrecSep-21	
280-143890-2	W-2	Total/NA	Water	PrecSep-21	
280-143890-3	W-3	Total/NA	Water	PrecSep-21	
280-143890-4	W-3D	Total/NA	Water	PrecSep-21	
280-143890-5	W-4	Total/NA	Water	PrecSep-21	
280-143890-6	MW-6	Total/NA	Water	PrecSep-21	
280-143890-7	MW-7	Total/NA	Water	PrecSep-21	
280-143890-8	MW-8	Total/NA	Water	PrecSep-21	
MB 160-492503/20-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-492503/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-492503/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 492603

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	PrecSep_0	
280-143890-2	W-2	Total/NA	Water	PrecSep_0	
280-143890-3	W-3	Total/NA	Water	PrecSep_0	
280-143890-4	W-3D	Total/NA	Water	PrecSep_0	
280-143890-5	W-4	Total/NA	Water	PrecSep_0	
280-143890-6	MW-6	Total/NA	Water	PrecSep_0	
280-143890-7	MW-7	Total/NA	Water	PrecSep_0	
280-143890-8	MW-8	Total/NA	Water	PrecSep_0	
MB 160-492603/20-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-492603/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-492603/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Client Sample ID: W-1

Date Collected: 12/15/20 13:15

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.34 mL	1.0 g	492503	12/21/20 08:36	KMP	TAL SL
Total/NA	Analysis	9315		1			495077	01/14/21 13:59	SCB	TAL SL
Total/NA	Prep	PrecSep_0			999.34 mL	1.0 g	492603	12/21/20 09:19	KMP	TAL SL
Total/NA	Analysis	9320		1			494112	01/06/21 13:17	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			495099	01/14/21 21:59	GRW	TAL SL

Client Sample ID: W-2

Date Collected: 12/15/20 16:00

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.86 mL	1.0 g	492503	12/21/20 08:36	KMP	TAL SL
Total/NA	Analysis	9315		1			495077	01/14/21 13:59	SCB	TAL SL
Total/NA	Prep	PrecSep_0			999.86 mL	1.0 g	492603	12/21/20 09:19	KMP	TAL SL
Total/NA	Analysis	9320		1			494112	01/06/21 13:18	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			495099	01/14/21 21:59	GRW	TAL SL

Client Sample ID: W-3

Date Collected: 12/15/20 14:30

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.28 mL	1.0 g	492503	12/21/20 08:36	KMP	TAL SL
Total/NA	Analysis	9315		1			495077	01/14/21 13:59	SCB	TAL SL
Total/NA	Prep	PrecSep_0			999.28 mL	1.0 g	492603	12/21/20 09:19	KMP	TAL SL
Total/NA	Analysis	9320		1			494112	01/06/21 13:18	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			495099	01/14/21 21:59	GRW	TAL SL

Client Sample ID: W-3D

Date Collected: 12/15/20 14:30

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.15 mL	1.0 g	492503	12/21/20 08:36	KMP	TAL SL
Total/NA	Analysis	9315		1			495077	01/14/21 13:59	SCB	TAL SL
Total/NA	Prep	PrecSep_0			999.15 mL	1.0 g	492603	12/21/20 09:19	KMP	TAL SL
Total/NA	Analysis	9320		1			494112	01/06/21 13:18	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			495099	01/14/21 21:59	GRW	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Client Sample ID: W-4

Date Collected: 12/16/20 10:20

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.48 mL	1.0 g	492503	12/21/20 08:36	KMP	TAL SL
Total/NA	Analysis	9315		1			495077	01/14/21 14:00	SCB	TAL SL
Total/NA	Prep	PrecSep_0			1000.48 mL	1.0 g	492603	12/21/20 09:19	KMP	TAL SL
Total/NA	Analysis	9320		1			494112	01/06/21 13:19	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			495099	01/14/21 21:59	GRW	TAL SL

Client Sample ID: MW-6

Date Collected: 12/16/20 11:35

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.92 mL	1.0 g	492503	12/21/20 08:36	KMP	TAL SL
Total/NA	Analysis	9315		1			495077	01/14/21 14:00	SCB	TAL SL
Total/NA	Prep	PrecSep_0			999.92 mL	1.0 g	492603	12/21/20 09:19	KMP	TAL SL
Total/NA	Analysis	9320		1			494112	01/06/21 13:19	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			495099	01/14/21 21:59	GRW	TAL SL

Client Sample ID: MW-7

Date Collected: 12/16/20 02:50

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			998.99 mL	1.0 g	492503	12/21/20 08:36	KMP	TAL SL
Total/NA	Analysis	9315		1			495077	01/14/21 14:00	SCB	TAL SL
Total/NA	Prep	PrecSep_0			998.99 mL	1.0 g	492603	12/21/20 09:19	KMP	TAL SL
Total/NA	Analysis	9320		1			494112	01/06/21 13:19	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			495099	01/14/21 21:59	GRW	TAL SL

Client Sample ID: MW-8

Date Collected: 12/16/20 04:20

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.04 mL	1.0 g	492503	12/21/20 08:36	KMP	TAL SL
Total/NA	Analysis	9315		1	1.0 mL	1.0 mL	495076	01/14/21 16:21	SCB	TAL SL
Total/NA	Prep	PrecSep_0			999.04 mL	1.0 g	492603	12/21/20 09:19	KMP	TAL SL
Total/NA	Analysis	9320		1			494114	01/06/21 13:21	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			495099	01/14/21 21:59	GRW	TAL SL

Laboratory References:

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

Eurofins TestAmerica, Denver

Accreditation/Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Laboratory: Eurofins TestAmerica, St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-21
California	Los Angeles County Sanitation Districts	10259	06-30-21
California	State	2886	06-30-21
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-21
HI - RadChem Recognition	State	n/a	06-30-21
Illinois	NELAP	004553	11-30-21
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-21
Kentucky (DW)	State	KY90125	12-31-20 *
Louisiana	NELAP	04080	06-30-21
Louisiana (DW)	State	LA011	12-31-21
Maryland	State	310	09-30-21
MI - RadChem Recognition	State	9005	06-30-21
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-21
New Jersey	NELAP	MO002	06-30-21
New York	NELAP	11616	04-01-21
North Dakota	State	R-207	06-30-21
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-21
Oregon	NELAP	4157	09-01-21
Pennsylvania	NELAP	68-00540	02-28-21
South Carolina	State	85002001	06-30-21
Texas	NELAP	T104704193-19-13	07-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542019-11	07-31-21
Virginia	NELAP	10310	06-14-21
Washington	State	C592	08-30-21
West Virginia DEP	State	381	10-31-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Denver

Chain of Custody Record



Denver
#280

Client Information Client Contact: Molly Reeves Company: HDR Inc		Lab PM: Bandy, Darlene F E-Mail: darlene.bandy@testamericainc.com		Sample: Java Kent Phone: 7209337496		COC No: Page: Job #:	
Address: 9781 S. Meridian Blvd Suite 400 City: Englewood State, Zip: CO, 80112 Phone: 734-263-7138(Tel) Email: Molly.Reeves@hdrinc.com		Due Date Requested: TAT Requested (days): PO #: DEN-018 WO #: Project #: 28014377 SOW#:		Analysis Request: 9320_Ra228 - Standard Target List 9315_Ra226 - Standard Target List 25400 - Total Suspended Solids pH 9040B, Anions (CL, F, SO4) 9056A, 280 AP41 + AP1V Metals 6010C, 6020A 2540C, Calcd - Total Dissolved Solids (TDS) Perform MS/MSD (Yes or No) Field Filtered Sample (Yes or No)		Preservation Codes: A - HCL M - Hexane N - None O - AsNaO2 P - Na2O4S Q - NaHSO4 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA L - EDA Other:	
Sample Identification W-1 W-2 W-3 W-3D W-4 MW-6 MW-7 MW-8		Sample Date 12-15-20 12-15-20 12-15-20 12-15-20 12-16-20 12-16-20 12-16-20		Sample Time 1315 1600 1430 1430 1020 1135 1250 1420		Matrix (Water, Sediment, Other) W W W W W W W W	
Special Instructions/Note: App E III IV		Total Number of Containers 6 6 6 6 6 6 6 6		Special Instructions/Note: App E III IV		Special Instructions/Note: App E III IV	

280-143890 Chain of Custody

Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months	
Empty Kit Relinquished by: Java Kent Relinquished by: Java Kent Relinquished by: Java Kent Relinquished by: Java Kent		Date: 17 Dec 2020 1355 Date: 17 Dec 2020 1355 Date: 17 Dec 2020 1355 Date: 17 Dec 2020 1355	
Custody Seals Intact: ☒ Yes ☐ No		Cooler Temperature(s) °C and Other Remarks: 29, 4.4, 0.6, +0.2, 18.9, 13.7, 2.0	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-143890-2

Login Number: 143890

List Source: Eurofins TestAmerica, Denver

List Number: 1

Creator: Kramer, Julieann L

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	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	
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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-143890-2

Login Number: 143890

List Number: 2

Creator: Boyd, Jacob C

List Source: Eurofins TestAmerica, St. Louis

List Creation: 12/19/20 02:35 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	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?	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.	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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

			Percent Yield (Acceptance Limits)			
		Ba				
Lab Sample ID	Client Sample ID	(40-110)				
280-143890-1	W-1	98.8				
280-143890-2	W-2	92.0				
280-143890-3	W-3	91.1				
280-143890-4	W-3D	100				
280-143890-5	W-4	104				
280-143890-6	MW-6	96.9				
280-143890-7	MW-7	100				
280-143890-8	MW-8	101				
LCS 160-492503/1-A	Lab Control Sample	95.1				
LCSD 160-492503/2-A	Lab Control Sample Dup	103				
MB 160-492503/20-A	Method Blank	92.4				
Tracer/Carrier Legend						
Ba = Ba Carrier						

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)							
		Ba	Y						
Lab Sample ID	Client Sample ID	(40-110)	(40-110)						
280-143890-1	W-1	98.8	71.0						
280-143890-2	W-2	92.0	74.8						
280-143890-3	W-3	91.1	73.3						
280-143890-4	W-3D	100	73.3						
280-143890-5	W-4	104	73.6						
280-143890-6	MW-6	96.9	72.5						
280-143890-7	MW-7	100	71.4						
280-143890-8	MW-8	101	71.4						
LCS 160-492603/1-A	Lab Control Sample	95.1	72.5						
LCSD 160-492603/2-A	Lab Control Sample Dup	103	74.8						
MB 160-492603/20-A	Method Blank	92.4	72.1						
Tracer/Carrier Legend									
Ba = Ba Carrier									
Y = Y Carrier									

ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

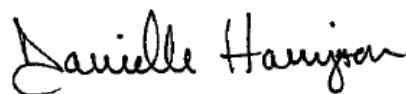
Laboratory Job ID: 280-143890-1

Client Project/Site: Xcel Energy GW CCR Monitoring - Hayden

For:

HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves



Authorized for release by:
1/14/2021 6:49:56 AM

Danielle Harrington, Project Manager II
(303)736-0176
Danielle.Harrington@Eurofinset.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:

www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1

Table of Contents 2

Definitions 3

Case Narrative 4

Detection Summary 6

Method Summary 10

Sample Summary 11

Client Sample Results 12

QC Sample Results 17

QC Association 24

Chronicle 28

Certification Summary 31

Chain of Custody 32

Receipt Checklists 35



Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Qualifiers

Metals

Qualifier	Qualifier Description
^	Continuing Calibration Verification (CCV) is outside acceptance limits, low biased.
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.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
E	Result exceeded calibration range.
F3	Duplicate RPD exceeds the control limit
H	Sample was prepped or analyzed beyond the specified holding time
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Job ID: 280-143890-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Hayden

Report Number: 280-143890-1

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. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 12/17/2020; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.1 C.

Please note, the radioactive analyses are reported under job 280-143890-2.

TOTAL RECOVERABLE METALS-Method 601C/6020A

Samples MW-6 and MW-7 required dilution prior to analysis for Method 6010C. The reporting limits have been adjusted accordingly.

The accuracy and precision of the Calcium MS/MSD performed on a sample W-1 could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The low level continuing calibration verification (CCVL) associated with batch 240-466952 recovered below the lower control limit for Lithium. The samples associated with this CCVL are greater than the CCV concentration for the affected analyte and more compatible with the CCV concentration; therefore, corrective action is deemed unnecessary.

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

GENERAL CHEMISTRY- VARIOUS

Several samples required a dilution prior to analysis for various methods. The reporting limits have been adjusted accordingly.

Due to a required dilution, sample W-4 was analyzed past the EPA-recommended holding time for method 2540C Total Dissolved Solids; the original analysis of the undiluted sample was performed within holding time. The out-of-hold, diluted result is confirmed by the undiluted result; only the diluted result has been reported.

