



2021 Annual Groundwater Monitoring and Corrective Action Report

LOS Ponds 2 and 3 Multi-unit

Leland Olds Station
Stanton, North Dakota
Basin Electric Power Cooperative

January 31, 2022
Project #60634880

Basin Electric Power Cooperative
Bismarck, North Dakota

Quality information

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List of Acronyms

AECOM	AECOM Technical Services, Inc.
ASD	Alternative Source Demonstration
Basin	Basin Electric Power Cooperative
CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
cm/sec	centimeters per second
ft amsl	feet above mean sea level
ft bgs	feet below ground surface
ft/day	feet per day
GWPS	groundwater protection standard
LOS	Leland Olds Station
LPL	lower prediction limit
SSIs	statistically significant increases
UPL	upper prediction limit

Executive Summary

This report summarizes groundwater monitoring and corrective action activities completed between January 1 and December 31, 2021 at the Ponds 2 and 3 Multi-unit at Leland Olds Station (LOS), as required by 40 Code of Federal Regulations (CFR) Section 257.90(e) of the United States Environmental Protection Agency Coal Combustion Residuals (CCR) Rule.

Detection-mode groundwater monitoring of the Multi-unit was initiated on November 11, 2019. Detection monitoring through 2021 identified no statistically significant increases (SSIs) of Appendix III indicator parameters boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids in the downgradient monitoring wells MW-2017-2, MW-2017-4, MW-2017-4, MW-2017-5, MW-2017-6, and MW-2017-7.

An Alternative Source Demonstration (ASD) was completed in December 2020 to evaluate whether a source other than the Pond 2 and Pond 3 Multi-unit was responsible for an unconfirmed SSI for pH identified at MW-2017-6 in August 2020. The ASD determined that the high pH values detected in the well resulted from its construction, specifically the effect of partially cured cement-bentonite grout in the well annular space and did not result from any effect of the Multi-unit. In 2020, the Sampling and Analysis Plan for the site was modified for MW-2017-6 and MW-2017-5 (as a precaution) to discontinue low-flow sampling in favor of using a decontaminated submersible pump to purge these wells at higher, but sustainable, flows to evacuate water that has been altered in the immediate vicinity by this alternative source and obtain a representative sample of the groundwater. The ASD did not alter the groundwater monitoring program, so detection monitoring was in place at the start and the end of the current annual reporting period (2021).

Other activities and conditions for the 2021 annual reporting period include:

- Semiannual detection-mode groundwater monitoring events were conducted in June and October. Monitoring involved sampling of two background monitoring wells and six downgradient monitoring wells.
- Groundwater sampling of one or more investigation wells was completed in June (MW-2017-8D and MW-2017-9) and October (MW-2017-8D only) for supplemental investigation of the Multi-unit.
- No well repair or decommissioning of the existing program monitoring networks was conducted.
- No program transitions (detection to assessment or vice versa) were triggered.
- No programmatic problems were encountered, so no remedies were required.

Anticipated activities for the next annual reporting period include:

- Completion of two semiannual detection-mode groundwater monitoring events.
- Statistical evaluation of groundwater data for Appendix III indicators.

1. Introduction

On behalf of Basin Electric Power Cooperative, (Basin), AECOM Technical Services, Inc. (AECOM) has prepared the 2021 annual report documenting groundwater monitoring and corrective action for the Coal Combustion Residuals (CCR) Ponds 2 and 3 Multi-unit (henceforth referred to as the Multi-unit) at Basin's Leland Olds Station (LOS). This is the fourth annual groundwater monitoring and corrective action report prepared for this site.

Chapter 1 provides background information on the power generating facility, the CCR unit(s) present at the facility, and the physical setting of the CCR unit(s), specifically with regard to groundwater conditions. Chapter 2 summarizes CCR groundwater monitoring activities conducted prior to January 2021. Chapter 3 summarizes the groundwater monitoring and corrective action activities completed between January and December 2021, and references attachments to this report that contain detailed documentation of those activities. Chapter 4 provides general information about the program including transitions and problems encountered in 2021 and actions planned for 2022. Chapter 5 presents summary and conclusions for the reporting period (January through December 2021). Chapter 6 lists references cited in this report.

Regulatory Background

The CCR rule effective on October 19, 2015, established standards for the disposal of CCR in landfills and surface impoundments (CCR units). In particular, the rule set forth groundwater monitoring and corrective action requirements for CCR units. The rule includes the requirement for an "annual groundwater monitoring and corrective action report" (annual report), submitted to the operating record annually on or before January 31 for inactive CCR units including the Multi-unit. The annual reports are intended to document the status of the groundwater monitoring and corrective action program for each CCR unit, summarize key actions completed in the previous year, and project key activities for the upcoming year. This report is the third annual report for the Multi-unit.

Facility Location and Operational History

LOS is a coal-based generating station located southeast of Stanton, North Dakota (**Figure 1**). The plant began operating in 1966 and consists of two power generating units with a total power output capacity of 669 megawatts.

CCR produced at LOS includes fly ash, bottom ash, and flue gas desulfurization waste.

CCR Unit Description

The Multi-unit is located on the east side of the LOS generating station (**Figure 1**). Closure of Bottom Ash Pond 2 and Pond 3 was completed in two phases. Phase I construction included the roughly southern half of Ash Pond 2 and was completed in 2017. Phase II construction began in 2019 and was completed in third quarter 2020. A closure notification, completed in accordance with the CCR Rule, including certification by a qualified professional engineer that the closure was completed in accordance with the written closure plan and the requirements of 40 Code of Federal Regulations (CFR) § 257.102, was posted on October 26, 2020.

Pond 2 and Pond 3 are now Closed-in-Place with their last operational configuration presented as **Figure 2**.

Physical Setting

The Multi-unit is situated in the valley of the Missouri River. The valley floor is relatively flat, with two relatively poorly defined terraces ranging from 1,670 feet above mean sea level (ft amsl) to a maximum elevation of 1,715 ft amsl near the southern property boundary. Seven of the CCR monitoring wells are located on the lower (first) terrace level, while one well is located on the upper (second) terrace (**Figure 2**).

The geology underlying the Multi-unit is generally comprised of a minimum of 50 feet of alluvial silt, silty sand, and gravel deposits. The upper terrace level appears to be underlain by at least 25 more feet of alluvial deposits than is found adjacent to the Multi-unit. The alluvial deposits are underlain by the Sentinel Butte Formation, which is described as 1,000 feet or more of continental deposits consisting of dense clay, weakly cemented sandstone, and mudstone interlaced with occasional lignite beds that typically range from 5 to 10 feet in thickness.

Groundwater at the lower terrace locations is found within alluvial deposits comprised primarily of silty, fine to medium-grained sand at depths ranging roughly from 17 to 35 feet below ground surface (ft bgs). Aquifer testing completed at monitoring wells MW-2017-3, MW-2017-4, MW-2017-5, and MW-2017-6 indicates hydraulic conductivity values within the monitored aquifer ranging from 1.28×10^{-2} to 6.94×10^{-4} centimeters per second (cm/sec) with a geometric mean of 2.0×10^{-3} cm/sec (5.67 feet per day [ft/day]). The potentiometric surface of the uppermost groundwater underlying the lower terrace area is typically encountered at approximately 1,664 ft amsl. Although the direction of groundwater flow is highly influenced by changes in the elevation of the Missouri River, the net flow direction is expected to be eastward in the general direction of river flow with some flow northward into the river. Groundwater at the upper terrace is perched at a considerably higher elevation with limited hydraulic connection to the lower terrace. As a result, the groundwater from the upper terrace is expected to act as a limited background/upgradient influence on the uppermost aquifer at the Multi-unit.

2. CCR Groundwater Monitoring and Corrective Action Activities Prior to January 2021

The regulatory process for CCR groundwater monitoring and corrective action is established by 40 CFR Sections 257.90 through 257.98. The process includes a phased approach to groundwater monitoring, leading (if applicable) to the establishment of groundwater protection standards (GWPSs) for each CCR unit. Exceedances of the GWPSs that are determined to be statistically significant can trigger requirements for additional groundwater characterization and Assessment of Corrective Measures followed by selection of remedy and remedy implementation.

The following paragraphs provide a brief summary of CCR groundwater monitoring activities performed prior to 2021. CCR groundwater monitoring activities performed between January and December 2021 are discussed in Chapter 3.

Groundwater monitoring at LOS is performed using a network of monitoring wells that includes both wells to monitor background water quality that is not potentially influenced by the presence of the CCR unit, and wells placed at the downgradient boundary of the unit (**Figure 2**). The hydrostratigraphic position of the CCR monitoring wells selected for sampling background and downgradient groundwater quality for the LOS CCR unit is summarized below:

CCR unit	Background wells	Downgradient wells
Ponds 2 and 3 Multi-unit	MW-2017-1 and MW-2017-8	MW-2017-2, MW-2017-3, MW-2017-4, MW-2017-5, MW-2017-6, and MW-2017-7

As previously stated in the introduction, this is the fourth annual groundwater and corrective action report prepared for the LOS Multi-unit. Baseline monitoring for the LOS Multi-unit initiated in September 2017 involved sampling groundwater for 40 CFR Part 257 Appendix III and IV constituents over eight monitoring events. Baseline monitoring events were performed in general accordance with procedures established in the site-specific Sampling and Analysis Plan (AECOM 2019a), which is included in the facility's Operating Record. The Sampling and Analysis Plan describes the procedures for equipment calibration, monitoring well water level measurement, monitoring well purging and sampling, sample custody, sample shipping, laboratory analysis, and documentation requirements for each groundwater sample submitted. The results of baseline monitoring at LOS were presented and discussed in the First Annual Groundwater Monitoring and Corrective Action Report, Fall 2017-Spring 2019 (AECOM 2019b) issued on July 31, 2019. The LOS Multi-unit was placed in detection monitoring in the fall of 2019 with the first groundwater sampling event completed in November 2019 then twice annually thereafter. The results of detection monitoring at the LOS Multi-unit between August 1, 2019 and December 31, 2019, and for January 1, 2020 to December 31, 2020 were presented and discussed in the Second and Third Annual Groundwater Monitoring and Corrective Action Reports, respectively (AECOM 2020, 2021).

3. CCR Groundwater Monitoring and Corrective Action Activities (January-December 2021)

This chapter summarizes the groundwater monitoring and corrective action activities conducted at the LOS CCR Multi-unit between January 1, 2021 and December 31, 2021. To comply with the requirements of the CCR Rule, this report presents:

- Groundwater Detection Monitoring Activities
 - monitoring system evaluation
 - groundwater monitoring completed May 2021
 - groundwater monitoring completed in September 2021
 - laboratory analysis for the May and September events
- Statistical analysis of the monitoring results

Further details concerning each of these activities, including a brief discussion of work completed during the reporting period are provided below.

Detection Monitoring Activities

Monitoring System Evaluation

As described in the CCR Groundwater Monitoring System Report (AECOM 2019c), monitoring wells were installed around the CCR Multi-unit with appropriate total depth and placement of the well screen to: (1) facilitate collection of representative groundwater samples from the uppermost aquifer; and (2) accurately measure water table elevations to support evaluation of groundwater gradient and flow direction. All monitoring wells comprising the Multi-unit monitoring system were found to be in good condition during the detection monitoring events conducted in June and October 2020.

Potentiometric surface maps were constructed using the depth-to-groundwater measurements obtained at the beginning of each detection monitoring event as presented in **Attachment A**. The direction of groundwater flow observed in both the May and October events was generally northeast toward the Missouri River. Baseline and detection monitoring completed between fall of 2017 through 2020 indicated that groundwater flow is generally northeast toward the Missouri River, but that reverse flow and parallel flow conditions, as observed during the June 2020 event, are to be expected, depending on prevailing river stage conditions at the time the event is conducted (AECOM 2019b, 2020). The general groundwater flow direction observed during the 2021 detection monitoring events support the designation of the wells noted in Section 2 above to represent background groundwater quality and the quality of groundwater downgradient of the Multi-unit.

Groundwater Sampling and Analysis

The detection monitoring events completed in 2021 included analysis of collected groundwater samples for the constituents listed in Part 257 Appendix III. The tabulated laboratory analytical results are presented in **Attachment A**, along with potentiometric surface maps for the uppermost aquifer, inferred groundwater flow direction and estimated velocities, and a tabulated summary of field measurements.

Sampling and analysis was performed in general accordance with procedures established in the Sampling and Analysis Plan (AECOM 2019a). For 2021, the May and September detection monitoring events included modified sampling procedures for downgradient wells MW-2017-5 and MW-2017-6 that were established in 2020 to address elevated pH readings observed in these wells. The sampling procedure modification included the removal of the dedicated bladder pumps from both wells in favor of submersible pumps with higher groundwater flow rates to remove the water with pH that is altered by the chemistry of the cement-bentonite grout used during well installation, which has raised the pH in

the immediate vicinity. Further details on the sampling procedure change are provided in the detection-mode ASD discussion included in the 2020 Annual report (AECOM 2020).

Statistical Procedures and Analysis

The cumulative groundwater data collected for Appendix III indicator parameters at the LOS Multi-unit was evaluated in accordance with the statistical procedures as certified on April 17, 2019 (AECOM 2019c). Program monitoring wells MW-2017-1 and MW-2017-8 are the designated background monitoring well locations for the LOS Multi-Unit for statistical comparison to downgradient monitoring wells MW-2017-2 through MW-2017-7 during the 2021 reporting period.

The Appendix III groundwater quality data were evaluated using an interwell approach that statistically compares constituent concentrations at downgradient monitoring wells to those present at background monitoring wells. For the LOS Multi-unit, monitoring wells MW-2017-1 and MW-2017-8 are designated as background wells because they are consistently located in background positions whereas monitoring wells MW-2017-2, MW-2017-3, MW-2017-4, MW-2017-5, MW-2017-6, and MW-2017-7 are often located downgradient of the Multi-unit but may individually be upgradient or side-gradient during some events depending on the river influence on groundwater flow direction.

Prediction limits (i.e., parametric or nonparametric) were developed for each constituent based on the frequency of non-detect values and whether the background data for that constituent exhibited a normal, lognormal, or nonparametric distribution. Analytical data from the background monitoring wells collected between September 2017 and October 2020 were used to develop upper and lower prediction limits (UPLs/LPLs) for the Appendix III constituents at 95 percent confidence. An LPL was also developed for pH because it is a two-sided parameter. ProUCL Version 5.1 was used to store the data and run the statistical analyses to calculate the UPLs. The background UPLs/LPLs for Appendix III constituents were last updated at the end of the 2020 reporting period. The next UPL/LPL update is anticipated to occur at the end of 2024.

Data from the downgradient monitoring wells for the same time period were compared to the UPL or LPL to identify SSIs over background. Mann-Kendall trend analysis was used to identify statistically significant increasing trends for constituents with a verified SSI. The statistical analysis results indicate that calcium, chloride, fluoride, pH, sulfate, and total dissolved solids do not currently exhibit SSIs over background. The analysis also indicated an unverified SSI for pH at MW-2017-6 during the September 2021 event. This unverified pH SSI will be reassessed for the next detection monitoring event to be completed in the first half of 2022. The Statistical Analysis Methods, Background UPLs/LPLs, and results for 2021 are provided as **Attachment B**.

4. General Information

The following subsections summarize any problems encountered in the LOS Multi-unit CCR program through 2021, any resolutions to those problems, if needed and upcoming actions planned for 2022.

Program Transitions 2021

There were no program transitions during the January to December 2021 monitoring period.

Problems Encountered

No problems were encountered during the January to December 2021 monitoring period.

Actions Planned for 2022

Basin plans on continuing the detection monitoring program for the Multi-unit in 2022. The detection monitoring program will include semi-annual groundwater sampling events and the required statistical evaluations.

5. Summary and Conclusions

Basin conducted two rounds of CCR groundwater detection monitoring at the LOS Multi-unit between January and December 2021. The results were used to establish background groundwater quality for Appendix III constituents in the uppermost aquifer, identify appropriate UPLs, and determine whether any UPLs represent SSIs downgradient of the Multi-unit.

