



2020 Annual Groundwater Monitoring and Corrective Action Report LOS CCR Landfill

Leland Olds Station
Stanton, North Dakota

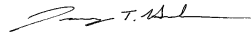
Basin Electric Power Cooperative

January 31, 2021
Project #60634996

Basin Electric Power Cooperative
Bismarck, North Dakota

Quality information

Prepared by



Jeremy Hurshman

Checked by



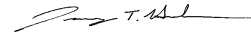
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List of Acronyms

ACMs	Assessment of Corrective Measures
AECOM	AECOM Technical Services, Inc.
Basin	Basin Electric Power Cooperative
CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
cm/sec	centimeters per second
EPA	United States Environmental Protection Agency
FGD	Flue Gas Desulfurization
ft, amsl	feet above mean sea level
ft, bgs	feet below ground surface
GWPSs	groundwater protection standards
LCL	lower control limits
LOS	Leland Olds Station
LPL	lower prediction limit
mg/L	milligrams per liter
RCRA	Resource Conservation and Recovery Act
SSI	statistically significant increase
TDS	total dissolved solids
UCL	upper control limits
UPL	upper prediction limit

Executive Summary

This report summarizes groundwater monitoring and corrective action activities completed between January 1 and December 31, 2020 at the Coal Combustion Residuals (CCR) Landfill 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 (USEPA) CCR Rule.

The location of the CCR units and program monitoring network for the CCR units, including supporting monitoring wells are illustrated on **Figures 1 and 2**, respectively. No program monitoring wells were modified or abandoned during the reporting period. Accordingly, the unit remains in Detection monitoring into the next year.

Detection-mode groundwater monitoring of the CCR Landfill was initiated in 2018. Detection monitoring through October 2020 identified no statistically significant increases (SSIs) of Appendix III indicators of boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids (TDS) in the downgradient monitoring wells MW-2016-2, MW-2016-9, MW-2016-10, and MW-2016-11.

Other activities and conditions for the 2020 annual reporting period include:

- Semiannual Detection-mode groundwater monitoring events were conducted in June and September/October. Monitoring involved sampling of five background monitoring wells and four downgradient monitoring wells.
- 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 2020 annual report documenting groundwater monitoring and corrective action for the Glenharold Coal Combustion Residuals (CCR) Landfill at Basin's Leland Olds Station (LOS).

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 the current reporting year. Chapter 3 summarizes the groundwater monitoring and corrective action activities completed in the current reporting year, and references attachments to this report that contain detailed documentation of those activities. Chapter 4 reports on general information including program transitions, problems encountered and anticipated activities for the coming year. Chapter 5 summarizes the report content. 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 of the year following the monitoring period. The annual report is 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 fourth annual report, and includes activities performed in calendar year 2020.

Facility Location and Operational History

LOS is a coal-based generating station located southeast of Stanton, North Dakota (**Figure 1**). The plant, which began operating in 1966 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 (FGD) waste.

CCR Unit Description

CCR is disposed at LOS in the following CCR unit:

- CCR Landfill

The CCR Landfill is located approximately 3 miles southwest of the generating units and office complex, in an area of mine spoils (**Figure 1**). Basin reported that in 2020 the LOS CCR Landfill received approximately 264,303 tons of solid waste, including fly ash, FGD waste, and a minor contribution of solid debris.

Physical Setting

The geology underlying the site includes mine spoils underlain by the Sentinel Butte Formation. This formation is comprised of continental deposits in excess of 1,000-feet thick, consisting of dense clay, weakly cemented sandstone, mudstone, and lignite beds.

The topography of the surrounding areas consists of alluvial terraces and historic mine spoils. Much of the surrounding mined areas have historically been developed such that precipitation outside of the landfill footprint is generally redirected as surface water runoff toward drainage ditches and culverts that drain to Alderin Creek and ultimately to the Missouri River. Groundwater is recharged primarily through regional infiltration of melt water in the spring.

The base of the LOS CCR Landfill is underlain by approximately 50 feet of clay-rich mine spoil that overlies the Lower Sentinel Butte Formation. At the site, the Sentinel Butte is comprised primarily of dense clay with trace very fine sand

and sparse beds of lignite typically ranging from 6- to 9-feet thick. The 2016 AECOM drilling investigation did not penetrate to depths great enough to expose the lower portions of the Sentinel Butte.

The uppermost aquifer is found within the 6- to 9-foot unmined lignite bed located at depths ranging roughly from 86 to 125 feet below ground surface (ft, bgs). The potentiometric surface of the uppermost groundwater present within the lignite is approximately 1880 feet above mean sea level (ft, amsl) in the southern portion of the Landfill facility sloping generally north-northeast to 1843 ft., amsl on the northern side of the landfill. Aquifer testing completed at monitoring wells MW-2016-4, MW-2016-8, and MW-2016-10 indicates an average hydraulic conductivity of 1.52×10^{-5} centimeters per second (cm/sec) for the saturated materials.

2. CCR Groundwater Monitoring Activity Prior to 2020

The regulatory process for CCR groundwater monitoring and corrective action is established by 40 Code of Federal Regulations (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 (ACMs) followed by selection of remedy and remedy implementation.

The following paragraphs provide a brief summary of CCR groundwater monitoring activities performed prior to 2020. CCR groundwater monitoring activities performed between January and December 2020 are discussed in Chapter 3.

Groundwater monitoring at the CCR Landfill is performed using a network of monitoring wells that include 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 positions of the CCR monitoring wells selected for sampling background and downgradient groundwater quality for the LOS CCR Landfill are summarized below:

CCR unit	Background wells	Downgradient wells
Landfill	MW-2016-3, MW-2016-4, MW-2016-5, MW-2016-6, MW-2016-8	MW-2016-2, MW-2016-9, MW-2016-10, MW-2016-11

Two monitoring wells are excluded from the groundwater monitoring network due to deficiencies. Monitoring well MW-2016-1 is excluded due to insufficient water production to obtain a representative sample. However, it remains in place for collection of groundwater level measurements for potential inclusion in the potentiometric map evaluation as appropriate. Monitoring well MW-2016-7 is excluded due to screen interval placement that is not representative of the uppermost aquifer monitoring at the site.

Baseline monitoring, initiated in August 2016, involved sampling groundwater for Appendix III and IV constituents over eight Baseline Detection monitoring events.

Baseline Detection monitoring events were performed in general accordance with procedures established in the site-specific Sampling and Analysis Plan (AECOM 2018a), 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 the Baseline monitoring and 2018 Detection monitoring at the LOS CCR Landfill were presented and discussed in the First and Second Annual Groundwater Monitoring and Corrective Action Reports, (AECOM 2018b and AECOM 2019). The LOS CCR Landfill was placed in Detection monitoring in the winter of 2018 with the first Detection monitoring groundwater sampling event completed in April 2018 then twice annually thereafter. The results of Detection monitoring at the LOS CCR Landfill in 2018 and 2019 were presented and discussed in the Second and Third Annual Groundwater Monitoring and Corrective Action Reports issued on January 31, 2019 (AECOM 2019) and January 31, 2020 (AECOM 2020), respectively.

3. CCR Groundwater Monitoring and Corrective Action Activities in 2020

This chapter summarizes the groundwater monitoring and corrective action conducted at the LOS CCR Landfill in 2020 to comply with the groundwater requirements of the CCR rule:

- Groundwater Detection Monitoring activities
 - monitoring system evaluation completed in June and October 2020
 - groundwater sampling completed in June and October 2020
 - laboratory analysis of groundwater samples in June and October 2020
- Statistical analysis of the monitoring results of the groundwater samples in June and October 2020
- Groundwater Corrective Action – Not applicable

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 2017), monitoring wells were installed around the CCR unit at LOS 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 LOS CCR Landfill monitoring system were found to be in good condition during the Detection Monitoring events conducted in 2020.

Potentiometric surface maps constructed using the depth-to-groundwater measurements obtained at the beginning of each Detection monitoring event are presented in **Attachment A**. The direction of groundwater flow observed in June and October 2020 was generally north-northeast, which is consistent with the direction observed in previous years. The flow direction supports the designation of the wells noted in Section 2 above to represent background groundwater quality and the quality of groundwater downgradient of the unit.

Groundwater Sampling and Analysis

The Detection monitoring events completed in 2020 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 2018a).

Statistical Procedures and Analysis

The cumulative groundwater data collected for Appendix III indicator parameters at the LOS CCR Landfill were evaluated in accordance with the statistical procedures certified on October 17, 2017 (AECOM 2017).

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 LOS

CCR Landfill, monitoring wells MW-2016-3, MW-2016-4, MW-2016-5, MW-2016-6, and MW-2016-8 are designated as the background wells because they are located upgradient of the LOS CCR Landfill, whereas the remaining monitoring wells (MW-2016-2, MW-2016-9, MW-2016-10, and MW-2016-11) are located downgradient of the facility.

Prediction limits (i.e., parametric, or nonparametric) were developed for each constituent, except boron, 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 2016 and October 2020 were used to develop an upper prediction limit (UPL) for the Appendix III background data 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 through October 2020 were compared to the UPL or LPL to identify statistically significant increases (SSIs) over background. Mann-Kendall trend analysis was used to identify statistically significant increasing trends for constituents with SSIs. ProUCL Version 5.1 was used to store the background data and run the statistical analyses.

The statistical analysis results indicate that none of the Appendix III parameters (boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids [TDS]) currently exhibit SSIs over background. The analysis also indicated that pH did not exhibit an SSI below background. The results of the analyses, including the UPLs and LPL, are provided in **Table 1**.

Boron was further evaluated using a control chart provided in **Figure 3**. Upper and lower control limits were developed as the mean \pm 4.5 standard deviations using the boron data for monitoring wells MW-2016-3, MW-2016-4, MW-2016-5, MW-2016-6, and MW-2016-8. Starks 1988¹; EPA 2009²; ASTM 2017³ suggest using 4.5 standard deviations to develop control limits for groundwater detection monitoring. A control chart that shows the background mean (0.253 milligrams per liter [mg/L]), upper and lower control limits (UCL and LCL), 0.332 and 0.175 mg/L, respectively, and the baseline and detection monitoring results for downgradient compliance wells MW-2016-2, MW-2016-9, MW-2016-10, and MW-2016-11 through June 2020 is provided as **Figure 3**. The results depicted on **Figure 3** indicate that boron does not exceed the UCL at monitoring wells MW-2016-2, MW-2016-9, MW-2016-10, and MW-2016-11 for any sampling event. Therefore, boron does not currently exhibit a SSI over background at any of the downgradient compliance wells.

Based on these results, assessment monitoring is not required at Leland Olds Station Landfill. Detection monitoring should continue at the LOS Landfill in 2021.

¹ Starks, T.H., 1988, Evaluation of Control Chart Methodologies for RCRA Waste Sites, U.S. Environmental Protection Agency EPA/600/4-88/040, December, 40 pp.

² U.S. Environmental Protection Agency, 2009, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance, EPA-530-R-09-007, March, 884 pp.

³ ASTM (American Society of Testing and Materials), 2017, Designation D6312-17 Standard Guide for Developing Appropriate Statistical Approaches for Groundwater Detection Monitoring Programs at Waste Disposal Facilities, 15 pp.

4. General Information

The following subsections summarize any problems encountered in the LOS CCR Landfill program through 2020, any resolutions to those problems, if needed and upcoming actions planned for 2021.

Program Transitions 2020

There were no groundwater monitoring program transitions for the LOS CCR Landfill monitoring system during the January – December 2020 reporting period.

Problems Encountered

No problems were encountered during the December – January 2020 monitoring period.

Actions Planned for 2021

Basin plans on continuing the Detection Monitoring program for the LOS CCR Landfill in 2021. 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 CCR Landfill between January and December in 2020. The results were used to establish background groundwater quality for Appendix III constituents in the uppermost aquifer, identify appropriate UPLs and LPL, and determine whether any Appendix III constituents experienced SSIs downgradient of the CCR unit.

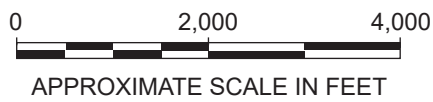
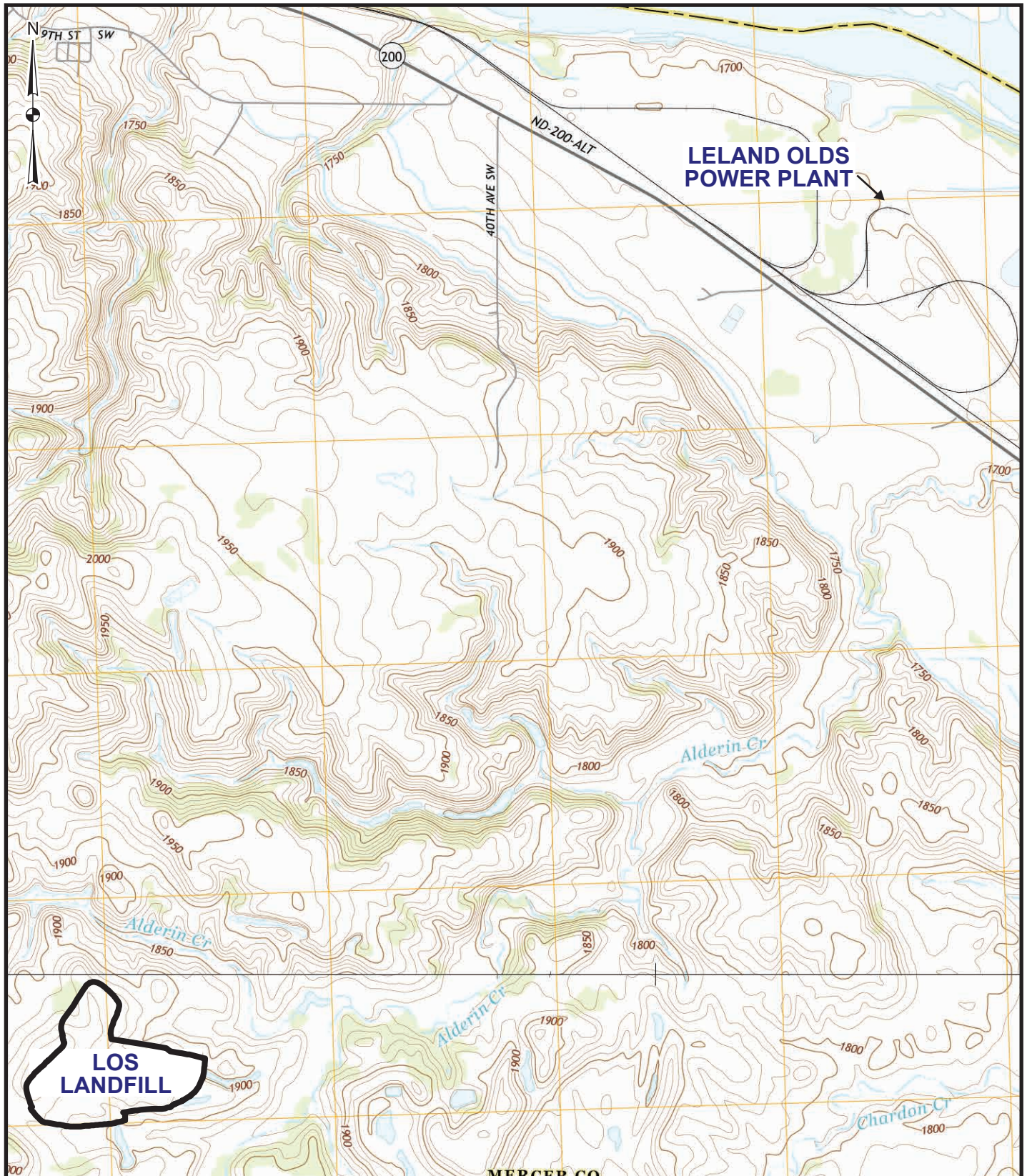
The statistical analysis results indicate that none of the Appendix III constituents had SSIs over background or statistically significant increasing trends in constituent concentrations. Based on these results, Assessment monitoring is not required at the LOS CCR Landfill. Detection Monitoring will continue at the site in 2021.