Please note that the recoveries, for the Chloride and/or Sulfate laboratory generated MS/MSD, are within QC limits; however, these are estimated values as the concentrations exceeded the calibration range. Method precision and accuracy has been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

The accuracy and precision of the Chloride and/or Sulfate MS/MSD performed on a laboratory generated samples could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Job ID: 280-143890-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

Laboratory generated MS/MSD analysis data have been provided. The MS/MSD for Fluoride method 9056A exhibited spike compound recoveries outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The Total Suspended Solids sample duplicate analysis data associated with QC batch 280-521254 exhibited RPD data outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The Total Suspended Solids sample duplicate analysis performed on sample MW-8DU exhibited RPD data outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The Sulfate sample duplicate analysis data associated with QC batches 280-522818 and 280-523140 exhibited RPD data outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: W-1

Lab Sample ID: 280-143890-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.84		0.10	0.023	mg/L	1		6010C	Total Recoverable
Barium	0.0098		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	350		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0012		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.25	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0033	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.016		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	21		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.3		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	2700		250	52	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	4200		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	2.0	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: W-2

Lab Sample ID: 280-143890-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	10		0.10	0.023	mg/L	1		6010C	Total Recoverable
Barium	0.0079		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Cadmium	0.00022	J	0.0010	0.00020	mg/L	1		6020A	Total Recoverable
Calcium	390		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0049		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.55	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0045	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.0036	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	89		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	6.7		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	4400		250	52	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	7100		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	3.2	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: W-3

Lab Sample ID: 280-143890-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.4		0.10	0.023	mg/L	1		6010C	Total Recoverable
Barium	0.0080		0.0050	0.0022	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: W-3 (Continued)

Lab Sample ID: 280-143890-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.00027	J	0.0010	0.00020	mg/L	1		6020A	Total Recoverable
Calcium	200		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0023		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.97	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0029	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.011		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	170		15	5.1	mg/L	5		9056A	Total/NA
Fluoride	8.7		2.5	0.83	mg/L	5		9056A	Total/NA
Sulfate	7600		250	52	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	22000		1000	470	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	5.2		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: W-3D

Lab Sample ID: 280-143890-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.5		0.10	0.023	mg/L	1		6010C	Total Recoverable
Barium	0.014		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Cadmium	0.00041	J	0.0010	0.00020	mg/L	1		6020A	Total Recoverable
Calcium	390		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0072		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.98	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0042	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.012		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.6	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	170		15	5.1	mg/L	5		9056A	Total/NA
Fluoride	8.6		2.5	0.83	mg/L	5		9056A	Total/NA
Sulfate	7600		250	52	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	22000		1000	470	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	4.8		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: W-4

Lab Sample ID: 280-143890-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2.2		0.10	0.023	mg/L	1		6010C	Total Recoverable
Barium	0.0082		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	370		1.0	0.58	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: W-4 (Continued)

Lab Sample ID: 280-143890-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0070		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.56	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0030	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.7	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	360		30	10	mg/L	10		9056A	Total/NA
Fluoride	0.21	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	12000		500	100	mg/L	100		9056A	Total/NA
Total Dissolved Solids (TDS)	18000	H	100	47	mg/L	1		SM 2540C	Total/NA
Total Dissolved Solids (TDS)	18000	E	20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	20		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-6

Lab Sample ID: 280-143890-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	46		1.0	0.23	mg/L	10		6010C	Total Recoverable
Barium	0.0057		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Cadmium	0.00062	J	0.0010	0.00020	mg/L	1		6020A	Total Recoverable
Calcium	440		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.00047	J	0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.097	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	1.2		0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.013		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	65		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.26	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	2900		500	100	mg/L	100		9056A	Total/NA
Total Dissolved Solids (TDS)	4000		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	5.6		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-7

Lab Sample ID: 280-143890-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	49		1.0	0.23	mg/L	10		6010C	Total Recoverable
Barium	0.0053		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Cadmium	0.00037	J	0.0010	0.00020	mg/L	1		6020A	Total Recoverable
Calcium	440		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.00040	J	0.0010	0.00019	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: MW-7 (Continued)

Lab Sample ID: 280-143890-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.21	^	0.0080	0.0017	mg/L	1		6020A	Total
									Recoverable
Molybdenum	0.86		0.010	0.0011	mg/L	1		6020A	Total
									Recoverable
Selenium	0.0078		0.0050	0.00089	mg/L	1		6020A	Total
									Recoverable
pH adj. to 25 deg C	8.8	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	160		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.44	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	3100		500	100	mg/L	100		9056A	Total/NA
Total Dissolved Solids (TDS)	4600		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	4.0		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-8

Lab Sample ID: 280-143890-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.7		0.10	0.023	mg/L	1		6010C	Total
									Recoverable
Barium	0.0057		0.0050	0.0022	mg/L	1		6020A	Total
									Recoverable
Calcium	400		1.0	0.58	mg/L	1		6020A	Total
									Recoverable
Cobalt	0.00066	J	0.0010	0.00019	mg/L	1		6020A	Total
									Recoverable
Lithium	0.57	^	0.0080	0.0017	mg/L	1		6020A	Total
									Recoverable
Molybdenum	0.0019	J	0.010	0.0011	mg/L	1		6020A	Total
									Recoverable
Selenium	0.044		0.0050	0.00089	mg/L	1		6020A	Total
									Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	240		30	10	mg/L	10		9056A	Total/NA
Sulfate	7000		500	100	mg/L	100		9056A	Total/NA
Total Dissolved Solids (TDS)	20000		1000	470	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	18		4.0	1.1	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL CAN
6020A	Metals (ICP/MS)	SW846	TAL CAN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CAN

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
280-143890-1	W-1	Water	12/15/20 13:15	12/17/20 13:55	
280-143890-2	W-2	Water	12/15/20 16:00	12/17/20 13:55	
280-143890-3	W-3	Water	12/15/20 14:30	12/17/20 13:55	
280-143890-4	W-3D	Water	12/15/20 14:30	12/17/20 13:55	
280-143890-5	W-4	Water	12/16/20 10:20	12/17/20 13:55	
280-143890-6	MW-6	Water	12/16/20 11:35	12/17/20 13:55	
280-143890-7	MW-7	Water	12/16/20 02:50	12/17/20 13:55	
280-143890-8	MW-8	Water	12/16/20 04:20	12/17/20 13:55	

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.84		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 15:05	1

Client Sample ID: W-2
Date Collected: 12/15/20 16:00
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	10		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 15:36	1

Client Sample ID: W-3
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.4		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 15:40	1

Client Sample ID: W-3D
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.5		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 15:45	1

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.2		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 15:49	1

Client Sample ID: MW-6
Date Collected: 12/16/20 11:35
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	46		1.0	0.23	mg/L		12/22/20 14:00	12/28/20 12:01	10

Client Sample ID: MW-7
Date Collected: 12/16/20 02:50
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	49		1.0	0.23	mg/L		12/22/20 14:00	12/28/20 12:05	10

Client Sample ID: MW-8
Date Collected: 12/16/20 04:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 16:03	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0098		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:21	1
Cadmium	ND		0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:21	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	350		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:21	1
Cobalt	0.0012		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:21	1
Lithium	0.25	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:21	1
Molybdenum	0.0033	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:21	1
Selenium	0.016		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:21	1

Client Sample ID: W-2
Date Collected: 12/15/20 16:00
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0079		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:36	1
Cadmium	0.00022	J	0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:36	1
Calcium	390		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:36	1
Cobalt	0.0049		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:36	1
Lithium	0.55	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:36	1
Molybdenum	0.0045	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:36	1
Selenium	0.0036	J	0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:36	1

Client Sample ID: W-3
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0080		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:43	1
Cadmium	0.00027	J	0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:43	1
Calcium	200		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:43	1
Cobalt	0.0023		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:43	1
Lithium	0.97	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:43	1
Molybdenum	0.0029	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:43	1
Selenium	0.011		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:43	1

Client Sample ID: W-3D
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.014		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:46	1
Cadmium	0.00041	J	0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:46	1
Calcium	390		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:46	1
Cobalt	0.0072		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:46	1
Lithium	0.98	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:46	1
Molybdenum	0.0042	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:46	1
Selenium	0.012		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:46	1

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0082		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:48	1
Cadmium	ND		0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:48	1
Calcium	370		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:48	1
Cobalt	0.0070		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:48	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.56	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:48	1
Molybdenum	0.0030	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:48	1
Selenium	ND		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:48	1

Client Sample ID: MW-6
Date Collected: 12/16/20 11:35
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0057		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:51	1
Cadmium	0.00062	J	0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:51	1
Calcium	440		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:51	1
Cobalt	0.00047	J	0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:51	1
Lithium	0.097	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:51	1
Molybdenum	1.2		0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:51	1
Selenium	0.013		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:51	1

Client Sample ID: MW-7
Date Collected: 12/16/20 02:50
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0053		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:53	1
Cadmium	0.00037	J	0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:53	1
Calcium	440		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:53	1
Cobalt	0.00040	J	0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:53	1
Lithium	0.21	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:53	1
Molybdenum	0.86		0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:53	1
Selenium	0.0078		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:53	1

Client Sample ID: MW-8
Date Collected: 12/16/20 04:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0057		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:56	1
Cadmium	ND		0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:56	1
Calcium	400		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:56	1
Cobalt	0.00066	J	0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:56	1
Lithium	0.57	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:56	1
Molybdenum	0.0019	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:56	1
Selenium	0.044		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:56	1

General Chemistry

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			12/30/20 13:24	1
Temperature	21.0	HF	1.0	1.0	Degrees C			12/30/20 13:24	1
Chloride	21		3.0	1.0	mg/L			01/09/21 21:40	1
Fluoride	1.3		0.50	0.17	mg/L			01/09/21 21:40	1
Sulfate	2700		250	52	mg/L			01/12/21 00:15	50

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

General Chemistry (Continued)

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	4200		40	19	mg/L			12/19/20 10:33	1
Total Suspended Solids	2.0	J	4.0	1.1	mg/L			12/22/20 19:54	1

Client Sample ID: W-2
Date Collected: 12/15/20 16:00
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			12/30/20 13:20	1
Temperature	21.4	HF	1.0	1.0	Degrees C			12/30/20 13:20	1
Chloride	89		3.0	1.0	mg/L			01/09/21 22:13	1
Fluoride	6.7		0.50	0.17	mg/L			01/09/21 22:13	1
Sulfate	4400		250	52	mg/L			01/12/21 00:31	50
Total Dissolved Solids (TDS)	7100		40	19	mg/L			12/21/20 11:37	1
Total Suspended Solids	3.2	J	4.0	1.1	mg/L			12/22/20 19:54	1

Client Sample ID: W-3
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			01/06/21 12:39	1
Temperature	20.9	HF	1.0	1.0	Degrees C			01/06/21 12:39	1
Chloride	170		15	5.1	mg/L			01/09/21 23:18	5
Fluoride	8.7		2.5	0.83	mg/L			01/09/21 23:18	5
Sulfate	7600		250	52	mg/L			01/12/21 00:47	50
Total Dissolved Solids (TDS)	22000		1000	470	mg/L			12/21/20 11:37	1
Total Suspended Solids	5.2		4.0	1.1	mg/L			12/22/20 19:54	1

Client Sample ID: W-3D
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			01/06/21 12:46	1
Temperature	19.6	HF	1.0	1.0	Degrees C			01/06/21 12:46	1
Chloride	170		15	5.1	mg/L			01/10/21 00:41	5
Fluoride	8.6		2.5	0.83	mg/L			01/10/21 00:41	5
Sulfate	7600		250	52	mg/L			01/12/21 01:04	50
Total Dissolved Solids (TDS)	22000		1000	470	mg/L			12/21/20 11:37	1
Total Suspended Solids	4.8		4.0	1.1	mg/L			12/22/20 19:54	1

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			01/06/21 12:50	1
Temperature	19.7	HF	1.0	1.0	Degrees C			01/06/21 12:50	1
Chloride	360		30	10	mg/L			01/08/21 04:06	10
Fluoride	0.21	J	0.50	0.17	mg/L			01/08/21 03:50	1
Sulfate	12000		500	100	mg/L			01/08/21 04:23	100
Total Dissolved Solids (TDS)	18000	E	20	9.4	mg/L			12/21/20 11:40	1
Total Dissolved Solids (TDS)	18000	H	100	47	mg/L			01/05/21 10:17	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

General Chemistry (Continued)

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	20		4.0	1.1	mg/L			12/23/20 08:05	1

Client Sample ID: MW-6
Date Collected: 12/16/20 11:35
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.5	HF	0.1	0.1	SU			01/06/21 12:54	1
Temperature	20.1	HF	1.0	1.0	Degrees C			01/06/21 12:54	1
Chloride	65		3.0	1.0	mg/L			01/08/21 04:39	1
Fluoride	0.26	J	0.50	0.17	mg/L			01/08/21 04:39	1
Sulfate	2900		500	100	mg/L			01/08/21 05:12	100
Total Dissolved Solids (TDS)	4000		40	19	mg/L			12/23/20 13:55	1
Total Suspended Solids	5.6		4.0	1.1	mg/L			12/23/20 08:05	1

Client Sample ID: MW-7
Date Collected: 12/16/20 02:50
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.8	HF	0.1	0.1	SU			01/06/21 12:57	1
Temperature	20.9	HF	1.0	1.0	Degrees C			01/06/21 12:57	1
Chloride	160		3.0	1.0	mg/L			01/08/21 05:28	1
Fluoride	0.44	J	0.50	0.17	mg/L			01/08/21 05:28	1
Sulfate	3100		500	100	mg/L			01/08/21 06:01	100
Total Dissolved Solids (TDS)	4600		40	19	mg/L			12/23/20 13:55	1
Total Suspended Solids	4.0		4.0	1.1	mg/L			12/23/20 16:40	1

Client Sample ID: MW-8
Date Collected: 12/16/20 04:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			01/06/21 13:01	1
Temperature	21.2	HF	1.0	1.0	Degrees C			01/06/21 13:01	1
Chloride	240		30	10	mg/L			01/08/21 07:07	10
Fluoride	ND		0.50	0.17	mg/L			01/08/21 06:18	1
Sulfate	7000		500	100	mg/L			01/08/21 10:36	100
Total Dissolved Solids (TDS)	20000		1000	470	mg/L			12/23/20 13:55	1
Total Suspended Solids	18		4.0	1.1	mg/L			12/23/20 16:40	1

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-466550/1-A
Matrix: Water
Analysis Batch: 467130

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 466550

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 14:36	1

Lab Sample ID: LCS 240-466550/2-A
Matrix: Water
Analysis Batch: 467130

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 466550

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.962		mg/L		96	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-466550/1-A
Matrix: Water
Analysis Batch: 466952

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 466550

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:14	1
Cadmium	ND		0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:14	1
Calcium	ND		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:14	1
Cobalt	ND		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:14	1
Lithium	ND		0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:14	1
Molybdenum	ND		0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:14	1
Selenium	ND		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:14	1

Lab Sample ID: LCS 240-466550/3-A
Matrix: Water
Analysis Batch: 466952

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 466550

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	1.00	0.976		mg/L		98	80 - 120
Cadmium	0.500	0.469		mg/L		94	80 - 120
Calcium	25.0	25.4		mg/L		102	80 - 120
Cobalt	0.500	0.450		mg/L		90	80 - 120
Lithium	0.500	0.428		mg/L		86	80 - 120
Molybdenum	0.500	0.488		mg/L		98	80 - 120
Selenium	1.00	0.993		mg/L		99	80 - 120

Lab Sample ID: 280-143890-1 MS
Matrix: Water
Analysis Batch: 466952

Client Sample ID: W-1
Prep Type: Total Recoverable
Prep Batch: 466550

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.0098		1.00	1.04		mg/L		103	75 - 125
Cadmium	ND		0.500	0.467		mg/L		93	75 - 125
Calcium	350		25.0	375	4	mg/L		98	75 - 125
Cobalt	0.0012		0.500	0.481		mg/L		96	75 - 125
Lithium	0.25	^	0.500	0.668		mg/L		84	75 - 125
Molybdenum	0.0033	J	0.500	0.540		mg/L		107	75 - 125
Selenium	0.016		1.00	1.07		mg/L		106	75 - 125