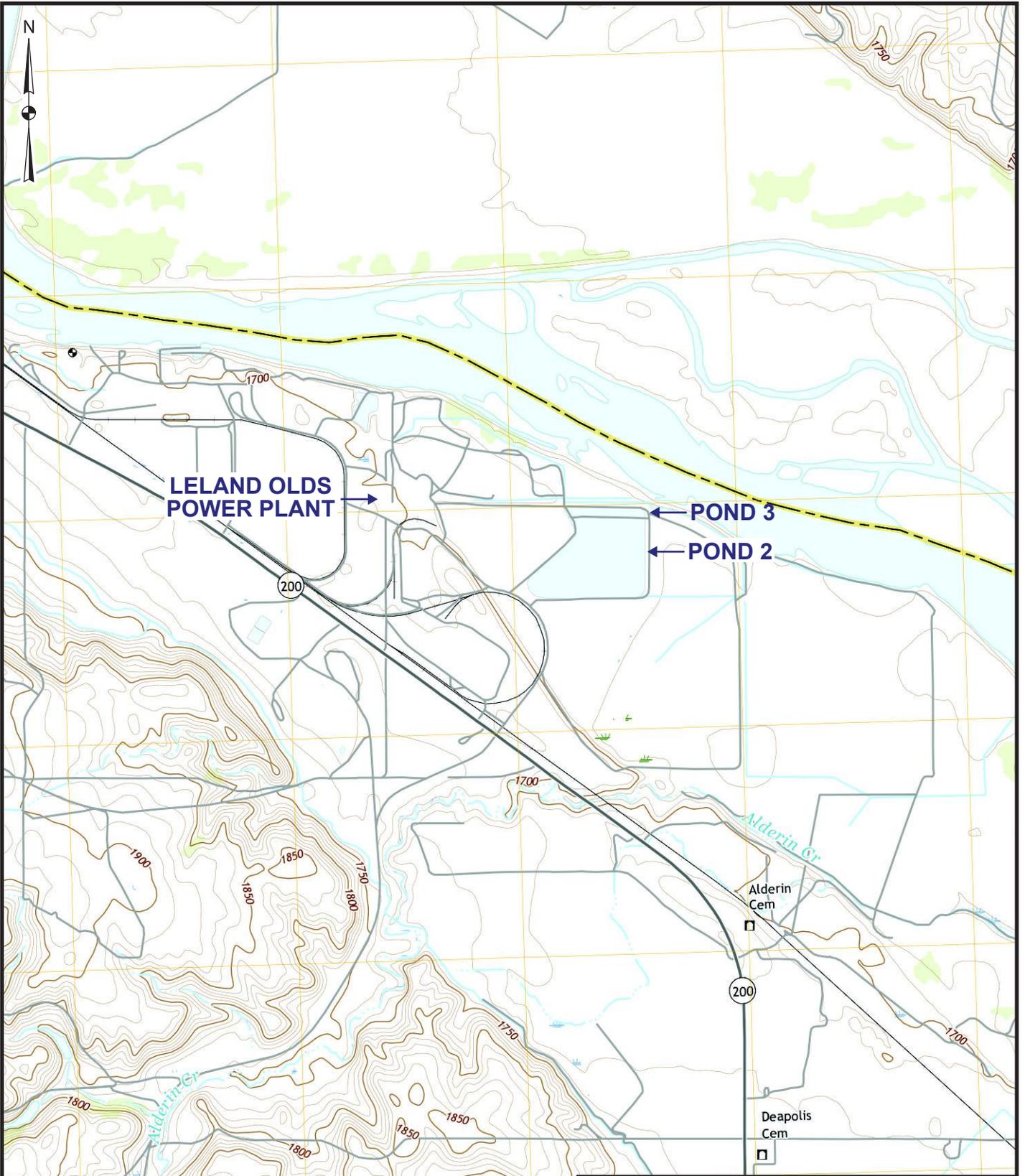
The statistical analysis results indicate that none of the Appendix III constituents had SSIs over background or statistically significant increasing trends in constituent concentrations. Based on these results, assessment monitoring is not required at the LOS Multi-unit. Detection monitoring will continue at the site in 2022.

6. References

- AECOM. 2019a. Pond 2 and Pond 3 Multi-Unit Sampling and Analysis Plan, CCR Monitoring Program, Leland Olds Station, Stanton, North Dakota. Basin Electric Power Cooperative. April 2019.
- AECOM. 2019b. First Annual Groundwater Monitoring and Corrective Action Report, Fall 2017- Spring 2019, Pond 2 and Pond 3 Multi-Unit, Leland Olds Station, Stanton, North Dakota. Basin Electric Power Cooperative. July 31, 2019.
- AECOM. 2019c. Pond 2 and Pond 3 Multi-unit CCR Groundwater Monitoring System Report, Leland Olds Station, Stanton, North Dakota. Basin Electric Power Cooperative. October 2017.
- AECOM. 2020. Second Annual Groundwater Monitoring and Corrective Action Report, 2019 issued January 31, 2020.
- AECOM. 2021. Third Annual Groundwater Monitoring and Corrective Action Report, 2020 issued January 31, 2021.

Figures

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0 2,000 4,000
 APPROXIMATE SCALE IN FEET

■ ND

Quadrangle Location

BASE MAP SOURCE: USGS 7½ minute topographic quadrangle map Stanton SE, North Dakota 2018.

BASIN ELECTRIC POWER COOPERATIVE

FIGURE 1
 SITE VICINITY MAP
 LOS POND 2 AND POND 3 MULTIUNIT

JOB NO. 60634880

AECOM



DRAWING: NORTH DAKOTA STATE PLANE NAD27 SOUTH ZONE-FT
 PHOTO: NAIP MERCER COUNTY FALL OF 2017 / UTM NAD83 ZONE 14N-METERS

LEGEND

- ▲ MONITORING WELL
- ⊙ CCR RULE COMPLIANCE WELL
- ◻ SITE CHARACTERIZATION WELL
- (144-84-2X-XXXX) NOT USED FOR CONTOURING
- Terrace Boundary (Inferred)

	BASIN ELECTRIC POWER COOPERATIVE		LELAND OLDS STATION STANTON, NORTH DAKOTA
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FIGURE 2
WELL LOCATION MAP
LOS POND 2 AND POND 3 MULTIUNIT

Attachment A

Sampling and Analysis Report, 2021, Pond 2 and Pond 3 Multi-unit CCR Monitoring Program



2021 Sampling and Analysis Report, LOS Pond 2 and Pond 3 Multi-unit CCR Monitoring Program

Leland Olds Station
Stanton, North Dakota

Basin Electric Power Cooperative

January 31, 2022

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Table 3	Analytical Results Summary

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Appendix A	Analytical Laboratory Reports, May and September 2021
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List of Acronyms

AECOM	AECOM Technical Services, Inc.
Basin	Basin Electric Power Cooperative
CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
LOS	Leland Olds Station

1. Introduction

On behalf of Basin Electric Power Cooperative (Basin), AECOM Technical Services, Inc. (AECOM) prepared this Coal Combustion Residuals (CCR) Groundwater Sampling and Analysis Report for the Pond 2 and Pond 3 Multi-unit at Basin's Leland Olds Station (LOS). The objective of the report is to provide a description of the field and office activities performed between January and December of 2021.

This Sampling and Analysis Report was prepared to present the results of sampling and analysis of groundwater conducted for the monitoring requirements of the United States Environmental Protection Agency CCR rule (Chapter 40 of the Code of Federal Regulations [CFR], Sections 257.90 to 257.98). Specifically, the report presents the data collected for the groundwater detection monitoring events conducted in May and September of 2021.

2. Groundwater Flow

As required by 40 CFR Section 257.93(c), groundwater elevations were measured for each well prior to purging each time groundwater was sampled. The measurements, presented in **Tables 1A** and **1B**, were used to create a potentiometric surface map for the uppermost aquifer for the detection monitoring events completed in May and September 2021, respectively. The resulting potentiometric surface maps, presented as **Figures 1** and **2**, were used to evaluate the direction of groundwater flow and hydraulic gradient for the subject CCR unit for each event. The potentiometric surface and direction of groundwater flow at the site is primarily controlled by changes in the river stage elevation of the Missouri River. In both May and September 2021, groundwater flow was generally northeast toward the Missouri River. Previous reporting periods have, on occasion, observed groundwater flow reversal to the south-southwest away from the Missouri River and then swinging broadly down-valley to the east-southeast. The seasonal flow directions observed in 2021 are generally consistent with those observed during previous monitoring events starting with the first gauging event in the fall of 2017. Groundwater flow velocities for the 2021 detection monitoring events were calculated and are summarized in **Table 2**. The velocities calculated for the 2021 events are generally consistent with those observed historically.

Based on the groundwater flow conditions documented in this chapter, the relative function of the monitoring wells employed in the LOS CCR groundwater monitoring system is as follows:

CCR unit	Background wells	Downgradient wells
Pond 2 and Pond 3 Multi-unit	MW-2017-1 and MW-2017-8	MW-2017-2, MW-2017-3, MW-2017-4, MW-2017-5, MW-2017-6, and MW-2017-7

Monitoring well MW-2017-8 is added to the groundwater monitoring network as a background well due to its upgradient location relative to the multi-unit. Additional evaluation of this area was initiated in 2020, including gauging, sampling, and installation of a deeper well, identified as MW-2017-8D. The boring for MW-2017-8D confirmed the presence of clay at the bottom of MW-2017-8, establishing the top of bedrock at this location. The boring was advanced through this clay to a depth of 61.5 feet below ground surface where a 2.5-foot-thick groundwater-yielding lignite bed was identified. MW-2017-8D was screened across this lignite to allow for further evaluation of the groundwater chemistry. One additional well, identified as MW-2017-9, was installed in October 2020 to aid in the characterization of the area southwest of the multi-unit. The surveyed location of each of these wells is presented in the potentiometric surface maps (**Figure 1** and **Figure 2**).

3. Groundwater Quality

The analytical testing laboratory provided a report presenting the results of laboratory analysis for the May and September 2021 monitoring events. The laboratory report is included in the operating record and was reviewed for completeness against the project-required methods and the chain-of-custody forms. The laboratory report was also reviewed for holding times, and to check that the data was appropriately flagged based on the quality assurance/quality control data provided. A data validation report was prepared for the monitoring event and is included in the operating record. The validated results for the May and September 2021 sampling events are compiled into summary form as presented in **Table 3** with final laboratory reports for each event included as **Appendix A**.

Figures



Tables

Table 1A. First Half 2021 - Groundwater Monitoring Water Levels and Elevations

**CCR Monitoring Wells
 LOS Pond 2 and Pond 3 - Multi-unit
 Stanton, North Dakota**

	Reference Elevation	May 11, 2021	Groundwater
	Top of Casing	Depth to Water	Elevation
Well ID	(feet, NAVD 88)	(feet)	(feet, NAVD 88)
MW-2017-1	1,683.86	24.94	1,658.92
MW-2017-2	1,681.03	22.30	1,658.73
MW-2017-3	1,682.36	23.61	1,658.75
MW-2017-4	1,684.13	25.49	1,658.64
MW-2017-5	1,691.72	33.00	1,658.72
MW-2017-6	1,693.44	34.50	1,658.94
MW-2017-7	1,698.25	39.25	1,659.00
MW-2017-8	1,717.23	29.37	1,687.86
MW-2017-8D	1,716.27	38.21	1,678.06
MW-2017-9	1,709.93	50.80	1,659.13
*Missouri River at 0900 on 5/11/2021			1657.46

* Elevation as reported at USGS 06340700 Missouri River near Stanton, ND.

Table 1B. Second Half 2021 - Groundwater Monitoring Water Levels and Elevations

**CCR Monitoring Wells
 LOS Pond 2 and Pond 3 - Multi-unit
 Stanton, North Dakota**

Well ID	Reference Elevation Top of Casing (feet, NAVD 88)	September 21, 2021 Depth to Water (feet)	Groundwater Elevation (feet, NAVD 88)
MW-2017-1	1,683.86	25.00	1,658.86
MW-2017-2	1,681.03	23.30	1,657.73
MW-2017-3	1,682.36	27.78	1,654.58
MW-2017-4	1,684.13	26.75	1,657.38
MW-2017-5	1,691.72	33.88	1,657.84
MW-2017-6	1,693.44	35.35	1,658.09
MW-2017-7	1,698.25	40.20	1,658.05
MW-2017-8	1,717.23	29.60	1,687.63
MW-2017-8D	1,716.27	38.29	1,677.98
MW-2017-9	1,709.93	NM	NM
*Missouri River at 0901 on 9/21/2021			1656.57

* Elevation as reported at Leland Olds Station River intake in Stanton ND.

**Table 2. Estimated Groundwater Gradient And Seepage Velocity
 CCR Program Monitoring Wells
 Leland Olds Station Pond 2 And Pond 3 Multi-Unit – Stanton, North Dakota**

Date of event	d _i (ft)	d _h (ft)	i (ft/ft)	n _e	K (ft/day)	v _s (ft/day)
3/12/2018	Insufficient Data: Limited site access due to high water					
4/17/2018	307	0.25	0.00081	0.33	1.16E+01	2.86E-02
6/14/2018*	493	0.25	0.00051	0.33	1.16E+01	1.78E-02
7/23/2018*	397	0.5	0.00126	0.33	1.16E+01	4.43E-02
9/27/2018*	480	0.25	0.00052	0.33	1.16E+01	1.83E-02
3/12/2019	337	0.5	0.00148	0.33	1.16E+01	5.22E-02
3/27/2019	300	0.5	0.00167	0.33	1.16E+01	5.86E-02
4/9/2019	303	0.75	0.00248	0.33	1.16E+01	8.70E-02
11/11/2019*	300	0.1	0.00033	0.33	1.16E+01	1.17E-02
6/8/2020*	960	0.29	0.00030	0.33	1.16E+01	1.06E-02
10/5/2020	810	0.6	0.00074	0.33	1.16E+01	2.60E-02
5/11/2021	620	0.2	0.00032	0.33	1.16E+01	1.13E-02
9/21/2021	700	0.4	0.00057	0.33	1.16E+01	2.01E-02

d_i = Horizontal separation between upgradient and downgradient locations perpendicular to potentiometric contours

d_h = Change in hydraulic head between upgradient and downgradient locations

i = Hydraulic gradient (change in elevation over distance)

n_e = Site average porosity of 33%

K = Site average hydraulic conductivity of 11.6 ft/day from slug tests at site

v_s = Seepage Velocity (ft/day)

* = Groundwater flow direction during event was from river to aquifer

Hydraulic Gradient Governing Equation¹ –
$$i = -dh/dl$$

Seepage Velocity Governing Equation² –
$$v_s = -K * i / n_e$$

**Table 3. Detection-Mode (Appendix III) Analytical Results Summary (2018-2021)
 LOS Pond 2 and Pond 3 Multi-Unit CCR Monitoring Well Network Leland Olds Station - Stanton, North Dakota**

Well ID	Event	Date	Appendix III Constituents						
			Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH SU	Sulfate mg/L	TDS mg/L
MW-2017-1	Event 01	3/12/18	2 F1	100	8.8	< 0.50 U	6.95	210	710
MW-2017-1	Event 02	4/17/18	2.1 F1	96	9.4	< 0.50 U	6.86	200	680
MW-2017-1	Event 03	6/14/18	2.2	89	8.2	< 0.50 U	7.06	220	690 H
MW-2017-1	Event 04	7/25/18	2.36 F1	91.1	8.73	< 0.500 U	7.21	218	710
MW-2017-1	Event 05	8/27/18	2.37	89.6	8.65	< 0.500 U	7.38	219	707
MW-2017-1	Event 06	3/12/19	2.15	103	8.5 H	< 0.500 UH	7.19	217 H	735
MW-2017-1	Event 07	3/27/19	2.02	98.3	8.53 HF1	< 0.500 UH	7.26	212 H	718
MW-2017-1	Event 08	4/9/19	2.02	107	8.91	< 0.500 U	7.23	221	761 H
MW-2017-1	Event 09	11/12/19	1.11	130	9	0.426	7.73	233	740
MW-2017-1	Event 10	6/8/20	1.04	150	7.74	<0.500 U	6.86	260	1050
MW-2017-1	Event 11	10/5/20	0.964	158	9.87	<0.500 U	7.01	270	960
MW-2017-1	Event 12	5/12/21	0.828	160	8.73	0.636	6.87	238	1030
MW-2017-1	Event 13	9/21/21	0.793	156	9.9	0.546	6.84	227	980
MW-2017-1 Dup	Event 01	3/12/18	2.1	110	8.8	< 0.50 U	6.95	210	710 H
MW-2017-1 Dup	Event 02	4/17/18	2.1	97	8.7	< 0.50 U	6.86	190	720
MW-2017-1 Dup	Event 03	6/14/18	2.3	92	8.2	< 0.50 U		220	720
MW-2017-1 Dup	Event 04	7/25/18	2.34	90.3	8.74	< 0.500 U		215	710
MW-2017-1 Dup	Event 05	8/27/18	2.42	91.1	8.73	< 0.500 U		220	717
MW-2017-1 Dup	Event 06	3/12/19	2.18	106	9.23 H	< 0.500 UH		219 H	742
MW-2017-1 Dup	Event 07	3/27/19	2.25	106	8.46 H	< 0.500 UH		211 H	740
MW-2017-1 Dup	Event 08	4/9/19	2.02	109	9	< 0.500 U		218	773 H
MW-2017-2	Event 01	3/12/18	1.6	120	12	< 0.50 U	6.88	320	920
MW-2017-2	Event 02	4/17/18	1.4	130	12	< 0.50 U	7.37	330	930
MW-2017-2	Event 03	6/14/18	1.3	130	10	< 0.50 U	7.04	320	890 H
MW-2017-2	Event 04	7/23/18	1.6	73.7	10.6	0.608	7.19	262	690
MW-2017-2	Event 05	8/27/18	1.61	74.1	10.5	0.537	7.49	261	< 10.0 U
MW-2017-2	Event 06	3/12/19	1.18	120	11.8 H	< 0.500 UH	7.19	323 H	910
MW-2017-2	Event 07	3/27/19	1.13	122	11.2 H	< 0.500 UH	7.12	336 H	948
MW-2017-2	Event 08	4/9/19	1.22	121	11.3	< 0.500 U	7.25	308	853 H
MW-2017-2	Event 09	11/12/19	0.82	75.3	10.7	0.524	7.94	231	676
MW-2017-2	Event 10	6/9/20	1.3	82.7	8.13	<0.500 U	7.26	233	732
MW-2017-2	Event 11	10/6/20	1.18	91.7	10.1	<0.500 U	7.05	269	803
MW-2017-2	Event 12	5/12/21	1.36	81.2	8.47	<0.500 U	7.09	244	690
MW-2017-2	Event 13	9/21/21	1.47	70.8	10.1	0.54	7.1	258	677
MW-2017-2 Dup	Event 10	6/9/20	1.31	83.2	8.1	<0.500 U		233	770
MW-2017-3	Event 01	3/12/18	1.6	84	11	0.5	6.71	190	760
MW-2017-3	Event 02	4/17/18	1.6	87	11	< 0.50 U	7.04	190	750
MW-2017-3	Event 03	6/14/18	1.6	84	9.4	< 0.50 U	7.1	200	750 H
MW-2017-3	Event 04	7/23/18	1.57	87.2	10.6	< 0.500 U	7.09	184	770
MW-2017-3	Event 05	8/27/18	1.61	81.4	10.5	< 0.500 U	7.35	187	765
MW-2017-3	Event 06	3/12/19	1.63	81.1	10.7 H	< 0.500 UH	7.25	190 H	765
MW-2017-3	Event 07	3/27/19	1.75 F1	80.3	10.6 H	0.516 H	7.15	182 H	756
MW-2017-3	Event 08	4/9/19	1.71	84.7	10.9	0.523	7.3	190	739 H
MW-2017-3	Event 09	11/11/19	1.45	72.4	10.6	0.498	7.86	184	710
MW-2017-3	Event 10	6/8/20	1.62	76	8.09	<0.500 U	7.31	173	764
MW-2017-3	Event 11	10/6/20	1.7	80.4	9.8	<0.500 U	7.04	194	754
MW-2017-3	Event 12	5/12/21	1.68	84.4	8.43	<0.500 U	6.87	169	765
MW-2017-3	Event 13	9/22/21	1.73	89.9	9.71	0.591	7.1	188 F1	792
MW-2017-3 Dup	Event 09	11/11/19	1.97	105	10.6	0.498	7.86	186	714
MW-2017-3 Dup	Event 12	5/12/21	1.7	85.9	8.35	<0.500 U	6.87	174	797
MW-2017-4	Event 01	3/12/18	1.4	140	9.8	0.75	6.82	300	830
MW-2017-4	Event 02	4/17/18	1.2	140	10	0.77	6.64	310	860
MW-2017-4	Event 03	6/14/18	1.2	140	9.3	0.59	7.02	300	870 H
MW-2017-4	Event 04	7/25/18	1.13	128	10.4	0.791	7.06	252	800
MW-2017-4	Event 05	8/28/18	1.15	127	10.3	0.79	7.31	292	818
MW-2017-4	Event 06	3/12/19	1.35	139	10.1 H	0.716 H	7.1	307 H	788
MW-2017-4	Event 07	3/27/19	1.47	133	9.55 H	0.725 H	7.06	294 H	850
MW-2017-4	Event 08	4/9/19	1.6	154	9.75	0.747	7.07	294	854 H
MW-2017-4	Event 09	11/11/19	1.74	78.5	10.4	0.768	7.78	289	832
MW-2017-4	Event 10	6/8/20	1.23	118	7.89	0.622	6.3	281	836
MW-2017-4	Event 11	10/6/20	1.45	134	9.1	0.509	6.8	291 F1	835
MW-2017-4	Event 12	5/12/21	1.25	124	8.3	0.595	7.12	295	825
MW-2017-4	Event 13	9/22/21	1.42	135	8.43	0.787	6.93	286	808