6. References

- AECOM. 2017. CCR Groundwater Monitoring System Report, Leland Olds Station, Stanton, North Dakota. Basin Electric Power Cooperative. October 2017.
- AECOM. 2018a. Sampling and Analysis Plan, CCR Monitoring Program, Leland Olds Station, Stanton, North Dakota. Basin Electric Power Cooperative. January 2018.
- AECOM. 2018b. First Annual Groundwater Monitoring and Corrective Action Report, 2016-2017, Leland Olds Station, Stanton, North Dakota. Basin Electric Power Cooperative. January 2018.
- AECOM. 2019. Second Annual Groundwater Monitoring and Corrective Action Report, 2018, Leland Olds Station, Stanton, North Dakota. Basin Electric Power Cooperative. January 2019.
- AECOM. 2020. Third Annual Groundwater Monitoring and Corrective Action Report, 2019, Leland Olds Station, Stanton, North Dakota. Basin Electric Power Cooperative. January 2020.
- U.S. Environmental Protection Agency. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities. Unified Guidance. EPA 530-R-09-007. March 2009. 884 pp.

Figures

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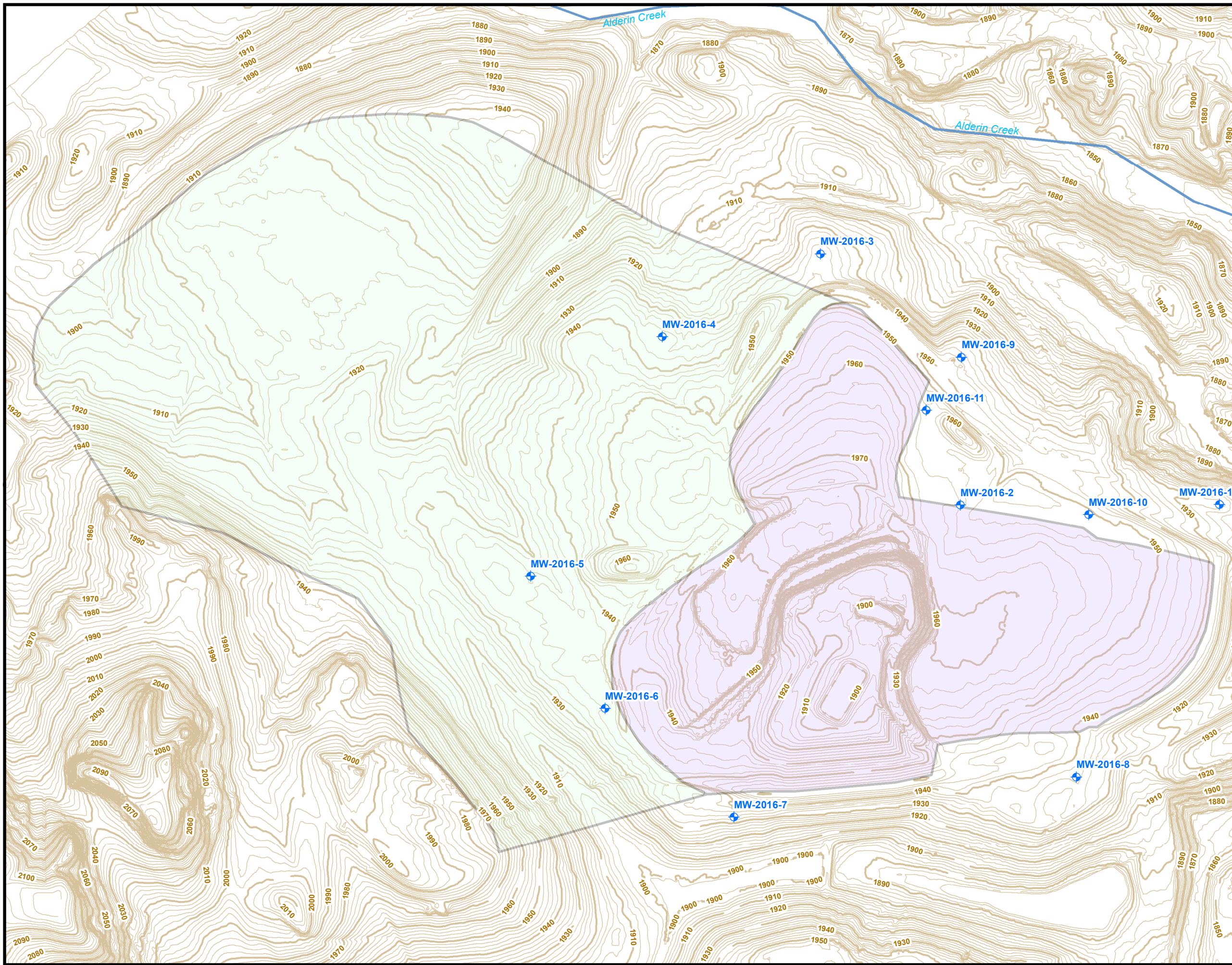
Quadrangle Location

BASIN ELECTRIC POWER COOPERATIVE





FIGURE 1-1
SITE VICINITY MAP
LOS LANDFILL

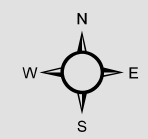
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JOB NO. 60514340

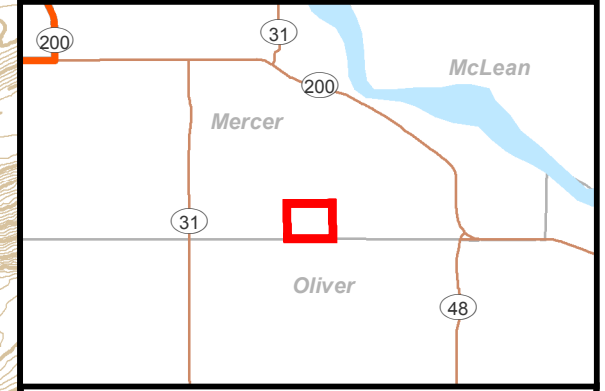
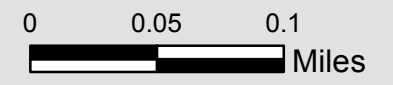


Legend

-  Monitoring Well
-  Existing Limits of Waste
-  Expansion Limits of Waste
-  Surface Contours (2-foot interval)

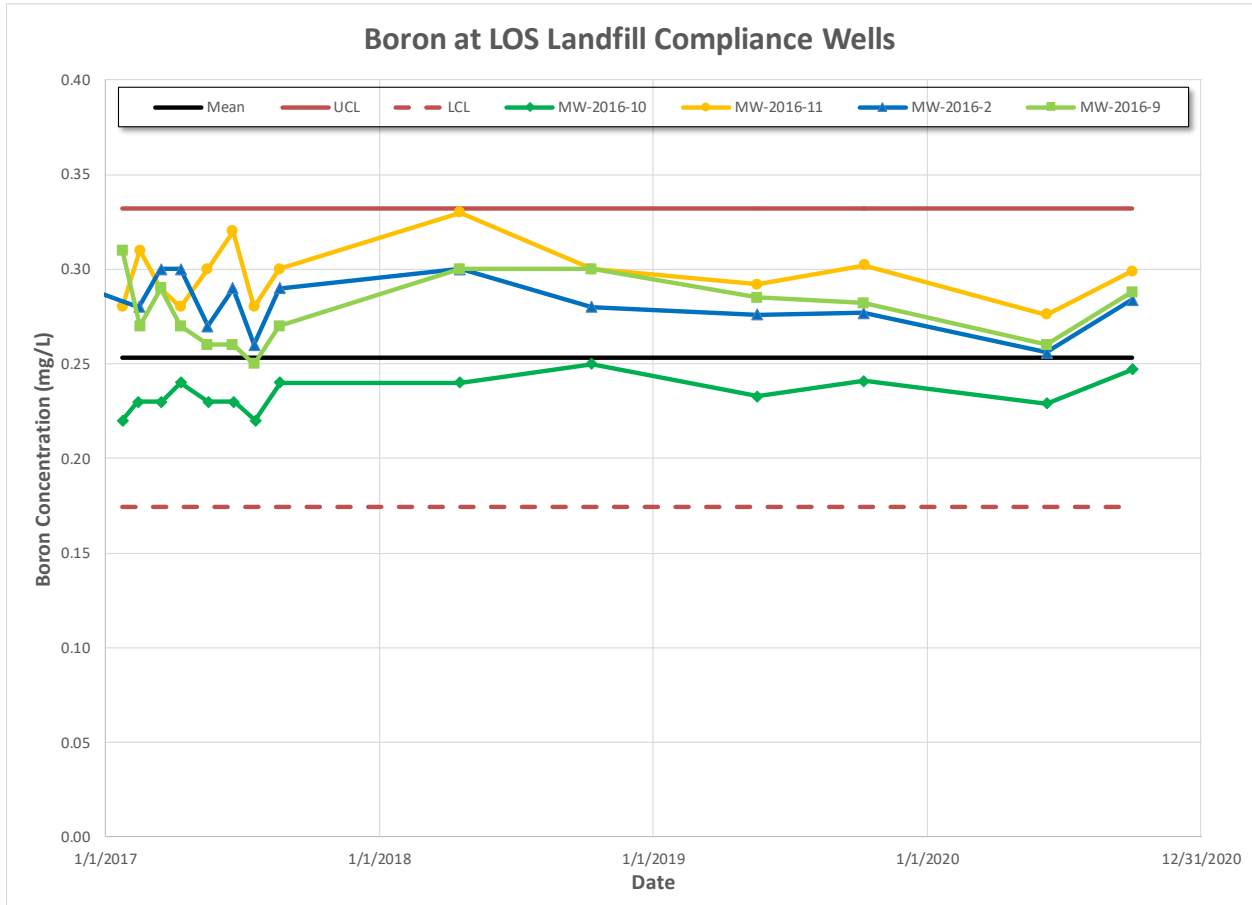


1 inch = 400 feet



**BASIN ELECTRIC POWER COOPERATIVE
FIGURE 2
LOS CCR MONITORING WELL NETWORK**

Figure 3. Boron Control Chart for October 2020
2020 Annual Groundwater Monitoring and Corrective Action Report
Leland Olds Station CCR Landfill, North Dakota



Table

**Table 1. Background Upper Prediction Limits (UPLs) or Control Limits
2020 Annual Groundwater Monitoring and Corrective Action Report
Leland Olds Station CCR Landfill, North Dakota**

Parameter (Units)	Number of Samples	Percent Nondetects	Normal or Lognormal Distribution?	Statistical Method	Background Prediction or Control Limit
Boron (mg/L)	70	0	Yes/Yes	Control Chart 99.9% UCL	0.332
Calcium (mg/L)	65	0	No/Yes	Parametric 95% UPL	21
Chloride (mg/L)	65	7	No/No	Nonparametric 95% UPL	38
Fluoride (mg/L)	65	40	No/No	Nonparametric 95% UPL	2.5
pH (std units)	75	0	No/No	Nonparametric 95% LPL/UPL	7.05/8.24
Sulfate (mg/L)	65	0	No/No	Nonparametric 95% UPL	741
TDS (mg/L)	65	0	No/No	Nonparametric 95% UPL	2,200

Note pH has both a LPL and UPL; all other constituents only have an UPL or UCL

Notes:

Mg/L= milligrams per liter
TDS = Total dissolved solids
UCL = Upper control limit
LPL = Lower control limit

Attachment A
Sampling and Analysis Report, 2020

2020 Sampling and Analysis Report LOS CCR Landfill Monitoring Program

Leland Olds Station
Stanton, North Dakota

Basin Electric Power Cooperative

January 31, 2021

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- Table 3 2020 Analytical Results Summary

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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
EPA	United States Environmental Protection Agency
LOS	Leland Olds Station
QA/QC	Quality assurance/quality control

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 Basin Leland Olds Station (LOS) CCR Landfill.

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 (EPA) 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 two groundwater Detection monitoring events conducted in 2020.

2. Groundwater Flow

As required by 40 CFR Section 257.93(c), groundwater elevations were measured in each well prior to purging, each time groundwater was sampled. The measurements, presented in **Table 1**, were used to create potentiometric surface maps for the uppermost aquifer for the Detection monitoring events. The resulting potentiometric surface maps were used to evaluate the direction and rate of groundwater flow across the subject CCR unit. **Figure 1** and **Figure 2** represent potentiometric surface maps constructed using measurements taken on June 9, 2020 and September 30, 2020, respectively. The maps and show the inferred groundwater flow directions for the CCR unit, which are generally consistent with the patterns observed during previous monitoring events. Calculated groundwater flow velocities are summarized in **Table 2**.

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

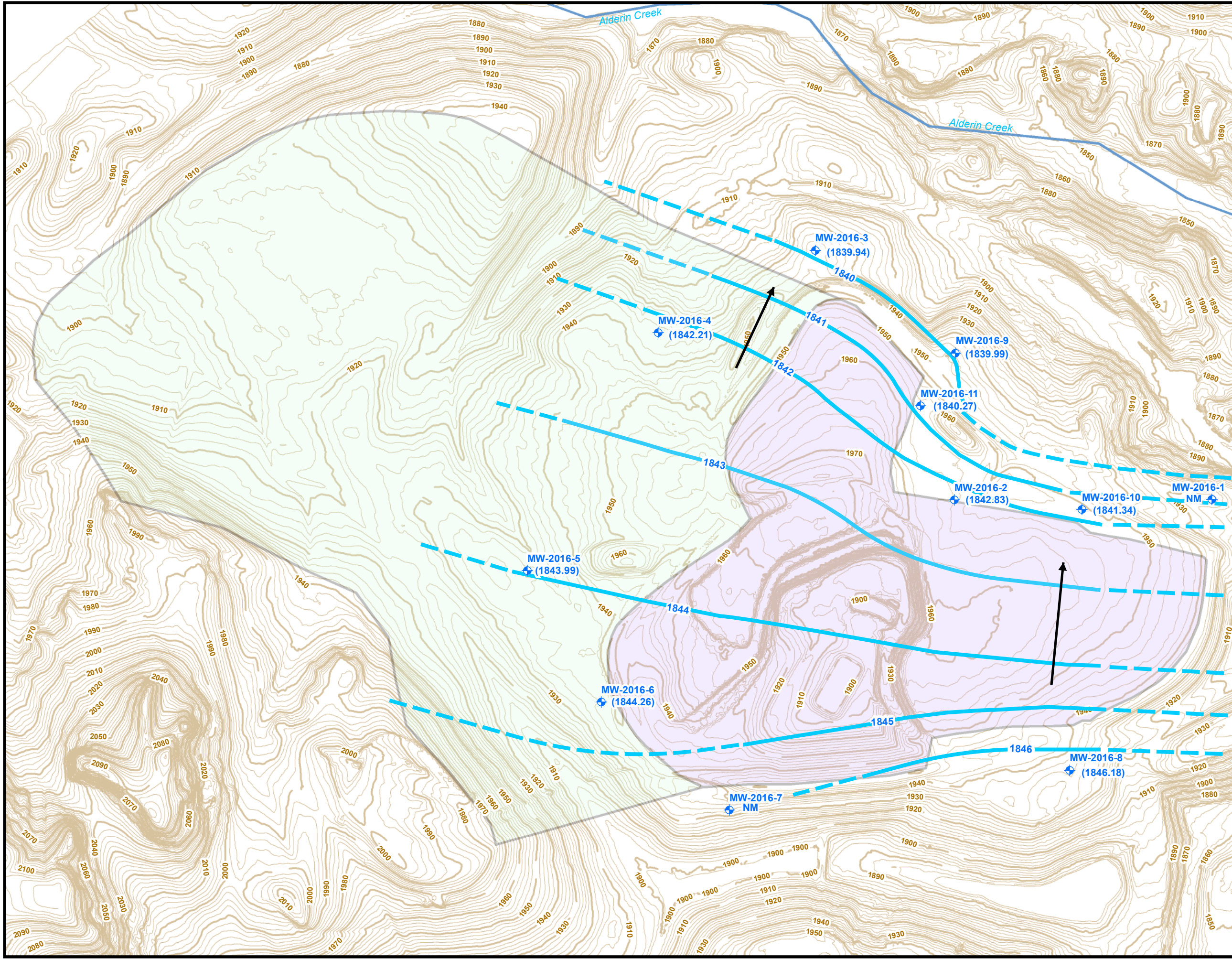
CCR unit	Background wells	Downgradient wells
Landfill	MW-2016-3, MW-2016-4, MW-2016-5, MW-2016-6, MW-2016-8	MW-2016-2, MW-2016-9, MW-2016-10, MW-2016-11

Monitoring wells MW-2016-1 and MW-2017-7 are excluded from the groundwater monitoring network. MW-2016-1 is excluded due to insufficient water production to obtain a representative sample. MW-2016-7 is excluded due to inappropriate screen placement to monitor uppermost groundwater. However, both remain in place for optional collection of groundwater level measurements for potential use in potentiometric mapping as appropriate. Groundwater level measurements at MW-2016-1 and MW-2016-7 were not recorded in 2020.