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

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

Lab Sample ID: 280-143890-1 MSD

Matrix: Water

Analysis Batch: 466952

Client Sample ID: W-1

Prep Type: Total Recoverable

Prep Batch: 466550

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	0.0098		1.00	1.05		mg/L		104	75 - 125	1	20
Cadmium	ND		0.500	0.475		mg/L		95	75 - 125	2	20
Calcium	350		25.0	382	4	mg/L		128	75 - 125	2	20
Cobalt	0.0012		0.500	0.493		mg/L		98	75 - 125	2	20
Lithium	0.25	^	0.500	0.678		mg/L		86	75 - 125	1	20
Molybdenum	0.0033	J	0.500	0.550		mg/L		109	75 - 125	2	20
Selenium	0.016		1.00	1.10		mg/L		109	75 - 125	3	20

Method: 9040B - pH

Lab Sample ID: LCS 280-522262/4

Matrix: Water

Analysis Batch: 522262

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		101	99 - 101

Lab Sample ID: LCS 280-522737/4

Matrix: Water

Analysis Batch: 522737

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Lab Sample ID: 280-143890-3 DU

Matrix: Water

Analysis Batch: 522737

Client Sample ID: W-3

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH adj. to 25 deg C	7.4	HF	7.4		SU		0.3	5
Temperature	20.9	HF	20.0		Degrees C		4	10

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-522818/6

Matrix: Water

Analysis Batch: 522818

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			01/07/21 17:06	1
Fluoride	ND		0.50	0.17	mg/L			01/07/21 17:06	1
Sulfate	ND		5.0	1.0	mg/L			01/07/21 17:06	1

Lab Sample ID: LCS 280-522818/4

Matrix: Water

Analysis Batch: 522818

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	96.3		mg/L		96	90 - 110
Fluoride	5.00	4.88		mg/L		98	90 - 110

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 280-522818/4

Matrix: Water

Analysis Batch: 522818

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	100	96.3		mg/L		96	90 - 110

Lab Sample ID: LCSD 280-522818/5

Matrix: Water

Analysis Batch: 522818

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	96.5		mg/L		97	90 - 110	0	10
Fluoride	5.00	4.89		mg/L		98	90 - 110	0	10
Sulfate	100	95.9		mg/L		96	90 - 110	0	10

Lab Sample ID: MRL 280-522818/3

Matrix: Water

Analysis Batch: 522818

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.86		mg/L		97	50 - 150
Fluoride	0.500	0.448	J	mg/L		90	50 - 150
Sulfate	5.00	5.28		mg/L		106	50 - 150

Lab Sample ID: MB 280-523023/6

Matrix: Water

Analysis Batch: 523023

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			01/09/21 14:56	1
Fluoride	ND		0.50	0.17	mg/L			01/09/21 14:56	1

Lab Sample ID: LCS 280-523023/4

Matrix: Water

Analysis Batch: 523023

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	97.9		mg/L		98	90 - 110
Fluoride	5.00	4.72		mg/L		94	90 - 110

Lab Sample ID: LCSD 280-523023/5

Matrix: Water

Analysis Batch: 523023

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	98.2		mg/L		98	90 - 110	0	10
Fluoride	5.00	4.71		mg/L		94	90 - 110	0	10

Lab Sample ID: MRL 280-523023/3

Matrix: Water

Analysis Batch: 523023

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.20		mg/L		84	50 - 150

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-523023/3

Matrix: Water

Analysis Batch: 523023

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.500	0.476	J	mg/L		95	50 - 150

Lab Sample ID: MB 280-523140/13

Matrix: Water

Analysis Batch: 523140

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			01/11/21 18:30	1
Fluoride	ND		0.50	0.17	mg/L			01/11/21 18:30	1
Sulfate	ND		5.0	1.0	mg/L			01/11/21 18:30	1

Lab Sample ID: LCS 280-523140/11

Matrix: Water

Analysis Batch: 523140

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	97.5		mg/L		97	90 - 110
Fluoride	5.00	5.03		mg/L		101	90 - 110
Sulfate	100	97.7		mg/L		98	90 - 110

Lab Sample ID: LCSD 280-523140/12

Matrix: Water

Analysis Batch: 523140

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	97.5		mg/L		97	90 - 110	0	10
Fluoride	5.00	5.03		mg/L		101	90 - 110	0	10
Sulfate	100	97.9		mg/L		98	90 - 110	0	10

Lab Sample ID: MRL 280-523140/10

Matrix: Water

Analysis Batch: 523140

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	5.13		mg/L		103	50 - 150
Fluoride	0.500	0.587		mg/L		117	50 - 150
Sulfate	5.00	4.84	J	mg/L		97	50 - 150

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-521115/1

Matrix: Water

Analysis Batch: 521115

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/19/20 10:33	1

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 280-521115/2

Matrix: Water

Analysis Batch: 521115

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	488		mg/L		98	88 - 114

Lab Sample ID: MB 280-521248/1

Matrix: Water

Analysis Batch: 521248

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/21/20 11:37	1

Lab Sample ID: LCS 280-521248/2

Matrix: Water

Analysis Batch: 521248

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	479		mg/L		96	88 - 114

Lab Sample ID: MB 280-521251/1

Matrix: Water

Analysis Batch: 521251

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/21/20 11:40	1

Lab Sample ID: LCS 280-521251/2

Matrix: Water

Analysis Batch: 521251

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	486		mg/L		97	88 - 114

Lab Sample ID: MB 280-521603/1

Matrix: Water

Analysis Batch: 521603

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/23/20 13:55	1

Lab Sample ID: LCS 280-521603/2

Matrix: Water

Analysis Batch: 521603

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	487		mg/L		97	88 - 114

Lab Sample ID: LCSD 280-521603/3

Matrix: Water

Analysis Batch: 521603

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	501	484		mg/L		97	88 - 114	1	20

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-522574/1
Matrix: Water
Analysis Batch: 522574

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			01/05/21 10:17	1

Lab Sample ID: LCS 280-522574/2
Matrix: Water
Analysis Batch: 522574

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	525		mg/L		105	88 - 114

Lab Sample ID: LCSD 280-522574/3
Matrix: Water
Analysis Batch: 522574

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	501	488		mg/L		98	88 - 114	7	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-521500/2
Matrix: Water
Analysis Batch: 521500

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			12/22/20 19:54	1

Lab Sample ID: LCS 280-521500/1
Matrix: Water
Analysis Batch: 521500

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	106		mg/L		106	79 - 114

Lab Sample ID: MB 280-521524/1
Matrix: Water
Analysis Batch: 521524

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			12/23/20 08:05	1

Lab Sample ID: LCS 280-521524/2
Matrix: Water
Analysis Batch: 521524

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	93.6		mg/L		94	79 - 114

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: MB 280-521641/1

Matrix: Water

Analysis Batch: 521641

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			12/23/20 16:40	1

Lab Sample ID: LCS 280-521641/2

Matrix: Water

Analysis Batch: 521641

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	89.6		mg/L		90	79 - 114

Lab Sample ID: 280-143890-8 DU

Matrix: Water

Analysis Batch: 521641

Client Sample ID: MW-8

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	18		27.6	F3	mg/L		40	10

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Metals

Prep Batch: 466550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total Recoverable	Water	3005A	
280-143890-2	W-2	Total Recoverable	Water	3005A	
280-143890-3	W-3	Total Recoverable	Water	3005A	
280-143890-4	W-3D	Total Recoverable	Water	3005A	
280-143890-5	W-4	Total Recoverable	Water	3005A	
280-143890-6	MW-6	Total Recoverable	Water	3005A	
280-143890-7	MW-7	Total Recoverable	Water	3005A	
280-143890-8	MW-8	Total Recoverable	Water	3005A	
MB 240-466550/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-466550/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-466550/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-143890-1 MS	W-1	Total Recoverable	Water	3005A	
280-143890-1 MSD	W-1	Total Recoverable	Water	3005A	

Analysis Batch: 466952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total Recoverable	Water	6020A	466550
280-143890-2	W-2	Total Recoverable	Water	6020A	466550
280-143890-3	W-3	Total Recoverable	Water	6020A	466550
280-143890-4	W-3D	Total Recoverable	Water	6020A	466550
280-143890-5	W-4	Total Recoverable	Water	6020A	466550
280-143890-6	MW-6	Total Recoverable	Water	6020A	466550
280-143890-7	MW-7	Total Recoverable	Water	6020A	466550
280-143890-8	MW-8	Total Recoverable	Water	6020A	466550
MB 240-466550/1-A	Method Blank	Total Recoverable	Water	6020A	466550
LCS 240-466550/3-A	Lab Control Sample	Total Recoverable	Water	6020A	466550
280-143890-1 MS	W-1	Total Recoverable	Water	6020A	466550
280-143890-1 MSD	W-1	Total Recoverable	Water	6020A	466550

Analysis Batch: 467130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total Recoverable	Water	6010C	466550
280-143890-2	W-2	Total Recoverable	Water	6010C	466550
280-143890-3	W-3	Total Recoverable	Water	6010C	466550
280-143890-4	W-3D	Total Recoverable	Water	6010C	466550
280-143890-5	W-4	Total Recoverable	Water	6010C	466550
280-143890-8	MW-8	Total Recoverable	Water	6010C	466550
MB 240-466550/1-A	Method Blank	Total Recoverable	Water	6010C	466550
LCS 240-466550/2-A	Lab Control Sample	Total Recoverable	Water	6010C	466550

Analysis Batch: 467359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-6	MW-6	Total Recoverable	Water	6010C	466550
280-143890-7	MW-7	Total Recoverable	Water	6010C	466550

General Chemistry

Analysis Batch: 521115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	SM 2540C	
MB 280-521115/1	Method Blank	Total/NA	Water	SM 2540C	

Eurofins TestAmerica, Denver

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

General Chemistry (Continued)

Analysis Batch: 521115 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-521115/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 521248

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-2	W-2	Total/NA	Water	SM 2540C	
280-143890-3	W-3	Total/NA	Water	SM 2540C	
280-143890-4	W-3D	Total/NA	Water	SM 2540C	
MB 280-521248/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-521248/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 521251

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-5	W-4	Total/NA	Water	SM 2540C	
MB 280-521251/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-521251/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 521500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	SM 2540D	
280-143890-2	W-2	Total/NA	Water	SM 2540D	
280-143890-3	W-3	Total/NA	Water	SM 2540D	
280-143890-4	W-3D	Total/NA	Water	SM 2540D	
MB 280-521500/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-521500/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 521524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-5	W-4	Total/NA	Water	SM 2540D	
280-143890-6	MW-6	Total/NA	Water	SM 2540D	
MB 280-521524/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-521524/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 521603

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-6	MW-6	Total/NA	Water	SM 2540C	
280-143890-7	MW-7	Total/NA	Water	SM 2540C	
280-143890-8	MW-8	Total/NA	Water	SM 2540C	
MB 280-521603/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-521603/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-521603/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 521641

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-7	MW-7	Total/NA	Water	SM 2540D	
280-143890-8	MW-8	Total/NA	Water	SM 2540D	
MB 280-521641/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-521641/2	Lab Control Sample	Total/NA	Water	SM 2540D	
280-143890-8 DU	MW-8	Total/NA	Water	SM 2540D	

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

General Chemistry

Analysis Batch: 522262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	9040B	
280-143890-2	W-2	Total/NA	Water	9040B	
LCS 280-522262/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 522574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-5	W-4	Total/NA	Water	SM 2540C	
MB 280-522574/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-522574/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-522574/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 522737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-3	W-3	Total/NA	Water	9040B	
280-143890-4	W-3D	Total/NA	Water	9040B	
280-143890-5	W-4	Total/NA	Water	9040B	
280-143890-6	MW-6	Total/NA	Water	9040B	
280-143890-7	MW-7	Total/NA	Water	9040B	
280-143890-8	MW-8	Total/NA	Water	9040B	
LCS 280-522737/4	Lab Control Sample	Total/NA	Water	9040B	
280-143890-3 DU	W-3	Total/NA	Water	9040B	

Analysis Batch: 522818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-5	W-4	Total/NA	Water	9056A	
280-143890-5	W-4	Total/NA	Water	9056A	
280-143890-5	W-4	Total/NA	Water	9056A	
280-143890-6	MW-6	Total/NA	Water	9056A	
280-143890-6	MW-6	Total/NA	Water	9056A	
280-143890-7	MW-7	Total/NA	Water	9056A	
280-143890-7	MW-7	Total/NA	Water	9056A	
280-143890-8	MW-8	Total/NA	Water	9056A	
280-143890-8	MW-8	Total/NA	Water	9056A	
280-143890-8	MW-8	Total/NA	Water	9056A	
MB 280-522818/6	Method Blank	Total/NA	Water	9056A	
LCS 280-522818/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-522818/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-522818/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 523023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	9056A	
280-143890-2	W-2	Total/NA	Water	9056A	
280-143890-3	W-3	Total/NA	Water	9056A	
280-143890-4	W-3D	Total/NA	Water	9056A	
MB 280-523023/6	Method Blank	Total/NA	Water	9056A	
LCS 280-523023/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-523023/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-523023/3	Lab Control Sample	Total/NA	Water	9056A	

Eurofins TestAmerica, Denver

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

General Chemistry

Analysis Batch: 523140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	9056A	
280-143890-2	W-2	Total/NA	Water	9056A	
280-143890-3	W-3	Total/NA	Water	9056A	
280-143890-4	W-3D	Total/NA	Water	9056A	
MB 280-523140/13	Method Blank	Total/NA	Water	9056A	
LCS 280-523140/11	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-523140/12	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-523140/10	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: W-1

Date Collected: 12/15/20 13:15

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 15:05	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:21	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522262	12/30/20 13:24	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	523023	01/09/21 21:40	CJ	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	523140	01/12/21 00:15	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	521115	12/19/20 10:33	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521500	12/22/20 19:54	SVC	TAL DEN

Client Sample ID: W-2

Date Collected: 12/15/20 16:00

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 15:36	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:36	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522262	12/30/20 13:20	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	523023	01/09/21 22:13	CJ	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	523140	01/12/21 00:31	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	521248	12/21/20 11:37	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521500	12/22/20 19:54	SVC	TAL DEN

Client Sample ID: W-3

Date Collected: 12/15/20 14:30

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 15:40	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:43	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 12:39	SPG	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	523023	01/09/21 23:18	CJ	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	523140	01/12/21 00:47	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	1 mL	100 mL	521248	12/21/20 11:37	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521500	12/22/20 19:54	SVC	TAL DEN

Eurofins TestAmerica, Denver

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: W-3D

Date Collected: 12/15/20 14:30

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 15:45	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:46	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 12:46	SPG	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	523023	01/10/21 00:41	CJ	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	523140	01/12/21 01:04	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	1 mL	100 mL	521248	12/21/20 11:37	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521500	12/22/20 19:54	SVC	TAL DEN