**Table 3. Detection-Mode (Appendix III) Analytical Results Summary (2018-2021)
 LOS Pond 2 and Pond 3 Multi-Unit CCR Monitoring Well Network Leland Olds Station - Stanton, North Dakota**

Well ID	Event	Date	Appendix III Constituents						
			Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH SU	Sulfate mg/L	TDS mg/L
MW-2017-5	Event 02	4/18/18	0.64	82	11	< 0.50 U	7.17	300	660
MW-2017-5	Event 03	6/14/18	0.74	82	9.5	< 0.50 U	6.98	290	650 H
MW-2017-5	Event 04	7/25/18	0.753	82.2	10.5	< 0.500 U	7.04	361	670
MW-2017-5	Event 05	8/28/18	0.87	84.1	10.4	0.514	7.34	304	676
MW-2017-5	Event 06	3/12/19	0.89	86.8	10.7 H	0.711 H	7.7	315 H	685
MW-2017-5	Event 07	3/27/19	0.897	79.7	11.1 H	0.778 H	7.49	314 H	659
MW-2017-5	Event 08	4/9/19	0.963	87.6	11.3	0.784	7.4	310	668 H
MW-2017-5	Event 09	11/11/19	1.78	82.3	11	0.812	7.42	293	628
MW-2017-5	Event Supp	11/1/18	0.93	85.4	10.8	0.64	7.22	321	1130
MW-2017-5	Event 10	6/8/20	0.68	53.9	8.01	1.04	8.91	257	636
MW-2017-5	Event 11	10/20/20	0.811	77.7	8.66	0.897	7.22	272 H	676
MW-2017-5	Event 12	5/11/21	0.842	83.1	8.86	0.753	7.52	273	646
MW-2017-5	Event 13	9/23/21	0.827	84.4	9.39	0.86	7.42	292	655
MW-2017-6	Event 02	4/18/18	2.6	87	8.3	< 0.50 U	11.79	220	630
MW-2017-6	Event 03	6/14/18	1.2	63	10	< 0.50 U	11.66	220	430 H
MW-2017-6	Event 04	7/25/18	1.06	65.8	11	0.503	10.08	212	470
MW-2017-6	Event 05	8/28/18	1.05	56.4	11.1	0.54	10.05	197	490
MW-2017-6	Event 06	3/12/19	1.26	55.5	11.1 H	0.545 H	9.52	205 H	534
MW-2017-6	Event 07	3/27/19	11.4	60.6	5.03 H	0.634 H	11.52	502 H	619
MW-2017-6	Event 08	4/9/19	5.06	46.5	9.17	< 0.500 U	11.81	270	618 H
MW-2017-6	Event 09	11/11/19	1.77	39.4	10.4	0.513	9.57	218	552
MW-2017-6	Event Supp	11/1/18	1.1	53.9	11.7	< 0.500 U	10.02	221	435
MW-2017-6	Event 10	6/8/20	1.61	54.5	7.98	0.505	8.03	205	610
MW-2017-6	Event 11	10/20/20	1.76	59.9	8.07	<0.500 UH	7.49	267	640
MW-2017-6	Event 12	5/11/21	1.72	57.8	8.52	<0.500 U	7.36	185	611
MW-2017-6	Event 13	9/23/21	1.51	62.8	8.9	0.587	7.65	221	608
MW-2017-7	Event 01	3/14/18	1.9	65	11	1	6.58	310	690
MW-2017-7	Event 02	4/17/18	2	70	11	1	7.35	320	690
MW-2017-7	Event 03	6/15/18	1.9	66	< 30 U	< 5.0 U	7.54	280	720 H
MW-2017-7	Event 04	7/25/18	2	67.5	< 15.0 U	< 2.50 U	7.48	291	750
MW-2017-7	Event 05	8/28/18	2.07	65.2	< 30.0 U	< 5.00 U	7.78	300	696
MW-2017-7	Event 06	3/12/19	2.05	67.8	11.1 H	1.26 H	7.34	315 H	722
MW-2017-7	Event 07	3/27/19	1.96	63.1	11.1 H	1.39 H	7.96	302 H	701
MW-2017-7	Event 08	4/9/19	2.04	67.2	< 300 U	< 50.0 U	7.37	1030	896 H
MW-2017-7	Event 09	11/11/19	2.16	59.4	10.6	1.37	7.49	309	686
MW-2017-7	Event 10	6/8/20	1.9	58.2	8.49	1.6	7.06	293	719
MW-2017-7	Event 11	10/5/20	2.14	61.1	10.8	1.24	7.26	270	597
MW-2017-7	Event 12	5/11/21	1.8	60.6	8.64	1.53	7.3	248	773
MW-2017-7	Event 13	9/21/21	1.85	61.4	10.1	1.93	7.22	284	747
MW-2017-7 Dup	Event 13	9/21/21	1.73	88.7	8.98	0.572		192	778
MW-2017-8	Event 01	3/14/18	0.48	150	25	< 1.0 U	7.03	2000	3800
MW-2017-8	Event 02	4/18/18	0.46	150	25	< 1.0 U	7.38	2100	4000
MW-2017-8	Event 03	6/15/18	0.46	140	22	< 1.0 U	7.19	2100	4000 H
MW-2017-8	Event 04	7/25/18	0.465	145	24.3	< 1.00 U	7.23	2010	3900
MW-2017-8	Event 05	8/28/18	0.468	140	24	< 1.00 U	7.52	2020	3880 H
MW-2017-8	Event 10	6/8/20	0.453	133	20.8	4.68	7.29	1860	3800
MW-2017-8	Event 11	10/6/20	0.48	137	24.6	4.57	7.16	1960	2960
MW-2017-8	Event 12	5/12/21	0.499	136	22.5	1.01	7.15	2010	3960
MW-2017-8	Event 13	9/30/21	0.504	136	26.8	< 0.500 U	7.27	2020	3770

TDS = Total Dissolved Solids
 mg/L = milligrams per liter
 S.U. = Standard units
 pCi/L = picoCurie/liter
 U = Analyte analyzed for but not detected
 F1 = MS and/or MSD Recovery is outside acceptance limits
 H = Sample was prepped or analyzed beyond the specified holding time

Appendix A

Analytical Laboratory Reports, May and September 2021

Appendix – 2021 Detection Monitoring Analytical Laboratory Reports

ANALYTICAL REPORT

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

Laboratory Job ID: 280-148626-2

Laboratory Sample Delivery Group: LOS Plant Ponds

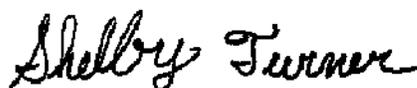
Client Project/Site: CCR Groundwater - ND Sites - LOS Plant
Ponds

Revision: 2

For:

Basin Electric Power Cooperative
1717 E Interstate Ave
Bismarck, North Dakota 58504

Attn: Aaron Knutson



Authorized for release by:
12/30/2021 12:26:58 PM

Shelby Turner, Project Manager I
(303)736-0100
Shelby.Turner@Eurofinset.com

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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.



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Definitions/Glossary

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
SDG: LOS Plant Ponds

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: Basin Electric Power Cooperative
Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
SDG: LOS Plant Ponds

Job ID: 280-148626-2

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Basin Electric Power Cooperative

Project: CCR Groundwater - ND Sites - LOS Plant Ponds

Report Number: 280-148626-2

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.

REVISION 1 - ADDED 6/7/21

The "Receipt Exceptions" section of the report narrative was revised to include the following information: "Samples MW-2017-9 (280-148626-5) and MW-2017-8D (280-148626-7) were logged for the full list metals (App III + IV) per client instruction." It can be noted that the COC requests 6010C Total Calcium and Boron only.

REVISION 2 - ADDED 12/30/21

Samples MW-2017-9 (280-148626-5) and MW-2017-8D (280-148626-7) were removed from this report per client instruction on 12/29/21.

RECEIPT

The samples were received on 5/14/2021 9:25 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.8° C and 2.0° C.

Receipt Exceptions

Samples -1 through -10 were logged with the prefix MW-2017- per client instruction on 5/17/21.

TOTAL RECOVERABLE METALS

Samples MW-2017-6 (280-148626-1), MW-2017-5 (280-148626-2), MW-2017-7 (280-148626-3), MW-2017-4 (280-148626-4), MW-2017-8 (280-148626-6), MW-2017-3 (280-148626-8), MW-2017-2 (280-148626-9), MW-2017-1 (280-148626-10) and DUP (280-148626-11) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 05/25/2021 and analyzed on 05/26/2021.

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

TOTAL DISSOLVED SOLIDS

Samples MW-2017-6 (280-148626-1), MW-2017-5 (280-148626-2), MW-2017-7 (280-148626-3), MW-2017-4 (280-148626-4), MW-2017-8 (280-148626-6), MW-2017-3 (280-148626-8), MW-2017-2 (280-148626-9), MW-2017-1 (280-148626-10) and DUP (280-148626-11) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 05/15/2021.

The drying oven used in association with analytical batch 280-536297 was outside the acceptance range. The Standard Operating Procedure (SOP) states the oven must read 180 +/- 2 degrees. The original reading of the oven over the course of analysis was 178 degree with a correction factor of -2 degrees. The corrected temperature was 176 degree which is outside the range. All associated QC has passed; therefore, the data has been reported. The following samples are affected: MW-2017-6 (280-148626-1), MW-2017-5

Case Narrative

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
SDG: LOS Plant Ponds

Job ID: 280-148626-2 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

(280-148626-2), MW-2017-7 (280-148626-3), MW-2017-4 (280-148626-4), MW-2017-8 (280-148626-6), MW-2017-3 (280-148626-8), MW-2017-2 (280-148626-9), MW-2017-1 (280-148626-10), DUP (280-148626-11), (LCS 280-536297/2), and (MB 280-536297/1). The client was notified on 5/19/21 and instructed the laboratory to proceed with reporting the data.

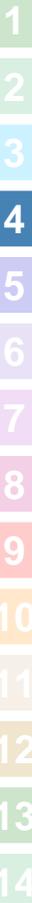
No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS (28 DAYS)

Samples MW-2017-6 (280-148626-1), MW-2017-5 (280-148626-2), MW-2017-7 (280-148626-3), MW-2017-4 (280-148626-4), MW-2017-8 (280-148626-6), MW-2017-3 (280-148626-8), MW-2017-2 (280-148626-9), MW-2017-1 (280-148626-10) and DUP (280-148626-11) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A (28 Days). The samples were analyzed on 06/03/2021 and 06/05/2021.

Samples MW-2017-6 (280-148626-1)[5X], MW-2017-5 (280-148626-2)[5X], MW-2017-7 (280-148626-3)[5X], MW-2017-4 (280-148626-4)[5X], MW-2017-8 (280-148626-6)[20X], MW-2017-3 (280-148626-8)[5X], MW-2017-2 (280-148626-9)[5X], MW-2017-1 (280-148626-10)[5X] and DUP (280-148626-11)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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



Detection Summary

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
 SDG: LOS Plant Ponds

Client Sample ID: MW-2017-6

Lab Sample ID: 280-148626-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1720		100		ug/L	1		6010C	Total Recoverable
Calcium	57800		200		ug/L	1		6010C	Total Recoverable
Chloride	8.52		3.00		mg/L	1		9056A	Total/NA
Sulfate	185		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	611		10.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2017-5

Lab Sample ID: 280-148626-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	842		100		ug/L	1		6010C	Total Recoverable
Calcium	83100		200		ug/L	1		6010C	Total Recoverable
Chloride	8.86		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.753		0.500		mg/L	1		9056A	Total/NA
Sulfate	273		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	646		10.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2017-7

Lab Sample ID: 280-148626-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1800		100		ug/L	1		6010C	Total Recoverable
Calcium	60600		200		ug/L	1		6010C	Total Recoverable
Chloride	8.64		3.00		mg/L	1		9056A	Total/NA
Fluoride	1.53		0.500		mg/L	1		9056A	Total/NA
Sulfate	248		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	773		10.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2017-4

Lab Sample ID: 280-148626-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1250		100		ug/L	1		6010C	Total Recoverable
Calcium	124000		200		ug/L	1		6010C	Total Recoverable
Chloride	8.30		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.595		0.500		mg/L	1		9056A	Total/NA
Sulfate	295		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	825		10.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2017-8

Lab Sample ID: 280-148626-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	499		100		ug/L	1		6010C	Total Recoverable
Calcium	136000		200		ug/L	1		6010C	Total Recoverable
Chloride	22.5		3.00		mg/L	1		9056A	Total/NA
Fluoride	1.01		0.500		mg/L	1		9056A	Total/NA
Sulfate	2010		100		mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	3960		40.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
 SDG: LOS Plant Ponds

Client Sample ID: MW-2017-3

Lab Sample ID: 280-148626-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1680		100		ug/L	1		6010C	Total Recoverable
Calcium	84400		200		ug/L	1		6010C	Total Recoverable
Chloride	8.43		3.00		mg/L	1		9056A	Total/NA
Sulfate	169		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	765		10.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2017-2

Lab Sample ID: 280-148626-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1360		100		ug/L	1		6010C	Total Recoverable
Calcium	81200		200		ug/L	1		6010C	Total Recoverable
Chloride	8.47		3.00		mg/L	1		9056A	Total/NA
Sulfate	244		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	690		20.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2017-1

Lab Sample ID: 280-148626-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	828		100		ug/L	1		6010C	Total Recoverable
Calcium	160000		200		ug/L	1		6010C	Total Recoverable
Chloride	8.73		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.636		0.500		mg/L	1		9056A	Total/NA
Sulfate	238		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1030		10.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP

Lab Sample ID: 280-148626-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1700		100		ug/L	1		6010C	Total Recoverable
Calcium	85900		200		ug/L	1		6010C	Total Recoverable
Chloride	8.35		3.00		mg/L	1		9056A	Total/NA
Sulfate	174		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	797		10.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Method Summary