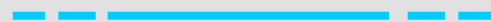

3. Groundwater Quality

The analytical testing laboratory provided reports presenting the results of laboratory analysis for each monitoring event. These laboratory reports are included in the operating record, are presented in **Appendix I**, and were reviewed for completeness against the project-required methods and the chain-of-custody forms. Laboratory reports were also reviewed for holding times, and that the data was appropriately flagged based on the quality assurance/quality control (QA/QC) testing results provided by the laboratory. The results were compiled into summary form as presented in **Table 3**.

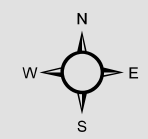
Figures




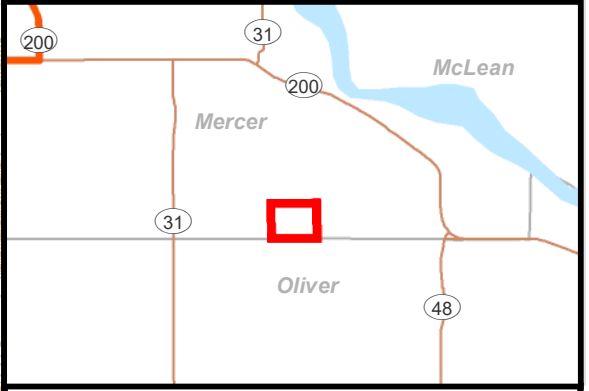
Legend

-  Monitoring Well
-  Existing Limits of Waste
-  Expansion Limits of Waste
-  Surface Contours (2-foot interval)
-  Piezometric Surface Contour Dashed where inferred (1-foot interval)
-  Groundwater Flow Direction

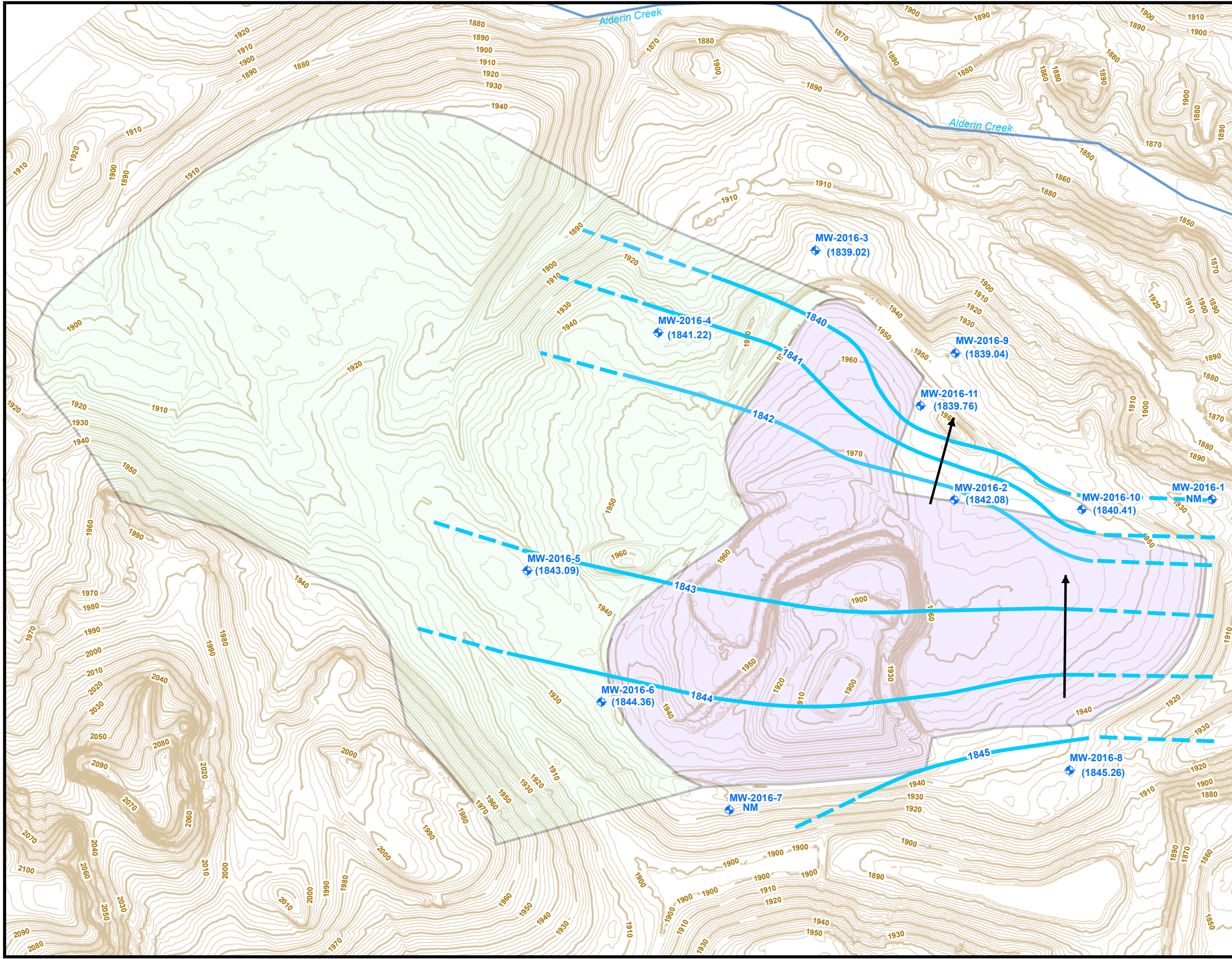
Note:
Groundwater elevations were obtained on June 9, 2020







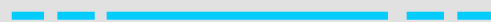

1 inch = 400 feet
0 0.05 0.1 Miles

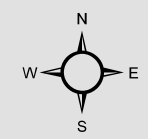
**BASIN ELECTRIC POWER COOPERATIVE
FIGURE 1
POTENTIOMETRIC SURFACE MAP
June 9, 2020**




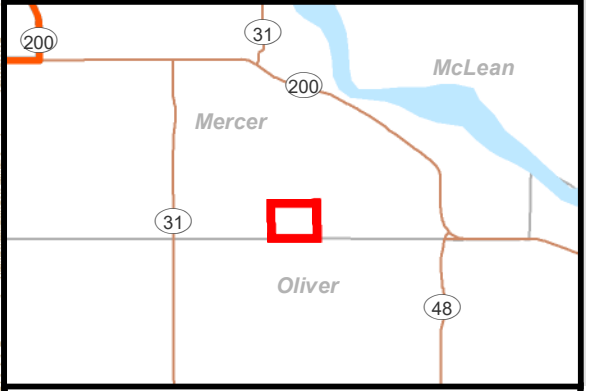
Legend

-  Monitoring Well
-  Existing Limits of Waste
-  Expansion Limits of Waste
-  Surface Contours (2-foot interval)
-  Piezometric Surface Contour
Dashed where inferred (1-foot interval)
-  Groundwater Flow Direction

Note:
Groundwater elevations were obtained on September 30, 2020



1 inch = 400 feet
0 0.05 0.1 Miles

**BASIN ELECTRIC POWER COOPERATIVE
FIGURE 2
POTENTIOMETRIC SURFACE MAP
September 30, 2020**

Tables

TABLE 1

**2020 GROUNDWATER MONITORING WATER LEVELS AND ELEVATIONS
CCR PROGRAM MONITORING WELLS
LELAND OLDS STATION CCR LANDFILL- STANTON ND**

Well ID	Reference Elevation Top of Casing (feet, NAVD 88)	June 9, 2020 Depth to Water (feet)	June 9, 2020 Groundwater Elevation (feet, NAVD 88)	September 30, 2020 Depth to Water (feet)	September 30, 2020 Groundwater Elevation (feet, NAVD 88)
MW-2016-2	1957.98	115.15	1842.83	115.90	1842.08
MW-2016-3	1939.88	99.94	1839.94	100.86	1839.02
MW-2016-4	1939.97	97.76	1842.21	98.75	1841.22
MW-2016-5	1937.54	93.55	1843.99	94.45	1843.09
MW-2016-6	1939.31	95.05	1844.26	94.95	1844.36
MW-2016-8	1939.361	93.18	1846.18	94.10	1845.26
MW-2016-9	1947.392	107.4	1839.99	108.35	1839.04
MW-2016-10	1953.315	111.98	1841.34	112.91	1840.41
MW-2016-11	1956.73	116.46	1840.27	116.97	1839.76

Notes:

NAVD 88 = North American Vertical Datum 1988

TABLE 2

ESTIMATED GROUNDWATER GRADIENT AND SEEPAGE VELOCITY
CCR PROGRAM MONITORING WELLS

LELAND OLDS STATION CCR LANDFILL – STANTON, NORTH DAKOTA

Date of event	d _l (ft)	d _h (ft)	i (ft/ft)	n _e	K (ft/day)	v _s (ft/day)
9/27/2016	680	4	5.88E-03	0.185	0.0344	1.09E-03
2/13/2017	680	3	4.41E-03	0.185	0.0344	8.20E-04
3/16/2017	600	4	6.67E-03	0.185	0.0344	1.24E-03
4/11/2017	600	3	5.00E-03	0.185	0.0344	9.30E-04
5/17/2017	920	4	4.35E-03	0.185	0.0344	8.08E-04
6/20/2017	880	4	4.55E-03	0.185	0.0344	8.45E-04
7/18/2017	960	6	6.25E-03	0.185	0.0344	1.16E-03
8/21/2017	960	5	5.21E-03	0.185	0.0344	9.68E-04
4/18/2018	800	4	5.00E-03	0.185	0.0344	9.30E-04
10/11/2018	960	3	3.13E-03	0.185	0.0344	5.81E-04
5/20/2019	800	2	2.50E-03	0.185	0.034	4.65E-04
10/8/2019	1080	4	3.70E-03	0.185	0.034	6.89E-04
6/9/2020	800	2	2.5E-03	0.185	0.034	4.649E-04
9/30/2020	640	2	3.13E-03	0.185	0.034	5.811E-04

d_l = 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 18.5%

K = Site average hydraulic conductivity of 3.44 E-02 ft/day from slug and pumping tests at site

v_s = Seepage Velocity (ft/day)

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

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

1. In textbook form, d_h is a negative number as hydraulic head is reported as the higher value subtracted from the lower value.

2. Negative operation performed as in textbook form, hydraulic gradient is negative.

Table 3

**2020 Analytical Results Summary
LOS Landfill CCR Monitoring Well Network
Leland Olds Station - Stanton, North Dakota**

			Appendix III Constituents						
Well ID	Event	Date	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total
			mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
MW-2016-2	June 2020	6/9/20	0.256	7.71	9.77	0.353 J	NA	313	1760
MW-2016-3	June 2020	6/10/20	0.246	5.41	29.8	0.512	7.86	31.6	1510
MW-2016-4	June 2020	6/9/20	0.234	5.37	13.2	0.516	8.13	366	1710
MW-2016-5	June 2020	6/10/20	0.237	6.5	5.31	0.451 J	7.91	623	1890
MW-2016-6	June 2020	6/10/20	0.265	8.35	4.85	0.325 J	7.93	667	2040
MW-2016-8	June 2020	6/10/20	0.23	435	6.67	0.221 J	7.90	678	2180
MW-2016-9	June 2020	6/9/20	0.26	6.34	16.1	0.391 J	7.88	206	1760
MW-2016-10	June 2020	6/9/20	0.229	5.36	11.1	0.436 J	8.01	301	1750
MW-2016-11	June 2020	6/9/20	0.276	6.56	16.4	0.394 J	7.91	237	1690
DUP-2 (2016-5)	June 2020	6/10/20	0.253	10.6	6.64	0.222 J	7.91	680	2250 H
MW-2016-2	October 2020	10/1/20	0.284	9.07	9.24	0.847	7.91	306	1690
MW-2016-3	October 2020	10/1/20	0.254	5	29.7	< 0.5 U	7.92	42.2	1590
MW-2016-4	October 2020	9/30/20	0.246	5.39	13.1	< 0.5 U	8.08	363	1860
MW-2016-5	October 2020	10/1/20	0.263	6.8	5.50	< 0.5 U	8.13	588	1860
MW-2016-6	October 2020	10/1/20	0.279	8.37	4.89	0.884	7.90	659	2100
MW-2016-8	October 2020	9/30/20	0.266	12.1	6.75	3.55	7.92	675	2090
MW-2016-9	October 2020	10/1/20	0.288	6.65	16.1	0.937	7.70	211	1680
MW-2016-10	October 2020	10/1/20	0.247	6.04	11.4	< 0.5 U	7.97	309	1710
MW-2016-11	October 2020	10/1/20	0.299	6.77	16.1	< 0.5 U	7.84	251	1600
Dup-1 (2016-4)	October 2020	10/1/20	0.246	5.39	13.1	< 0.5 U	8.08	368	1650

Notes:

mg/L = milligrams per liter

S.U. = Standard units

< = less than

J = Estimated concentration below reporting limit

H = Sample was prepped or analyzed beyond the specified holding time

U = Non detect

Appendix I

Laboratory Reports


ANALYTICAL REPORT

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

Laboratory Job ID: 280-137534-1
Client Project/Site: LOS Landfill

For:
AECOM Technical Services Inc.
525 Vine Street
Suite 1800
Cincinnati, Ohio 45202

Attn: Mr. Jason Lach



Authorized for release by:
6/24/2020 11:49:45 PM

Darlene Bandy, Project Manager I
(303)736-0188
darlene.bandy@testamericainc.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: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137534-1

Qualifiers

General Chemistry

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

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: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137534-1

Job ID: 280-137534-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: AECOM Technical Services Inc.

Project: LOS Landfill

Report Number: 280-137534-1

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 6/11/2020 9:40 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.8° C.

Receipt Exceptions

The following sample was received with containers not completely filled with volume: MW-2016-2 (280-137534-5). It can be noted that sufficient volume is available for the requested analyses.

- 1 x 1L unpreserved plastic container filled with ~500mL of volume.
- 1 x 500mL Nitric Acid preserved plastic container filled with ~300mL of volume.
- 1 x 250mL unpreserved plastic container filled with ~150mL of volume.

TOTAL METALS (ICP)

Samples MW-2016-4 (280-137534-1), MW-2016-10 (280-137534-2), MW-2016-9 (280-137534-3), MW-2016-11 (280-137534-4) and MW-2016-2 (280-137534-5) were analyzed for Total Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 06/17/2020 and analyzed on 06/19/2020.

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

TOTAL DISSOLVED SOLIDS

Samples MW-2016-4 (280-137534-1), MW-2016-10 (280-137534-2), MW-2016-9 (280-137534-3), MW-2016-11 (280-137534-4) and MW-2016-2 (280-137534-5) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 06/12/2020.

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

ANIONS (28 DAYS)

Samples MW-2016-4 (280-137534-1), MW-2016-10 (280-137534-2), MW-2016-9 (280-137534-3), MW-2016-11 (280-137534-4) and MW-2016-2 (280-137534-5) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 06/22/2020 and 06/23/2020.