Client Sample ID: W-4

Date Collected: 12/16/20 10:20

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 15:49	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:48	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 12:50	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	522818	01/08/21 03:50	CJ	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	522818	01/08/21 04:06	CJ	TAL DEN
Total/NA	Analysis	9056A		100	5 mL	5 mL	522818	01/08/21 04:23	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	521251	12/21/20 11:40	JMH	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	522574	01/05/21 10:17	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521524	12/23/20 08:05	LEB	TAL DEN

Client Sample ID: MW-6

Date Collected: 12/16/20 11:35

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		10			467359	12/28/20 12:01	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:51	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 12:54	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	522818	01/08/21 04:39	CJ	TAL DEN
Total/NA	Analysis	9056A		100	5 mL	5 mL	522818	01/08/21 05:12	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	521603	12/23/20 13:55	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521524	12/23/20 08:05	LEB	TAL DEN

Eurofins TestAmerica, Denver

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: MW-7

Date Collected: 12/16/20 02:50

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		10			467359	12/28/20 12:05	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:53	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 12:57	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	522818	01/08/21 05:28	CJ	TAL DEN
Total/NA	Analysis	9056A		100	5 mL	5 mL	522818	01/08/21 06:01	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	521603	12/23/20 13:55	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521641	12/23/20 16:40	LEB	TAL DEN

Client Sample ID: MW-8

Date Collected: 12/16/20 04:20

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 16:03	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:56	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 13:01	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	522818	01/08/21 06:18	CJ	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	522818	01/08/21 07:07	CJ	TAL DEN
Total/NA	Analysis	9056A		100	5 mL	5 mL	522818	01/08/21 10:36	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	1 mL	100 mL	521603	12/23/20 13:55	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521641	12/23/20 16:40	LEB	TAL DEN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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

Accreditation/Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Laboratory: Eurofins TestAmerica, Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-21
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
9040B		Water	Temperature

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-24-21
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

Chain of Custody Record



Denver
#280

Environment Testing
 TestAmerica

Client Information Client Contact: Molly Reeves Company: HDR Inc		Lab PM: Bandy, Darlene F E-Mail: darlene.bandy@testamericainc.com		Sample: Java Kent Phone: 7209337496		Lab PM: Bandy, Darlene F E-Mail: darlene.bandy@testamericainc.com	
Address: 9781 S. Meridian Blvd Suite 400 City: Englewood State, Zip: CO, 80112 Phone: 734-263-7138(Tel) Email: Molly.Reeves@hdrinc.com		Project #: 28014377 SOW#:		Due Date Requested: TAT Requested (days):		Analysis Requested: 9320_Ra228 - Standard Target List 9315_Ra226 - Standard Target List 25400 - Total Suspended Solids pH 9040B, Anions (CL, F, SO4) 9056A, 280 AP11 + AP1V Metals 6010C, 6020A 2540C, Calcd - Total Dissolved Solids (TDS) Perform MS/MSD (Yes or No)	
Field Filtered Sample (Yes or No)		Field Filtered Sample (Yes or No)		Field Filtered Sample (Yes or No)		Field Filtered Sample (Yes or No)	
Sample Identification W-1 W-2 W-3 W-3D W-4 MW-6 MW-7 MW-8		Sample Type (C=Comp, G=grab) G G G G G G G G		Sample Date 12-15-20 12-15-20 12-15-20 12-15-20 12-16-20 12-16-20 12-16-20 12-16-20 12-16-20		Matrix (W=Water, S=Solid, O=Other) W W W W W W W W W	
Preservation Code: (1=Ice, 2=Refrigeration, 3=Freeze, 4=Room Temp, 5=Other)		Preservation Code: (1=Ice, 2=Refrigeration, 3=Freeze, 4=Room Temp, 5=Other)		Preservation Code: (1=Ice, 2=Refrigeration, 3=Freeze, 4=Room Temp, 5=Other)		Preservation Code: (1=Ice, 2=Refrigeration, 3=Freeze, 4=Room Temp, 5=Other)	
Special Instructions/Note: App E III IV		Special Instructions/Note: App E III IV		Special Instructions/Note: App E III IV		Special Instructions/Note: App E III IV	
Total Number of Containers		Total Number of Containers		Total Number of Containers		Total Number of Containers	
Barcode: 280-143890 Chain of Custody		Barcode: 280-143890 Chain of Custody		Barcode: 280-143890 Chain of Custody		Barcode: 280-143890 Chain of Custody	
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological		Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological		Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological		Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	
Deliverable Requested: I, II, III, IV, Other (specify)		Deliverable Requested: I, II, III, IV, Other (specify)		Deliverable Requested: I, II, III, IV, Other (specify)		Deliverable Requested: I, II, III, IV, Other (specify)	
Empty Kit Relinquished by:		Empty Kit Relinquished by:		Empty Kit Relinquished by:		Empty Kit Relinquished by:	
Relinquished by: Java Kent Date/Time: 17 Dec 2020 1355		Relinquished by: HDR Date/Time: 17 Dec 2020 1355		Relinquished by: HDR Date/Time: 17 Dec 2020 1355		Relinquished by: HDR Date/Time: 17 Dec 2020 1355	
Relinquished by:		Relinquished by:		Relinquished by:		Relinquished by:	
Relinquished by:		Relinquished by:		Relinquished by:		Relinquished by:	
Custody Seal No.: Δ Yes Δ No		Custody Seal No.: Δ Yes Δ No		Custody Seal No.: Δ Yes Δ No		Custody Seal No.: Δ Yes Δ No	
Cooler Temperature(s) °C and Other Remarks: 29, 4.4, 0.6, +0.2, 18.9, 13.7, 2.0		Cooler Temperature(s) °C and Other Remarks: 29, 4.4, 0.6, +0.2, 18.9, 13.7, 2.0		Cooler Temperature(s) °C and Other Remarks: 29, 4.4, 0.6, +0.2, 18.9, 13.7, 2.0		Cooler Temperature(s) °C and Other Remarks: 29, 4.4, 0.6, +0.2, 18.9, 13.7, 2.0	

Eurofins TestAmerica Canton Sample Receipt Form/Narrative Login # : _____

Canton Facility

Client ETA Site Name _____ Cooler unpacked by: Yang Ray

Cooler Received on 12-19-20 Opened on 12-21-20

FedEx: 1st Grd Exp^r UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box _____ Client Cooler _____ Box _____ Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt _____ ☐ See Multiple Cooler Form

IR GUN# IR-11 (CF +0.9 °C) Observed Cooler Temp. 4.1 °C Corrected Cooler Temp. 5.0 °C

IR GUN# IR-12 (CF +0.5 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No

-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA

-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA

-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No

4. Did custody papers accompany the sample(s)? Yes No

5. Were the custody papers relinquished & signed in the appropriate place? Yes No

6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No

7. Did all bottles arrive in good condition (Unbroken)? Yes No

8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No

9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No

10. Were correct bottle(s) used for the test(s) indicated? Yes No

11. Sufficient quantity received to perform indicated analyses? Yes No

12. Are these work share samples and all listed on the COC? Yes No

If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC907861

14. Were VOAs on the COC? Yes No

15. Were air bubbles >6 mm in any VOA vials? Yes Larger than this. Yes No NA

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No

17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page Samples processed by: _____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-143890-1

Login Number: 143890

List Source: Eurofins TestAmerica, Denver

List Number: 1

Creator: Kramer, Julieann L

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	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	
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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-143890-1

Login Number: 143890

List Source: Eurofins TestAmerica, Denver

List Number: 1

Creator: Kramer, Julieann L

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	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	
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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

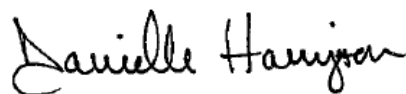
Laboratory Job ID: 280-143890-1

Client Project/Site: Xcel Energy GW CCR Monitoring - Hayden

For:

HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves



Authorized for release by:
1/14/2021 6:49:56 AM

Danielle Harrington, Project Manager II
(303)736-0176
Danielle.Harrington@Eurofinset.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1

Table of Contents 2

Definitions 3

Case Narrative 4

Detection Summary 6

Method Summary 10

Sample Summary 11

Client Sample Results 12

QC Sample Results 17

QC Association 24

Chronicle 28

Certification Summary 31

Chain of Custody 32

Receipt Checklists 35



Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Qualifiers

Metals

Qualifier	Qualifier Description
^	Continuing Calibration Verification (CCV) is outside acceptance limits, low biased.
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.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
E	Result exceeded calibration range.
F3	Duplicate RPD exceeds the control limit
H	Sample was prepped or analyzed beyond the specified holding time
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Job ID: 280-143890-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Hayden

Report Number: 280-143890-1

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. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 12/17/2020; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.1 C.

Please note, the radioactive analyses are reported under job 280-143890-2.

TOTAL RECOVERABLE METALS-Method 601C/6020A

Samples MW-6 and MW-7 required dilution prior to analysis for Method 6010C. The reporting limits have been adjusted accordingly.

The accuracy and precision of the Calcium MS/MSD performed on a sample W-1 could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The low level continuing calibration verification (CCVL) associated with batch 240-466952 recovered below the lower control limit for Lithium. The samples associated with this CCVL are greater than the CCV concentration for the affected analyte and more compatible with the CCV concentration; therefore, corrective action is deemed unnecessary.

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

GENERAL CHEMISTRY- VARIOUS

Several samples required a dilution prior to analysis for various methods. The reporting limits have been adjusted accordingly.

Due to a required dilution, sample W-4 was analyzed past the EPA-recommended holding time for method 2540C Total Dissolved Solids; the original analysis of the undiluted sample was performed within holding time. The out-of-hold, diluted result is confirmed by the undiluted result; only the diluted result has been reported.

Please note that the recoveries, for the Chloride and/or Sulfate laboratory generated MS/MSD, are within QC limits; however, these are estimated values as the concentrations exceeded the calibration range. Method precision and accuracy has been verified by the acceptable LCS/LCSD analysis data; therefore, corrective action is deemed unnecessary.

The accuracy and precision of the Chloride and/or Sulfate MS/MSD performed on a laboratory generated samples could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Job ID: 280-143890-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

Laboratory generated MS/MSD analysis data have been provided. The MS/MSD for Fluoride method 9056A exhibited spike compound recoveries outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The Total Suspended Solids sample duplicate analysis data associated with QC batch 280-521254 exhibited RPD data outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The Total Suspended Solids sample duplicate analysis performed on sample MW-8DU exhibited RPD data outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The Sulfate sample duplicate analysis data associated with QC batches 280-522818 and 280-523140 exhibited RPD data outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: W-1

Lab Sample ID: 280-143890-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.84		0.10	0.023	mg/L	1		6010C	Total Recoverable
Barium	0.0098		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	350		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0012		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.25	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0033	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.016		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.0	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	21		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.3		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	2700		250	52	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	4200		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	2.0	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: W-2

Lab Sample ID: 280-143890-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	10		0.10	0.023	mg/L	1		6010C	Total Recoverable
Barium	0.0079		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Cadmium	0.00022	J	0.0010	0.00020	mg/L	1		6020A	Total Recoverable
Calcium	390		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0049		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.55	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0045	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.0036	J	0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	89		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	6.7		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	4400		250	52	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	7100		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	3.2	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: W-3

Lab Sample ID: 280-143890-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.4		0.10	0.023	mg/L	1		6010C	Total Recoverable
Barium	0.0080		0.0050	0.0022	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: W-3 (Continued)

Lab Sample ID: 280-143890-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.00027	J	0.0010	0.00020	mg/L	1		6020A	Total Recoverable
Calcium	200		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0023		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.97	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0029	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.011		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	170		15	5.1	mg/L	5		9056A	Total/NA
Fluoride	8.7		2.5	0.83	mg/L	5		9056A	Total/NA
Sulfate	7600		250	52	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	22000		1000	470	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	5.2		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: W-3D

Lab Sample ID: 280-143890-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.5		0.10	0.023	mg/L	1		6010C	Total Recoverable
Barium	0.014		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Cadmium	0.00041	J	0.0010	0.00020	mg/L	1		6020A	Total Recoverable
Calcium	390		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.0072		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.98	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0042	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.012		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.6	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	170		15	5.1	mg/L	5		9056A	Total/NA
Fluoride	8.6		2.5	0.83	mg/L	5		9056A	Total/NA
Sulfate	7600		250	52	mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	22000		1000	470	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	4.8		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: W-4

Lab Sample ID: 280-143890-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2.2		0.10	0.023	mg/L	1		6010C	Total Recoverable
Barium	0.0082		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Calcium	370		1.0	0.58	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: W-4 (Continued)

Lab Sample ID: 280-143890-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0070		0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.56	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	0.0030	J	0.010	0.0011	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.7	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	360		30	10	mg/L	10		9056A	Total/NA
Fluoride	0.21	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	12000		500	100	mg/L	100		9056A	Total/NA
Total Dissolved Solids (TDS)	18000	H	100	47	mg/L	1		SM 2540C	Total/NA
Total Dissolved Solids (TDS)	18000	E	20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	20		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-6

Lab Sample ID: 280-143890-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	46		1.0	0.23	mg/L	10		6010C	Total Recoverable
Barium	0.0057		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Cadmium	0.00062	J	0.0010	0.00020	mg/L	1		6020A	Total Recoverable
Calcium	440		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.00047	J	0.0010	0.00019	mg/L	1		6020A	Total Recoverable
Lithium	0.097	^	0.0080	0.0017	mg/L	1		6020A	Total Recoverable
Molybdenum	1.2		0.010	0.0011	mg/L	1		6020A	Total Recoverable
Selenium	0.013		0.0050	0.00089	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	8.5	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	65		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.26	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	2900		500	100	mg/L	100		9056A	Total/NA
Total Dissolved Solids (TDS)	4000		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	5.6		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-7

Lab Sample ID: 280-143890-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	49		1.0	0.23	mg/L	10		6010C	Total Recoverable
Barium	0.0053		0.0050	0.0022	mg/L	1		6020A	Total Recoverable
Cadmium	0.00037	J	0.0010	0.00020	mg/L	1		6020A	Total Recoverable
Calcium	440		1.0	0.58	mg/L	1		6020A	Total Recoverable
Cobalt	0.00040	J	0.0010	0.00019	mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: MW-7 (Continued)