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
SDG: LOS Plant Ponds

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL DEN

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

Sample Summary

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
SDG: LOS Plant Ponds

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-148626-1	MW-2017-6	Water	05/11/21 10:45	05/14/21 09:25
280-148626-2	MW-2017-5	Water	05/11/21 11:28	05/14/21 09:25
280-148626-3	MW-2017-7	Water	05/11/21 13:35	05/14/21 09:25
280-148626-4	MW-2017-4	Water	05/11/21 14:30	05/14/21 09:25
280-148626-6	MW-2017-8	Water	05/12/21 10:45	05/14/21 09:25
280-148626-8	MW-2017-3	Water	05/12/21 13:25	05/14/21 09:25
280-148626-9	MW-2017-2	Water	05/12/21 14:15	05/14/21 09:25
280-148626-10	MW-2017-1	Water	05/12/21 14:40	05/14/21 09:25
280-148626-11	DUP	Water	05/12/21 00:00	05/14/21 09:25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Client Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
 SDG: LOS Plant Ponds

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

Client Sample ID: MW-2017-6
Date Collected: 05/11/21 10:45
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1720		100		ug/L		05/25/21 16:35	05/26/21 08:59	1
Calcium	57800		200		ug/L		05/25/21 16:35	05/26/21 08:59	1

Client Sample ID: MW-2017-5
Date Collected: 05/11/21 11:28
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	842		100		ug/L		05/25/21 16:35	05/26/21 09:13	1
Calcium	83100		200		ug/L		05/25/21 16:35	05/26/21 09:13	1

Client Sample ID: MW-2017-7
Date Collected: 05/11/21 13:35
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1800		100		ug/L		05/25/21 16:35	05/26/21 09:16	1
Calcium	60600		200		ug/L		05/25/21 16:35	05/26/21 09:16	1

Client Sample ID: MW-2017-4
Date Collected: 05/11/21 14:30
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1250		100		ug/L		05/25/21 16:35	05/26/21 09:19	1
Calcium	124000		200		ug/L		05/25/21 16:35	05/26/21 09:19	1

Client Sample ID: MW-2017-8
Date Collected: 05/12/21 10:45
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	499		100		ug/L		05/25/21 16:35	05/26/21 09:39	1
Calcium	136000		200		ug/L		05/25/21 16:35	05/26/21 09:39	1

Client Sample ID: MW-2017-3
Date Collected: 05/12/21 13:25
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1680		100		ug/L		05/25/21 16:35	05/26/21 09:46	1
Calcium	84400		200		ug/L		05/25/21 16:35	05/26/21 09:46	1

Client Sample ID: MW-2017-2
Date Collected: 05/12/21 14:15
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1360		100		ug/L		05/25/21 16:35	05/26/21 09:49	1
Calcium	81200		200		ug/L		05/25/21 16:35	05/26/21 09:49	1

Client Sample ID: MW-2017-1
Date Collected: 05/12/21 14:40
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	828		100		ug/L		05/25/21 16:35	05/26/21 09:53	1
Calcium	160000		200		ug/L		05/25/21 16:35	05/26/21 09:53	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
 SDG: LOS Plant Ponds

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

Client Sample ID: DUP
Date Collected: 05/12/21 00:00
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1700		100		ug/L		05/25/21 16:35	05/26/21 09:56	1
Calcium	85900		200		ug/L		05/25/21 16:35	05/26/21 09:56	1

General Chemistry

Client Sample ID: MW-2017-6
Date Collected: 05/11/21 10:45
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.52		3.00		mg/L			06/03/21 00:20	1
Fluoride	ND		0.500		mg/L			06/03/21 00:20	1
Sulfate	185		25.0		mg/L			06/03/21 00:35	5
Total Dissolved Solids (TDS)	611		10.0		mg/L			05/15/21 11:32	1

Client Sample ID: MW-2017-5
Date Collected: 05/11/21 11:28
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.86		3.00		mg/L			06/03/21 00:50	1
Fluoride	0.753		0.500		mg/L			06/03/21 00:50	1
Sulfate	273		25.0		mg/L			06/05/21 02:56	5
Total Dissolved Solids (TDS)	646		10.0		mg/L			05/15/21 11:32	1

Client Sample ID: MW-2017-7
Date Collected: 05/11/21 13:35
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.64		3.00		mg/L			06/03/21 01:05	1
Fluoride	1.53		0.500		mg/L			06/03/21 01:05	1
Sulfate	248		25.0		mg/L			06/05/21 03:12	5
Total Dissolved Solids (TDS)	773		10.0		mg/L			05/15/21 11:32	1

Client Sample ID: MW-2017-4
Date Collected: 05/11/21 14:30
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.30		3.00		mg/L			06/03/21 01:20	1
Fluoride	0.595		0.500		mg/L			06/03/21 01:20	1
Sulfate	295		25.0		mg/L			06/05/21 03:29	5
Total Dissolved Solids (TDS)	825		10.0		mg/L			05/15/21 11:32	1

Client Sample ID: MW-2017-8
Date Collected: 05/12/21 10:45
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	22.5		3.00		mg/L			06/03/21 04:19	1
Fluoride	1.01		0.500		mg/L			06/03/21 04:19	1
Sulfate	2010		100		mg/L			06/05/21 04:02	20
Total Dissolved Solids (TDS)	3960		40.0		mg/L			05/15/21 11:32	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
 SDG: LOS Plant Ponds

General Chemistry

Client Sample ID: MW-2017-3
Date Collected: 05/12/21 13:25
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.43		3.00		mg/L			06/03/21 05:04	1
Fluoride	ND		0.500		mg/L			06/03/21 05:04	1
Sulfate	169		25.0		mg/L			06/05/21 04:34	5
Total Dissolved Solids (TDS)	765		10.0		mg/L			05/15/21 11:32	1

Client Sample ID: MW-2017-2
Date Collected: 05/12/21 14:15
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.47		3.00		mg/L			06/03/21 05:19	1
Fluoride	ND		0.500		mg/L			06/03/21 05:19	1
Sulfate	244		25.0		mg/L			06/05/21 06:13	5
Total Dissolved Solids (TDS)	690		20.0		mg/L			05/15/21 11:32	1

Client Sample ID: MW-2017-1
Date Collected: 05/12/21 14:40
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.73		3.00		mg/L			06/03/21 05:34	1
Fluoride	0.636		0.500		mg/L			06/03/21 05:34	1
Sulfate	238		25.0		mg/L			06/05/21 06:29	5
Total Dissolved Solids (TDS)	1030		10.0		mg/L			05/15/21 11:32	1

Client Sample ID: DUP
Date Collected: 05/12/21 00:00
Date Received: 05/14/21 09:25

Lab Sample ID: 280-148626-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.35		3.00		mg/L			06/03/21 06:49	1
Fluoride	ND		0.500		mg/L			06/03/21 06:49	1
Sulfate	174		25.0		mg/L			06/05/21 06:46	5
Total Dissolved Solids (TDS)	797		10.0		mg/L			05/15/21 11:32	1

QC Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
 SDG: LOS Plant Ponds

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-537378/1-A
Matrix: Water
Analysis Batch: 537491

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 537378

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100		ug/L		05/25/21 16:35	05/26/21 08:53	1
Calcium	ND		200		ug/L		05/25/21 16:35	05/26/21 08:53	1

Lab Sample ID: LCS 280-537378/2-A
Matrix: Water
Analysis Batch: 537491

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 537378

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	970.1		ug/L		97	86 - 110
Calcium	50000	49900		ug/L		100	90 - 111

Lab Sample ID: 280-148626-1 MS
Matrix: Water
Analysis Batch: 537491

Client Sample ID: MW-2017-6
Prep Type: Total Recoverable
Prep Batch: 537378

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1720		1000	2791		ug/L		107	87 - 113
Calcium	57800		50000	107600		ug/L		100	48 - 153

Lab Sample ID: 280-148626-1 MSD
Matrix: Water
Analysis Batch: 537491

Client Sample ID: MW-2017-6
Prep Type: Total Recoverable
Prep Batch: 537378

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Boron	1720		1000	2753		ug/L		103	87 - 113	1	20
Calcium	57800		50000	107000		ug/L		98	48 - 153	1	20

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-538248/6
Matrix: Water
Analysis Batch: 538248

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00		mg/L			06/02/21 13:11	1
Fluoride	ND		0.500		mg/L			06/02/21 13:11	1
Sulfate	ND		5.00		mg/L			06/02/21 13:11	1

Lab Sample ID: LCS 280-538248/4
Matrix: Water
Analysis Batch: 538248

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	96.97		mg/L		97	90 - 110
Fluoride	5.00	4.728		mg/L		95	90 - 110
Sulfate	100	94.55		mg/L		95	90 - 110

Eurofins TestAmerica, Denver

QC Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
 SDG: LOS Plant Ponds

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

Lab Sample ID: LCSD 280-538248/5
Matrix: Water
Analysis Batch: 538248

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	96.97		mg/L		97	90 - 110	0	10
Fluoride	5.00	4.729		mg/L		95	90 - 110	0	10
Sulfate	100	94.59		mg/L		95	90 - 110	0	10

Lab Sample ID: MRL 280-538248/3
Matrix: Water
Analysis Batch: 538248

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	4.055		mg/L		81	50 - 150
Fluoride	0.500	ND		mg/L		97	50 - 150
Sulfate	5.00	ND		mg/L		84	50 - 150

Lab Sample ID: MB 280-538576/6
Matrix: Water
Analysis Batch: 538576

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.00		mg/L			06/04/21 11:43	1

Lab Sample ID: LCS 280-538576/4
Matrix: Water
Analysis Batch: 538576

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	100	95.43		mg/L		95	90 - 110

Lab Sample ID: LCSD 280-538576/5
Matrix: Water
Analysis Batch: 538576

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
Sulfate	100	95.26		mg/L		95	90 - 110	0	10

Lab Sample ID: MRL 280-538576/3
Matrix: Water
Analysis Batch: 538576

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	ND		mg/L		80	50 - 150

Lab Sample ID: 280-148626-8 MS
Matrix: Water
Analysis Batch: 538576

Client Sample ID: MW-2017-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	169		250	434.2		mg/L		106	80 - 120

QC Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
 SDG: LOS Plant Ponds

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

Lab Sample ID: 280-148626-8 MSD
 Matrix: Water
 Analysis Batch: 538576

Client Sample ID: MW-2017-3
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	169		250	425.7		mg/L		103	80 - 120	2	20

Lab Sample ID: 280-148626-8 DU
 Matrix: Water
 Analysis Batch: 538576

Client Sample ID: MW-2017-3
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	169		167.7		mg/L		0.9	15

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

Lab Sample ID: MB 280-536297/1
 Matrix: Water
 Analysis Batch: 536297

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		10.0		mg/L			05/15/21 11:32	1

Lab Sample ID: LCS 280-536297/2
 Matrix: Water
 Analysis Batch: 536297

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	466.0		mg/L		93	88 - 114

QC Association Summary

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
SDG: LOS Plant Ponds

Metals

Prep Batch: 537378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-148626-1	MW-2017-6	Total Recoverable	Water	3005A	
280-148626-2	MW-2017-5	Total Recoverable	Water	3005A	
280-148626-3	MW-2017-7	Total Recoverable	Water	3005A	
280-148626-4	MW-2017-4	Total Recoverable	Water	3005A	
280-148626-6	MW-2017-8	Total Recoverable	Water	3005A	
280-148626-8	MW-2017-3	Total Recoverable	Water	3005A	
280-148626-9	MW-2017-2	Total Recoverable	Water	3005A	
280-148626-10	MW-2017-1	Total Recoverable	Water	3005A	
280-148626-11	DUP	Total Recoverable	Water	3005A	
MB 280-537378/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-537378/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-148626-1 MS	MW-2017-6	Total Recoverable	Water	3005A	
280-148626-1 MSD	MW-2017-6	Total Recoverable	Water	3005A	

Analysis Batch: 537491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-148626-1	MW-2017-6	Total Recoverable	Water	6010C	537378
280-148626-2	MW-2017-5	Total Recoverable	Water	6010C	537378
280-148626-3	MW-2017-7	Total Recoverable	Water	6010C	537378
280-148626-4	MW-2017-4	Total Recoverable	Water	6010C	537378
280-148626-6	MW-2017-8	Total Recoverable	Water	6010C	537378
280-148626-8	MW-2017-3	Total Recoverable	Water	6010C	537378
280-148626-9	MW-2017-2	Total Recoverable	Water	6010C	537378
280-148626-10	MW-2017-1	Total Recoverable	Water	6010C	537378
280-148626-11	DUP	Total Recoverable	Water	6010C	537378
MB 280-537378/1-A	Method Blank	Total Recoverable	Water	6010C	537378
LCS 280-537378/2-A	Lab Control Sample	Total Recoverable	Water	6010C	537378
280-148626-1 MS	MW-2017-6	Total Recoverable	Water	6010C	537378
280-148626-1 MSD	MW-2017-6	Total Recoverable	Water	6010C	537378

General Chemistry

Analysis Batch: 536297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-148626-1	MW-2017-6	Total/NA	Water	SM 2540C	
280-148626-2	MW-2017-5	Total/NA	Water	SM 2540C	
280-148626-3	MW-2017-7	Total/NA	Water	SM 2540C	
280-148626-4	MW-2017-4	Total/NA	Water	SM 2540C	
280-148626-6	MW-2017-8	Total/NA	Water	SM 2540C	
280-148626-8	MW-2017-3	Total/NA	Water	SM 2540C	
280-148626-9	MW-2017-2	Total/NA	Water	SM 2540C	
280-148626-10	MW-2017-1	Total/NA	Water	SM 2540C	
280-148626-11	DUP	Total/NA	Water	SM 2540C	
MB 280-536297/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-536297/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 538248

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-148626-1	MW-2017-6	Total/NA	Water	9056A	
280-148626-1	MW-2017-6	Total/NA	Water	9056A	
280-148626-2	MW-2017-5	Total/NA	Water	9056A	

Eurofins TestAmerica, Denver

QC Association Summary

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
SDG: LOS Plant Ponds

General Chemistry (Continued)

Analysis Batch: 538248 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-148626-3	MW-2017-7	Total/NA	Water	9056A	
280-148626-4	MW-2017-4	Total/NA	Water	9056A	
280-148626-6	MW-2017-8	Total/NA	Water	9056A	
280-148626-8	MW-2017-3	Total/NA	Water	9056A	
280-148626-9	MW-2017-2	Total/NA	Water	9056A	
280-148626-10	MW-2017-1	Total/NA	Water	9056A	
280-148626-11	DUP	Total/NA	Water	9056A	
MB 280-538248/6	Method Blank	Total/NA	Water	9056A	
LCS 280-538248/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-538248/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-538248/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 538576

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-148626-2	MW-2017-5	Total/NA	Water	9056A	
280-148626-3	MW-2017-7	Total/NA	Water	9056A	
280-148626-4	MW-2017-4	Total/NA	Water	9056A	
280-148626-6	MW-2017-8	Total/NA	Water	9056A	
280-148626-8	MW-2017-3	Total/NA	Water	9056A	
280-148626-9	MW-2017-2	Total/NA	Water	9056A	
280-148626-10	MW-2017-1	Total/NA	Water	9056A	
280-148626-11	DUP	Total/NA	Water	9056A	
MB 280-538576/6	Method Blank	Total/NA	Water	9056A	
LCS 280-538576/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-538576/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-538576/3	Lab Control Sample	Total/NA	Water	9056A	
280-148626-8 MS	MW-2017-3	Total/NA	Water	9056A	
280-148626-8 MSD	MW-2017-3	Total/NA	Water	9056A	
280-148626-8 DU	MW-2017-3	Total/NA	Water	9056A	

Lab Chronicle

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
 SDG: LOS Plant Ponds

Client Sample ID: MW-2017-6

Lab Sample ID: 280-148626-1

Date Collected: 05/11/21 10:45

Matrix: Water

Date Received: 05/14/21 09:25

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	537378	05/25/21 16:35	EC	TAL DEN
Total Recoverable	Analysis	6010C		1			537491	05/26/21 08:59	LMT	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	538248	06/03/21 00:20	JMB	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	538248	06/03/21 00:35	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	536297	05/15/21 11:32	JMH	TAL DEN

Client Sample ID: MW-2017-5

Lab Sample ID: 280-148626-2

Date Collected: 05/11/21 11:28

Matrix: Water

Date Received: 05/14/21 09:25

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	537378	05/25/21 16:35	EC	TAL DEN
Total Recoverable	Analysis	6010C		1			537491	05/26/21 09:13	LMT	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	538576	06/05/21 02:56	JMB	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	538248	06/03/21 00:50	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	536297	05/15/21 11:32	JMH	TAL DEN

Client Sample ID: MW-2017-7

Lab Sample ID: 280-148626-3

Date Collected: 05/11/21 13:35

Matrix: Water

Date Received: 05/14/21 09:25

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	537378	05/25/21 16:35	EC	TAL DEN
Total Recoverable	Analysis	6010C		1			537491	05/26/21 09:16	LMT	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	538576	06/05/21 03:12	JMB	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	538248	06/03/21 01:05	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	536297	05/15/21 11:32	JMH	TAL DEN

Client Sample ID: MW-2017-4

Lab Sample ID: 280-148626-4

Date Collected: 05/11/21 14:30

Matrix: Water

Date Received: 05/14/21 09:25

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	537378	05/25/21 16:35	EC	TAL DEN
Total Recoverable	Analysis	6010C		1			537491	05/26/21 09:19	LMT	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	538576	06/05/21 03:29	JMB	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	538248	06/03/21 01:20	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	536297	05/15/21 11:32	JMH	TAL DEN

Lab Chronicle

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
 SDG: LOS Plant Ponds

Client Sample ID: MW-2017-8

Lab Sample ID: 280-148626-6

Date Collected: 05/12/21 10:45

Matrix: Water

Date Received: 05/14/21 09:25

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	537378	05/25/21 16:35	EC	TAL DEN
Total Recoverable	Analysis	6010C		1			537491	05/26/21 09:39	LMT	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	538576	06/05/21 04:02	JMB	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	538248	06/03/21 04:19	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	536297	05/15/21 11:32	JMH	TAL DEN