Samples MW-2016-4 (280-137534-1)[5X], MW-2016-10 (280-137534-2)[5X], MW-2016-9 (280-137534-3)[5X], MW-2016-11

Case Narrative

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137534-1

Job ID: 280-137534-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

(280-137534-4)[5X] and MW-2016-2 (280-137534-5)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

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Detection Summary

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137534-1

Client Sample ID: MW-2016-4

Lab Sample ID: 280-137534-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	234		100	4.37	ug/L	1		6010C	Total/NA
Calcium	5370		200	77.8	ug/L	1		6010C	Total/NA
Chloride	13.2		3.00	1.02	mg/L	1		9056A	Total/NA
Fluoride	0.516		0.500	0.165	mg/L	1		9056A	Total/NA
Sulfate	366		25.0	5.15	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1710		20.0	9.40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2016-10

Lab Sample ID: 280-137534-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	229		100	4.37	ug/L	1		6010C	Total/NA
Calcium	5360		200	77.8	ug/L	1		6010C	Total/NA
Chloride	11.1		3.00	1.02	mg/L	1		9056A	Total/NA
Fluoride	0.436	J	0.500	0.165	mg/L	1		9056A	Total/NA
Sulfate	301		25.0	5.15	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1750		20.0	9.40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2016-9

Lab Sample ID: 280-137534-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	260		100	4.37	ug/L	1		6010C	Total/NA
Calcium	6340		200	77.8	ug/L	1		6010C	Total/NA
Chloride	16.1		3.00	1.02	mg/L	1		9056A	Total/NA
Fluoride	0.391	J	0.500	0.165	mg/L	1		9056A	Total/NA
Sulfate	206		25.0	5.15	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1760		20.0	9.40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2016-11

Lab Sample ID: 280-137534-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	276		100	4.37	ug/L	1		6010C	Total/NA
Calcium	6560		200	77.8	ug/L	1		6010C	Total/NA
Chloride	16.4		3.00	1.02	mg/L	1		9056A	Total/NA
Fluoride	0.394	J	0.500	0.165	mg/L	1		9056A	Total/NA
Sulfate	237		25.0	5.15	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1690		20.0	9.40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2016-2

Lab Sample ID: 280-137534-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	256		100	4.37	ug/L	1		6010C	Total/NA
Calcium	7710		200	77.8	ug/L	1		6010C	Total/NA
Chloride	9.77		3.00	1.02	mg/L	1		9056A	Total/NA
Fluoride	0.353	J	0.500	0.165	mg/L	1		9056A	Total/NA
Sulfate	313		25.0	5.15	mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1760		20.0	9.40	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Method Summary

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137534-1

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
3010A	Preparation, Total 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: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137534-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
280-137534-1	MW-2016-4	Water	06/09/20 12:40	06/11/20 09:40	
280-137534-2	MW-2016-10	Water	06/09/20 13:35	06/11/20 09:40	
280-137534-3	MW-2016-9	Water	06/09/20 16:10	06/11/20 09:40	
280-137534-4	MW-2016-11	Water	06/09/20 16:35	06/11/20 09:40	
280-137534-5	MW-2016-2	Water	06/09/20 17:00	06/11/20 09:40	

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Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137534-1

Method: 6010C - Metals (ICP)

Client Sample ID: MW-2016-4
Date Collected: 06/09/20 12:40
Date Received: 06/11/20 09:40

Lab Sample ID: 280-137534-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	234		100	4.37	ug/L		06/17/20 09:00	06/19/20 20:08	1
Calcium	5370		200	77.8	ug/L		06/17/20 09:00	06/19/20 20:08	1

Client Sample ID: MW-2016-10
Date Collected: 06/09/20 13:35
Date Received: 06/11/20 09:40

Lab Sample ID: 280-137534-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	229		100	4.37	ug/L		06/17/20 09:00	06/19/20 20:38	1
Calcium	5360		200	77.8	ug/L		06/17/20 09:00	06/19/20 20:38	1

Client Sample ID: MW-2016-9
Date Collected: 06/09/20 16:10
Date Received: 06/11/20 09:40

Lab Sample ID: 280-137534-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	260		100	4.37	ug/L		06/17/20 09:00	06/19/20 20:41	1
Calcium	6340		200	77.8	ug/L		06/17/20 09:00	06/19/20 20:41	1

Client Sample ID: MW-2016-11
Date Collected: 06/09/20 16:35
Date Received: 06/11/20 09:40

Lab Sample ID: 280-137534-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	276		100	4.37	ug/L		06/17/20 09:00	06/19/20 20:45	1
Calcium	6560		200	77.8	ug/L		06/17/20 09:00	06/19/20 20:45	1

Client Sample ID: MW-2016-2
Date Collected: 06/09/20 17:00
Date Received: 06/11/20 09:40

Lab Sample ID: 280-137534-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	256		100	4.37	ug/L		06/17/20 09:00	06/19/20 20:48	1
Calcium	7710		200	77.8	ug/L		06/17/20 09:00	06/19/20 20:48	1

General Chemistry

Client Sample ID: MW-2016-4
Date Collected: 06/09/20 12:40
Date Received: 06/11/20 09:40

Lab Sample ID: 280-137534-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13.2		3.00	1.02	mg/L			06/22/20 16:36	1
Fluoride	0.516		0.500	0.165	mg/L			06/22/20 16:36	1
Sulfate	366		25.0	5.15	mg/L			06/23/20 21:05	5
Total Dissolved Solids (TDS)	1710		20.0	9.40	mg/L			06/12/20 08:45	1

Client Sample ID: MW-2016-10
Date Collected: 06/09/20 13:35
Date Received: 06/11/20 09:40

Lab Sample ID: 280-137534-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.1		3.00	1.02	mg/L			06/22/20 16:52	1
Fluoride	0.436	J	0.500	0.165	mg/L			06/22/20 16:52	1
Sulfate	301		25.0	5.15	mg/L			06/23/20 21:57	5
Total Dissolved Solids (TDS)	1750		20.0	9.40	mg/L			06/12/20 08:45	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137534-1

General Chemistry

Client Sample ID: MW-2016-9
Date Collected: 06/09/20 16:10
Date Received: 06/11/20 09:40

Lab Sample ID: 280-137534-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16.1		3.00	1.02	mg/L			06/22/20 17:09	1
Fluoride	0.391	J	0.500	0.165	mg/L			06/22/20 17:09	1
Sulfate	206		25.0	5.15	mg/L			06/23/20 22:15	5
Total Dissolved Solids (TDS)	1760		20.0	9.40	mg/L			06/12/20 08:45	1

Client Sample ID: MW-2016-11
Date Collected: 06/09/20 16:35
Date Received: 06/11/20 09:40

Lab Sample ID: 280-137534-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16.4		3.00	1.02	mg/L			06/22/20 17:25	1
Fluoride	0.394	J	0.500	0.165	mg/L			06/22/20 17:25	1
Sulfate	237		25.0	5.15	mg/L			06/23/20 22:32	5
Total Dissolved Solids (TDS)	1690		20.0	9.40	mg/L			06/12/20 08:45	1

Client Sample ID: MW-2016-2
Date Collected: 06/09/20 17:00
Date Received: 06/11/20 09:40

Lab Sample ID: 280-137534-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.77		3.00	1.02	mg/L			06/22/20 17:42	1
Fluoride	0.353	J	0.500	0.165	mg/L			06/22/20 17:42	1
Sulfate	313		25.0	5.15	mg/L			06/23/20 22:50	5
Total Dissolved Solids (TDS)	1760		20.0	9.40	mg/L			06/12/20 08:45	1

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137534-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-498857/1-A
Matrix: Water
Analysis Batch: 499561

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 498857

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100	4.37	ug/L		06/17/20 09:00	06/19/20 20:01	1
Calcium	ND		200	77.8	ug/L		06/17/20 09:00	06/19/20 20:01	1

Lab Sample ID: LCS 280-498857/2-A
Matrix: Water
Analysis Batch: 499561

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 498857

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	1005		ug/L		101	86 - 110
Calcium	50000	51390		ug/L		103	90 - 111

Lab Sample ID: 280-137534-1 MS
Matrix: Water
Analysis Batch: 499561

Client Sample ID: MW-2016-4
Prep Type: Total/NA
Prep Batch: 498857

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	234		1000	1236		ug/L		100	87 - 113
Calcium	5370		50000	56400		ug/L		102	48 - 153

Lab Sample ID: 280-137534-1 MSD
Matrix: Water
Analysis Batch: 499561

Client Sample ID: MW-2016-4
Prep Type: Total/NA
Prep Batch: 498857

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Boron	234		1000	1226		ug/L		99	87 - 113	1	20
Calcium	5370		50000	55150		ug/L		100	48 - 153	2	20

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-499405/6
Matrix: Water
Analysis Batch: 499405

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	1.02	mg/L			06/19/20 13:44	1
Fluoride	ND		0.500	0.165	mg/L			06/19/20 13:44	1

Lab Sample ID: LCS 280-499405/4
Matrix: Water
Analysis Batch: 499405

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	97.67		mg/L		98	90 - 110
Fluoride	5.00	5.073		mg/L		101	90 - 110

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137534-1

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

Lab Sample ID: LCSD 280-499405/5
Matrix: Water
Analysis Batch: 499405

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	97.73		mg/L		98	90 - 110	0	10
Fluoride	5.00	5.090		mg/L		102	90 - 110	0	10

Lab Sample ID: MRL 280-499405/3
Matrix: Water
Analysis Batch: 499405

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	5.00	4.082		mg/L		82	50 - 150		
Fluoride	0.500	0.5114		mg/L		102	50 - 150		

Lab Sample ID: 280-137534-5 MS
Matrix: Water
Analysis Batch: 499405

Client Sample ID: MW-2016-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	9.77		50.0	62.95		mg/L		106	80 - 120		
Fluoride	0.353	J	5.00	5.556		mg/L		104	80 - 120		

Lab Sample ID: 280-137534-5 MSD
Matrix: Water
Analysis Batch: 499405

Client Sample ID: MW-2016-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	9.77		50.0	61.32		mg/L		103	80 - 120	3	20
Fluoride	0.353	J	5.00	5.548		mg/L		104	80 - 120	0	20

Lab Sample ID: 280-137534-5 DU
Matrix: Water
Analysis Batch: 499405

Client Sample ID: MW-2016-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	9.77		50.0	10.05		mg/L				3	15
Fluoride	0.353	J	5.00	0.3643	J	mg/L				3	15

Lab Sample ID: MB 280-499768/6
Matrix: Water
Analysis Batch: 499768

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	1.03	mg/L			06/23/20 11:17	1

Lab Sample ID: LCS 280-499768/4
Matrix: Water
Analysis Batch: 499768

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	100	95.76		mg/L		96	90 - 110		

Eurofins TestAmerica, Denver

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137534-1

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

Lab Sample ID: LCSD 280-499768/5
Matrix: Water
Analysis Batch: 499768

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	95.63		mg/L		96	90 - 110	0	10

Lab Sample ID: MRL 280-499768/3
Matrix: Water
Analysis Batch: 499768

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	5.00	4.176	J	mg/L		84	50 - 150		

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

Lab Sample ID: MB 280-498486/1
Matrix: Water
Analysis Batch: 498486

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	4.70	mg/L			06/12/20 08:45	1

Lab Sample ID: LCS 280-498486/2
Matrix: Water
Analysis Batch: 498486

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	500	515.0		mg/L		103	93 - 110		

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137534-1

Metals

Prep Batch: 498857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137534-1	MW-2016-4	Total/NA	Water	3010A	
280-137534-2	MW-2016-10	Total/NA	Water	3010A	
280-137534-3	MW-2016-9	Total/NA	Water	3010A	
280-137534-4	MW-2016-11	Total/NA	Water	3010A	
280-137534-5	MW-2016-2	Total/NA	Water	3010A	
MB 280-498857/1-A	Method Blank	Total/NA	Water	3010A	
LCS 280-498857/2-A	Lab Control Sample	Total/NA	Water	3010A	
280-137534-1 MS	MW-2016-4	Total/NA	Water	3010A	
280-137534-1 MSD	MW-2016-4	Total/NA	Water	3010A	

Analysis Batch: 499561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137534-1	MW-2016-4	Total/NA	Water	6010C	498857
280-137534-2	MW-2016-10	Total/NA	Water	6010C	498857
280-137534-3	MW-2016-9	Total/NA	Water	6010C	498857
280-137534-4	MW-2016-11	Total/NA	Water	6010C	498857
280-137534-5	MW-2016-2	Total/NA	Water	6010C	498857
MB 280-498857/1-A	Method Blank	Total/NA	Water	6010C	498857
LCS 280-498857/2-A	Lab Control Sample	Total/NA	Water	6010C	498857
280-137534-1 MS	MW-2016-4	Total/NA	Water	6010C	498857
280-137534-1 MSD	MW-2016-4	Total/NA	Water	6010C	498857

General Chemistry

Analysis Batch: 498486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137534-1	MW-2016-4	Total/NA	Water	SM 2540C	
280-137534-2	MW-2016-10	Total/NA	Water	SM 2540C	
280-137534-3	MW-2016-9	Total/NA	Water	SM 2540C	
280-137534-4	MW-2016-11	Total/NA	Water	SM 2540C	
280-137534-5	MW-2016-2	Total/NA	Water	SM 2540C	
MB 280-498486/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-498486/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 499405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137534-1	MW-2016-4	Total/NA	Water	9056A	
280-137534-2	MW-2016-10	Total/NA	Water	9056A	
280-137534-3	MW-2016-9	Total/NA	Water	9056A	
280-137534-4	MW-2016-11	Total/NA	Water	9056A	
280-137534-5	MW-2016-2	Total/NA	Water	9056A	
MB 280-499405/6	Method Blank	Total/NA	Water	9056A	
LCS 280-499405/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-499405/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-499405/3	Lab Control Sample	Total/NA	Water	9056A	
280-137534-5 MS	MW-2016-2	Total/NA	Water	9056A	
280-137534-5 MSD	MW-2016-2	Total/NA	Water	9056A	
280-137534-5 DU	MW-2016-2	Total/NA	Water	9056A	

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QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137534-1

General Chemistry

Analysis Batch: 499768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137534-1	MW-2016-4	Total/NA	Water	9056A	
280-137534-2	MW-2016-10	Total/NA	Water	9056A	
280-137534-3	MW-2016-9	Total/NA	Water	9056A	
280-137534-4	MW-2016-11	Total/NA	Water	9056A	
280-137534-5	MW-2016-2	Total/NA	Water	9056A	
MB 280-499768/6	Method Blank	Total/NA	Water	9056A	
LCS 280-499768/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-499768/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-499768/3	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137534-1

Client Sample ID: MW-2016-4

Lab Sample ID: 280-137534-1

Date Collected: 06/09/20 12:40

Matrix: Water

Date Received: 06/11/20 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	498857	06/17/20 09:00	NK	TAL DEN
Total/NA	Analysis	6010C		1			499561	06/19/20 20:08	MRJ	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	499768	06/23/20 21:05	JAP	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	499405	06/22/20 16:36	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	498486	06/12/20 08:45	FRG	TAL DEN

Client Sample ID: MW-2016-10

Lab Sample ID: 280-137534-2

Date Collected: 06/09/20 13:35

Matrix: Water

Date Received: 06/11/20 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	498857	06/17/20 09:00	NK	TAL DEN
Total/NA	Analysis	6010C		1			499561	06/19/20 20:38	MRJ	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	499768	06/23/20 21:57	JAP	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	499405	06/22/20 16:52	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	498486	06/12/20 08:45	FRG	TAL DEN

Client Sample ID: MW-2016-9

Lab Sample ID: 280-137534-3

Date Collected: 06/09/20 16:10

Matrix: Water

Date Received: 06/11/20 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	498857	06/17/20 09:00	NK	TAL DEN
Total/NA	Analysis	6010C		1			499561	06/19/20 20:41	MRJ	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	499768	06/23/20 22:15	JAP	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	499405	06/22/20 17:09	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	498486	06/12/20 08:45	FRG	TAL DEN

Client Sample ID: MW-2016-11

Lab Sample ID: 280-137534-4

Date Collected: 06/09/20 16:35

Matrix: Water

Date Received: 06/11/20 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	498857	06/17/20 09:00	NK	TAL DEN
Total/NA	Analysis	6010C		1			499561	06/19/20 20:45	MRJ	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	499768	06/23/20 22:32	JAP	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	499405	06/22/20 17:25	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	498486	06/12/20 08:45	FRG	TAL DEN

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137534-1

Client Sample ID: MW-2016-2

Lab Sample ID: 280-137534-5

Date Collected: 06/09/20 17:00

Matrix: Water

Date Received: 06/11/20 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	498857	06/17/20 09:00	NK	TAL DEN
Total/NA	Analysis	6010C		1			499561	06/19/20 20:48	MRJ	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	499768	06/23/20 22:50	JAP	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	499405	06/22/20 17:42	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	498486	06/12/20 08:45	FRG	TAL DEN

Laboratory References:

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



Accreditation/Certification Summary

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill


Job ID: 280-137534-1

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	01-08-21

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

Client Information Client Contact: Mr. Jason Lach Company: AECOM Technical Services Inc. Address: 525 Vine Street Suite 1800 City: Cincinnati State, Zip: OH, 45202 Phone: 513-419-3443(Tel) Email: Jason.lach@aecom.com Project Name: LOS Landfill Site:		Lab PM: Bandy, Darlene F E-Mail: darlene.bandy@testamericainc.com Carrier Tracking No(s): Lab No: 280-99415-29899.1 Page: Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): PO #: WO #: Project #: 28018115 SSOW#:		Analysis Requested  280-137534 Chain of Custody	
Sample Identification Sample ID: JA 6/9/10 MW-2016-4 JA 6/9/10 MW-2016-10 JA 6/9/10 MW-2016-3 JA 6/9/10 MW-2016-8 JA 6/9/10 MW-2016-6 MW-2016-9 MW-2016-11 MW-2016-2		Matrix (W=water, S=solid, O=wastewater, G=grab) (BT=Trace, A=All) Sample Type (C=Comp, G=grab) Sample Time Sample Date Preservation Code:	
Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 6010C - Boron and Calcium 9056A_28D - Chloride, Fluoride, Sulfate 2540C_Calcd - TDS		Total Number of Containers Special Instructions/Note: pH = 7.81 pH = 8.13 pH = 8.01 pH = 7.90 pH = 7.93 pH = 8.05 pH = 7.88 pH = 7.91 Limited Volume	
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			
Deliverable Requested: I, II, III, IV, Other (specify)			
Empty Kit Relinquished by:			
Relinquished by: T Lach Date/Time: 6/10/20 800		Received by: J Lach Date/Time: 6-11-20 0940	
Relinquished by:		Received by:	
Relinquished by:		Received by:	
Custody Seal No.: 1305445 A Yes Δ No		Other Remarks: 0.2, 1.8, 10.0, DS 6-11-20	
Special Instructions/OC Requirements: 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			
Method of Shipment:			



Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 280-137534-1

Login Number: 137534

List Source: Eurofins TestAmerica, Denver

List Number: 1

Creator: Schade, Daniel B

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	Refer to Job Narrative for details.
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").	True	
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: 280-137634-1
Client Project/Site: LOS Landfill

For:
AECOM Technical Services Inc.
525 Vine Street
Suite 1800
Cincinnati, Ohio 45202

Attn: Mr. Jason Lach



Authorized for release by:
6/29/2020 10:14:42 AM

Darlene Bandy, Project Manager I
(303)736-0188
darlene.bandy@testamericainc.com

LINKS

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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: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137634-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
E	Result exceeded calibration range.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Case Narrative

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137634-1

Job ID: 280-137634-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: AECOM Technical Services Inc.