Lab Sample ID: 280-143890-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.21	^	0.0080	0.0017	mg/L	1		6020A	Total
									Recoverable
Molybdenum	0.86		0.010	0.0011	mg/L	1		6020A	Total
									Recoverable
Selenium	0.0078		0.0050	0.00089	mg/L	1		6020A	Total
									Recoverable
pH adj. to 25 deg C	8.8	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	160		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.44	J	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	3100		500	100	mg/L	100		9056A	Total/NA
Total Dissolved Solids (TDS)	4600		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	4.0		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-8

Lab Sample ID: 280-143890-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.7		0.10	0.023	mg/L	1		6010C	Total
									Recoverable
Barium	0.0057		0.0050	0.0022	mg/L	1		6020A	Total
									Recoverable
Calcium	400		1.0	0.58	mg/L	1		6020A	Total
									Recoverable
Cobalt	0.00066	J	0.0010	0.00019	mg/L	1		6020A	Total
									Recoverable
Lithium	0.57	^	0.0080	0.0017	mg/L	1		6020A	Total
									Recoverable
Molybdenum	0.0019	J	0.010	0.0011	mg/L	1		6020A	Total
									Recoverable
Selenium	0.044		0.0050	0.00089	mg/L	1		6020A	Total
									Recoverable
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	240		30	10	mg/L	10		9056A	Total/NA
Sulfate	7000		500	100	mg/L	100		9056A	Total/NA
Total Dissolved Solids (TDS)	20000		1000	470	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	18		4.0	1.1	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL CAN
6020A	Metals (ICP/MS)	SW846	TAL CAN
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CAN

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
280-143890-1	W-1	Water	12/15/20 13:15	12/17/20 13:55	
280-143890-2	W-2	Water	12/15/20 16:00	12/17/20 13:55	
280-143890-3	W-3	Water	12/15/20 14:30	12/17/20 13:55	
280-143890-4	W-3D	Water	12/15/20 14:30	12/17/20 13:55	
280-143890-5	W-4	Water	12/16/20 10:20	12/17/20 13:55	
280-143890-6	MW-6	Water	12/16/20 11:35	12/17/20 13:55	
280-143890-7	MW-7	Water	12/16/20 02:50	12/17/20 13:55	
280-143890-8	MW-8	Water	12/16/20 04:20	12/17/20 13:55	

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.84		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 15:05	1

Client Sample ID: W-2
Date Collected: 12/15/20 16:00
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	10		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 15:36	1

Client Sample ID: W-3
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.4		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 15:40	1

Client Sample ID: W-3D
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.5		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 15:45	1

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.2		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 15:49	1

Client Sample ID: MW-6
Date Collected: 12/16/20 11:35
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	46		1.0	0.23	mg/L		12/22/20 14:00	12/28/20 12:01	10

Client Sample ID: MW-7
Date Collected: 12/16/20 02:50
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	49		1.0	0.23	mg/L		12/22/20 14:00	12/28/20 12:05	10

Client Sample ID: MW-8
Date Collected: 12/16/20 04:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 16:03	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0098		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:21	1
Cadmium	ND		0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:21	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	350		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:21	1
Cobalt	0.0012		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:21	1
Lithium	0.25	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:21	1
Molybdenum	0.0033	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:21	1
Selenium	0.016		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:21	1

Client Sample ID: W-2
Date Collected: 12/15/20 16:00
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0079		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:36	1
Cadmium	0.00022	J	0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:36	1
Calcium	390		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:36	1
Cobalt	0.0049		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:36	1
Lithium	0.55	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:36	1
Molybdenum	0.0045	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:36	1
Selenium	0.0036	J	0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:36	1

Client Sample ID: W-3
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0080		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:43	1
Cadmium	0.00027	J	0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:43	1
Calcium	200		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:43	1
Cobalt	0.0023		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:43	1
Lithium	0.97	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:43	1
Molybdenum	0.0029	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:43	1
Selenium	0.011		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:43	1

Client Sample ID: W-3D
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.014		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:46	1
Cadmium	0.00041	J	0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:46	1
Calcium	390		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:46	1
Cobalt	0.0072		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:46	1
Lithium	0.98	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:46	1
Molybdenum	0.0042	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:46	1
Selenium	0.012		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:46	1

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0082		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:48	1
Cadmium	ND		0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:48	1
Calcium	370		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:48	1
Cobalt	0.0070		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:48	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.56	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:48	1
Molybdenum	0.0030	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:48	1
Selenium	ND		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:48	1

Client Sample ID: MW-6
Date Collected: 12/16/20 11:35
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0057		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:51	1
Cadmium	0.00062	J	0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:51	1
Calcium	440		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:51	1
Cobalt	0.00047	J	0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:51	1
Lithium	0.097	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:51	1
Molybdenum	1.2		0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:51	1
Selenium	0.013		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:51	1

Client Sample ID: MW-7
Date Collected: 12/16/20 02:50
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0053		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:53	1
Cadmium	0.00037	J	0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:53	1
Calcium	440		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:53	1
Cobalt	0.00040	J	0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:53	1
Lithium	0.21	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:53	1
Molybdenum	0.86		0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:53	1
Selenium	0.0078		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:53	1

Client Sample ID: MW-8
Date Collected: 12/16/20 04:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0057		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:56	1
Cadmium	ND		0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:56	1
Calcium	400		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:56	1
Cobalt	0.00066	J	0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:56	1
Lithium	0.57	^-	0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:56	1
Molybdenum	0.0019	J	0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:56	1
Selenium	0.044		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:56	1

General Chemistry

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			12/30/20 13:24	1
Temperature	21.0	HF	1.0	1.0	Degrees C			12/30/20 13:24	1
Chloride	21		3.0	1.0	mg/L			01/09/21 21:40	1
Fluoride	1.3		0.50	0.17	mg/L			01/09/21 21:40	1
Sulfate	2700		250	52	mg/L			01/12/21 00:15	50

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

General Chemistry (Continued)

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	4200		40	19	mg/L			12/19/20 10:33	1
Total Suspended Solids	2.0	J	4.0	1.1	mg/L			12/22/20 19:54	1

Client Sample ID: W-2
Date Collected: 12/15/20 16:00
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			12/30/20 13:20	1
Temperature	21.4	HF	1.0	1.0	Degrees C			12/30/20 13:20	1
Chloride	89		3.0	1.0	mg/L			01/09/21 22:13	1
Fluoride	6.7		0.50	0.17	mg/L			01/09/21 22:13	1
Sulfate	4400		250	52	mg/L			01/12/21 00:31	50
Total Dissolved Solids (TDS)	7100		40	19	mg/L			12/21/20 11:37	1
Total Suspended Solids	3.2	J	4.0	1.1	mg/L			12/22/20 19:54	1

Client Sample ID: W-3
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			01/06/21 12:39	1
Temperature	20.9	HF	1.0	1.0	Degrees C			01/06/21 12:39	1
Chloride	170		15	5.1	mg/L			01/09/21 23:18	5
Fluoride	8.7		2.5	0.83	mg/L			01/09/21 23:18	5
Sulfate	7600		250	52	mg/L			01/12/21 00:47	50
Total Dissolved Solids (TDS)	22000		1000	470	mg/L			12/21/20 11:37	1
Total Suspended Solids	5.2		4.0	1.1	mg/L			12/22/20 19:54	1

Client Sample ID: W-3D
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			01/06/21 12:46	1
Temperature	19.6	HF	1.0	1.0	Degrees C			01/06/21 12:46	1
Chloride	170		15	5.1	mg/L			01/10/21 00:41	5
Fluoride	8.6		2.5	0.83	mg/L			01/10/21 00:41	5
Sulfate	7600		250	52	mg/L			01/12/21 01:04	50
Total Dissolved Solids (TDS)	22000		1000	470	mg/L			12/21/20 11:37	1
Total Suspended Solids	4.8		4.0	1.1	mg/L			12/22/20 19:54	1

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			01/06/21 12:50	1
Temperature	19.7	HF	1.0	1.0	Degrees C			01/06/21 12:50	1
Chloride	360		30	10	mg/L			01/08/21 04:06	10
Fluoride	0.21	J	0.50	0.17	mg/L			01/08/21 03:50	1
Sulfate	12000		500	100	mg/L			01/08/21 04:23	100
Total Dissolved Solids (TDS)	18000	E	20	9.4	mg/L			12/21/20 11:40	1
Total Dissolved Solids (TDS)	18000	H	100	47	mg/L			01/05/21 10:17	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

General Chemistry (Continued)

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	20		4.0	1.1	mg/L			12/23/20 08:05	1

Client Sample ID: MW-6
Date Collected: 12/16/20 11:35
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.5	HF	0.1	0.1	SU			01/06/21 12:54	1
Temperature	20.1	HF	1.0	1.0	Degrees C			01/06/21 12:54	1
Chloride	65		3.0	1.0	mg/L			01/08/21 04:39	1
Fluoride	0.26	J	0.50	0.17	mg/L			01/08/21 04:39	1
Sulfate	2900		500	100	mg/L			01/08/21 05:12	100
Total Dissolved Solids (TDS)	4000		40	19	mg/L			12/23/20 13:55	1
Total Suspended Solids	5.6		4.0	1.1	mg/L			12/23/20 08:05	1

Client Sample ID: MW-7
Date Collected: 12/16/20 02:50
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.8	HF	0.1	0.1	SU			01/06/21 12:57	1
Temperature	20.9	HF	1.0	1.0	Degrees C			01/06/21 12:57	1
Chloride	160		3.0	1.0	mg/L			01/08/21 05:28	1
Fluoride	0.44	J	0.50	0.17	mg/L			01/08/21 05:28	1
Sulfate	3100		500	100	mg/L			01/08/21 06:01	100
Total Dissolved Solids (TDS)	4600		40	19	mg/L			12/23/20 13:55	1
Total Suspended Solids	4.0		4.0	1.1	mg/L			12/23/20 16:40	1

Client Sample ID: MW-8
Date Collected: 12/16/20 04:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			01/06/21 13:01	1
Temperature	21.2	HF	1.0	1.0	Degrees C			01/06/21 13:01	1
Chloride	240		30	10	mg/L			01/08/21 07:07	10
Fluoride	ND		0.50	0.17	mg/L			01/08/21 06:18	1
Sulfate	7000		500	100	mg/L			01/08/21 10:36	100
Total Dissolved Solids (TDS)	20000		1000	470	mg/L			12/23/20 13:55	1
Total Suspended Solids	18		4.0	1.1	mg/L			12/23/20 16:40	1

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-466550/1-A
Matrix: Water
Analysis Batch: 467130

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 466550

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.023	mg/L		12/22/20 14:00	12/23/20 14:36	1

Lab Sample ID: LCS 240-466550/2-A
Matrix: Water
Analysis Batch: 467130

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 466550

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.962		mg/L		96	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-466550/1-A
Matrix: Water
Analysis Batch: 466952

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 466550

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0050	0.0022	mg/L		12/22/20 14:00	12/23/20 19:14	1
Cadmium	ND		0.0010	0.00020	mg/L		12/22/20 14:00	12/23/20 19:14	1
Calcium	ND		1.0	0.58	mg/L		12/22/20 14:00	12/23/20 19:14	1
Cobalt	ND		0.0010	0.00019	mg/L		12/22/20 14:00	12/23/20 19:14	1
Lithium	ND		0.0080	0.0017	mg/L		12/22/20 14:00	12/23/20 19:14	1
Molybdenum	ND		0.010	0.0011	mg/L		12/22/20 14:00	12/23/20 19:14	1
Selenium	ND		0.0050	0.00089	mg/L		12/22/20 14:00	12/23/20 19:14	1

Lab Sample ID: LCS 240-466550/3-A
Matrix: Water
Analysis Batch: 466952

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 466550

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	1.00	0.976		mg/L		98	80 - 120
Cadmium	0.500	0.469		mg/L		94	80 - 120
Calcium	25.0	25.4		mg/L		102	80 - 120
Cobalt	0.500	0.450		mg/L		90	80 - 120
Lithium	0.500	0.428		mg/L		86	80 - 120
Molybdenum	0.500	0.488		mg/L		98	80 - 120
Selenium	1.00	0.993		mg/L		99	80 - 120

Lab Sample ID: 280-143890-1 MS
Matrix: Water
Analysis Batch: 466952

Client Sample ID: W-1
Prep Type: Total Recoverable
Prep Batch: 466550

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.0098		1.00	1.04		mg/L		103	75 - 125
Cadmium	ND		0.500	0.467		mg/L		93	75 - 125
Calcium	350		25.0	375	4	mg/L		98	75 - 125
Cobalt	0.0012		0.500	0.481		mg/L		96	75 - 125
Lithium	0.25	^	0.500	0.668		mg/L		84	75 - 125
Molybdenum	0.0033	J	0.500	0.540		mg/L		107	75 - 125
Selenium	0.016		1.00	1.07		mg/L		106	75 - 125

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

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

Lab Sample ID: 280-143890-1 MSD

Matrix: Water

Analysis Batch: 466952

Client Sample ID: W-1

Prep Type: Total Recoverable

Prep Batch: 466550

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	0.0098		1.00	1.05		mg/L		104	75 - 125	1	20
Cadmium	ND		0.500	0.475		mg/L		95	75 - 125	2	20
Calcium	350		25.0	382	4	mg/L		128	75 - 125	2	20
Cobalt	0.0012		0.500	0.493		mg/L		98	75 - 125	2	20
Lithium	0.25	^	0.500	0.678		mg/L		86	75 - 125	1	20
Molybdenum	0.0033	J	0.500	0.550		mg/L		109	75 - 125	2	20
Selenium	0.016		1.00	1.10		mg/L		109	75 - 125	3	20

Method: 9040B - pH

Lab Sample ID: LCS 280-522262/4

Matrix: Water

Analysis Batch: 522262

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.0		SU		101	99 - 101

Lab Sample ID: LCS 280-522737/4

Matrix: Water

Analysis Batch: 522737

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Lab Sample ID: 280-143890-3 DU

Matrix: Water

Analysis Batch: 522737

Client Sample ID: W-3

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH adj. to 25 deg C	7.4	HF	7.4		SU		0.3	5
Temperature	20.9	HF	20.0		Degrees C		4	10

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-522818/6

Matrix: Water

Analysis Batch: 522818

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			01/07/21 17:06	1
Fluoride	ND		0.50	0.17	mg/L			01/07/21 17:06	1
Sulfate	ND		5.0	1.0	mg/L			01/07/21 17:06	1

Lab Sample ID: LCS 280-522818/4

Matrix: Water

Analysis Batch: 522818

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	96.3		mg/L		96	90 - 110
Fluoride	5.00	4.88		mg/L		98	90 - 110

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 280-522818/4

Matrix: Water

Analysis Batch: 522818

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	100	96.3		mg/L		96	90 - 110