Client Sample ID: MW-2017-3

Lab Sample ID: 280-148626-8

Date Collected: 05/12/21 13:25

Matrix: Water

Date Received: 05/14/21 09:25

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	537378	05/25/21 16:35	EC	TAL DEN
Total Recoverable	Analysis	6010C		1			537491	05/26/21 09:46	LMT	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	538576	06/05/21 04:34	JMB	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	538248	06/03/21 05:04	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	536297	05/15/21 11:32	JMH	TAL DEN

Client Sample ID: MW-2017-2

Lab Sample ID: 280-148626-9

Date Collected: 05/12/21 14:15

Matrix: Water

Date Received: 05/14/21 09:25

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	537378	05/25/21 16:35	EC	TAL DEN
Total Recoverable	Analysis	6010C		1			537491	05/26/21 09:49	LMT	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	538576	06/05/21 06:13	JMB	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	538248	06/03/21 05:19	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	536297	05/15/21 11:32	JMH	TAL DEN

Client Sample ID: MW-2017-1

Lab Sample ID: 280-148626-10

Date Collected: 05/12/21 14:40

Matrix: Water

Date Received: 05/14/21 09:25

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	537378	05/25/21 16:35	EC	TAL DEN
Total Recoverable	Analysis	6010C		1			537491	05/26/21 09:53	LMT	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	538576	06/05/21 06:29	JMB	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	538248	06/03/21 05:34	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	536297	05/15/21 11:32	JMH	TAL DEN

Lab Chronicle

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
 SDG: LOS Plant Ponds

Client Sample ID: DUP

Lab Sample ID: 280-148626-11

Date Collected: 05/12/21 00:00

Matrix: Water

Date Received: 05/14/21 09:25

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	537378	05/25/21 16:35	EC	TAL DEN
Total Recoverable	Analysis	6010C		1			537491	05/26/21 09:56	LMT	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	538576	06/05/21 06:46	JMB	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	538248	06/03/21 06:49	JMB	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	536297	05/15/21 11:32	JMH	TAL DEN

Laboratory References:

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



Accreditation/Certification Summary

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater - ND Sites - LOS Plant Ponds

Job ID: 280-148626-2
SDG: LOS Plant Ponds

Laboratory: Eurofins TestAmerica, Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
North Dakota	State	R-034	01-08-22

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Chain of Custody Record

Client Information		Lab PM: Turner, Shelby R		Carrier Tracking No(s):		
Client Contact: Mr. Aaron Knutson		E-Mail: Shelby.Turner@Eurofinset.com		COC No:		
Company: Basin Electric Power Cooperative		Phone: 701-745-7238		Page: 1 of 1		
Address: 3901 Highway 200A		City: Stanton		Job #:		
State, Zip: ND, 58571		TAT Requested (days): Standard		Preservation Codes:		
Phone: 701-745-7238(Tel)		PO #: Purchase Order 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 - Na2OAS Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)		
Email: aknutson@bepec.com		WO #: 28021258		Other:		
Project Name: CCR Groundwater - North Dakota Site		SSOW#:		Special Instructions/Note:		
Site: LOS PLANT PONDS				Total Number of containers: X		
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Seawater, Other)	Field Filtered Sample (Yes or No)	Analysis Requested
MW 2017-6	5-11-21	1045	G	Water	X	6010C - Total Calcium and Boron (Appendix III) 2540C - Calcd - TDS 9056A - 28D - Chloride, Fluoride, Sulfate 9315 - Ra226, 9320 - Ra228, Combined Radium-226 and Radium-228 6010C - Total B, Ca, Li (1 of 3), 6020A - Total 11 Metals (2 of 3), 7470A - Total Mercury (3 of 3) (Appendix III + IV)
MW 2017-5	5-11-21	1128	G	Water	X	
MW 2017-7	5-11-21	1335	G	Water	X	
MW 2017-4	5-11-21	1430	G	Water	X	
MW 2017-9	5-12-21	0845	G	Water	X	
MW 2017-8	5-12-21	1045	G	Water	X	
MW 2017-8D	5-12-21	1120	G	Water	X	
MW 2017-3	5-12-21	1325	G	Water	X	
MW 2017-2	5-12-21	1415	G	Water	X	
MW 2017-1	5-12-21	1440	G	Water	X	
DUP			G	Water	X	



280-148626 Chain of Custody

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/QC Requirements:

Empty Kit Relinquished by: _____ Date: _____ Time: _____
 Relinquished by: _____ Date/Time: 5-13-21 0710 Company: BEPC 1205
 Relinquished by: _____ Date/Time: _____ Company: _____
 Relinquished by: _____ Date/Time: _____ Company: _____

Custody Seal Intact: Yes No
 Custody Seal No: 1547668, 1547669
 Cooler Temperature(s) °C and Other Remarks: 1.6, 0.4 CF 0.1 JRU1

- 1
- 2
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- 11
- 12
- 13
- 14

Do Not Lift Using This Tag

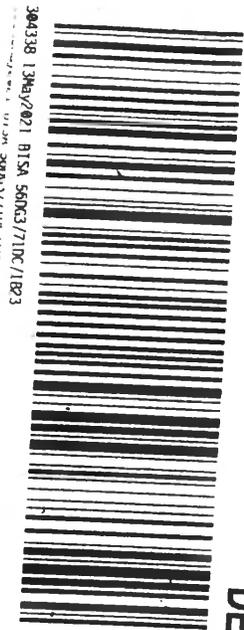
FedEx, 2 of 2

MPS# 0260 8677 9839 0350
 Mst# 8750 2835 1403 0200

XH LAAA

FRI - 14 MAY AA
PRIORITY OVERNIGHT

80002
 00-US
DEN



304338 1344/021 B1SA 560G3/71DC/1R23

Name Please print _____
 or Suite/Room _____
 Address We cannot deliver to P.O. boxes or P.O. ZIP codes. _____
 ZIP _____
 Country _____

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Indirect Signature
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 (optional deliveries only) As

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XH LAAA
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 0200 8750 2835 1403

FRI - 14 MAY AA
PRIORITY OVERNIGHT
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FID: 304338 1344/021 B1SA 560G3/71DC/1R23

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Plat



1543669

eurofins
 0.4



280-148626 Waybill

FedEx Tracking Number for Customer
 8677 9839 0350



MPS Label
 Form ID No: 8677 9839 0350

fedEX. US Airbill
 Express

875

Sender's FedEX
 Account Number

00M
 Sender's
 name
 Ph

Company

Address

City

State

Your Internal Billing Reference

To
 Recipient's
 Name

Company

Address

Use correct address for PO, boxes or PO ZIP codes

City

State

Use this line for the MAIL location address or for completion of your recipient address



85 1403

© 2011 FedEx 158396 REV 1711 BP

Login Sample Receipt Checklist

Client: Basin Electric Power Cooperative

Job Number: 280-148626-2
SDG Number: LOS Plant Ponds

Login Number: 148626

List Number: 1

Creator: Turner, Shelby R

List Source: Eurofins TestAmerica, Denver

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.	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 <math><6\text{mm}</math> (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

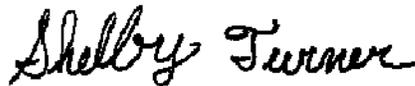
Laboratory Job ID: 280-153422-1

Laboratory Sample Delivery Group: LOS Multi Unit- Ponds
Client Project/Site: CCR Groundwater -ND Sites - LOS Multi
Unit- Ponds

For:

Basin Electric Power Cooperative
1717 E Interstate Ave
Bismarck, North Dakota 58504

Attn: Aaron Knutson



Authorized for release by:
10/13/2021 9:15:31 AM

Shelby Turner, Project Manager I
(303)736-0100
Shelby.Turner@Eurofinset.com

LINKS

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results through
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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.



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Definitions/Glossary

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-
Ponds

Job ID: 280-153422-1
SDG: LOS Multi Unit- Ponds

Qualifiers

General Chemistry

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
F1	MS and/or MSD recovery exceeds control limits.

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: Basin Electric Power Cooperative
Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit- Ponds

Job ID: 280-153422-1
SDG: LOS Multi Unit- Ponds

Job ID: 280-153422-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Basin Electric Power Cooperative

Project: CCR Groundwater -ND Sites - LOS Multi Unit- Ponds

Report Number: 280-153422-1

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 9/25/2021 10:20 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.1° C.

Receipt Exceptions

The following sample was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): DUP (280-153422-8). The sample was logged per the sample ID/date/time on the container labels. The sample was logged for 6010C Boron and Calcium, 9056A Anions, and 2540C TDS.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): MW 2017-1 (280-153422-2). The container labels list collection time 09:45, while the COC lists collection time 13:45. The client was contacted, and the lab was instructed to log sample per the COC.

TOTAL RECOVERABLE METALS

Samples MW 2017-7 (280-153422-1), MW 2017-1 (280-153422-2), MW 2017-2 (280-153422-3), MW 2017-3 (280-153422-4), MW 2017-4 (280-153422-5), MW 2017-5 (280-153422-6), MW 2017-6 (280-153422-7) and DUP (280-153422-8) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 09/27/2021 and 09/28/2021 and analyzed on 09/28/2021 and 09/29/2021.

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

TOTAL DISSOLVED SOLIDS

Samples MW 2017-7 (280-153422-1), MW 2017-1 (280-153422-2), MW 2017-2 (280-153422-3), MW 2017-3 (280-153422-4), MW 2017-4 (280-153422-5), MW 2017-5 (280-153422-6), MW 2017-6 (280-153422-7) and DUP (280-153422-8) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 09/26/2021 and 09/28/2021.

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

ANIONS (28 DAYS)

Samples MW 2017-7 (280-153422-1), MW 2017-1 (280-153422-2), MW 2017-2 (280-153422-3), MW 2017-3 (280-153422-4), MW 2017-4 (280-153422-5), MW 2017-5 (280-153422-6), MW 2017-6 (280-153422-7) and DUP (280-153422-8) were analyzed for anions (28 days) in

Case Narrative

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit- Ponds

Job ID: 280-153422-1
SDG: LOS Multi Unit- Ponds

Job ID: 280-153422-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

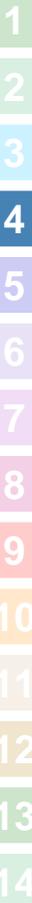
accordance with EPA SW-846 Method 9056A (28 Days). The samples were analyzed on 09/30/2021, 10/01/2021 and 10/02/2021.

Fluoride failed the recovery criteria low for the MS and MSD of sample MW 2017-2 (280-153422-3) in batch 280-552044. Sulfate failed the recovery criteria high for the MSD of sample MW 2017-3 (280-153422-4) in batch 280-551796. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. Refer to the QC report for details.

Samples MW 2017-7 (280-153422-1)[5X], MW 2017-1 (280-153422-2)[5X], MW 2017-2 (280-153422-3)[5X], MW 2017-3 (280-153422-4)[5X], MW 2017-4 (280-153422-5)[5X], MW 2017-5 (280-153422-6)[5X], MW 2017-6 (280-153422-7)[5X] and DUP (280-153422-8)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following continuing calibration verification (CCV) was above the upper recovery limit at 111% for chloride: (CCV 280-551796/17). The laboratory control spike and laboratory control spike duplicate (LCS/LCSD) are associated with this CCV. Despite the CCV recovery being high, all other QC in this batch is within control limits; therefore, the data is being qualified and reported.

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



Detection Summary

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-
 Ponds

Job ID: 280-153422-1
 SDG: LOS Multi Unit- Ponds

Client Sample ID: MW 2017-7

Lab Sample ID: 280-153422-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1850		100		ug/L	1		6010C	Total Recoverable
Calcium	61400		200		ug/L	1		6010C	Total Recoverable
Chloride	10.1		3.00		mg/L	1		9056A	Total/NA
Fluoride	1.93		0.500		mg/L	1		9056A	Total/NA
Sulfate	284		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	747		33.3		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW 2017-1

Lab Sample ID: 280-153422-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	793		100		ug/L	1		6010C	Total Recoverable
Calcium	156000		200		ug/L	1		6010C	Total Recoverable
Chloride	9.90		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.546		0.500		mg/L	1		9056A	Total/NA
Sulfate	227		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	980		20.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW 2017-2

Lab Sample ID: 280-153422-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1470		100		ug/L	1		6010C	Total Recoverable
Calcium	70800		200		ug/L	1		6010C	Total Recoverable
Chloride	10.1		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.540		0.500		mg/L	1		9056A	Total/NA
Sulfate	258		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	677		16.7		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW 2017-3

Lab Sample ID: 280-153422-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1730		100		ug/L	1		6010C	Total Recoverable
Calcium	89900		200		ug/L	1		6010C	Total Recoverable
Chloride	9.71		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.591		0.500		mg/L	1		9056A	Total/NA
Sulfate	188	F1	25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	792		20.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW 2017-4

Lab Sample ID: 280-153422-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1420		100		ug/L	1		6010C	Total Recoverable
Calcium	135000		200		ug/L	1		6010C	Total Recoverable
Chloride	8.43		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.787		0.500		mg/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-
 Ponds

Job ID: 280-153422-1
 SDG: LOS Multi Unit- Ponds

Client Sample ID: MW 2017-4 (Continued)

Lab Sample ID: 280-153422-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	286		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	808		10.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW 2017-5

Lab Sample ID: 280-153422-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	827		100		ug/L	1		6010C	Total Recoverable
Calcium	84400		200		ug/L	1		6010C	Total Recoverable
Chloride	9.39		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.860		0.500		mg/L	1		9056A	Total/NA
Sulfate	292		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	655		10.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW 2017-6

Lab Sample ID: 280-153422-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1510		100		ug/L	1		6010C	Total Recoverable
Calcium	62800		200		ug/L	1		6010C	Total Recoverable
Chloride	8.90		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.587		0.500		mg/L	1		9056A	Total/NA
Sulfate	221		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	608		10.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP

Lab Sample ID: 280-153422-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1730		100		ug/L	1		6010C	Total Recoverable
Calcium	88700		200		ug/L	1		6010C	Total Recoverable
Chloride	8.98		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.572		0.500		mg/L	1		9056A	Total/NA
Sulfate	192		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	778		20.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Method Summary

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-
Ponds

Job ID: 280-153422-1
SDG: LOS Multi Unit- Ponds

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL DEN

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

Sample Summary

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-
Ponds

Job ID: 280-153422-1
SDG: LOS Multi Unit- Ponds

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-153422-1	MW 2017-7	Water	09/21/21 09:18	09/25/21 10:20
280-153422-2	MW 2017-1	Water	09/21/21 13:45	09/25/21 10:20
280-153422-3	MW 2017-2	Water	09/21/21 14:40	09/25/21 10:20
280-153422-4	MW 2017-3	Water	09/22/21 08:25	09/25/21 10:20
280-153422-5	MW 2017-4	Water	09/22/21 11:30	09/25/21 10:20
280-153422-6	MW 2017-5	Water	09/23/21 10:15	09/25/21 10:20
280-153422-7	MW 2017-6	Water	09/23/21 14:00	09/25/21 10:20
280-153422-8	DUP	Water	09/21/21 09:18	09/25/21 10:20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Client Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-
 Ponds

Job ID: 280-153422-1
 SDG: LOS Multi Unit- Ponds

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

Client Sample ID: MW 2017-7
Date Collected: 09/21/21 09:18
Date Received: 09/25/21 10:20

Lab Sample ID: 280-153422-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1850		100		ug/L		09/28/21 08:05	09/28/21 23:59	1
Calcium	61400		200		ug/L		09/28/21 08:05	09/28/21 23:59	1

Client Sample ID: MW 2017-1
Date Collected: 09/21/21 13:45
Date Received: 09/25/21 10:20

Lab Sample ID: 280-153422-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	793		100		ug/L		09/27/21 14:38	09/28/21 19:49	1
Calcium	156000		200		ug/L		09/27/21 14:38	09/28/21 19:49	1

Client Sample ID: MW 2017-2
Date Collected: 09/21/21 14:40
Date Received: 09/25/21 10:20

Lab Sample ID: 280-153422-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1470		100		ug/L		09/28/21 08:05	09/29/21 00:35	1
Calcium	70800		200		ug/L		09/28/21 08:05	09/29/21 00:35	1

Client Sample ID: MW 2017-3
Date Collected: 09/22/21 08:25
Date Received: 09/25/21 10:20

Lab Sample ID: 280-153422-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1730		100		ug/L		09/28/21 08:05	09/29/21 00:39	1
Calcium	89900		200		ug/L		09/28/21 08:05	09/29/21 00:39	1

Client Sample ID: MW 2017-4
Date Collected: 09/22/21 11:30
Date Received: 09/25/21 10:20

Lab Sample ID: 280-153422-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1420		100		ug/L		09/28/21 08:05	09/29/21 00:42	1
Calcium	135000		200		ug/L		09/28/21 08:05	09/29/21 00:42	1

Client Sample ID: MW 2017-5
Date Collected: 09/23/21 10:15
Date Received: 09/25/21 10:20

Lab Sample ID: 280-153422-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	827		100		ug/L		09/28/21 08:05	09/29/21 00:46	1
Calcium	84400		200		ug/L		09/28/21 08:05	09/29/21 00:46	1

Client Sample ID: MW 2017-6
Date Collected: 09/23/21 14:00
Date Received: 09/25/21 10:20