Project: LOS Landfill

Report Number: 280-137634-1

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 6/12/2020 2:12 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.2° C.

TOTAL METALS (ICP)

Samples MW-2016-8 (280-137634-1), DUP-2 (280-137634-2), MW-2016-5 (280-137634-3), MW-2016-3 (280-137634-4) and MW-2016-6 (280-137634-5) were analyzed for Total Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 06/17/2020 and analyzed on 06/20/2020.

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

TOTAL DISSOLVED SOLIDS

Samples MW-2016-8 (280-137634-1), DUP-2 (280-137634-2), MW-2016-5 (280-137634-3), MW-2016-3 (280-137634-4) and MW-2016-6 (280-137634-5) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 06/15/2020 and 06/17/2020.

The analysis volume selected for the following samples produced a base result greater than 200mg before calculation of the final result: DUP-2 (280-137634-2) and MW-2016-6 (280-137634-5). Reanalysis was done at a lower initial volume because the reference method specifies that no more than 200mg of weight be recovered for a chosen sample analysis volume in order to produce the best data precision. The reanalysis for sample DUP-2 (280-137634-2) was performed 1 day after the hold time expired. As instructed by the client, both results have been reported.

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

ANIONS (28 DAYS)

Samples MW-2016-8 (280-137634-1), DUP-2 (280-137634-2), MW-2016-5 (280-137634-3), MW-2016-3 (280-137634-4) and MW-2016-6 (280-137634-5) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 06/23/2020 and 06/24/2020.

Samples MW-2016-8 (280-137634-1)[10X], DUP-2 (280-137634-2)[10X], MW-2016-5 (280-137634-3)[10X] and MW-2016-6 (280-137634-5)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Case Narrative

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137634-1

Job ID: 280-137634-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

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

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Detection Summary

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137634-1

Client Sample ID: MW-2016-8

Lab Sample ID: 280-137634-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	230		100	4.37	ug/L	1		6010C	Total/NA
Calcium	435000		200	77.8	ug/L	1		6010C	Total/NA
Chloride	6.67		3.00	1.02	mg/L	1		9056A	Total/NA
Fluoride	0.221	J	0.500	0.165	mg/L	1		9056A	Total/NA
Sulfate	678		50.0	10.3	mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	2180		20.0	9.40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-2

Lab Sample ID: 280-137634-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	253		100	4.37	ug/L	1		6010C	Total/NA
Calcium	10600		200	77.8	ug/L	1		6010C	Total/NA
Chloride	6.64		3.00	1.02	mg/L	1		9056A	Total/NA
Fluoride	0.222	J	0.500	0.165	mg/L	1		9056A	Total/NA
Sulfate	680		50.0	10.3	mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	2280	E	10.0	4.70	mg/L	1		SM 2540C	Total/NA
Total Dissolved Solids (TDS) - RA	2250	H	20.0	9.40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2016-5

Lab Sample ID: 280-137634-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	237		100	4.37	ug/L	1		6010C	Total/NA
Calcium	6500		200	77.8	ug/L	1		6010C	Total/NA
Chloride	5.31		3.00	1.02	mg/L	1		9056A	Total/NA
Fluoride	0.451	J	0.500	0.165	mg/L	1		9056A	Total/NA
Sulfate	623		50.0	10.3	mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1890		10.0	4.70	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2016-3

Lab Sample ID: 280-137634-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	246		100	4.37	ug/L	1		6010C	Total/NA
Calcium	5410		200	77.8	ug/L	1		6010C	Total/NA
Chloride	29.8		3.00	1.02	mg/L	1		9056A	Total/NA
Fluoride	0.512		0.500	0.165	mg/L	1		9056A	Total/NA
Sulfate	31.6		5.00	1.03	mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	1510		10.0	4.70	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2016-6

Lab Sample ID: 280-137634-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	265		100	4.37	ug/L	1		6010C	Total/NA
Calcium	8350		200	77.8	ug/L	1		6010C	Total/NA
Chloride	4.85		3.00	1.02	mg/L	1		9056A	Total/NA
Fluoride	0.325	J	0.500	0.165	mg/L	1		9056A	Total/NA
Sulfate	667		50.0	10.3	mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	2040		20.0	9.40	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Method Summary

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137634-1

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
3010A	Preparation, Total 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: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137634-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
280-137634-1	MW-2016-8	Water	06/10/20 08:50	06/12/20 14:12	
280-137634-2	DUP-2	Water	06/10/20 00:00	06/12/20 14:12	
280-137634-3	MW-2016-5	Water	06/10/20 11:40	06/12/20 14:12	
280-137634-4	MW-2016-3	Water	06/10/20 07:50	06/12/20 14:12	
280-137634-5	MW-2016-6	Water	06/10/20 08:10	06/12/20 14:12	

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Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137634-1

Method: 6010C - Metals (ICP)

Client Sample ID: MW-2016-8
Date Collected: 06/10/20 08:50
Date Received: 06/12/20 14:12

Lab Sample ID: 280-137634-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	230		100	4.37	ug/L		06/17/20 09:00	06/20/20 07:44	1
Calcium	435000		200	77.8	ug/L		06/17/20 09:00	06/20/20 07:44	1

Client Sample ID: DUP-2
Date Collected: 06/10/20 00:00
Date Received: 06/12/20 14:12

Lab Sample ID: 280-137634-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	253		100	4.37	ug/L		06/17/20 09:00	06/20/20 07:47	1
Calcium	10600		200	77.8	ug/L		06/17/20 09:00	06/20/20 07:47	1

Client Sample ID: MW-2016-5
Date Collected: 06/10/20 11:40
Date Received: 06/12/20 14:12

Lab Sample ID: 280-137634-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	237		100	4.37	ug/L		06/17/20 09:00	06/20/20 07:51	1
Calcium	6500		200	77.8	ug/L		06/17/20 09:00	06/20/20 07:51	1

Client Sample ID: MW-2016-3
Date Collected: 06/10/20 07:50
Date Received: 06/12/20 14:12

Lab Sample ID: 280-137634-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	246		100	4.37	ug/L		06/17/20 09:00	06/20/20 07:54	1
Calcium	5410		200	77.8	ug/L		06/17/20 09:00	06/20/20 07:54	1

Client Sample ID: MW-2016-6
Date Collected: 06/10/20 08:10
Date Received: 06/12/20 14:12

Lab Sample ID: 280-137634-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	265		100	4.37	ug/L		06/17/20 09:00	06/20/20 07:57	1
Calcium	8350		200	77.8	ug/L		06/17/20 09:00	06/20/20 07:57	1

General Chemistry

Client Sample ID: MW-2016-8
Date Collected: 06/10/20 08:50
Date Received: 06/12/20 14:12

Lab Sample ID: 280-137634-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.67		3.00	1.02	mg/L			06/23/20 19:04	1
Fluoride	0.221	J	0.500	0.165	mg/L			06/23/20 19:04	1
Sulfate	678		50.0	10.3	mg/L			06/24/20 17:28	10
Total Dissolved Solids (TDS)	2180		20.0	9.40	mg/L			06/15/20 15:11	1

Client Sample ID: DUP-2
Date Collected: 06/10/20 00:00
Date Received: 06/12/20 14:12

Lab Sample ID: 280-137634-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.64		3.00	1.02	mg/L			06/23/20 19:21	1
Fluoride	0.222	J	0.500	0.165	mg/L			06/23/20 19:21	1
Sulfate	680		50.0	10.3	mg/L			06/24/20 19:40	10
Total Dissolved Solids (TDS)	2280	E	10.0	4.70	mg/L			06/15/20 15:11	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137634-1

General Chemistry

Client Sample ID: MW-2016-5
Date Collected: 06/10/20 11:40
Date Received: 06/12/20 14:12

Lab Sample ID: 280-137634-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.31		3.00	1.02	mg/L			06/23/20 19:37	1
Fluoride	0.451	J	0.500	0.165	mg/L			06/23/20 19:37	1
Sulfate	623		50.0	10.3	mg/L			06/24/20 19:56	10
Total Dissolved Solids (TDS)	1890		10.0	4.70	mg/L			06/15/20 15:11	1

Client Sample ID: MW-2016-3
Date Collected: 06/10/20 07:50
Date Received: 06/12/20 14:12

Lab Sample ID: 280-137634-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	29.8		3.00	1.02	mg/L			06/23/20 19:54	1
Fluoride	0.512		0.500	0.165	mg/L			06/23/20 19:54	1
Sulfate	31.6		5.00	1.03	mg/L			06/23/20 19:54	1
Total Dissolved Solids (TDS)	1510		10.0	4.70	mg/L			06/15/20 15:11	1

Client Sample ID: MW-2016-6
Date Collected: 06/10/20 08:10
Date Received: 06/12/20 14:12

Lab Sample ID: 280-137634-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.85		3.00	1.02	mg/L			06/23/20 20:10	1
Fluoride	0.325	J	0.500	0.165	mg/L			06/23/20 20:10	1
Sulfate	667		50.0	10.3	mg/L			06/24/20 20:13	10
Total Dissolved Solids (TDS)	2040		20.0	9.40	mg/L			06/17/20 15:14	1

General Chemistry - RA

Client Sample ID: DUP-2
Date Collected: 06/10/20 00:00
Date Received: 06/12/20 14:12

Lab Sample ID: 280-137634-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	2250	H	20.0	9.40	mg/L			06/17/20 15:14	1

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137634-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-498858/1-A
Matrix: Water
Analysis Batch: 499563

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 498858

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100	4.37	ug/L		06/17/20 09:00	06/20/20 06:46	1
Calcium	ND		200	77.8	ug/L		06/17/20 09:00	06/20/20 06:46	1

Lab Sample ID: LCS 280-498858/2-A
Matrix: Water
Analysis Batch: 499563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 498858

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	999.3		ug/L		100	86 - 110
Calcium	50000	51700		ug/L		103	90 - 111

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-499766/6
Matrix: Water
Analysis Batch: 499766

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	1.02	mg/L			06/23/20 10:59	1
Fluoride	ND		0.500	0.165	mg/L			06/23/20 10:59	1
Sulfate	ND		5.00	1.03	mg/L			06/23/20 10:59	1

Lab Sample ID: LCS 280-499766/4
Matrix: Water
Analysis Batch: 499766

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	93.19		mg/L		93	90 - 110
Fluoride	5.00	5.016		mg/L		100	90 - 110
Sulfate	100	91.01		mg/L		91	90 - 110

Lab Sample ID: LCSD 280-499766/5
Matrix: Water
Analysis Batch: 499766

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	93.10		mg/L		93	90 - 110	0	10
Fluoride	5.00	5.018		mg/L		100	90 - 110	0	10
Sulfate	100	90.78		mg/L		91	90 - 110	0	10

Lab Sample ID: MRL 280-499766/3
Matrix: Water
Analysis Batch: 499766

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	4.094		mg/L		82	50 - 150
Fluoride	0.500	0.5083		mg/L		102	50 - 150
Sulfate	5.00	4.413	J	mg/L		88	50 - 150

Eurofins TestAmerica, Denver

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137634-1

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

Lab Sample ID: MB 280-499923/6
Matrix: Water
Analysis Batch: 499923

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	1.03	mg/L			06/24/20 10:54	1

Lab Sample ID: LCS 280-499923/4
Matrix: Water
Analysis Batch: 499923

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	100	96.13		mg/L		96	90 - 110

Lab Sample ID: LCSD 280-499923/5
Matrix: Water
Analysis Batch: 499923

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	96.06		mg/L		96	90 - 110	0	10

Lab Sample ID: MRL 280-499923/3
Matrix: Water
Analysis Batch: 499923

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	4.894	J	mg/L		98	50 - 150

Lab Sample ID: 280-137634-1 MS
Matrix: Water
Analysis Batch: 499923

Client Sample ID: MW-2016-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	678		500	1193		mg/L		103	80 - 120

Lab Sample ID: 280-137634-1 MSD
Matrix: Water
Analysis Batch: 499923

Client Sample ID: MW-2016-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	678		500	1197		mg/L		104	80 - 120	0	20

Lab Sample ID: 280-137634-1 DU
Matrix: Water
Analysis Batch: 499923

Client Sample ID: MW-2016-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	678		669.1		mg/L		1	15

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137634-1

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

Lab Sample ID: MB 280-498800/1
Matrix: Water
Analysis Batch: 498800

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	4.70	mg/L			06/15/20 15:11	1

Lab Sample ID: LCS 280-498800/2
Matrix: Water
Analysis Batch: 498800

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	496.0		mg/L		99	93 - 110

Lab Sample ID: LCSD 280-498800/3
Matrix: Water
Analysis Batch: 498800

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	500	493.0		mg/L		99	93 - 110	1	20

Lab Sample ID: MB 280-499148/1
Matrix: Water
Analysis Batch: 499148

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	4.70	mg/L			06/17/20 15:14	1

Lab Sample ID: LCS 280-499148/2
Matrix: Water
Analysis Batch: 499148

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	509.0		mg/L		102	93 - 110

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137634-1

Metals

Prep Batch: 498858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137634-1	MW-2016-8	Total/NA	Water	3010A	
280-137634-2	DUP-2	Total/NA	Water	3010A	
280-137634-3	MW-2016-5	Total/NA	Water	3010A	
280-137634-4	MW-2016-3	Total/NA	Water	3010A	
280-137634-5	MW-2016-6	Total/NA	Water	3010A	
MB 280-498858/1-A	Method Blank	Total/NA	Water	3010A	
LCS 280-498858/2-A	Lab Control Sample	Total/NA	Water	3010A	

Analysis Batch: 499563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137634-1	MW-2016-8	Total/NA	Water	6010C	498858
280-137634-2	DUP-2	Total/NA	Water	6010C	498858
280-137634-3	MW-2016-5	Total/NA	Water	6010C	498858
280-137634-4	MW-2016-3	Total/NA	Water	6010C	498858
280-137634-5	MW-2016-6	Total/NA	Water	6010C	498858
MB 280-498858/1-A	Method Blank	Total/NA	Water	6010C	498858
LCS 280-498858/2-A	Lab Control Sample	Total/NA	Water	6010C	498858