Lab Sample ID: LCSD 280-522818/5

Matrix: Water

Analysis Batch: 522818

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	96.5		mg/L		97	90 - 110	0	10
Fluoride	5.00	4.89		mg/L		98	90 - 110	0	10
Sulfate	100	95.9		mg/L		96	90 - 110	0	10

Lab Sample ID: MRL 280-522818/3

Matrix: Water

Analysis Batch: 522818

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.86		mg/L		97	50 - 150
Fluoride	0.500	0.448	J	mg/L		90	50 - 150
Sulfate	5.00	5.28		mg/L		106	50 - 150

Lab Sample ID: MB 280-523023/6

Matrix: Water

Analysis Batch: 523023

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			01/09/21 14:56	1
Fluoride	ND		0.50	0.17	mg/L			01/09/21 14:56	1

Lab Sample ID: LCS 280-523023/4

Matrix: Water

Analysis Batch: 523023

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	97.9		mg/L		98	90 - 110
Fluoride	5.00	4.72		mg/L		94	90 - 110

Lab Sample ID: LCSD 280-523023/5

Matrix: Water

Analysis Batch: 523023

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	98.2		mg/L		98	90 - 110	0	10
Fluoride	5.00	4.71		mg/L		94	90 - 110	0	10

Lab Sample ID: MRL 280-523023/3

Matrix: Water

Analysis Batch: 523023

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.20		mg/L		84	50 - 150

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 280-523023/3

Matrix: Water

Analysis Batch: 523023

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.500	0.476	J	mg/L		95	50 - 150

Lab Sample ID: MB 280-523140/13

Matrix: Water

Analysis Batch: 523140

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			01/11/21 18:30	1
Fluoride	ND		0.50	0.17	mg/L			01/11/21 18:30	1
Sulfate	ND		5.0	1.0	mg/L			01/11/21 18:30	1

Lab Sample ID: LCS 280-523140/11

Matrix: Water

Analysis Batch: 523140

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	97.5		mg/L		97	90 - 110
Fluoride	5.00	5.03		mg/L		101	90 - 110
Sulfate	100	97.7		mg/L		98	90 - 110

Lab Sample ID: LCSD 280-523140/12

Matrix: Water

Analysis Batch: 523140

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	97.5		mg/L		97	90 - 110	0	10
Fluoride	5.00	5.03		mg/L		101	90 - 110	0	10
Sulfate	100	97.9		mg/L		98	90 - 110	0	10

Lab Sample ID: MRL 280-523140/10

Matrix: Water

Analysis Batch: 523140

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	5.13		mg/L		103	50 - 150
Fluoride	0.500	0.587		mg/L		117	50 - 150
Sulfate	5.00	4.84	J	mg/L		97	50 - 150

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-521115/1

Matrix: Water

Analysis Batch: 521115

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/19/20 10:33	1

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 280-521115/2
Matrix: Water
Analysis Batch: 521115

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	488		mg/L		98	88 - 114

Lab Sample ID: MB 280-521248/1
Matrix: Water
Analysis Batch: 521248

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/21/20 11:37	1

Lab Sample ID: LCS 280-521248/2
Matrix: Water
Analysis Batch: 521248

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	479		mg/L		96	88 - 114

Lab Sample ID: MB 280-521251/1
Matrix: Water
Analysis Batch: 521251

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/21/20 11:40	1

Lab Sample ID: LCS 280-521251/2
Matrix: Water
Analysis Batch: 521251

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	486		mg/L		97	88 - 114

Lab Sample ID: MB 280-521603/1
Matrix: Water
Analysis Batch: 521603

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			12/23/20 13:55	1

Lab Sample ID: LCS 280-521603/2
Matrix: Water
Analysis Batch: 521603

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	487		mg/L		97	88 - 114

Lab Sample ID: LCSD 280-521603/3
Matrix: Water
Analysis Batch: 521603

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	501	484		mg/L		97	88 - 114	1	20

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 280-522574/1
Matrix: Water
Analysis Batch: 522574

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			01/05/21 10:17	1

Lab Sample ID: LCS 280-522574/2
Matrix: Water
Analysis Batch: 522574

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	525		mg/L		105	88 - 114

Lab Sample ID: LCSD 280-522574/3
Matrix: Water
Analysis Batch: 522574

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	501	488		mg/L		98	88 - 114	7	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 280-521500/2
Matrix: Water
Analysis Batch: 521500

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			12/22/20 19:54	1

Lab Sample ID: LCS 280-521500/1
Matrix: Water
Analysis Batch: 521500

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	106		mg/L		106	79 - 114

Lab Sample ID: MB 280-521524/1
Matrix: Water
Analysis Batch: 521524

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			12/23/20 08:05	1

Lab Sample ID: LCS 280-521524/2
Matrix: Water
Analysis Batch: 521524

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	93.6		mg/L		94	79 - 114

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: MB 280-521641/1

Matrix: Water

Analysis Batch: 521641

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			12/23/20 16:40	1

Lab Sample ID: LCS 280-521641/2

Matrix: Water

Analysis Batch: 521641

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100	89.6		mg/L		90	79 - 114

Lab Sample ID: 280-143890-8 DU

Matrix: Water

Analysis Batch: 521641

Client Sample ID: MW-8

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	18		27.6	F3	mg/L		40	10

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Metals

Prep Batch: 466550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total Recoverable	Water	3005A	
280-143890-2	W-2	Total Recoverable	Water	3005A	
280-143890-3	W-3	Total Recoverable	Water	3005A	
280-143890-4	W-3D	Total Recoverable	Water	3005A	
280-143890-5	W-4	Total Recoverable	Water	3005A	
280-143890-6	MW-6	Total Recoverable	Water	3005A	
280-143890-7	MW-7	Total Recoverable	Water	3005A	
280-143890-8	MW-8	Total Recoverable	Water	3005A	
MB 240-466550/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-466550/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-466550/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-143890-1 MS	W-1	Total Recoverable	Water	3005A	
280-143890-1 MSD	W-1	Total Recoverable	Water	3005A	

Analysis Batch: 466952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total Recoverable	Water	6020A	466550
280-143890-2	W-2	Total Recoverable	Water	6020A	466550
280-143890-3	W-3	Total Recoverable	Water	6020A	466550
280-143890-4	W-3D	Total Recoverable	Water	6020A	466550
280-143890-5	W-4	Total Recoverable	Water	6020A	466550
280-143890-6	MW-6	Total Recoverable	Water	6020A	466550
280-143890-7	MW-7	Total Recoverable	Water	6020A	466550
280-143890-8	MW-8	Total Recoverable	Water	6020A	466550
MB 240-466550/1-A	Method Blank	Total Recoverable	Water	6020A	466550
LCS 240-466550/3-A	Lab Control Sample	Total Recoverable	Water	6020A	466550
280-143890-1 MS	W-1	Total Recoverable	Water	6020A	466550
280-143890-1 MSD	W-1	Total Recoverable	Water	6020A	466550

Analysis Batch: 467130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total Recoverable	Water	6010C	466550
280-143890-2	W-2	Total Recoverable	Water	6010C	466550
280-143890-3	W-3	Total Recoverable	Water	6010C	466550
280-143890-4	W-3D	Total Recoverable	Water	6010C	466550
280-143890-5	W-4	Total Recoverable	Water	6010C	466550
280-143890-8	MW-8	Total Recoverable	Water	6010C	466550
MB 240-466550/1-A	Method Blank	Total Recoverable	Water	6010C	466550
LCS 240-466550/2-A	Lab Control Sample	Total Recoverable	Water	6010C	466550

Analysis Batch: 467359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-6	MW-6	Total Recoverable	Water	6010C	466550
280-143890-7	MW-7	Total Recoverable	Water	6010C	466550

General Chemistry

Analysis Batch: 521115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	SM 2540C	
MB 280-521115/1	Method Blank	Total/NA	Water	SM 2540C	

Eurofins TestAmerica, Denver

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

General Chemistry (Continued)

Analysis Batch: 521115 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-521115/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 521248

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-2	W-2	Total/NA	Water	SM 2540C	
280-143890-3	W-3	Total/NA	Water	SM 2540C	
280-143890-4	W-3D	Total/NA	Water	SM 2540C	
MB 280-521248/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-521248/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 521251

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-5	W-4	Total/NA	Water	SM 2540C	
MB 280-521251/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-521251/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 521500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	SM 2540D	
280-143890-2	W-2	Total/NA	Water	SM 2540D	
280-143890-3	W-3	Total/NA	Water	SM 2540D	
280-143890-4	W-3D	Total/NA	Water	SM 2540D	
MB 280-521500/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-521500/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 521524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-5	W-4	Total/NA	Water	SM 2540D	
280-143890-6	MW-6	Total/NA	Water	SM 2540D	
MB 280-521524/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-521524/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 521603

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-6	MW-6	Total/NA	Water	SM 2540C	
280-143890-7	MW-7	Total/NA	Water	SM 2540C	
280-143890-8	MW-8	Total/NA	Water	SM 2540C	
MB 280-521603/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-521603/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-521603/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 521641

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-7	MW-7	Total/NA	Water	SM 2540D	
280-143890-8	MW-8	Total/NA	Water	SM 2540D	
MB 280-521641/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-521641/2	Lab Control Sample	Total/NA	Water	SM 2540D	
280-143890-8 DU	MW-8	Total/NA	Water	SM 2540D	

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

General Chemistry

Analysis Batch: 522262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	9040B	
280-143890-2	W-2	Total/NA	Water	9040B	
LCS 280-522262/4	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 522574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-5	W-4	Total/NA	Water	SM 2540C	
MB 280-522574/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-522574/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-522574/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 522737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-3	W-3	Total/NA	Water	9040B	
280-143890-4	W-3D	Total/NA	Water	9040B	
280-143890-5	W-4	Total/NA	Water	9040B	
280-143890-6	MW-6	Total/NA	Water	9040B	
280-143890-7	MW-7	Total/NA	Water	9040B	
280-143890-8	MW-8	Total/NA	Water	9040B	
LCS 280-522737/4	Lab Control Sample	Total/NA	Water	9040B	
280-143890-3 DU	W-3	Total/NA	Water	9040B	

Analysis Batch: 522818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-5	W-4	Total/NA	Water	9056A	
280-143890-5	W-4	Total/NA	Water	9056A	
280-143890-5	W-4	Total/NA	Water	9056A	
280-143890-6	MW-6	Total/NA	Water	9056A	
280-143890-6	MW-6	Total/NA	Water	9056A	
280-143890-7	MW-7	Total/NA	Water	9056A	
280-143890-7	MW-7	Total/NA	Water	9056A	
280-143890-8	MW-8	Total/NA	Water	9056A	
280-143890-8	MW-8	Total/NA	Water	9056A	
280-143890-8	MW-8	Total/NA	Water	9056A	
MB 280-522818/6	Method Blank	Total/NA	Water	9056A	
LCS 280-522818/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-522818/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-522818/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 523023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	9056A	
280-143890-2	W-2	Total/NA	Water	9056A	
280-143890-3	W-3	Total/NA	Water	9056A	
280-143890-4	W-3D	Total/NA	Water	9056A	
MB 280-523023/6	Method Blank	Total/NA	Water	9056A	
LCS 280-523023/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-523023/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-523023/3	Lab Control Sample	Total/NA	Water	9056A	

Eurofins TestAmerica, Denver

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

General Chemistry

Analysis Batch: 523140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	9056A	
280-143890-2	W-2	Total/NA	Water	9056A	
280-143890-3	W-3	Total/NA	Water	9056A	
280-143890-4	W-3D	Total/NA	Water	9056A	
MB 280-523140/13	Method Blank	Total/NA	Water	9056A	
LCS 280-523140/11	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-523140/12	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-523140/10	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: W-1

Date Collected: 12/15/20 13:15

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 15:05	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:21	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522262	12/30/20 13:24	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	523023	01/09/21 21:40	CJ	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	523140	01/12/21 00:15	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	521115	12/19/20 10:33	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521500	12/22/20 19:54	SVC	TAL DEN

Client Sample ID: W-2

Date Collected: 12/15/20 16:00

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 15:36	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:36	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522262	12/30/20 13:20	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	523023	01/09/21 22:13	CJ	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	523140	01/12/21 00:31	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	521248	12/21/20 11:37	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521500	12/22/20 19:54	SVC	TAL DEN

Client Sample ID: W-3

Date Collected: 12/15/20 14:30

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 15:40	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:43	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 12:39	SPG	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	523023	01/09/21 23:18	CJ	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	523140	01/12/21 00:47	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	1 mL	100 mL	521248	12/21/20 11:37	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521500	12/22/20 19:54	SVC	TAL DEN

Eurofins TestAmerica, Denver

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: W-3D

Date Collected: 12/15/20 14:30

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 15:45	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:46	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 12:46	SPG	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	523023	01/10/21 00:41	CJ	TAL DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	523140	01/12/21 01:04	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	1 mL	100 mL	521248	12/21/20 11:37	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521500	12/22/20 19:54	SVC	TAL DEN

Client Sample ID: W-4

Date Collected: 12/16/20 10:20

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 15:49	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:48	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 12:50	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	522818	01/08/21 03:50	CJ	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	522818	01/08/21 04:06	CJ	TAL DEN
Total/NA	Analysis	9056A		100	5 mL	5 mL	522818	01/08/21 04:23	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	521251	12/21/20 11:40	JMH	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	522574	01/05/21 10:17	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521524	12/23/20 08:05	LEB	TAL DEN

Client Sample ID: MW-6

Date Collected: 12/16/20 11:35

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		10			467359	12/28/20 12:01	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:51	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 12:54	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	522818	01/08/21 04:39	CJ	TAL DEN
Total/NA	Analysis	9056A		100	5 mL	5 mL	522818	01/08/21 05:12	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	521603	12/23/20 13:55	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521524	12/23/20 08:05	LEB	TAL DEN

Eurofins TestAmerica, Denver

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Client Sample ID: MW-7

Date Collected: 12/16/20 02:50

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		10			467359	12/28/20 12:05	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:53	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 12:57	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	522818	01/08/21 05:28	CJ	TAL DEN
Total/NA	Analysis	9056A		100	5 mL	5 mL	522818	01/08/21 06:01	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	521603	12/23/20 13:55	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521641	12/23/20 16:40	LEB	TAL DEN