Lab Sample ID: 280-153422-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1510		100		ug/L		09/28/21 08:05	09/29/21 00:49	1
Calcium	62800		200		ug/L		09/28/21 08:05	09/29/21 00:49	1

Client Sample ID: DUP
Date Collected: 09/21/21 09:18
Date Received: 09/25/21 10:20

Lab Sample ID: 280-153422-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1730		100		ug/L		09/28/21 08:05	09/29/21 00:53	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-
 Ponds

Job ID: 280-153422-1
 SDG: LOS Multi Unit- Ponds

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

Client Sample ID: DUP
Date Collected: 09/21/21 09:18
Date Received: 09/25/21 10:20

Lab Sample ID: 280-153422-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	88700		200		ug/L		09/28/21 08:05	09/29/21 00:53	1

General Chemistry

Client Sample ID: MW 2017-7
Date Collected: 09/21/21 09:18
Date Received: 09/25/21 10:20

Lab Sample ID: 280-153422-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10.1		3.00		mg/L			10/02/21 14:30	1
Fluoride	1.93		0.500		mg/L			09/30/21 19:12	1
Sulfate	284		25.0		mg/L			09/30/21 19:27	5
Total Dissolved Solids (TDS)	747		33.3		mg/L			09/26/21 16:45	1

Client Sample ID: MW 2017-1
Date Collected: 09/21/21 13:45
Date Received: 09/25/21 10:20

Lab Sample ID: 280-153422-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.90		3.00		mg/L			10/02/21 14:44	1
Fluoride	0.546		0.500		mg/L			09/30/21 19:42	1
Sulfate	227		25.0		mg/L			09/30/21 19:56	5
Total Dissolved Solids (TDS)	980		20.0		mg/L			09/28/21 13:28	1

Client Sample ID: MW 2017-2
Date Collected: 09/21/21 14:40
Date Received: 09/25/21 10:20

Lab Sample ID: 280-153422-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10.1		3.00		mg/L			10/02/21 14:58	1
Fluoride	0.540		0.500		mg/L			09/30/21 20:11	1
Sulfate	258		25.0		mg/L			09/30/21 20:26	5
Total Dissolved Solids (TDS)	677		16.7		mg/L			09/26/21 16:45	1

Client Sample ID: MW 2017-3
Date Collected: 09/22/21 08:25
Date Received: 09/25/21 10:20

Lab Sample ID: 280-153422-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.71		3.00		mg/L			10/02/21 15:54	1
Fluoride	0.591		0.500		mg/L			09/30/21 20:41	1
Sulfate	188	F1	25.0		mg/L			09/30/21 22:11	5
Total Dissolved Solids (TDS)	792		20.0		mg/L			09/26/21 16:45	1

Client Sample ID: MW 2017-4
Date Collected: 09/22/21 11:30
Date Received: 09/25/21 10:20

Lab Sample ID: 280-153422-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.43		3.00		mg/L			09/30/21 23:10	1
Fluoride	0.787		0.500		mg/L			09/30/21 23:10	1
Sulfate	286		25.0		mg/L			09/30/21 23:25	5
Total Dissolved Solids (TDS)	808		10.0		mg/L			09/28/21 13:28	1

Client Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-
 Ponds

Job ID: 280-153422-1
 SDG: LOS Multi Unit- Ponds

General Chemistry

Client Sample ID: MW 2017-5
Date Collected: 09/23/21 10:15
Date Received: 09/25/21 10:20

Lab Sample ID: 280-153422-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.39		3.00		mg/L			09/30/21 23:40	1
Fluoride	0.860		0.500		mg/L			09/30/21 23:40	1
Sulfate	292		25.0		mg/L			09/30/21 23:55	5
Total Dissolved Solids (TDS)	655		10.0		mg/L			09/28/21 13:28	1

Client Sample ID: MW 2017-6
Date Collected: 09/23/21 14:00
Date Received: 09/25/21 10:20

Lab Sample ID: 280-153422-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.90		3.00		mg/L			10/01/21 00:10	1
Fluoride	0.587		0.500		mg/L			10/01/21 00:10	1
Sulfate	221		25.0		mg/L			10/01/21 00:25	5
Total Dissolved Solids (TDS)	608		10.0		mg/L			09/28/21 13:28	1

Client Sample ID: DUP
Date Collected: 09/21/21 09:18
Date Received: 09/25/21 10:20

Lab Sample ID: 280-153422-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.98		3.00		mg/L			10/01/21 01:10	1
Fluoride	0.572		0.500		mg/L			10/01/21 01:10	1
Sulfate	192		25.0		mg/L			10/01/21 01:25	5
Total Dissolved Solids (TDS)	778		20.0		mg/L			09/26/21 16:45	1

QC Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-
 Ponds

Job ID: 280-153422-1
 SDG: LOS Multi Unit- Ponds

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-551326/1-A
Matrix: Water
Analysis Batch: 551605

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 551326

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100		ug/L		09/27/21 14:38	09/28/21 19:29	1
Calcium	ND		200		ug/L		09/27/21 14:38	09/28/21 19:29	1

Lab Sample ID: LCS 280-551326/2-A
Matrix: Water
Analysis Batch: 551605

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 551326

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	998.4		ug/L		100	86 - 110
Calcium	50000	48050		ug/L		96	90 - 111

Lab Sample ID: MB 280-551388/1-A
Matrix: Water
Analysis Batch: 551653

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 551388

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100		ug/L		09/28/21 08:05	09/28/21 23:52	1
Calcium	ND		200		ug/L		09/28/21 08:05	09/28/21 23:52	1

Lab Sample ID: LCS 280-551388/2-A
Matrix: Water
Analysis Batch: 551653

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 551388

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	978.6		ug/L		98	86 - 110
Calcium	50000	50250		ug/L		100	90 - 111

Lab Sample ID: 280-153422-1 MS
Matrix: Water
Analysis Batch: 551653

Client Sample ID: MW 2017-7
Prep Type: Total Recoverable
Prep Batch: 551388

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1850		1000	2892		ug/L		105	87 - 113
Calcium	61400		50000	111300		ug/L		100	48 - 153

Lab Sample ID: 280-153422-1 MSD
Matrix: Water
Analysis Batch: 551653

Client Sample ID: MW 2017-7
Prep Type: Total Recoverable
Prep Batch: 551388

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	1850		1000	2873		ug/L		103	87 - 113	1	20
Calcium	61400		50000	111600		ug/L		100	48 - 153	0	20

QC Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-Ponds

Job ID: 280-153422-1
 SDG: LOS Multi Unit- Ponds

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-551796/6
Matrix: Water
Analysis Batch: 551796

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND	^+	3.00		mg/L			09/30/21 12:55	1
Fluoride	ND		0.500		mg/L			09/30/21 12:55	1
Sulfate	ND		5.00		mg/L			09/30/21 12:55	1

Lab Sample ID: LCS 280-551796/4
Matrix: Water
Analysis Batch: 551796

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	102.1	^+	mg/L		102	90 - 110
Fluoride	5.00	4.987		mg/L		100	90 - 110
Sulfate	100	100.6		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-551796/5
Matrix: Water
Analysis Batch: 551796

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	104.4	^+	mg/L		104	90 - 110	2	10
Fluoride	5.00	5.142		mg/L		103	90 - 110	3	10
Sulfate	100	98.20		mg/L		98	90 - 110	2	10

Lab Sample ID: MRL 280-551796/3
Matrix: Water
Analysis Batch: 551796

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	4.247		mg/L		85	50 - 150
Fluoride	0.500	0.6243		mg/L		125	50 - 150
Sulfate	5.00	ND		mg/L		88	50 - 150

Lab Sample ID: 280-153422-4 MS
Matrix: Water
Analysis Batch: 551796

Client Sample ID: MW 2017-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.591		5.00	5.311		mg/L		94	80 - 120

Lab Sample ID: 280-153422-4 MS
Matrix: Water
Analysis Batch: 551796

Client Sample ID: MW 2017-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	188	F1	250	476.3		mg/L		115	80 - 120

QC Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-
 Ponds

Job ID: 280-153422-1
 SDG: LOS Multi Unit- Ponds

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

Lab Sample ID: 280-153422-4 MSD
Matrix: Water
Analysis Batch: 551796

Client Sample ID: MW 2017-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.591		5.00	5.434		mg/L		97	80 - 120	2	20

Lab Sample ID: 280-153422-4 MSD
Matrix: Water
Analysis Batch: 551796

Client Sample ID: MW 2017-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	188	F1	250	493.7	F1	mg/L		122	80 - 120	4	20

Lab Sample ID: 280-153422-4 DU
Matrix: Water
Analysis Batch: 551796

Client Sample ID: MW 2017-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.591		0.5822		mg/L		2	15

Lab Sample ID: 280-153422-4 DU
Matrix: Water
Analysis Batch: 551796

Client Sample ID: MW 2017-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	188	F1	182.0		mg/L		3	15

Lab Sample ID: MB 280-552044/6
Matrix: Water
Analysis Batch: 552044

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00		mg/L			10/02/21 12:31	1
Sulfate	ND		5.00		mg/L			10/02/21 12:31	1

Lab Sample ID: LCS 280-552044/4
Matrix: Water
Analysis Batch: 552044

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	96.50		mg/L		96	90 - 110
Sulfate	100	97.12		mg/L		97	90 - 110

Lab Sample ID: LCSD 280-552044/5
Matrix: Water
Analysis Batch: 552044

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	96.35		mg/L		96	90 - 110	0	10
Sulfate	100	97.00		mg/L		97	90 - 110	0	10

QC Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-
 Ponds

Job ID: 280-153422-1
 SDG: LOS Multi Unit- Ponds

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

Lab Sample ID: MRL 280-552044/3
Matrix: Water
Analysis Batch: 552044

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	4.388		mg/L		88	50 - 150
Sulfate	5.00	ND		mg/L		84	50 - 150

Lab Sample ID: 280-153422-3 MS
Matrix: Water
Analysis Batch: 552044

Client Sample ID: MW 2017-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.1		50.0	60.97		mg/L		102	80 - 120

Lab Sample ID: 280-153422-3 MSD
Matrix: Water
Analysis Batch: 552044

Client Sample ID: MW 2017-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.1		50.0	61.99		mg/L		104	80 - 120	2	20

Lab Sample ID: 280-153422-3 DU
Matrix: Water
Analysis Batch: 552044

Client Sample ID: MW 2017-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	10.1		10.11		mg/L		0.09	15

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

Lab Sample ID: MB 280-551293/2
Matrix: Water
Analysis Batch: 551293

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		10.0		mg/L			09/26/21 16:45	1

Lab Sample ID: LCS 280-551293/1
Matrix: Water
Analysis Batch: 551293

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)	505	496.0		mg/L		98	88 - 114

Lab Sample ID: 280-153422-8 DU
Matrix: Water
Analysis Batch: 551293

Client Sample ID: DUP
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	778		790.0		mg/L		2	10

QC Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-
 Ponds

Job ID: 280-153422-1
 SDG: LOS Multi Unit- Ponds

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

Lab Sample ID: MB 280-551509/1
Matrix: Water
Analysis Batch: 551509

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		10.0		mg/L			09/28/21 13:28	1

Lab Sample ID: LCS 280-551509/2
Matrix: Water
Analysis Batch: 551509

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)	505	492.0		mg/L		97	88 - 114

QC Association Summary

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-
 Ponds

Job ID: 280-153422-1
 SDG: LOS Multi Unit- Ponds

Metals

Prep Batch: 551326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153422-2	MW 2017-1	Total Recoverable	Water	3005A	
MB 280-551326/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-551326/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 551388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153422-1	MW 2017-7	Total Recoverable	Water	3005A	
280-153422-3	MW 2017-2	Total Recoverable	Water	3005A	
280-153422-4	MW 2017-3	Total Recoverable	Water	3005A	
280-153422-5	MW 2017-4	Total Recoverable	Water	3005A	
280-153422-6	MW 2017-5	Total Recoverable	Water	3005A	
280-153422-7	MW 2017-6	Total Recoverable	Water	3005A	
280-153422-8	DUP	Total Recoverable	Water	3005A	
MB 280-551388/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-551388/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-153422-1 MS	MW 2017-7	Total Recoverable	Water	3005A	
280-153422-1 MSD	MW 2017-7	Total Recoverable	Water	3005A	

Analysis Batch: 551605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153422-2	MW 2017-1	Total Recoverable	Water	6010C	551326
MB 280-551326/1-A	Method Blank	Total Recoverable	Water	6010C	551326
LCS 280-551326/2-A	Lab Control Sample	Total Recoverable	Water	6010C	551326

Analysis Batch: 551653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153422-1	MW 2017-7	Total Recoverable	Water	6010C	551388
280-153422-3	MW 2017-2	Total Recoverable	Water	6010C	551388
280-153422-4	MW 2017-3	Total Recoverable	Water	6010C	551388
280-153422-5	MW 2017-4	Total Recoverable	Water	6010C	551388
280-153422-6	MW 2017-5	Total Recoverable	Water	6010C	551388
280-153422-7	MW 2017-6	Total Recoverable	Water	6010C	551388
280-153422-8	DUP	Total Recoverable	Water	6010C	551388
MB 280-551388/1-A	Method Blank	Total Recoverable	Water	6010C	551388
LCS 280-551388/2-A	Lab Control Sample	Total Recoverable	Water	6010C	551388
280-153422-1 MS	MW 2017-7	Total Recoverable	Water	6010C	551388
280-153422-1 MSD	MW 2017-7	Total Recoverable	Water	6010C	551388

General Chemistry

Analysis Batch: 551293

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153422-1	MW 2017-7	Total/NA	Water	SM 2540C	
280-153422-3	MW 2017-2	Total/NA	Water	SM 2540C	
280-153422-4	MW 2017-3	Total/NA	Water	SM 2540C	
280-153422-8	DUP	Total/NA	Water	SM 2540C	
MB 280-551293/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-551293/1	Lab Control Sample	Total/NA	Water	SM 2540C	
280-153422-8 DU	DUP	Total/NA	Water	SM 2540C	

QC Association Summary

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-
Ponds

Job ID: 280-153422-1
SDG: LOS Multi Unit- Ponds

General Chemistry

Analysis Batch: 551509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153422-2	MW 2017-1	Total/NA	Water	SM 2540C	
280-153422-5	MW 2017-4	Total/NA	Water	SM 2540C	
280-153422-6	MW 2017-5	Total/NA	Water	SM 2540C	
280-153422-7	MW 2017-6	Total/NA	Water	SM 2540C	
MB 280-551509/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-551509/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 551796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153422-1	MW 2017-7	Total/NA	Water	9056A	
280-153422-1	MW 2017-7	Total/NA	Water	9056A	
280-153422-2	MW 2017-1	Total/NA	Water	9056A	
280-153422-2	MW 2017-1	Total/NA	Water	9056A	
280-153422-3	MW 2017-2	Total/NA	Water	9056A	
280-153422-3	MW 2017-2	Total/NA	Water	9056A	
280-153422-4	MW 2017-3	Total/NA	Water	9056A	
280-153422-4	MW 2017-3	Total/NA	Water	9056A	
280-153422-5	MW 2017-4	Total/NA	Water	9056A	
280-153422-5	MW 2017-4	Total/NA	Water	9056A	
280-153422-6	MW 2017-5	Total/NA	Water	9056A	
280-153422-6	MW 2017-5	Total/NA	Water	9056A	
280-153422-7	MW 2017-6	Total/NA	Water	9056A	
280-153422-7	MW 2017-6	Total/NA	Water	9056A	
280-153422-8	DUP	Total/NA	Water	9056A	
280-153422-8	DUP	Total/NA	Water	9056A	
MB 280-551796/6	Method Blank	Total/NA	Water	9056A	
LCS 280-551796/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-551796/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-551796/3	Lab Control Sample	Total/NA	Water	9056A	
280-153422-4 MS	MW 2017-3	Total/NA	Water	9056A	
280-153422-4 MS	MW 2017-3	Total/NA	Water	9056A	
280-153422-4 MSD	MW 2017-3	Total/NA	Water	9056A	
280-153422-4 MSD	MW 2017-3	Total/NA	Water	9056A	
280-153422-4 DU	MW 2017-3	Total/NA	Water	9056A	
280-153422-4 DU	MW 2017-3	Total/NA	Water	9056A	

Analysis Batch: 552044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153422-1	MW 2017-7	Total/NA	Water	9056A	
280-153422-2	MW 2017-1	Total/NA	Water	9056A	
280-153422-3	MW 2017-2	Total/NA	Water	9056A	
280-153422-4	MW 2017-3	Total/NA	Water	9056A	
MB 280-552044/6	Method Blank	Total/NA	Water	9056A	
LCS 280-552044/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-552044/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-552044/3	Lab Control Sample	Total/NA	Water	9056A	
280-153422-3 MS	MW 2017-2	Total/NA	Water	9056A	
280-153422-3 MSD	MW 2017-2	Total/NA	Water	9056A	
280-153422-3 DU	MW 2017-2	Total/NA	Water	9056A	

Lab Chronicle

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-
 Ponds

Job ID: 280-153422-1
 SDG: LOS Multi Unit- Ponds

Client Sample ID: MW 2017-7

Lab Sample ID: 280-153422-1

Date Collected: 09/21/21 09:18

Matrix: Water

Date Received: 09/25/21 10:20

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	551388	09/28/21 08:05	PNS	TAL DEN
Total Recoverable	Analysis	6010C		1			551653	09/28/21 23:59	LMT	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	552044	10/02/21 14:30	CJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	551796	09/30/21 19:12	SPG	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	551796	09/30/21 19:27	SPG	TAL DEN
Total/NA	Analysis	SM 2540C		1	30 mL	100 mL	551293	09/26/21 16:45	SVC	TAL DEN