General Chemistry

Analysis Batch: 498800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137634-1	MW-2016-8	Total/NA	Water	SM 2540C	
280-137634-2	DUP-2	Total/NA	Water	SM 2540C	
280-137634-3	MW-2016-5	Total/NA	Water	SM 2540C	
280-137634-4	MW-2016-3	Total/NA	Water	SM 2540C	
MB 280-498800/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-498800/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-498800/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 499148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137634-2 - RA	DUP-2	Total/NA	Water	SM 2540C	
280-137634-5	MW-2016-6	Total/NA	Water	SM 2540C	
MB 280-499148/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-499148/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 499766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137634-1	MW-2016-8	Total/NA	Water	9056A	
280-137634-2	DUP-2	Total/NA	Water	9056A	
280-137634-3	MW-2016-5	Total/NA	Water	9056A	
280-137634-4	MW-2016-3	Total/NA	Water	9056A	
280-137634-5	MW-2016-6	Total/NA	Water	9056A	
MB 280-499766/6	Method Blank	Total/NA	Water	9056A	
LCS 280-499766/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-499766/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-499766/3	Lab Control Sample	Total/NA	Water	9056A	

Eurofins TestAmerica, Denver

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137634-1

General Chemistry

Analysis Batch: 499923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-137634-1	MW-2016-8	Total/NA	Water	9056A	
280-137634-2	DUP-2	Total/NA	Water	9056A	
280-137634-3	MW-2016-5	Total/NA	Water	9056A	
280-137634-5	MW-2016-6	Total/NA	Water	9056A	
MB 280-499923/6	Method Blank	Total/NA	Water	9056A	
LCS 280-499923/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-499923/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-499923/3	Lab Control Sample	Total/NA	Water	9056A	
280-137634-1 MS	MW-2016-8	Total/NA	Water	9056A	
280-137634-1 MSD	MW-2016-8	Total/NA	Water	9056A	
280-137634-1 DU	MW-2016-8	Total/NA	Water	9056A	

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137634-1

Client Sample ID: MW-2016-8

Lab Sample ID: 280-137634-1

Date Collected: 06/10/20 08:50

Matrix: Water

Date Received: 06/12/20 14:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	498858	06/17/20 09:00	NK	TAL DEN
Total/NA	Analysis	6010C		1			499563	06/20/20 07:44	MRJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	499766	06/23/20 19:04	JAP	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	499923	06/24/20 17:28	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	498800	06/15/20 15:11	ILC	TAL DEN

Client Sample ID: DUP-2

Lab Sample ID: 280-137634-2

Date Collected: 06/10/20 00:00

Matrix: Water

Date Received: 06/12/20 14:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	498858	06/17/20 09:00	NK	TAL DEN
Total/NA	Analysis	6010C		1			499563	06/20/20 07:47	MRJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	499766	06/23/20 19:21	JAP	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	499923	06/24/20 19:40	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	498800	06/15/20 15:11	ILC	TAL DEN
Total/NA	Analysis	SM 2540C	RA	1	50 mL	100 mL	499148	06/17/20 15:14	ILC	TAL DEN

Client Sample ID: MW-2016-5

Lab Sample ID: 280-137634-3

Date Collected: 06/10/20 11:40

Matrix: Water

Date Received: 06/12/20 14:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	498858	06/17/20 09:00	NK	TAL DEN
Total/NA	Analysis	6010C		1			499563	06/20/20 07:51	MRJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	499766	06/23/20 19:37	JAP	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	499923	06/24/20 19:56	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	498800	06/15/20 15:11	ILC	TAL DEN

Client Sample ID: MW-2016-3

Lab Sample ID: 280-137634-4

Date Collected: 06/10/20 07:50

Matrix: Water

Date Received: 06/12/20 14:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	498858	06/17/20 09:00	NK	TAL DEN
Total/NA	Analysis	6010C		1			499563	06/20/20 07:54	MRJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	499766	06/23/20 19:54	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	498800	06/15/20 15:11	ILC	TAL DEN

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137634-1

Client Sample ID: MW-2016-6

Lab Sample ID: 280-137634-5

Date Collected: 06/10/20 08:10

Matrix: Water

Date Received: 06/12/20 14:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	498858	06/17/20 09:00	NK	TAL DEN
Total/NA	Analysis	6010C		1			499563	06/20/20 07:57	MRJ	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	499766	06/23/20 20:10	JAP	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	499923	06/24/20 20:13	JAP	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	499148	06/17/20 15:14	ILC	TAL DEN

Laboratory References:

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



Accreditation/Certification Summary

Client: AECOM Technical Services Inc.
Project/Site: LOS Landfill

Job ID: 280-137634-1

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	01-08-21

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

Denver #280



Environment Testing America

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

Chain of Custody Record

Client Information Client Contact: Mr. Jason Lach Company: AECOM Technical Services Inc. Address: 525 Vine Street, Suite 1800 City: Cincinnati State, Zip: OH, 45202 Phone: 513-419-3443(Tel) Email: jason.lach@aecom.com Project #: 28018115 Site: LOS Landfill		Lab PM: Bandy, Darlene F E-Mail: darlene.bandy@testamericainc.com Carrier Tracking No(s): COC No: 280-99415-29899-1 Page: Page 1 of 1 Job #:								
Sampler: Jerry Huskuma Phone: 970-530-3418		Due Date Requested: TAT Requested (days): Standard								
PO #: WO #: Project #: SSOW#:		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - H2SO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Z - other (specify)								
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested	Special Instructions/Note:		
MW-2016-8	6/10/20	850	G	W	X	X	6010C - Boron and Calcium	pH = 7.90		
DUP-2	6/10/20	-	G	W	X	X	9056A_28D - Chloride, Fluoride, Sulfate	pH = 7.91		
MW-2016-5	6/10/20	1140	G	W	X	X	2540C Calcd - TDS	pH = 7.83		
MW-2016-3	6/11/20	750	G	W	X	X		pH = 7.91		
MW-2016-6	6/11/20	810	G	W	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 Deliverable Requested: I, II, III, IV, Other (specify)					Total Number of Containers:				Special Instructions/Note: 280-137634 Chain of Custody	
Empty Kit Relinquished by:					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					
Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by:					Special Instructions/QC Requirements:					
Date/Time: 6/12/20 1410 Date/Time:					Method of Shipment:					
Date/Time:					Received by: [Signature] Date/Time: 6-12-20 @ 1412 Company: ETAOEN					
Date/Time:					Received by:					
Date/Time:					Received by:					
Custody Seal No.: Δ Yes Δ No					Cooler Temperature(s) °C and Other Remarks: 2.9 12.8 16.6 13.5 14.2					



Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 280-137634-1

Login Number: 137634

List Source: Eurofins TestAmerica, Denver

List Number: 1

Creator: Bentley, Beau J

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	



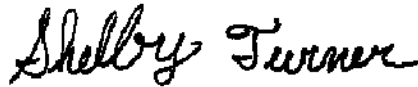
ANALYTICAL REPORT

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

Laboratory Job ID: 280-141144-1
Laboratory Sample Delivery Group: LOS Landfill
Client Project/Site: CCR Groundwater - North Dakota Sites
Revision: 1

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

Attn: Aaron Knutson



Authorized for release by:
1/19/2021 2:56:57 PM

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

LINKS

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results through
TotalAccess

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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 - North Dakota Sites

Job ID: 280-141144-1
SDG: LOS Landfill

Qualifiers

Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance 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 - North Dakota Sites

Job ID: 280-141144-1
SDG: LOS Landfill

Job ID: 280-141144-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Basin Electric Power Cooperative

Project: CCR Groundwater - North Dakota Sites - LOS Landfill

Report Number: 280-141144-1

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.

REVISED REPORT - CREATED 1/19/21

This report includes revised data. Sulfate & Fluoride results were over-calibration and required adjustments in dilution; however, Chloride results were not over-calibration but were reported at 10X dilution. The 10X dilution for Chloride results was not needed. As such, Chloride results in this report were revised to report from batch 513327 where the samples were analyzed at 1X dilution.

RECEIPT

The samples were received on 10/3/2020 9:30 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.0° C and 4.6° C.

Receipt Exceptions

The container labels for the following samples did not match the information listed on the Chain-of-Custody (COC): MW-2016-3 (280-141144-2), MW-2016-4 (280-141144-3) and MW-2016-9 (280-141144-7). The samples were logged per the collection times listed on the COC unless instructed otherwise.

MW-2016-3: Collection time on COC 10:48, 10:49 on container.

MW-2016-4: Collection time not indicated on containers.

MW-2016-9: Collection time not indicated on containers.

The following sample was received with containers not completely filled with volume: MW-2016-2 (280-141144-1). It can be noted that sufficient volume is available for the requested analyses.

-MW-2016-2: Plastic 1L Unpreserved filled with ~200mL, Plastic 500mL Nitric Acid filled with ~ 400mL, Plastic 250mL Unpreserved filled with ~125mL.

TOTAL RECOVERABLE METALS

Samples MW-2016-2 (280-141144-1), MW-2016-3 (280-141144-2), MW-2016-4 (280-141144-3), MW-2016-5 (280-141144-4), MW-2016-6 (280-141144-5), MW-2016-8 (280-141144-6), MW-2016-9 (280-141144-7), MW-2016-10 (280-141144-8), MW-2016-11 (280-141144-9) and Dup-1 (280-141144-10) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 10/14/2020 and analyzed on 10/16/2020.

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

Case Narrative

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
SDG: LOS Landfill

Job ID: 280-141144-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

TOTAL METALS (ICPMS)

Samples MW-2016-2 (280-141144-1), MW-2016-3 (280-141144-2), MW-2016-4 (280-141144-3), MW-2016-5 (280-141144-4), MW-2016-6 (280-141144-5), MW-2016-8 (280-141144-6), MW-2016-9 (280-141144-7), MW-2016-10 (280-141144-8), MW-2016-11 (280-141144-9) and Dup-1 (280-141144-10) were analyzed for total metals (ICPMS) in accordance with EPA SW-846 6020A. The samples were prepared on 10/12/2020 and analyzed on 10/12/2020 and 10/13/2020.

The continuing calibration verification (CCV) associated with batch 280-512346 recovered (111%) above the upper control limit (110%) for Arsenic. The samples associated with this CCV were <RL for the affected analytes; therefore, the data have been reported. The associated samples are impacted: MW-2016-5 (280-141144-4), MW-2016-6 (280-141144-5), MW-2016-8 (280-141144-6), MW-2016-9 (280-141144-7), MW-2016-10 (280-141144-8), MW-2016-11 (280-141144-9), Dup-1 (280-141144-10) and (CCV 280-512346/169).

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

TOTAL MERCURY

Samples MW-2016-2 (280-141144-1), MW-2016-3 (280-141144-2), MW-2016-4 (280-141144-3), MW-2016-5 (280-141144-4), MW-2016-6 (280-141144-5), MW-2016-8 (280-141144-6), MW-2016-9 (280-141144-7), MW-2016-10 (280-141144-8), MW-2016-11 (280-141144-9) and Dup-1 (280-141144-10) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 10/16/2020.

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

TOTAL DISSOLVED SOLIDS

Samples MW-2016-2 (280-141144-1), MW-2016-3 (280-141144-2), MW-2016-4 (280-141144-3), MW-2016-5 (280-141144-4), MW-2016-6 (280-141144-5), MW-2016-8 (280-141144-6), MW-2016-9 (280-141144-7), MW-2016-10 (280-141144-8), MW-2016-11 (280-141144-9) and Dup-1 (280-141144-10) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 10/06/2020.

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

ANIONS (28 DAYS)

Samples MW-2016-2 (280-141144-1), MW-2016-3 (280-141144-2), MW-2016-4 (280-141144-3), MW-2016-5 (280-141144-4), MW-2016-6 (280-141144-5), MW-2016-8 (280-141144-6), MW-2016-9 (280-141144-7), MW-2016-10 (280-141144-8), MW-2016-11 (280-141144-9) and Dup-1 (280-141144-10) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were analyzed on 10/20/2020, 10/21/2020 and 10/22/2020.

Samples MW-2016-2 (280-141144-1)[10X], MW-2016-3 (280-141144-2)[10X], MW-2016-3 (280-141144-2)[5X], MW-2016-4 (280-141144-3)[10X], MW-2016-5 (280-141144-4)[10X], MW-2016-6 (280-141144-5)[10X], MW-2016-8 (280-141144-6)[10X], MW-2016-9 (280-141144-7)[10X], MW-2016-10 (280-141144-8)[10X], MW-2016-11 (280-141144-9)[10X] and Dup-1 (280-141144-10)[10X] required dilution prior to analysis for Sulfate. 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 - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

Client Sample ID: MW-2016-2

Lab Sample ID: 280-141144-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	284		100		ug/L	1		6010C	Total Recoverable
Calcium	9070		200		ug/L	1		6010C	Total Recoverable
Barium	65.0		1.00		ug/L	1		6020A	Total/NA
Chromium	5.41		2.00		ug/L	1		6020A	Total/NA
Cobalt	1.36		1.00		ug/L	1		6020A	Total/NA
Molybdenum	10.4		2.00		ug/L	1		6020A	Total/NA
Chloride	9.24		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.847		0.500		mg/L	1		9056A	Total/NA
Sulfate	306		50.0		mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1690		20.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2016-3

Lab Sample ID: 280-141144-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	254		100		ug/L	1		6010C	Total Recoverable
Calcium	5000		200		ug/L	1		6010C	Total Recoverable
Barium	36.0		1.00		ug/L	1		6020A	Total/NA
Molybdenum	13.1		2.00		ug/L	1		6020A	Total/NA
Chloride	29.7		3.00		mg/L	1		9056A	Total/NA
Sulfate	42.2		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1590		20.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2016-4

Lab Sample ID: 280-141144-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	246		100		ug/L	1		6010C	Total Recoverable
Calcium	5390		200		ug/L	1		6010C	Total Recoverable
Lithium	59.0		20.0		ug/L	1		6010C	Total Recoverable
Barium	44.8		1.00		ug/L	1		6020A	Total/NA
Molybdenum	2.43		2.00		ug/L	1		6020A	Total/NA
Chloride	13.1		3.00		mg/L	1		9056A	Total/NA
Sulfate	363		50.0		mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1860		20.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2016-5

Lab Sample ID: 280-141144-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	263		100		ug/L	1		6010C	Total Recoverable
Calcium	6800		200		ug/L	1		6010C	Total Recoverable
Lithium	39.7		20.0		ug/L	1		6010C	Total Recoverable
Barium	35.7		1.00		ug/L	1		6020A	Total/NA
Chromium	17.1		2.00		ug/L	1		6020A	Total/NA
Chloride	5.50		3.00		mg/L	1		9056A	Total/NA
Sulfate	588		50.0		mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1860		20.0		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 - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

Client Sample ID: MW-2016-6

Lab Sample ID: 280-141144-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	279		100		ug/L	1		6010C	Total Recoverable
Calcium	8370		200		ug/L	1		6010C	Total Recoverable
Lithium	60.8		20.0		ug/L	1		6010C	Total Recoverable
Barium	45.8		1.00		ug/L	1		6020A	Total/NA
Chromium	8.57		2.00		ug/L	1		6020A	Total/NA
Molybdenum	5.16		2.00		ug/L	1		6020A	Total/NA
Chloride	4.89		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.884		0.500		mg/L	1		9056A	Total/NA
Sulfate	659		50.0		mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	2100		40.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2016-8

Lab Sample ID: 280-141144-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	266		100		ug/L	1		6010C	Total Recoverable
Calcium	12100		200		ug/L	1		6010C	Total Recoverable
Lithium	57.6		20.0		ug/L	1		6010C	Total Recoverable
Barium	45.1		1.00		ug/L	1		6020A	Total/NA
Chloride	6.75		3.00		mg/L	1		9056A	Total/NA
Fluoride	3.55		0.500		mg/L	1		9056A	Total/NA
Sulfate	675		50.0		mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	2090		40.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2016-9

Lab Sample ID: 280-141144-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	288		100		ug/L	1		6010C	Total Recoverable
Calcium	6650		200		ug/L	1		6010C	Total Recoverable
Lithium	23.5		20.0		ug/L	1		6010C	Total Recoverable
Barium	49.4		1.00		ug/L	1		6020A	Total/NA
Molybdenum	19.3		2.00		ug/L	1		6020A	Total/NA
Chloride	16.1		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.937		0.500		mg/L	1		9056A	Total/NA
Sulfate	211		50.0		mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1680		20.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2016-10