Client Sample ID: MW-8

Date Collected: 12/16/20 04:20

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8

Matrix: Water

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	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1			467130	12/23/20 16:03	RKT	TAL CAN
Total Recoverable	Prep	3005A			50 mL	50 mL	466550	12/22/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1			466952	12/23/20 19:56	DSH	TAL CAN
Total/NA	Analysis	9040B		1			522737	01/06/21 13:01	SPG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	522818	01/08/21 06:18	CJ	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	522818	01/08/21 07:07	CJ	TAL DEN
Total/NA	Analysis	9056A		100	5 mL	5 mL	522818	01/08/21 10:36	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	1 mL	100 mL	521603	12/23/20 13:55	JMH	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	521641	12/23/20 16:40	LEB	TAL DEN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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

Accreditation/Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-1

Laboratory: Eurofins TestAmerica, Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-21
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
9040B		Water	Temperature

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-24-21
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

Chain of Custody Record

Denver
#280

Client Information Client Contact: Molly Reeves Company: HDR Inc		Lab PM: Bandy, Darlene F E-Mail: darlene.bandy@testamericainc.com		Sample: Java Kent Phone: 7209337496		COC No: Page: Job #:	
Address: 9781 S. Meridian Blvd Suite 400 City: Englewood State, Zip: CO, 80112 Phone: 734-263-7138(Tel) Email: Molly.Reeves@hdrinc.com		Due Date Requested: TAT Requested (days): PO #: DEN-018 WO #: Project #: 28014377 SOW#:		Analysis Request: 9320_Ra228 - Standard Target List 9315_Ra226 - Standard Target List 25400 - Total Suspended Solids pH 9040B, Anions (CL, F, SO4) 9056A, 280 AP11 + AP1V Metals 6010C, 6020A 2540C, Calcd - Total Dissolved Solids (TDS) Perform MS/MSD (Yes or No) Field Filtered Sample (Yes or No)		Preservation Codes: A - HCL M - Hexane N - None O - AsNaO2 P - Na2O4S Q - NaHSO4 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA L - EDA Other:	
Sample Identification W-1 W-2 W-3 W-3D W-4 MW-6 MW-7 MW-8		Sample Date 12-15-20 12-15-20 12-15-20 12-15-20 12-16-20 12-16-20 12-16-20		Sample Time 1315 1600 1430 1430 1020 1135 1250 1420		Matrix (Water, Sediment, Other) W W W W W W W W	
Special Instructions/Note: App E III IV		Total Number of Containers 6 6 6 6 6 6 6 6		Special Instructions/Note: App E III IV		Special Instructions/Note: App E III IV	



280-143890 Chain of Custody

Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months	
Empty Kit Relinquished by: Java Kent Relinquished by: Java Kent Relinquished by: Java Kent Relinquished by: Java Kent		Date: 17 Dec 2020 1355 Date: 17 Dec 2020 1355 Date: 17 Dec 2020 1355 Date: 17 Dec 2020 1355	
Custody Seals Intact: ☒ Yes ☐ No Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 29, 4.4, 0.6, +0.2, 18.9 12.17.20	

Eurofins TestAmerica, Denver
 4955 Yarrow Street
 Arvada, CO 80002
 Phone: 303-736-0100 Fax: 303-431-7171



Chain of Custody Record

4.1/5.0



Environment Testing
 America

Client Information (Sub Contract Lab)		Sampler:		Lab PM:	Carrier Tracking No(s):		COC No:
Client Contact:		Harrington, Danielle M		State of Origin:		280-551372.1	
Shipping/Receiving		E-Mail:		Colorado		Page:	
Company:		Danielle.Harrington@Eurofinset.com		Job #:		Page 1 of 1	
Address:		TestAmerica Laboratories, Inc.		Accreditations Required (See note):		280-143890-1	
City:		North Canton		DoD - A2LA		Preservation Codes:	
State, Zip:		OH, 44720		Due Date Requested:		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Phone:		330-497-9396(Tel) 330-497-0772(Fax)		TAT Requested (days):		Other:	
Email:				PO #:		Total Number of containers	
WO #:				Project #:		551	
Project Name:		Xcel Energy GW CCR Monitoring - Hayden		SSOW#:		Special Instructions/Note:	
Site:		Xcel Energy CCR - Hayden Station		Sample Date		Field Filtered Sample (Yes or No)	
Sample Identification - Client ID (Lab ID)		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=oil, BT=tissue, A=air)	
W-1 (280-143890-1)	12/15/20	13:15 Mountain	Water	X	X	X	Use Collision Cell
W-2 (280-143890-2)	12/15/20	16:00 Mountain	Water	X	X	X	Use Collision Cell
W-3 (280-143890-3)	12/15/20	14:30 Mountain	Water	X	X	X	Use Collision Cell
W-3D (280-143890-4)	12/15/20	14:30 Mountain	Water	X	X	X	Use Collision Cell
W-4 (280-143890-5)	12/16/20	10:20 Mountain	Water	X	X	X	Use Collision Cell
MW-6 (280-143890-6)	12/16/20	11:35 Mountain	Water	X	X	X	Use Collision Cell
MW-7 (280-143890-7)	12/16/20	02:50 Mountain	Water	X	X	X	Use Collision Cell
MW-8 (280-143890-8)	12/16/20	04:20 Mountain	Water	X	X	X	Use Collision Cell

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Unconfirmed		Return To Client ☐ Disposal By Lab ☐ Archive For ☐ Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/OC Requirements:	
Empty Kit Relinquished by:		Method of Shipment:	
Relinquished by: <i>Paul P...</i>		Received by: <i>Danielle Harrington</i>	
Date/Time: 12/18/2020 11:05		Date/Time: 12-19-20 1100	
Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:	
Custody Seals Intact: ☐ Yes ☐ No		Cooler Temperature(s) °C and Other Remarks:	

Eurofins TestAmerica Canton Sample Receipt Form/Narrative Login # : _____

Canton Facility

Client ETA Site Name _____ Cooler unpacked by: Yang Ray

Cooler Received on 12-19-20 Opened on 12-21-20

FedEx: 1st Grd Exp^r UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box _____ Client Cooler _____ Box _____ Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt 4.1 °C ☐ See Multiple Cooler Form
 IR GUN# IR-11 (CF +0.9 °C) Observed Cooler Temp. 4.1 °C Corrected Cooler Temp. 5.0 °C
 IR GUN# IR-12 (CF +0.5 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 -Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No
 4. Did custody papers accompany the sample(s)? Yes No
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
 10. Were correct bottle(s) used for the test(s) indicated? Yes No
 11. Sufficient quantity received to perform indicated analyses? Yes No
 12. Are these work share samples and all listed on the COC? Yes No

If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC907861
 14. Were VOAs on the COC? Yes No
 15. Were air bubbles >6 mm in any VOA vials? Yes Larger than this. Yes No NA
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
 17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page Samples processed by: _____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-143890-1

Login Number: 143890

List Source: Eurofins TestAmerica, Denver

List Number: 1

Creator: Kramer, Julieann L

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	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	
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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

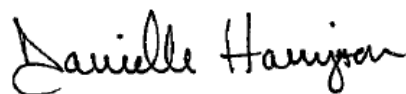
Laboratory Job ID: 280-143890-2

Client Project/Site: Xcel Energy GW CCR Monitoring - Hayden

For:

HDR Inc
1670 Broadway, Suite 3400
Denver, Colorado 80202

Attn: Molly Reeves



Authorized for release by:
1/15/2021 8:41:24 AM

Danielle Harrington, Project Manager II
(303)736-0176
Danielle.Harrington@Eurofinset.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:

www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1

Table of Contents 2

Definitions 3

Case Narrative 4

Detection Summary 6

Method Summary 7

Sample Summary 8

Client Sample Results 9

QC Sample Results 14

QC Association 16

Chronicle 17

Certification Summary 19

Chain of Custody 20

Receipt Checklists 21

Tracer Carrier Summary 23



Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Job ID: 280-143890-2

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Hayden

Report Number: 280-143890-2

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. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 12/17/2020; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.1 C.

Please note, this report only contains the radioactive analyses. All other analyses are reported under job 280-143890-1.

RADIUM-226 (GFPC)

The method 9315 MS/MSD could not be performed for this batch, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data.

The following samples contained a slight yellow discoloration: W-1 (280-143890-1), W-2 (280-143890-2), W-3 (280-143890-3), W-3D (280-143890-4), W-4 (280-143890-5), MW-6 (280-143890-6), MW-7 (280-143890-7) and MW-8 (280-143890-8).

The following samples were treated with barium seeding to facilitate precipitation: W-1 (280-143890-1), W-2 (280-143890-2), W-3 (280-143890-3), W-3D (280-143890-4), W-4 (280-143890-5), MW-6 (280-143890-6), MW-7 (280-143890-7) and MW-8 (280-143890-8). Inadvertently the analyst during the into ingrowth process added extra EDTA which required a pH adjustment and minor barium seeding. The seeding was successful and does not have adverse effect to the result.

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

RADIUM-228

The method 9320 MS/MSD could not be performed for this batch, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data.

The following samples contained a slight yellow discoloration: W-1 (280-143890-1), W-2 (280-143890-2), W-3 (280-143890-3), W-3D (280-143890-4), W-4 (280-143890-5), MW-6 (280-143890-6), MW-7 (280-143890-7) and MW-8 (280-143890-8).

The following samples were treated with barium seeding to facilitate precipitation: W-1 (280-143890-1), W-2 (280-143890-2), W-3 (280-143890-3), W-3D (280-143890-4), W-4 (280-143890-5), MW-6 (280-143890-6), MW-7 (280-143890-7) and MW-8 (280-143890-8). Inadvertently the analyst during the into ingrowth process added extra EDTA which required a pH adjustment and minor barium seeding. The seeding was successful and does not have adverse effect to the result.

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Job ID: 280-143890-2 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

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

RADIUM-226/RADIUM-228 (GFPC)

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Client Sample ID: W-1

Lab Sample ID: 280-143890-1

☐ No Detections.

Client Sample ID: W-2

Lab Sample ID: 280-143890-2

☐ No Detections.

Client Sample ID: W-3

Lab Sample ID: 280-143890-3

☐ No Detections.

Client Sample ID: W-3D

Lab Sample ID: 280-143890-4

☐ No Detections.

Client Sample ID: W-4

Lab Sample ID: 280-143890-5

☐ No Detections.

Client Sample ID: MW-6

Lab Sample ID: 280-143890-6

☐ No Detections.

Client Sample ID: MW-7

Lab Sample ID: 280-143890-7

☐ No Detections.

Client Sample ID: MW-8

Lab Sample ID: 280-143890-8

☐ No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

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

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

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

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
280-143890-1	W-1	Water	12/15/20 13:15	12/17/20 13:55	
280-143890-2	W-2	Water	12/15/20 16:00	12/17/20 13:55	
280-143890-3	W-3	Water	12/15/20 14:30	12/17/20 13:55	
280-143890-4	W-3D	Water	12/15/20 14:30	12/17/20 13:55	
280-143890-5	W-4	Water	12/16/20 10:20	12/17/20 13:55	
280-143890-6	MW-6	Water	12/16/20 11:35	12/17/20 13:55	
280-143890-7	MW-7	Water	12/16/20 02:50	12/17/20 13:55	
280-143890-8	MW-8	Water	12/16/20 04:20	12/17/20 13:55	

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0890	U	0.0915	0.0919	1.00	0.147	pCi/L	12/21/20 08:36	01/14/21 13:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110					12/21/20 08:36	01/14/21 13:59	1

Client Sample ID: W-2
Date Collected: 12/15/20 16:00
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0967	U	0.0769	0.0774	1.00	0.114	pCi/L	12/21/20 08:36	01/14/21 13:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		40 - 110					12/21/20 08:36	01/14/21 13:59	1

Client Sample ID: W-3
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00648	U	0.0719	0.0719	1.00	0.140	pCi/L	12/21/20 08:36	01/14/21 13:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.1		40 - 110					12/21/20 08:36	01/14/21 13:59	1

Client Sample ID: W-3D
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0720	U	0.0756	0.0759	1.00	0.121	pCi/L	12/21/20 08:36	01/14/21 13:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					12/21/20 08:36	01/14/21 13:59	1

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.135	U	0.0975	0.0982	1.00	0.145	pCi/L	12/21/20 08:36	01/14/21 14:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					12/21/20 08:36	01/14/21 14:00	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-6
Date Collected: 12/16/20 11:35
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0842	U	0.0834	0.0837	1.00	0.132	pCi/L	12/21/20 08:36	01/14/21 14:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.9		40 - 110					12/21/20 08:36	01/14/21 14:00	1

Client Sample ID: MW-7
Date Collected: 12/16/20 02:50
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00222	U	0.0710	0.0710	1.00	0.138	pCi/L	12/21/20 08:36	01/14/21 14:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					12/21/20 08:36	01/14/21 14:00	1

Client Sample ID: MW-8
Date Collected: 12/16/20 04:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.128		0.0794	0.0802	1.00	0.109	pCi/L	12/21/20 08:36	01/14/21 16:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					12/21/20 08:36	01/14/21 16:21	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.753		0.331	0.338	1.00	0.476	pCi/L	12/21/20 09:19	01/06/21 13:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110					12/21/20 09:19	01/06/21 13:17	1
Y Carrier	71.0		40 - 110					12/21/20 09:19	01/06/21 13:17	1

Client Sample ID: W-2
Date Collected: 12/15/20 16:00
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.487		0.297	0.300	1.00	0.449	pCi/L	12/21/20 09:19	01/06/21 13:18	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Method: 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		40 - 110	12/21/20 09:19	01/06/21 13:18	1
Y Carrier	74.8		40 - 110	12/21/20 09:19	01/06/21 13:18	1

Client Sample ID: W-3
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3
Matrix: Water

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.317	U	0.300	0.301	1.00	0.484	pCi/L	12/21/20 09:19	01/06/21 13:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.1		40 - 110					12/21/20 09:19	01/06/21 13:18	1
Y Carrier	73.3		40 - 110					12/21/20 09:19	01/06/21 13:18	1

Client Sample ID: W-3D
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4
Matrix: Water

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.249	U	0.299	0.300	1.00	0.495	pCi/L	12/21/20 09:19	01/06/21 13:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					12/21/20 09:19	01/06/21 13:18	1
Y Carrier	73.3		40 - 110					12/21/20 09:19	01/06/21 13:18	1

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

			Count Uncert.	Total Uncert.						
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0514	U	0.255	0.255	1.00	0.446	pCi/L	12/21/20 09:19	01/06/21 13:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					12/21/20 09:19	01/06/21 13:19	1
Y Carrier	73.6		40 - 110					12/21/20 09:19	01/06/21 13:19	1

Client Sample ID: MW-6
Date Collected: 12/16/20 11:35
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6
Matrix: Water