Client Sample ID: MW 2017-1

Lab Sample ID: 280-153422-2

Date Collected: 09/21/21 13:45

Matrix: Water

Date Received: 09/25/21 10:20

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	551326	09/27/21 14:38	CJB	TAL DEN
Total Recoverable	Analysis	6010C		1			551605	09/28/21 19:49	LMT	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	552044	10/02/21 14:44	CJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	551796	09/30/21 19:42	SPG	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	551796	09/30/21 19:56	SPG	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	551509	09/28/21 13:28	LRB	TAL DEN

Client Sample ID: MW 2017-2

Lab Sample ID: 280-153422-3

Date Collected: 09/21/21 14:40

Matrix: Water

Date Received: 09/25/21 10:20

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	551388	09/28/21 08:05	PNS	TAL DEN
Total Recoverable	Analysis	6010C		1			551653	09/29/21 00:35	LMT	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	552044	10/02/21 14:58	CJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	551796	09/30/21 20:11	SPG	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	551796	09/30/21 20:26	SPG	TAL DEN
Total/NA	Analysis	SM 2540C		1	60 mL	100 mL	551293	09/26/21 16:45	SVC	TAL DEN

Client Sample ID: MW 2017-3

Lab Sample ID: 280-153422-4

Date Collected: 09/22/21 08:25

Matrix: Water

Date Received: 09/25/21 10:20

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	551388	09/28/21 08:05	PNS	TAL DEN
Total Recoverable	Analysis	6010C		1			551653	09/29/21 00:39	LMT	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	552044	10/02/21 15:54	CJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	551796	09/30/21 20:41	SPG	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	551796	09/30/21 22:11	SPG	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	551293	09/26/21 16:45	SVC	TAL DEN

Eurofins TestAmerica, Denver

Lab Chronicle

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-
Ponds

Job ID: 280-153422-1
SDG: LOS Multi Unit- Ponds

Client Sample ID: MW 2017-4

Lab Sample ID: 280-153422-5

Date Collected: 09/22/21 11:30

Matrix: Water

Date Received: 09/25/21 10:20

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	551388	09/28/21 08:05	PNS	TAL DEN
Total Recoverable	Analysis	6010C		1			551653	09/29/21 00:42	LMT	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	551796	09/30/21 23:10	SPG	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	551796	09/30/21 23:25	SPG	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	551509	09/28/21 13:28	LRB	TAL DEN

Client Sample ID: MW 2017-5

Lab Sample ID: 280-153422-6

Date Collected: 09/23/21 10:15

Matrix: Water

Date Received: 09/25/21 10:20

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	551388	09/28/21 08:05	PNS	TAL DEN
Total Recoverable	Analysis	6010C		1			551653	09/29/21 00:46	LMT	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	551796	09/30/21 23:40	SPG	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	551796	09/30/21 23:55	SPG	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	551509	09/28/21 13:28	LRB	TAL DEN

Client Sample ID: MW 2017-6

Lab Sample ID: 280-153422-7

Date Collected: 09/23/21 14:00

Matrix: Water

Date Received: 09/25/21 10:20

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	551388	09/28/21 08:05	PNS	TAL DEN
Total Recoverable	Analysis	6010C		1			551653	09/29/21 00:49	LMT	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	551796	10/01/21 00:10	SPG	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	551796	10/01/21 00:25	SPG	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	551509	09/28/21 13:28	LRB	TAL DEN

Client Sample ID: DUP

Lab Sample ID: 280-153422-8

Date Collected: 09/21/21 09:18

Matrix: Water

Date Received: 09/25/21 10:20

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	551388	09/28/21 08:05	PNS	TAL DEN
Total Recoverable	Analysis	6010C		1			551653	09/29/21 00:53	LMT	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	551796	10/01/21 01:10	SPG	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	551796	10/01/21 01:25	SPG	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	551293	09/26/21 16:45	SVC	TAL DEN

Laboratory References:

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

Accreditation/Certification Summary

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater -ND Sites - LOS Multi Unit-
Ponds

Job ID: 280-153422-1
SDG: LOS Multi Unit- Ponds

Laboratory: Eurofins TestAmerica, Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
North Dakota	State	R-034	01-08-22

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Chain of Custody Record

Client Information Company: Basin Electric Power Cooperative Address: 3901 Highway 200A City: Stanton State, Zip: ND, 58571 Phone: 701-745-7238(Tel) Email: aknutson@bepec.com Project Name: CCR Groundwater - North Dakota Sites Site: LOS Multi Unit - Ponds		Lab PM: Turner, Shelby R E-Mail: Shelby.Turner@Eurofinset.com Project #: 28021258 SSO#:																																																																																																									
Sampler: A. Knutson Phone: 701-745-7238		Carrier Tracking No(s): Page: 1 of 1 Job #:																																																																																																									
Due Date Requested: TAT Requested (days): Standard		Analysis Requested 6010C - Total Calcium and Boron (App III) <input checked="" type="checkbox"/> D <input type="checkbox"/> N 6010C - Total Lithium (1 of 3), 6020A - Total 11 Metals (2 of 3), 7470A - Total Mercury (3 of 3) (Appendix IV) <input checked="" type="checkbox"/> N <input type="checkbox"/> N 2540C_Calc - TDS <input checked="" type="checkbox"/> N <input type="checkbox"/> N 9056A_28D - Chloride, Fluoride, Sulfate <input checked="" type="checkbox"/> N <input type="checkbox"/> N 9056A_28D - Fluoride only (App IV) <input checked="" type="checkbox"/> N <input type="checkbox"/> N 9315_Ra226, 9320_Ra228, Combined Radium-226 and Radium-228 <input checked="" type="checkbox"/> N <input type="checkbox"/> D																																																																																																									
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:		Special Instructions/Note: pH - 7.22 6.84 7.10 7.10 6.92 7.42 7.65																																																																																																									
Sample Identification <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Sample ID</th> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (C=Comp, G=grab)</th> <th>Matrix (W=water, S=solid, O=waste/oli, BT=Tissue, A=Air)</th> <th>Field Filtered Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>6010C - Total Calcium and Boron (App III)</th> <th>6010C - Total Lithium (1 of 3), 6020A - Total 11 Metals (2 of 3), 7470A - Total Mercury (3 of 3) (Appendix IV)</th> <th>2540C_Calc - TDS</th> <th>9056A_28D - Chloride, Fluoride, Sulfate</th> <th>9056A_28D - Fluoride only (App IV)</th> <th>9315_Ra226, 9320_Ra228, Combined Radium-226 and Radium-228</th> </tr> </thead> <tbody> <tr> <td>MW 2017-7</td> <td>9-21-21</td> <td>0918</td> <td>G</td> <td>W</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>MW 2017-1</td> <td>9-21-21</td> <td>1345</td> <td>G</td> <td>W</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>MW 2017-2</td> <td>9-21-21</td> <td>1440</td> <td>G</td> <td>W</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>MW 2017-3</td> <td>9-22-21</td> <td>0825</td> <td>G</td> <td>W</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>MW 2017-4</td> <td>9-22-21</td> <td>1130</td> <td>G</td> <td>W</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>MW 2017-5</td> <td>9-23-21</td> <td>1015</td> <td>G</td> <td>W</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>MW 2017-6</td> <td>9-23-21</td> <td>1400</td> <td>G</td> <td>W</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> </tbody> </table>		Sample ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oli, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C - Total Calcium and Boron (App III)	6010C - Total Lithium (1 of 3), 6020A - Total 11 Metals (2 of 3), 7470A - Total Mercury (3 of 3) (Appendix IV)	2540C_Calc - TDS	9056A_28D - Chloride, Fluoride, Sulfate	9056A_28D - Fluoride only (App IV)	9315_Ra226, 9320_Ra228, Combined Radium-226 and Radium-228	MW 2017-7	9-21-21	0918	G	W	X	X	X	X	X	X	X	X	MW 2017-1	9-21-21	1345	G	W	X	X	X	X	X	X	X	X	MW 2017-2	9-21-21	1440	G	W	X	X	X	X	X	X	X	X	MW 2017-3	9-22-21	0825	G	W	X	X	X	X	X	X	X	X	MW 2017-4	9-22-21	1130	G	W	X	X	X	X	X	X	X	X	MW 2017-5	9-23-21	1015	G	W	X	X	X	X	X	X	X	X	MW 2017-6	9-23-21	1400	G	W	X	X	X	X	X	X	X	X	Total Number of containers:	
Sample ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oli, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C - Total Calcium and Boron (App III)	6010C - Total Lithium (1 of 3), 6020A - Total 11 Metals (2 of 3), 7470A - Total Mercury (3 of 3) (Appendix IV)	2540C_Calc - TDS	9056A_28D - Chloride, Fluoride, Sulfate	9056A_28D - Fluoride only (App IV)	9315_Ra226, 9320_Ra228, Combined Radium-226 and Radium-228																																																																																															
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MW 2017-5	9-23-21	1015	G	W	X	X	X	X	X	X	X	X																																																																																															
MW 2017-6	9-23-21	1400	G	W	X	X	X	X	X	X	X	X																																																																																															
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																																																																																																									
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:																																																																																																									
Empty Kit Relinquished by:		Method of Shipment:																																																																																																									
Relinquished by:		Date/Time:																																																																																																									
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Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Cooler Temperature(s) °C and Other Remarks: 2-1 144 C F 1.0																																																																																																									





280-153422 Waybill

SIGNATURE

DATE 9-24-21

Custody Seal



Environment Testing
TestAmerica

1699154

FedEx Express Package US Airbill

FedEx Tracking Number 8118 2531 2062

1 From Date 9-24-21

Sender's Name Aaron Kautson Phone (701) 745-3371

Company Basin Electric Coop 7 LOS

Address 3901 Highway 200A

City Stanton State ND ZIP 58571

2 Your Internal Billing Reference

3 To Recipient's Name Eurofins-Denver Phone (303) 736-0100

Company Eurofins-Test America Denver

Address 4955 Yarrow St

City Arvada State CO ZIP 80002

Address Use this line for the HOLD location address or for continuation of your shipping address.

City Arvada State CO ZIP 80002



PRIORITY MAIL 80002 CO-US DEN

X0 LAAA



304538 24 SEP 2021 11:51 AM 169A/1BZ3

0200

4 Express Package Service To meet location.

Next Business Day

FedEx First Overnight Earliest next business morning delivery to select locations. For more information, visit fedex.com/overnight.

FedEx Priority Overnight Next business morning delivery with guaranteed next business day delivery.

FedEx Standard Overnight Next business day delivery.

2 or 3 Business Days

FedEx 2Day AM! Second business morning delivery to select locations. For more information, visit fedex.com/2dayam.

FedEx 2Day Second business morning delivery to select locations. For more information, visit fedex.com/2day.

FedEx Express Saver Third business day delivery.

Packaging FedEx Envelope, FedEx Pak, FedEx Box, FedEx Tube, Other

5 Packaging (Declared value limit apply.)

6 Special Handling and Delivery Signature Options

Saturday Delivery, Direct Signature, Indirect Signature

7 Payment (Bill to)

Obtain recip. Act. No., Credit Card, Cash/Check

644

1 2 3 4 5 6 7 8 9 10 11 12 13 14

Align FedEx pouch here.

Login Sample Receipt Checklist

Client: Basin Electric Power Cooperative

Job Number: 280-153422-1
SDG Number: LOS Multi Unit- Ponds

Login Number: 153422

List Number: 1

Creator: Roehsner, Karen P

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	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.	False	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



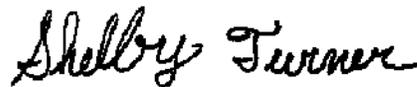
ANALYTICAL REPORT

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

Laboratory Job ID: 280-153678-1
Laboratory Sample Delivery Group: LOS Ponds
Client Project/Site: CCR Groundwater - ND Sites - LOS Ponds

For:
Basin Electric Power Cooperative
1717 E Interstate Ave
Bismarck, North Dakota 58504

Attn: Aaron Knutson



Authorized for release by:
10/19/2021 9:47:52 AM

Shelby Turner, Project Manager I
(303)736-0100
Shelby.Turner@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.



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Definitions/Glossary

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater - ND Sites - LOS Ponds

Job ID: 280-153678-1
SDG: LOS Ponds

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: Basin Electric Power Cooperative
Project/Site: CCR Groundwater - ND Sites - LOS Ponds

Job ID: 280-153678-1
SDG: LOS Ponds

Job ID: 280-153678-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Basin Electric Power Cooperative

Project: CCR Groundwater - ND Sites - LOS Ponds

Report Number: 280-153678-1

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 sample was received on 10/2/2021 9:45 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.6° C.

TOTAL RECOVERABLE METALS

Sample MW 2017-8 (280-153678-1) was analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 10/05/2021 and analyzed on 10/06/2021.

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

TOTAL DISSOLVED SOLIDS

Sample MW 2017-8 (280-153678-1) was analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 10/06/2021.

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

ANIONS (28 DAYS)

Sample MW 2017-8 (280-153678-1) was analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A (28 Days). The samples were analyzed on 10/06/2021 and 10/15/2021.

Sample MW 2017-8 (280-153678-1)[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.

Detection Summary

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Ponds

Job ID: 280-153678-1
 SDG: LOS Ponds

Client Sample ID: MW 2017-8

Lab Sample ID: 280-153678-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	504		100		ug/L	1		6010C	Total Recoverable
Calcium	136000		200		ug/L	1		6010C	Total Recoverable
Chloride	26.8		3.00		mg/L	1		9056A	Total/NA
Sulfate	2020		100		mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	3770		40.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver



Method Summary

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater - ND Sites - LOS Ponds

Job ID: 280-153678-1
SDG: LOS Ponds

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL DEN

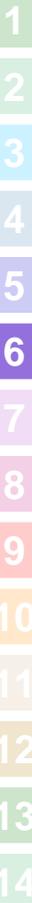
Protocol References:

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



Sample Summary

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater - ND Sites - LOS Ponds

Job ID: 280-153678-1
SDG: LOS Ponds

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-153678-1	MW 2017-8	Water	09/30/21 09:05	10/02/21 09:45

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Client Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Ponds

Job ID: 280-153678-1
 SDG: LOS Ponds

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

Client Sample ID: MW 2017-8
Date Collected: 09/30/21 09:05
Date Received: 10/02/21 09:45

Lab Sample ID: 280-153678-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	504		100		ug/L		10/05/21 08:15	10/06/21 01:44	1
Calcium	136000		200		ug/L		10/05/21 08:15	10/06/21 01:44	1

General Chemistry

Client Sample ID: MW 2017-8
Date Collected: 09/30/21 09:05
Date Received: 10/02/21 09:45

Lab Sample ID: 280-153678-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26.8		3.00		mg/L			10/06/21 02:43	1
Fluoride	ND		0.500		mg/L			10/06/21 02:43	1
Sulfate	2020		100		mg/L			10/15/21 22:21	20
Total Dissolved Solids (TDS)	3770		40.0		mg/L			10/06/21 08:31	1

QC Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Ponds

Job ID: 280-153678-1
 SDG: LOS Ponds

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-552184/1-A
Matrix: Water
Analysis Batch: 552489

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 552184

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100		ug/L		10/05/21 08:15	10/06/21 01:37	1
Calcium	ND		200		ug/L		10/05/21 08:15	10/06/21 01:37	1

Lab Sample ID: LCS 280-552184/2-A
Matrix: Water
Analysis Batch: 552489

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 552184

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	1014		ug/L		101	86 - 110
Calcium	50000	50600		ug/L		101	90 - 111

Lab Sample ID: 280-153678-1 MS
Matrix: Water
Analysis Batch: 552489

Client Sample ID: MW 2017-8
Prep Type: Total Recoverable
Prep Batch: 552184

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	504		1000	1578		ug/L		107	87 - 113
Calcium	136000		50000	186400		ug/L		101	48 - 153

Lab Sample ID: 280-153678-1 MSD
Matrix: Water
Analysis Batch: 552489

Client Sample ID: MW 2017-8
Prep Type: Total Recoverable
Prep Batch: 552184

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	504		1000	1560		ug/L		106	87 - 113	1	20
Calcium	136000		50000	184300		ug/L		97	48 - 153	1	20

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-552193/46
Matrix: Water
Analysis Batch: 552193

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00		mg/L			10/05/21 21:49	1
Fluoride	ND		0.500		mg/L			10/05/21 21:49	1

Lab Sample ID: MB 280-552193/6
Matrix: Water
Analysis Batch: 552193

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00		mg/L			10/04/21 16:13	1
Fluoride	ND		0.500		mg/L			10/04/21 16:13	1

QC Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Ponds

Job ID: 280-153678-1
 SDG: LOS Ponds

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

Lab Sample ID: LCS 280-552193/44
Matrix: Water
Analysis Batch: 552193

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	97.45		mg/L		97	90 - 110
Fluoride	5.00	5.019		mg/L		100	90 - 110

Lab Sample ID: LCSD 280-552193/45
Matrix: Water
Analysis Batch: 552193

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	97.37		mg/L		97	90 - 110	0	10
Fluoride	5.00	5.142		mg/L		103	90 - 110	2	10