Lab Sample ID: 280-141144-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	247		100		ug/L	1		6010C	Total Recoverable
Calcium	6040		200		ug/L	1		6010C	Total Recoverable
Lithium	35.4		20.0		ug/L	1		6010C	Total Recoverable
Barium	49.2		1.00		ug/L	1		6020A	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 - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

Client Sample ID: MW-2016-10 (Continued)

Lab Sample ID: 280-141144-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	3.04		2.00		ug/L	1		6020A	Total/NA
Molybdenum	5.60		2.00		ug/L	1		6020A	Total/NA
Chloride	11.4		3.00		mg/L	1		9056A	Total/NA
Sulfate	309		50.0		mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1710		20.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2016-11

Lab Sample ID: 280-141144-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	299		100		ug/L	1		6010C	Total Recoverable
Calcium	6770		200		ug/L	1		6010C	Total Recoverable
Lithium	22.3		20.0		ug/L	1		6010C	Total Recoverable
Barium	49.8		1.00		ug/L	1		6020A	Total/NA
Chromium	3.35		2.00		ug/L	1		6020A	Total/NA
Molybdenum	21.1		2.00		ug/L	1		6020A	Total/NA
Chloride	16.1		3.00		mg/L	1		9056A	Total/NA
Sulfate	251		50.0		mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1600		20.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: Dup-1

Lab Sample ID: 280-141144-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	246		100		ug/L	1		6010C	Total Recoverable
Calcium	5390		200		ug/L	1		6010C	Total Recoverable
Lithium	61.7		20.0		ug/L	1		6010C	Total Recoverable
Barium	43.0		1.00		ug/L	1		6020A	Total/NA
Molybdenum	2.43		2.00		ug/L	1		6020A	Total/NA
Chloride	13.1		3.00		mg/L	1		9056A	Total/NA
Sulfate	368		50.0		mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1650		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 - North Dakota Sites

Job ID: 280-141144-1
SDG: LOS Landfill

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL DEN
7470A	Mercury (CVAA)	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
3020A	Preparation, Total Metals	SW846	TAL DEN
7470A	Preparation, Mercury	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 - North Dakota Sites

Job ID: 280-141144-1
SDG: LOS Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
280-141144-1	MW-2016-2	Water	10/01/20 13:05	10/03/20 09:30	
280-141144-2	MW-2016-3	Water	10/01/20 10:48	10/03/20 09:30	
280-141144-3	MW-2016-4	Water	09/30/20 13:15	10/03/20 09:30	
280-141144-4	MW-2016-5	Water	10/01/20 11:20	10/03/20 09:30	
280-141144-5	MW-2016-6	Water	10/01/20 10:20	10/03/20 09:30	
280-141144-6	MW-2016-8	Water	09/30/20 10:40	10/03/20 09:30	
280-141144-7	MW-2016-9	Water	10/01/20 13:30	10/03/20 09:30	
280-141144-8	MW-2016-10	Water	10/01/20 09:55	10/03/20 09:30	
280-141144-9	MW-2016-11	Water	10/01/20 12:40	10/03/20 09:30	
280-141144-10	Dup-1	Water	10/01/20 00:00	10/03/20 09:30	

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Client Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

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

Client Sample ID: MW-2016-2
Date Collected: 10/01/20 13:05
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	284		100		ug/L		10/14/20 20:28	10/16/20 15:16	1
Calcium	9070		200		ug/L		10/14/20 20:28	10/16/20 15:16	1
Lithium	ND		20.0		ug/L		10/14/20 20:28	10/16/20 15:16	1

Client Sample ID: MW-2016-3
Date Collected: 10/01/20 10:48
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	254		100		ug/L		10/14/20 20:28	10/16/20 15:33	1
Calcium	5000		200		ug/L		10/14/20 20:28	10/16/20 15:33	1
Lithium	ND		20.0		ug/L		10/14/20 20:28	10/16/20 15:33	1

Client Sample ID: MW-2016-4
Date Collected: 09/30/20 13:15
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	246		100		ug/L		10/14/20 20:28	10/16/20 15:49	1
Calcium	5390		200		ug/L		10/14/20 20:28	10/16/20 15:49	1
Lithium	59.0		20.0		ug/L		10/14/20 20:28	10/16/20 15:49	1

Client Sample ID: MW-2016-5
Date Collected: 10/01/20 11:20
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	263		100		ug/L		10/14/20 20:28	10/16/20 15:53	1
Calcium	6800		200		ug/L		10/14/20 20:28	10/16/20 15:53	1
Lithium	39.7		20.0		ug/L		10/14/20 20:28	10/16/20 15:53	1

Client Sample ID: MW-2016-6
Date Collected: 10/01/20 10:20
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	279		100		ug/L		10/14/20 20:28	10/16/20 15:56	1
Calcium	8370		200		ug/L		10/14/20 20:28	10/16/20 15:56	1
Lithium	60.8		20.0		ug/L		10/14/20 20:28	10/16/20 15:56	1

Client Sample ID: MW-2016-8
Date Collected: 09/30/20 10:40
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	266		100		ug/L		10/14/20 20:28	10/16/20 16:00	1
Calcium	12100		200		ug/L		10/14/20 20:28	10/16/20 16:00	1
Lithium	57.6		20.0		ug/L		10/14/20 20:28	10/16/20 16:00	1

Client Sample ID: MW-2016-9
Date Collected: 10/01/20 13:30
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	288		100		ug/L		10/14/20 20:28	10/16/20 16:03	1
Calcium	6650		200		ug/L		10/14/20 20:28	10/16/20 16:03	1
Lithium	23.5		20.0		ug/L		10/14/20 20:28	10/16/20 16:03	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

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

Client Sample ID: MW-2016-10
Date Collected: 10/01/20 09:55
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	247		100		ug/L		10/14/20 20:28	10/16/20 16:06	1
Calcium	6040		200		ug/L		10/14/20 20:28	10/16/20 16:06	1
Lithium	35.4		20.0		ug/L		10/14/20 20:28	10/16/20 16:06	1

Client Sample ID: MW-2016-11
Date Collected: 10/01/20 12:40
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	299		100		ug/L		10/14/20 20:28	10/16/20 16:10	1
Calcium	6770		200		ug/L		10/14/20 20:28	10/16/20 16:10	1
Lithium	22.3		20.0		ug/L		10/14/20 20:28	10/16/20 16:10	1

Client Sample ID: Dup-1
Date Collected: 10/01/20 00:00
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	246		100		ug/L		10/14/20 20:28	10/16/20 16:13	1
Calcium	5390		200		ug/L		10/14/20 20:28	10/16/20 16:13	1
Lithium	61.7		20.0		ug/L		10/14/20 20:28	10/16/20 16:13	1

Method: 6020A - Metals (ICP/MS)

Client Sample ID: MW-2016-2
Date Collected: 10/01/20 13:05
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00		ug/L		10/12/20 08:18	10/12/20 23:53	1
Arsenic	ND		5.00		ug/L		10/12/20 08:18	10/12/20 23:53	1
Barium	65.0		1.00		ug/L		10/12/20 08:18	10/12/20 23:53	1
Beryllium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 19:47	1
Cadmium	ND		1.00		ug/L		10/12/20 08:18	10/12/20 23:53	1
Chromium	5.41		2.00		ug/L		10/12/20 08:18	10/12/20 23:53	1
Cobalt	1.36		1.00		ug/L		10/12/20 08:18	10/12/20 23:53	1
Lead	ND		1.00		ug/L		10/12/20 08:18	10/12/20 23:53	1
Molybdenum	10.4		2.00		ug/L		10/12/20 08:18	10/12/20 23:53	1
Selenium	ND		5.00		ug/L		10/12/20 08:18	10/12/20 23:53	1
Thallium	ND		1.00		ug/L		10/12/20 08:18	10/12/20 23:53	1

Client Sample ID: MW-2016-3
Date Collected: 10/01/20 10:48
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00		ug/L		10/12/20 08:18	10/13/20 00:11	1
Arsenic	ND		5.00		ug/L		10/12/20 08:18	10/13/20 00:11	1
Barium	36.0		1.00		ug/L		10/12/20 08:18	10/13/20 00:11	1
Beryllium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 20:05	1
Cadmium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:11	1
Chromium	ND		2.00		ug/L		10/12/20 08:18	10/13/20 00:11	1
Cobalt	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:11	1
Lead	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:11	1
Molybdenum	13.1		2.00		ug/L		10/12/20 08:18	10/13/20 00:11	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

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

Client Sample ID: MW-2016-3
Date Collected: 10/01/20 10:48
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		5.00		ug/L		10/12/20 08:18	10/13/20 00:11	1
Thallium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:11	1

Client Sample ID: MW-2016-4
Date Collected: 09/30/20 13:15
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00		ug/L		10/12/20 08:18	10/13/20 00:15	1
Arsenic	ND		5.00		ug/L		10/12/20 08:18	10/13/20 00:15	1
Barium	44.8		1.00		ug/L		10/12/20 08:18	10/13/20 00:15	1
Beryllium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 20:09	1
Cadmium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:15	1
Chromium	ND		2.00		ug/L		10/12/20 08:18	10/13/20 00:15	1
Cobalt	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:15	1
Lead	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:15	1
Molybdenum	2.43		2.00		ug/L		10/12/20 08:18	10/13/20 00:15	1
Selenium	ND		5.00		ug/L		10/12/20 08:18	10/13/20 00:15	1
Thallium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:15	1

Client Sample ID: MW-2016-5
Date Collected: 10/01/20 11:20
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00		ug/L		10/12/20 08:18	10/13/20 00:30	1
Arsenic	ND	^	5.00		ug/L		10/12/20 08:18	10/13/20 00:30	1
Barium	35.7		1.00		ug/L		10/12/20 08:18	10/13/20 00:30	1
Beryllium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:30	1
Cadmium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:30	1
Chromium	17.1		2.00		ug/L		10/12/20 08:18	10/13/20 00:30	1
Cobalt	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:30	1
Lead	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:30	1
Molybdenum	ND		2.00		ug/L		10/12/20 08:18	10/13/20 00:30	1
Selenium	ND		5.00		ug/L		10/12/20 08:18	10/13/20 00:30	1
Thallium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:30	1

Client Sample ID: MW-2016-6
Date Collected: 10/01/20 10:20
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00		ug/L		10/12/20 08:18	10/13/20 00:34	1
Arsenic	ND	^	5.00		ug/L		10/12/20 08:18	10/13/20 00:34	1
Barium	45.8		1.00		ug/L		10/12/20 08:18	10/13/20 00:34	1
Beryllium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:34	1
Cadmium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:34	1
Chromium	8.57		2.00		ug/L		10/12/20 08:18	10/13/20 00:34	1
Cobalt	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:34	1
Lead	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:34	1
Molybdenum	5.16		2.00		ug/L		10/12/20 08:18	10/13/20 00:34	1
Selenium	ND		5.00		ug/L		10/12/20 08:18	10/13/20 00:34	1
Thallium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:34	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

Method: 6020A - Metals (ICP/MS)

Client Sample ID: MW-2016-8
Date Collected: 09/30/20 10:40
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00		ug/L		10/12/20 08:18	10/13/20 00:37	1
Arsenic	ND	^	5.00		ug/L		10/12/20 08:18	10/13/20 00:37	1
Barium	45.1		1.00		ug/L		10/12/20 08:18	10/13/20 00:37	1
Beryllium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:37	1
Cadmium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:37	1
Chromium	ND		2.00		ug/L		10/12/20 08:18	10/13/20 00:37	1
Cobalt	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:37	1
Lead	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:37	1
Molybdenum	ND		2.00		ug/L		10/12/20 08:18	10/13/20 00:37	1
Selenium	ND		5.00		ug/L		10/12/20 08:18	10/13/20 00:37	1
Thallium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:37	1

Client Sample ID: MW-2016-9
Date Collected: 10/01/20 13:30
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00		ug/L		10/12/20 08:18	10/13/20 00:41	1
Arsenic	ND	^	5.00		ug/L		10/12/20 08:18	10/13/20 00:41	1
Barium	49.4		1.00		ug/L		10/12/20 08:18	10/13/20 00:41	1
Beryllium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:41	1
Cadmium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:41	1
Chromium	ND		2.00		ug/L		10/12/20 08:18	10/13/20 00:41	1
Cobalt	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:41	1
Lead	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:41	1
Molybdenum	19.3		2.00		ug/L		10/12/20 08:18	10/13/20 00:41	1
Selenium	ND		5.00		ug/L		10/12/20 08:18	10/13/20 00:41	1
Thallium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:41	1

Client Sample ID: MW-2016-10
Date Collected: 10/01/20 09:55
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00		ug/L		10/12/20 08:18	10/13/20 00:45	1
Arsenic	ND	^	5.00		ug/L		10/12/20 08:18	10/13/20 00:45	1
Barium	49.2		1.00		ug/L		10/12/20 08:18	10/13/20 00:45	1
Beryllium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:45	1
Cadmium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:45	1
Chromium	3.04		2.00		ug/L		10/12/20 08:18	10/13/20 00:45	1
Cobalt	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:45	1
Lead	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:45	1
Molybdenum	5.60		2.00		ug/L		10/12/20 08:18	10/13/20 00:45	1
Selenium	ND		5.00		ug/L		10/12/20 08:18	10/13/20 00:45	1
Thallium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:45	1

Client Sample ID: MW-2016-11
Date Collected: 10/01/20 12:40
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00		ug/L		10/12/20 08:18	10/13/20 00:48	1
Arsenic	ND	^	5.00		ug/L		10/12/20 08:18	10/13/20 00:48	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

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

Client Sample ID: MW-2016-11
Date Collected: 10/01/20 12:40
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	49.8		1.00		ug/L		10/12/20 08:18	10/13/20 00:48	1
Beryllium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:48	1
Cadmium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:48	1
Chromium	3.35		2.00		ug/L		10/12/20 08:18	10/13/20 00:48	1
Cobalt	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:48	1
Lead	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:48	1
Molybdenum	21.1		2.00		ug/L		10/12/20 08:18	10/13/20 00:48	1
Selenium	ND		5.00		ug/L		10/12/20 08:18	10/13/20 00:48	1
Thallium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:48	1

Client Sample ID: Dup-1
Date Collected: 10/01/20 00:00
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00		ug/L		10/12/20 08:18	10/13/20 00:52	1
Arsenic	ND	^	5.00		ug/L		10/12/20 08:18	10/13/20 00:52	1
Barium	43.0		1.00		ug/L		10/12/20 08:18	10/13/20 00:52	1
Beryllium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:52	1
Cadmium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:52	1
Chromium	ND		2.00		ug/L		10/12/20 08:18	10/13/20 00:52	1
Cobalt	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:52	1
Lead	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:52	1
Molybdenum	2.43		2.00		ug/L		10/12/20 08:18	10/13/20 00:52	1
Selenium	ND		5.00		ug/L		10/12/20 08:18	10/13/20 00:52	1
Thallium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 00:52	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-2016-2
Date Collected: 10/01/20 13:05
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/16/20 15:15	10/16/20 18:38	1

Client Sample ID: MW-2016-3
Date Collected: 10/01/20 10:48
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/16/20 15:15	10/16/20 18:51	1

Client Sample ID: MW-2016-4
Date Collected: 09/30/20 13:15
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/16/20 15:15	10/16/20 18:53	1

Client Sample ID: MW-2016-5
Date Collected: 10/01/20 11:20
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/16/20 15:15	10/16/20 18:56	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-2016-6
Date Collected: 10/01/20 10:20
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/16/20 15:15	10/16/20 18:58	1

Client Sample ID: MW-2016-8
Date Collected: 09/30/20 10:40
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/16/20 15:15	10/16/20 19:01	1

Client Sample ID: MW-2016-9
Date Collected: 10/01/20 13:30
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/16/20 15:15	10/16/20 19:03	1

Client Sample ID: MW-2016-10
Date Collected: 10/01/20 09:55
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/16/20 15:15	10/16/20 19:06	1

Client Sample ID: MW-2016-11
Date Collected: 10/01/20 12:40
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/16/20 15:15	10/16/20 19:09	1

Client Sample ID: Dup-1
Date Collected: 10/01/20 00:00
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/16/20 15:15	10/16/20 19:11	1