		Count	Total							
		Uncert.	Uncert.							
Analyte	Result	Qualifier	(2σ+/-)	(2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0927	U	0.224	0.224	1.00	0.388	pCi/L	12/21/20 09:19	01/06/21 13:19	1
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	96.9		40 - 110							
Y Carrier	72.5		40 - 110							
								Prepared	Analyzed	Dil Fac
								12/21/20 09:19	01/06/21 13:19	1
								12/21/20 09:19	01/06/21 13:19	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-7
Date Collected: 12/16/20 02:50
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0637	U	0.211	0.211	1.00	0.372	pCi/L	12/21/20 09:19	01/06/21 13:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					12/21/20 09:19	01/06/21 13:19	1
Y Carrier	71.4		40 - 110					12/21/20 09:19	01/06/21 13:19	1

Client Sample ID: MW-8
Date Collected: 12/16/20 04:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.290	U	0.280	0.282	1.00	0.454	pCi/L	12/21/20 09:19	01/06/21 13:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					12/21/20 09:19	01/06/21 13:21	1
Y Carrier	71.4		40 - 110					12/21/20 09:19	01/06/21 13:21	1

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

Client Sample ID: W-1
Date Collected: 12/15/20 13:15
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.842		0.343	0.350	5.00	0.476	pCi/L		01/14/21 21:59	1

Client Sample ID: W-2
Date Collected: 12/15/20 16:00
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.584		0.307	0.310	5.00	0.449	pCi/L		01/14/21 21:59	1

Client Sample ID: W-3
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.324	U	0.308	0.309	5.00	0.484	pCi/L		01/14/21 21:59	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

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

Client Sample ID: W-3D
Date Collected: 12/15/20 14:30
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.321	U	0.308	0.309	5.00	0.495	pCi/L		01/14/21 21:59	1

Client Sample ID: W-4
Date Collected: 12/16/20 10:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.186	U	0.273	0.273	5.00	0.446	pCi/L		01/14/21 21:59	1

Client Sample ID: MW-6
Date Collected: 12/16/20 11:35
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.177	U	0.239	0.239	5.00	0.388	pCi/L		01/14/21 21:59	1

Client Sample ID: MW-7
Date Collected: 12/16/20 02:50
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0659	U	0.223	0.223	5.00	0.372	pCi/L		01/14/21 21:59	1

Client Sample ID: MW-8
Date Collected: 12/16/20 04:20
Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.418	U	0.291	0.293	5.00	0.454	pCi/L		01/14/21 21:59	1

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-492503/20-A

Matrix: Water

Analysis Batch: 495076

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 492503

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.002916	U	0.0733	0.0733	1.00	0.141	pCi/L	12/21/20 08:36	01/14/21 16:21	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.4		40 - 110					12/21/20 08:36	01/14/21 16:21	1

Lab Sample ID: LCS 160-492503/1-A

Matrix: Water

Analysis Batch: 495076

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 492503

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226		11.3	9.771		1.02	1.00	0.115	pCi/L	86	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	95.1		40 - 110							

Lab Sample ID: LCSD 160-492503/2-A

Matrix: Water

Analysis Batch: 495076

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 492503

Analyte		Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226		11.3	9.289		0.976	1.00	0.130	pCi/L	82	75 - 125	0.24	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits									
Ba Carrier	103		40 - 110									

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-492603/20-A

Matrix: Water

Analysis Batch: 494114

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 492603

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.08057	U	0.282	0.282	1.00	0.493	pCi/L	12/21/20 09:19	01/06/21 13:21	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.4		40 - 110					12/21/20 09:19	01/06/21 13:21	1
Y Carrier	72.1		40 - 110					12/21/20 09:19	01/06/21 13:21	1

Eurofins TestAmerica, Denver

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-492603/1-A

Matrix: Water

Analysis Batch: 494112

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 492603

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228		7.52	6.832		0.908	1.00	0.488	pCi/L	91	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	95.1		40 - 110
Y Carrier	72.5		40 - 110

Lab Sample ID: LCSD 160-492603/2-A

Matrix: Water

Analysis Batch: 494112

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 492603

Analyte		Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228		7.52	6.145		0.817	1.00	0.457	pCi/L	82	75 - 125	0.40	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	103		40 - 110
Y Carrier	74.8		40 - 110

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Rad

Prep Batch: 492503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	PrecSep-21	
280-143890-2	W-2	Total/NA	Water	PrecSep-21	
280-143890-3	W-3	Total/NA	Water	PrecSep-21	
280-143890-4	W-3D	Total/NA	Water	PrecSep-21	
280-143890-5	W-4	Total/NA	Water	PrecSep-21	
280-143890-6	MW-6	Total/NA	Water	PrecSep-21	
280-143890-7	MW-7	Total/NA	Water	PrecSep-21	
280-143890-8	MW-8	Total/NA	Water	PrecSep-21	
MB 160-492503/20-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-492503/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-492503/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 492603

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-143890-1	W-1	Total/NA	Water	PrecSep_0	
280-143890-2	W-2	Total/NA	Water	PrecSep_0	
280-143890-3	W-3	Total/NA	Water	PrecSep_0	
280-143890-4	W-3D	Total/NA	Water	PrecSep_0	
280-143890-5	W-4	Total/NA	Water	PrecSep_0	
280-143890-6	MW-6	Total/NA	Water	PrecSep_0	
280-143890-7	MW-7	Total/NA	Water	PrecSep_0	
280-143890-8	MW-8	Total/NA	Water	PrecSep_0	
MB 160-492603/20-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-492603/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-492603/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Client Sample ID: W-1

Date Collected: 12/15/20 13:15

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.34 mL	1.0 g	492503	12/21/20 08:36	KMP	TAL SL
Total/NA	Analysis	9315		1			495077	01/14/21 13:59	SCB	TAL SL
Total/NA	Prep	PrecSep_0			999.34 mL	1.0 g	492603	12/21/20 09:19	KMP	TAL SL
Total/NA	Analysis	9320		1			494112	01/06/21 13:17	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			495099	01/14/21 21:59	GRW	TAL SL

Client Sample ID: W-2

Date Collected: 12/15/20 16:00

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.86 mL	1.0 g	492503	12/21/20 08:36	KMP	TAL SL
Total/NA	Analysis	9315		1			495077	01/14/21 13:59	SCB	TAL SL
Total/NA	Prep	PrecSep_0			999.86 mL	1.0 g	492603	12/21/20 09:19	KMP	TAL SL
Total/NA	Analysis	9320		1			494112	01/06/21 13:18	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			495099	01/14/21 21:59	GRW	TAL SL

Client Sample ID: W-3

Date Collected: 12/15/20 14:30

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.28 mL	1.0 g	492503	12/21/20 08:36	KMP	TAL SL
Total/NA	Analysis	9315		1			495077	01/14/21 13:59	SCB	TAL SL
Total/NA	Prep	PrecSep_0			999.28 mL	1.0 g	492603	12/21/20 09:19	KMP	TAL SL
Total/NA	Analysis	9320		1			494112	01/06/21 13:18	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			495099	01/14/21 21:59	GRW	TAL SL

Client Sample ID: W-3D

Date Collected: 12/15/20 14:30

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.15 mL	1.0 g	492503	12/21/20 08:36	KMP	TAL SL
Total/NA	Analysis	9315		1			495077	01/14/21 13:59	SCB	TAL SL
Total/NA	Prep	PrecSep_0			999.15 mL	1.0 g	492603	12/21/20 09:19	KMP	TAL SL
Total/NA	Analysis	9320		1			494112	01/06/21 13:18	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			495099	01/14/21 21:59	GRW	TAL SL

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Client Sample ID: W-4

Date Collected: 12/16/20 10:20

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.48 mL	1.0 g	492503	12/21/20 08:36	KMP	TAL SL
Total/NA	Analysis	9315		1			495077	01/14/21 14:00	SCB	TAL SL
Total/NA	Prep	PrecSep_0			1000.48 mL	1.0 g	492603	12/21/20 09:19	KMP	TAL SL
Total/NA	Analysis	9320		1			494112	01/06/21 13:19	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			495099	01/14/21 21:59	GRW	TAL SL

Client Sample ID: MW-6

Date Collected: 12/16/20 11:35

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.92 mL	1.0 g	492503	12/21/20 08:36	KMP	TAL SL
Total/NA	Analysis	9315		1			495077	01/14/21 14:00	SCB	TAL SL
Total/NA	Prep	PrecSep_0			999.92 mL	1.0 g	492603	12/21/20 09:19	KMP	TAL SL
Total/NA	Analysis	9320		1			494112	01/06/21 13:19	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			495099	01/14/21 21:59	GRW	TAL SL

Client Sample ID: MW-7

Date Collected: 12/16/20 02:50

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			998.99 mL	1.0 g	492503	12/21/20 08:36	KMP	TAL SL
Total/NA	Analysis	9315		1			495077	01/14/21 14:00	SCB	TAL SL
Total/NA	Prep	PrecSep_0			998.99 mL	1.0 g	492603	12/21/20 09:19	KMP	TAL SL
Total/NA	Analysis	9320		1			494112	01/06/21 13:19	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			495099	01/14/21 21:59	GRW	TAL SL

Client Sample ID: MW-8

Date Collected: 12/16/20 04:20

Date Received: 12/17/20 13:55

Lab Sample ID: 280-143890-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.04 mL	1.0 g	492503	12/21/20 08:36	KMP	TAL SL
Total/NA	Analysis	9315		1	1.0 mL	1.0 mL	495076	01/14/21 16:21	SCB	TAL SL
Total/NA	Prep	PrecSep_0			999.04 mL	1.0 g	492603	12/21/20 09:19	KMP	TAL SL
Total/NA	Analysis	9320		1			494114	01/06/21 13:21	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			495099	01/14/21 21:59	GRW	TAL SL

Laboratory References:

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

Eurofins TestAmerica, Denver

Accreditation/Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Laboratory: Eurofins TestAmerica, St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-21
California	Los Angeles County Sanitation Districts	10259	06-30-21
California	State	2886	06-30-21
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-21
HI - RadChem Recognition	State	n/a	06-30-21
Illinois	NELAP	004553	11-30-21
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-21
Kentucky (DW)	State	KY90125	12-31-20 *
Louisiana	NELAP	04080	06-30-21
Louisiana (DW)	State	LA011	12-31-21
Maryland	State	310	09-30-21
MI - RadChem Recognition	State	9005	06-30-21
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-21
New Jersey	NELAP	MO002	06-30-21
New York	NELAP	11616	04-01-21
North Dakota	State	R-207	06-30-21
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-21
Oregon	NELAP	4157	09-01-21
Pennsylvania	NELAP	68-00540	02-28-21
South Carolina	State	85002001	06-30-21
Texas	NELAP	T104704193-19-13	07-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542019-11	07-31-21
Virginia	NELAP	10310	06-14-21
Washington	State	C592	08-30-21
West Virginia DEP	State	381	10-31-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Denver

Chain of Custody Record

Denver

#280

Client Information Client Contact: Molly Reeves Company: HDR Inc		Lab PM: Bandy, Darlene F E-Mail: darlene.bandy@testamericainc.com	
Address: 9781 S. Meridian Blvd Suite 400 City: Englewood State, Zip: CO, 80112 Phone: 734-263-7138(Tel) Email: Molly.Reeves@hdrinc.com		Project #: 28014377 SOW#:	
Due Date Requested: TAT Requested (days):		Analysis Requested: 9320_Ra228 - Standard Target List 9315_Ra226 - Standard Target List 25400 - Total Suspended Solids pH 9040B, Anions (CL, F, SO4) 9056A, 280 AP41 + AP1V Metals 6010C, 6020A 2540C, Calcd - Total Dissolved Solids (TDS) Perform MS/MSD (Yes or No)	
PO #: DEN-018 WO #:		Field Filtered Sample (Yes or No)	
Project Name: Xcel Energy GW CCR Monitoring - Hayden Site: Colorado		Field Filtered Sample (Yes or No)	
Sample Identification		Matrix (Water, Solid, Other)	
Sample Type (C=Comp, G=grab)		Preservation Code:	
Sample Date		Sample Time	
W-1 W-2 W-3 W-3D W-4 MW-6 MW-7 MW-8		12-15-20 1315 12-15-20 1600 12-15-20 1430 12-15-20 1430 12-16-20 1020 12-16-20 1135 12-16-20 1250 12-16-20 1420	
Total Number of Containers		Special Instructions/Note: App E III IV	
Preservation Codes: A - HCL M - Hexane N - None O - AshNaO2 P - Na2O4S Q - Nitric Acid R - NaHSO4 S - MeOH T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA Y - EDA Z - other (specify)		Other:	
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab ☐ Archive For Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Date:	
Relinquished by: Java Kent		Date/Time: 17 Dec 2020 1355	
Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:	
Custody Seals Intact:		Cooler Temperature(s) °C and Other Remarks: 29, 4.4, 0.6, +0.2, 18.9 12/17/20	
Yes No		Ver: 01/16/2019	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-143890-2

Login Number: 143890

List Source: Eurofins TestAmerica, Denver

List Number: 1

Creator: Kramer, Julieann L

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	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	
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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-143890-2

Login Number: 143890

List Number: 2

Creator: Boyd, Jacob C

List Source: Eurofins TestAmerica, St. Louis

List Creation: 12/19/20 02:35 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	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?	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.	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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Hayden

Job ID: 280-143890-2

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	
280-143890-1	W-1	98.8	
280-143890-2	W-2	92.0	
280-143890-3	W-3	91.1	
280-143890-4	W-3D	100	
280-143890-5	W-4	104	
280-143890-6	MW-6	96.9	
280-143890-7	MW-7	100	
280-143890-8	MW-8	101	
LCS 160-492503/1-A	Lab Control Sample	95.1	
LCSD 160-492503/2-A	Lab Control Sample Dup	103	
MB 160-492503/20-A	Method Blank	92.4	
Tracer/Carrier Legend			
Ba = Ba Carrier			

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
280-143890-1	W-1	98.8	71.0
280-143890-2	W-2	92.0	74.8
280-143890-3	W-3	91.1	73.3
280-143890-4	W-3D	100	73.3
280-143890-5	W-4	104	73.6
280-143890-6	MW-6	96.9	72.5
280-143890-7	MW-7	100	71.4
280-143890-8	MW-8	101	71.4
LCS 160-492603/1-A	Lab Control Sample	95.1	72.5
LCSD 160-492603/2-A	Lab Control Sample Dup	103	74.8
MB 160-492603/20-A	Method Blank	92.4	72.1
Tracer/Carrier Legend			
Ba = Ba Carrier			
Y = Y Carrier			