Lab Sample ID: MRL 280-552193/3
Matrix: Water
Analysis Batch: 552193

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	5.041		mg/L		101	50 - 150
Fluoride	0.500	0.5541		mg/L		111	50 - 150

Lab Sample ID: MB 280-553692/47
Matrix: Water
Analysis Batch: 553692

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.00		mg/L			10/15/21 22:07	1

Lab Sample ID: MB 280-553692/6
Matrix: Water
Analysis Batch: 553692

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.00		mg/L			10/15/21 12:01	1

Lab Sample ID: LCS 280-553692/4
Matrix: Water
Analysis Batch: 553692

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	100	97.43		mg/L		97	90 - 110

Lab Sample ID: LCS 280-553692/45
Matrix: Water
Analysis Batch: 553692

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	100	99.51		mg/L		100	90 - 110

QC Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Ponds

Job ID: 280-153678-1
 SDG: LOS Ponds

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

Lab Sample ID: LCSD 280-553692/46
Matrix: Water
Analysis Batch: 553692

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
Sulfate	100	100.1		mg/L		100	90 - 110	1	10

Lab Sample ID: LCSD 280-553692/5
Matrix: Water
Analysis Batch: 553692

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
Sulfate	100	97.61		mg/L		98	90 - 110	0	10

Lab Sample ID: MRL 280-553692/3
Matrix: Water
Analysis Batch: 553692

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	5.00	ND		mg/L		91	50 - 150		

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

Lab Sample ID: MB 280-552469/1
Matrix: Water
Analysis Batch: 552469

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		10.0		mg/L			10/06/21 08:31	1

Lab Sample ID: LCS 280-552469/2
Matrix: Water
Analysis Batch: 552469

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)	503	482.0		mg/L		96	88 - 114		

QC Association Summary

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Ponds

Job ID: 280-153678-1
 SDG: LOS Ponds

Metals

Prep Batch: 552184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153678-1	MW 2017-8	Total Recoverable	Water	3005A	
MB 280-552184/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-552184/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-153678-1 MS	MW 2017-8	Total Recoverable	Water	3005A	
280-153678-1 MSD	MW 2017-8	Total Recoverable	Water	3005A	

Analysis Batch: 552489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153678-1	MW 2017-8	Total Recoverable	Water	6010C	552184
MB 280-552184/1-A	Method Blank	Total Recoverable	Water	6010C	552184
LCS 280-552184/2-A	Lab Control Sample	Total Recoverable	Water	6010C	552184
280-153678-1 MS	MW 2017-8	Total Recoverable	Water	6010C	552184
280-153678-1 MSD	MW 2017-8	Total Recoverable	Water	6010C	552184

General Chemistry

Analysis Batch: 552193

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153678-1	MW 2017-8	Total/NA	Water	9056A	
MB 280-552193/46	Method Blank	Total/NA	Water	9056A	
MB 280-552193/6	Method Blank	Total/NA	Water	9056A	
LCS 280-552193/44	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-552193/45	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-552193/3	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 552469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153678-1	MW 2017-8	Total/NA	Water	SM 2540C	
MB 280-552469/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-552469/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 553692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-153678-1	MW 2017-8	Total/NA	Water	9056A	
MB 280-553692/47	Method Blank	Total/NA	Water	9056A	
MB 280-553692/6	Method Blank	Total/NA	Water	9056A	
LCS 280-553692/4	Lab Control Sample	Total/NA	Water	9056A	
LCS 280-553692/45	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-553692/46	Lab Control Sample Dup	Total/NA	Water	9056A	
LCSD 280-553692/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-553692/3	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - ND Sites - LOS Ponds

Job ID: 280-153678-1
 SDG: LOS Ponds

Client Sample ID: MW 2017-8

Lab Sample ID: 280-153678-1

Date Collected: 09/30/21 09:05

Matrix: Water

Date Received: 10/02/21 09:45

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	552184	10/05/21 08:15	ABW	TAL DEN
Total Recoverable	Analysis	6010C		1			552489	10/06/21 01:44	MAB	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	552193	10/06/21 02:43	CJ	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	553692	10/15/21 22:21	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	552469	10/06/21 08:31	LRB	TAL DEN

Laboratory References:

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



Accreditation/Certification Summary

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater - ND Sites - LOS Ponds

Job ID: 280-153678-1
SDG: LOS Ponds

Laboratory: Eurofins TestAmerica, Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
North Dakota	State	R-034	01-08-22

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Chain of Custody Record

Client Information		Lab P/N: Turner, Shelby R		Carrier Tracking No(s):		COC No:	
Client Contact: Mr. Aaron Knutson		E-Mail: Shelby.Turner@Eurofinsnet.com		Page: 105		Job #:	
Company: Basin Electric Power Cooperative		Address: 3901 Highway 200A		City: Stanton		State, Zip: ND, 58571	
Phone: 701-745-7238 (Tel)		PO #: Purchase Order Requested		WO #:		Project #:	
Email: aknutson@bepcc.com		28021258		SSOW#:		Site: LOS Ponds	
CCR Groundwater - North Dakota Sites		Due Date Requested:		TAT Requested (days):		Standard	
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)	
mw 2017-8		9-30-21		0905		G	
Matrix (W=water, S=solid, O=ore, etc.)		Preservation Code:		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)	
W		W		N		X	
6010C - Total Calcium and Boron (App III)		D		N		X	
6010C - Total Lithium (1 of 3), 6020A - Total 11 Metals (2 of 3), 7470A - Total Mercury (3 of 3) (Appendix IV)		D		N		X	
2540C - Calcd - TDS		N		N		X	
9056A_28D - Chloride, Fluoride, Sulfate		N		N		X	
9056A_28D - Fluoride only (App IV)		N		N		X	
9315_Ra226, 9320_Ra228, Combined Radium-226 and Radium-228		N		N		D	
Total Number of Containers							
Special Instructions/Note:						pH - 7.27	
Preservation Codes:						M - Hexane N - None O - AshNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA Z - other (specify)	
Other:							
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input checked="" type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Deliverable Requested: I, II, III, IV, Other (specify)							
Empty Kit Relinquished by:		Date:		Method of Shipment:			
Relinquished by:		Date/Time: 10-1-21		Received by: [Signature]		Date/Time: 10/1/2019	
Relinquished by:		Date/Time:		Received by:		Date/Time:	
Custody Seals Intact: Yes Δ No		Custody Seal No.: 1543672, 1543673		Cooler Temperature(s) °C and Other Remarks: 06 1411C F110			



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280-153678 Waybill

ORIGIN ID: BISA (701) 745-3371
 LELAND OLDS STATION
 BASIN ELECTRIC
 3901 HWY 200A

SHIP DATE: 01OCT21
 ACTWGT: 60.00 LB
 CAD: 251286197/INET4400

STANTON, ND 58571
 UNITED STATES US

BILL SENDER

TO SHELBY TURNER
 EUROFINS TESTAMERICA, DENVER
 4955 YARROW ST

ARVADA CO 80002

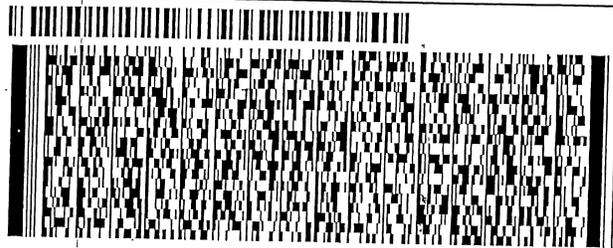
(303) 736-0100
 INV:
 PO:

REF: CGR.GROUNDWATER - ND SITE

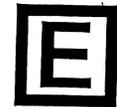
DEPT:

560J3/169MFE4A

FedEx Ship Manager - Print Your Label(s)



FedEx Express



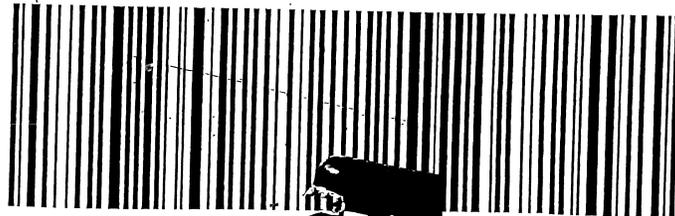
J212821070801ur

SATURDAY 9:30A
 FIRST OVERNIGHT

TRK# 7748 5611 0180
 0201

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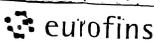
10/1/21, 7:39 AM



Environment Testing
TestAmerica

1543673





Environment Testing
TestAmerica

1543672

Login Sample Receipt Checklist

Client: Basin Electric Power Cooperative

Job Number: 280-153678-1

SDG Number: LOS Ponds

Login Number: 153678

List Number: 1

Creator: O'Hara, Jake F

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Attachment B

Statistical Analysis Methods, Background Upper/Lower Prediction Limits and 2021 Results

Statistical Procedures and Results 2021

LOS Pond 2 and Pond 3 (Multi-Unit) CCR Monitoring Well Network Leland Olds Station – Stanton, North Dakota

The Appendix III groundwater quality data at the Leland Olds Station (LOS) Multi-Unit were evaluated using an interwell approach that statistically compared constituent concentrations at downgradient monitoring wells to those present at the background monitoring wells. For LOS Multi-Unit, monitoring wells MW-2017-1 and MW-2017-8 are designated as background wells because they are consistently located upgradient of the Multi-Unit. The remaining monitoring wells, MW-2017-2, MW-2017-3, MW-2017-4, MW-2017-5, MW-2017-6, and MW-2017-7, are designated as downgradient wells because they are located at variably downgradient positions relative to the Multi-Unit, meaning that they vary hydraulically from upgradient, sidegradient, or downgradient, but are generally downgradient at some point during the year.

Background upper prediction limits (UPLs) with 1 of 2 retesting were developed for each Appendix III constituent from monitoring wells MW-2017-1 and MW-2017-8 based on the frequency of non-detect values and whether the background data for that constituent exhibited a normal, lognormal, or nonparametric distribution. For the statistical analysis, non-detect values were represented at the reporting limit. Analytical data from background monitoring wells MW-2017-1 and MW-2017-8, collected between March 2018 and October 2020, were used to develop UPLs at 95 percent confidence. A lower prediction limit (LPL) was also developed for pH which is a two-sided parameter. ProUCL Version 5.1 was used to store the data and run the statistical analyses.

Data from the downgradient monitoring wells were compared to the UPL to identify statistically significant increases (SSIs) over background. For pH, the data were also compared to determine whether it was below the LPL. Mann-Kendall trend analysis was used to identify statistically significant increasing trends for constituents with SSIs. The results of the analyses, including the UPLs, and LPL for pH, are provided in Table 1.

Table 2 provides a summary of the Appendix III constituents with verified and unverified SSIs above background. No SSIs were identified for boron, calcium, chloride, fluoride, sulfate, or total dissolved solids (TDS). However, pH exhibits an unverified SSI above the background UPL at monitoring well MW-2017-6, as indicated in Table 2. The LOS Multi-Unit should continue detection monitoring in 2021.

**Table 1. 2021 Statistical Analysis Methods and Background Upper/Lower Prediction Limits
Monitoring Wells MW-2017-1 and MW-2017-8
LOS Pond 2 and Pond 3 (Multi-Unit) CCR Monitoring Well Network
Leland Olds Station – Stanton, North Dakota**

Parameter (Units)	Number of Samples	Percent Non Detects	Normal or Lognormal Distribution?	Statistical Method	Background Prediction Limit
Boron (mg/L)	18	0	No/No	Nonparametric 95% UPL	2.37
Calcium (mg/L)	18	0	Yes/No	Parametric 95% UPL	167
Chloride (mg/L)	18	0	No/No	Nonparametric 95% UPL	25
Fluoride (mg/L)	18	83	No/No	Nonparametric 95% UPL	4.68
pH (std units)	18	0	Yes/Yes	Parametric 95% LPL/UPL	6.80/7.59
Sulfate (mg/L)	18	0	No/No	Nonparametric 95% UPL	2,100
TDS (mg/L)	18	0	No/No	Nonparametric 95% UPL	4,000

Notes:

pH has both an LPL and UPL; all other constituents only have an UPL.

mg/L= milligrams per liter

TDS = total dissolved solids

**Table 2. 2021 Statistical Method Analysis and Results
 LOS Pond 2 and Pond 3 (Multi-Unit) CCR Monitoring Well Network
 Leland Olds Station – Stanton, North Dakota**

Well	Location	B	Ca	Cl	F	pH LPL/UPL)		SO ₄	TDS
MW-2017-2	Downgradient								
MW-2017-3	Downgradient								
MW-2017-4	Downgradient								
MW-2017-5	Downgradient								
MW-2017-6	Downgradient								
MW-2017-7	Downgradient								

Notes:

SSIs determined using interwell upper prediction limits (UPLs) at background monitoring well MW-2017-1

 Less than or equal to background upper prediction limit (UPL) or greater than lower prediction limit (LPL) for pH

 Unverified statistically significant increase (SSI) over background UPL or below background LPL for pH

 Verified SSI over background UPL or below background LPL for pH

**Attachment. Input Data Files for Calculation of Upper and Lower Predictive Limits
Background Monitoring Wells MW-2017-1 and MW-2017-8
LOS Pond 2 and Pond 3 (Multi-Unit) CCR Monitoring Well Network
Leland Olds Station – Stanton, North Dakota**

Well No	Date	B	D_B	Ca	D_Ca	Cl	D_Cl	F	D_F	pH	D_pH	SO4	D_SO4	TDS	D_TDS
MW-2017-1	03/12/2018	2	1	100	1	8.8	1	0.5	0	6.95	1	210	1	710	1
MW-2017-1	04/17/2018	2.1	1	96	1	9.4	1	0.5	0	6.86	1	200	1	680	1
MW-2017-1	06/14/2018	2.2	1	89	1	8.2	1	0.5	0	7.06	1	220	1	690	1
MW-2017-1	07/25/2018	2.36	1	91	1	8.73	1	0.5	0	7.21	1	218	1	710	1
MW-2017-1	08/27/2018	2.37	1	90	1	8.65	1	0.5	0	7.38	1	219	1	707	1
MW-2017-1	03/12/2019	2.15	1	103	1	8.5	1	0.5	0	7.19	1	217	1	735	1
MW-2017-1	03/27/2019	2.02	1	98	1	8.53	1	0.5	0	7.26	1	212	1	718	1
MW-2017-1	04/09/2019	2.02	1	107	1	8.91	1	0.5	0	7.23	1	221	1	761	1
MW-2017-1	11/12/2019	1.11	1	130	1	9	1	0.43	1	7.73	1	233	1	740	1
MW-2017-1	06/08/2020	1.04	1	150	1	7.74	1	0.5	0	6.86	1	260	1	1050	1
MW-2017-1	10/05/2020	0.96	1	158	1	9.87	1	0.5	0	7.01	1	270	1	960	1
MW-2017-8	03/14/2018	0.48	1	150	1	25	1	1	0	7.03	1	2,000	1	3,800	1
MW-2017-8	04/18/2018	0.46	1	150	1	25	1	1	0	7.38	1	2,100	1	4,000	1
MW-2017-8	06/15/2018	0.46	1	140	1	22	1	1	0	7.19	1	2,100	1	4,000	1
MW-2017-8	07/25/2018	0.47	1	145	1	24.3	1	1	0	7.23	1	2,010	1	3,900	1
MW-2017-8	08/28/2018	0.47	1	140	1	24	1	1	0	7.52	1	2,020	1	3,880	1
MW-2017-8	06/08/2020	0.45	1	133	1	20.8	1	4.68	1	7.29	1	1,860	1	3800	1
MW-2017-8	10/06/2020	0.48	1	137	1	24.6	1	4.57	1	7.16	1	1,960	1	2,960	1

D_(Analyte): 0 = non-detect and 1 = detect

pH in Standard Units

All other analytes reported in mg/L

the \mathbb{R}^n is a linear space over \mathbb{R} with the usual addition and scalar multiplication. The inner product is defined by

$$\langle x, y \rangle = x_1 y_1 + x_2 y_2 + \dots + x_n y_n \quad (1)$$

where $x = (x_1, x_2, \dots, x_n)$ and $y = (y_1, y_2, \dots, y_n)$ are vectors in \mathbb{R}^n .

The norm of a vector x is defined by

$$\|x\| = \sqrt{\langle x, x \rangle} = \sqrt{x_1^2 + x_2^2 + \dots + x_n^2} \quad (2)$$

The distance between two vectors x and y is defined by

$$d(x, y) = \|x - y\| = \sqrt{(x_1 - y_1)^2 + (x_2 - y_2)^2 + \dots + (x_n - y_n)^2} \quad (3)$$

The angle between two vectors x and y is defined by

$$\cos \theta = \frac{\langle x, y \rangle}{\|x\| \|y\|} \quad (4)$$

The orthogonal projection of a vector x onto a vector y is defined by

$$\text{proj}_y x = \frac{\langle x, y \rangle}{\|y\|^2} y \quad (5)$$

The orthogonal distance from a vector x to a vector y is defined by

$$d(x, y) = \|x - \text{proj}_y x\| \quad (6)$$

The orthogonal distance from a vector x to a subspace S is defined by

$$d(x, S) = \inf_{y \in S} \|x - y\| \quad (7)$$

The orthogonal distance from a point x to a line L is defined by

$$d(x, L) = \inf_{y \in L} \|x - y\| \quad (8)$$

The orthogonal distance from a point x to a plane P is defined by

$$d(x, P) = \inf_{y \in P} \|x - y\| \quad (9)$$