General Chemistry

Client Sample ID: MW-2016-2
Date Collected: 10/01/20 13:05
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.24		3.00		mg/L			10/20/20 16:47	1
Fluoride	0.847		0.500		mg/L			10/20/20 16:47	1
Sulfate	306		50.0		mg/L			10/21/20 22:27	10
Total Dissolved Solids (TDS)	1690		20.0		mg/L			10/06/20 16:35	1

Client Sample ID: MW-2016-3
Date Collected: 10/01/20 10:48
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	29.7		3.00		mg/L			10/20/20 17:03	1
Fluoride	ND		0.500		mg/L			10/20/20 17:03	1
Sulfate	42.2		25.0		mg/L			10/21/20 22:43	5
Total Dissolved Solids (TDS)	1590		20.0		mg/L			10/06/20 16:35	1

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Client Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

General Chemistry

Client Sample ID: MW-2016-4
Date Collected: 09/30/20 13:15
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13.1		3.00		mg/L			10/20/20 17:20	1
Fluoride	ND		0.500		mg/L			10/20/20 17:20	1
Sulfate	363		50.0		mg/L			10/21/20 23:00	10
Total Dissolved Solids (TDS)	1860		20.0		mg/L			10/06/20 16:35	1

Client Sample ID: MW-2016-5
Date Collected: 10/01/20 11:20
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.50		3.00		mg/L			10/20/20 18:58	1
Fluoride	ND		0.500		mg/L			10/20/20 18:58	1
Sulfate	588		50.0		mg/L			10/22/20 02:01	10
Total Dissolved Solids (TDS)	1860		20.0		mg/L			10/06/20 16:35	1

Client Sample ID: MW-2016-6
Date Collected: 10/01/20 10:20
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.89		3.00		mg/L			10/20/20 19:15	1
Fluoride	0.884		0.500		mg/L			10/20/20 19:15	1
Sulfate	659		50.0		mg/L			10/22/20 02:17	10
Total Dissolved Solids (TDS)	2100		40.0		mg/L			10/06/20 16:35	1

Client Sample ID: MW-2016-8
Date Collected: 09/30/20 10:40
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.75		3.00		mg/L			10/20/20 19:31	1
Fluoride	3.55		0.500		mg/L			10/20/20 19:31	1
Sulfate	675		50.0		mg/L			10/22/20 02:33	10
Total Dissolved Solids (TDS)	2090		40.0		mg/L			10/06/20 16:35	1

Client Sample ID: MW-2016-9
Date Collected: 10/01/20 13:30
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16.1		3.00		mg/L			10/20/20 19:47	1
Fluoride	0.937		0.500		mg/L			10/20/20 19:47	1
Sulfate	211		50.0		mg/L			10/22/20 02:50	10
Total Dissolved Solids (TDS)	1680		20.0		mg/L			10/06/20 16:35	1

Client Sample ID: MW-2016-10
Date Collected: 10/01/20 09:55
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.4		3.00		mg/L			10/20/20 20:04	1
Fluoride	ND		0.500		mg/L			10/20/20 20:04	1
Sulfate	309		50.0		mg/L			10/22/20 03:06	10
Total Dissolved Solids (TDS)	1710		20.0		mg/L			10/06/20 16:35	1

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Client Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

General Chemistry

Client Sample ID: MW-2016-11
Date Collected: 10/01/20 12:40
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16.1		3.00		mg/L			10/20/20 20:20	1
Fluoride	ND		0.500		mg/L			10/20/20 20:20	1
Sulfate	251		50.0		mg/L			10/22/20 03:23	10
Total Dissolved Solids (TDS)	1600		20.0		mg/L			10/06/20 16:35	1

Client Sample ID: Dup-1
Date Collected: 10/01/20 00:00
Date Received: 10/03/20 09:30

Lab Sample ID: 280-141144-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13.1		3.00		mg/L			10/20/20 20:37	1
Fluoride	ND		0.500		mg/L			10/20/20 20:37	1
Sulfate	368		50.0		mg/L			10/22/20 04:12	10
Total Dissolved Solids (TDS)	1650		20.0		mg/L			10/06/20 16:35	1

QC Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-512652/1-A
Matrix: Water
Analysis Batch: 513134

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 512652

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100		ug/L		10/14/20 20:28	10/16/20 15:09	1
Calcium	ND		200		ug/L		10/14/20 20:28	10/16/20 15:09	1
Lithium	ND		20.0		ug/L		10/14/20 20:28	10/16/20 15:09	1

Lab Sample ID: LCS 280-512652/2-A
Matrix: Water
Analysis Batch: 513134

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 512652

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	1018		ug/L		102	86 - 110
Calcium	50000	50910		ug/L		102	90 - 111
Lithium	1000	1016		ug/L		102	90 - 112

Lab Sample ID: 280-141144-1 MS
Matrix: Water
Analysis Batch: 513134

Client Sample ID: MW-2016-2
Prep Type: Total Recoverable
Prep Batch: 512652

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	284		1000	1328		ug/L		104	87 - 113
Calcium	9070		50000	60290		ug/L		102	48 - 153
Lithium	ND		1000	1052		ug/L		103	89 - 114

Lab Sample ID: 280-141144-1 MSD
Matrix: Water
Analysis Batch: 513134

Client Sample ID: MW-2016-2
Prep Type: Total Recoverable
Prep Batch: 512652

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Boron	284		1000	1322		ug/L		104	87 - 113	0	20
Calcium	9070		50000	59950		ug/L		102	48 - 153	1	20
Lithium	ND		1000	1039		ug/L		102	89 - 114	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 280-511890/1-A
Matrix: Water
Analysis Batch: 512346

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 511890

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00		ug/L		10/12/20 08:18	10/12/20 23:45	1
Arsenic	ND		5.00		ug/L		10/12/20 08:18	10/12/20 23:45	1
Barium	ND		1.00		ug/L		10/12/20 08:18	10/12/20 23:45	1
Cadmium	ND		1.00		ug/L		10/12/20 08:18	10/12/20 23:45	1
Chromium	ND		2.00		ug/L		10/12/20 08:18	10/12/20 23:45	1
Cobalt	ND		1.00		ug/L		10/12/20 08:18	10/12/20 23:45	1
Lead	ND		1.00		ug/L		10/12/20 08:18	10/12/20 23:45	1
Molybdenum	ND		2.00		ug/L		10/12/20 08:18	10/12/20 23:45	1
Selenium	ND		5.00		ug/L		10/12/20 08:18	10/12/20 23:45	1
Thallium	ND		1.00		ug/L		10/12/20 08:18	10/12/20 23:45	1

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QC Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

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

Lab Sample ID: MB 280-511890/1-A
Matrix: Water
Analysis Batch: 512550

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 511890

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		1.00		ug/L		10/12/20 08:18	10/13/20 19:39	1

Lab Sample ID: LCS 280-511890/2-A
Matrix: Water
Analysis Batch: 512346

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 511890

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	40.0	40.87		ug/L		102	85 - 115
Arsenic	40.0	39.96		ug/L		100	85 - 117
Barium	40.0	40.70		ug/L		102	85 - 118
Cadmium	40.0	40.09		ug/L		100	85 - 115
Chromium	40.0	42.20		ug/L		106	84 - 121
Cobalt	40.0	41.66		ug/L		104	85 - 120
Lead	40.0	40.75		ug/L		102	85 - 118
Molybdenum	40.0	41.00		ug/L		103	85 - 119
Selenium	40.0	40.24		ug/L		101	77 - 122
Thallium	40.0	40.64		ug/L		102	85 - 118

Lab Sample ID: LCS 280-511890/2-A
Matrix: Water
Analysis Batch: 512550

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 511890

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	40.0	40.23		ug/L		101	80 - 125

Lab Sample ID: 280-141144-1 MS
Matrix: Water
Analysis Batch: 512346

Client Sample ID: MW-2016-2
Prep Type: Total/NA
Prep Batch: 511890

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		40.0	41.01		ug/L		101	85 - 115
Arsenic	ND		40.0	43.23		ug/L		105	85 - 117
Barium	65.0		40.0	109.2		ug/L		111	85 - 118
Cadmium	ND		40.0	40.08		ug/L		100	85 - 115
Chromium	5.41		40.0	47.10		ug/L		104	84 - 121
Cobalt	1.36		40.0	42.38		ug/L		103	85 - 120
Lead	ND		40.0	41.14		ug/L		100	85 - 118
Molybdenum	10.4		40.0	53.23		ug/L		107	85 - 119
Selenium	ND		40.0	41.20		ug/L		103	77 - 122
Thallium	ND		40.0	38.78		ug/L		97	85 - 118

Lab Sample ID: 280-141144-1 MS
Matrix: Water
Analysis Batch: 512550

Client Sample ID: MW-2016-2
Prep Type: Total/NA
Prep Batch: 511890

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	ND		40.0	45.23		ug/L		113	80 - 125

QC Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

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

Lab Sample ID: 280-141144-1 MSD
 Matrix: Water
 Analysis Batch: 512346

Client Sample ID: MW-2016-2
 Prep Type: Total/NA
 Prep Batch: 511890

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Antimony	ND		40.0	40.78		ug/L		100	85 - 115	1	20
Arsenic	ND		40.0	43.22		ug/L		105	85 - 117	0	20
Barium	65.0		40.0	110.6		ug/L		114	85 - 118	1	20
Cadmium	ND		40.0	40.16		ug/L		100	85 - 115	0	20
Chromium	5.41		40.0	47.56		ug/L		105	84 - 121	1	20
Cobalt	1.36		40.0	42.00		ug/L		102	85 - 120	1	20
Lead	ND		40.0	40.24		ug/L		98	85 - 118	2	20
Molybdenum	10.4		40.0	52.61		ug/L		106	85 - 119	1	20
Selenium	ND		40.0	39.81		ug/L		100	77 - 122	3	20
Thallium	ND		40.0	38.85		ug/L		97	85 - 118	0	20

Lab Sample ID: 280-141144-1 MSD
 Matrix: Water
 Analysis Batch: 512550

Client Sample ID: MW-2016-2
 Prep Type: Total/NA
 Prep Batch: 511890

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Beryllium	ND		40.0	46.03		ug/L		115	80 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-512934/1-A
 Matrix: Water
 Analysis Batch: 512972

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 512934

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.000200		mg/L		10/16/20 15:15	10/16/20 18:33	1

Lab Sample ID: LCS 280-512934/2-A
 Matrix: Water
 Analysis Batch: 512972

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 512934

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
Mercury	0.00500	0.004764		mg/L		95	84 - 120

Lab Sample ID: 280-141144-1 MS
 Matrix: Water
 Analysis Batch: 512972

Client Sample ID: MW-2016-2
 Prep Type: Total/NA
 Prep Batch: 512934

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
Mercury	ND		0.00500	0.004692		mg/L		94	75 - 125

Lab Sample ID: 280-141144-1 MSD
 Matrix: Water
 Analysis Batch: 512972

Client Sample ID: MW-2016-2
 Prep Type: Total/NA
 Prep Batch: 512934

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Mercury	ND		0.00500	0.004841		mg/L		97	75 - 125	3	20

QC Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-513327/6
Matrix: Water
Analysis Batch: 513327

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			10/20/20 15:20	1
Fluoride	ND		0.500		mg/L			10/20/20 15:20	1

Lab Sample ID: LCS 280-513327/4
Matrix: Water
Analysis Batch: 513327

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	92.03		mg/L		92	90 - 110
Fluoride	5.00	4.940		mg/L		99	90 - 110

Lab Sample ID: LCSD 280-513327/5
Matrix: Water
Analysis Batch: 513327

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	91.84		mg/L		92	90 - 110	0	10
Fluoride	5.00	4.919		mg/L		98	90 - 110	0	10

Lab Sample ID: MRL 280-513327/3
Matrix: Water
Analysis Batch: 513327

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	3.973		mg/L		79	50 - 150
Fluoride	0.500	0.5019		mg/L		100	50 - 150

Lab Sample ID: 280-141144-3 MS
Matrix: Water
Analysis Batch: 513327

Client Sample ID: MW-2016-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	13.1		50.0	63.24		mg/L		100	80 - 120
Fluoride	ND		5.00	5.347		mg/L		100	80 - 120

Lab Sample ID: 280-141144-3 MSD
Matrix: Water
Analysis Batch: 513327

Client Sample ID: MW-2016-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	13.1		50.0	62.71		mg/L		99	80 - 120	1	20
Fluoride	ND		5.00	5.349		mg/L		100	80 - 120	0	20

Lab Sample ID: 280-141144-10 MS
Matrix: Water
Analysis Batch: 513327

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	13.1		50.0	63.29		mg/L		100	80 - 120
Fluoride	ND		5.00	5.436		mg/L		102	80 - 120

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QC Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: 280-141144-10 MSD
Matrix: Water
Analysis Batch: 513327

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	13.1		50.0	63.57		mg/L		101	80 - 120	0	20
Fluoride	ND		5.00	5.413		mg/L		101	80 - 120	0	20

Lab Sample ID: 280-141144-3 DU
Matrix: Water
Analysis Batch: 513327

Client Sample ID: MW-2016-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	13.1		13.12		mg/L		0.4	15
Fluoride	ND		ND		mg/L		NC	15

Lab Sample ID: 280-141144-10 DU
Matrix: Water
Analysis Batch: 513327

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	13.1		13.13		mg/L		0.6	15
Fluoride	ND		ND		mg/L		NC	15

Lab Sample ID: MB 280-513527/6
Matrix: Water
Analysis Batch: 513527

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			10/21/20 21:17	1

Lab Sample ID: LCS 280-513527/4
Matrix: Water
Analysis Batch: 513527

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	100	96.48		mg/L		96	90 - 110

Lab Sample ID: LCSD 280-513527/5
Matrix: Water
Analysis Batch: 513527

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	96.54		mg/L		97	90 - 110	0	10

Lab Sample ID: MRL 280-513527/3
Matrix: Water
Analysis Batch: 513527

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		94	50 - 150

QC Sample Results

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

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

Lab Sample ID: MB 280-511560/1
Matrix: Water
Analysis Batch: 511560

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			10/06/20 16:35	1

Lab Sample ID: LCS 280-511560/2
Matrix: Water
Analysis Batch: 511560

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	501	479.0		mg/L		96	93 - 110

Lab Sample ID: 280-141144-7 DU
Matrix: Water
Analysis Batch: 511560

Client Sample ID: MW-2016-9
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	1680		1716		mg/L		2	10

QC Association Summary

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

Metals

Prep Batch: 511890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-141144-1	MW-2016-2	Total/NA	Water	3020A	
280-141144-2	MW-2016-3	Total/NA	Water	3020A	
280-141144-3	MW-2016-4	Total/NA	Water	3020A	
280-141144-4	MW-2016-5	Total/NA	Water	3020A	
280-141144-5	MW-2016-6	Total/NA	Water	3020A	
280-141144-6	MW-2016-8	Total/NA	Water	3020A	
280-141144-7	MW-2016-9	Total/NA	Water	3020A	
280-141144-8	MW-2016-10	Total/NA	Water	3020A	
280-141144-9	MW-2016-11	Total/NA	Water	3020A	
280-141144-10	Dup-1	Total/NA	Water	3020A	
MB 280-511890/1-A	Method Blank	Total/NA	Water	3020A	
LCS 280-511890/2-A	Lab Control Sample	Total/NA	Water	3020A	
280-141144-1 MS	MW-2016-2	Total/NA	Water	3020A	
280-141144-1 MSD	MW-2016-2	Total/NA	Water	3020A	

Analysis Batch: 512346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-141144-1	MW-2016-2	Total/NA	Water	6020A	511890
280-141144-2	MW-2016-3	Total/NA	Water	6020A	511890
280-141144-3	MW-2016-4	Total/NA	Water	6020A	511890
280-141144-4	MW-2016-5	Total/NA	Water	6020A	511890
280-141144-5	MW-2016-6	Total/NA	Water	6020A	511890
280-141144-6	MW-2016-8	Total/NA	Water	6020A	511890
280-141144-7	MW-2016-9	Total/NA	Water	6020A	511890
280-141144-8	MW-2016-10	Total/NA	Water	6020A	511890
280-141144-9	MW-2016-11	Total/NA	Water	6020A	511890
280-141144-10	Dup-1	Total/NA	Water	6020A	511890
MB 280-511890/1-A	Method Blank	Total/NA	Water	6020A	511890
LCS 280-511890/2-A	Lab Control Sample	Total/NA	Water	6020A	511890
280-141144-1 MS	MW-2016-2	Total/NA	Water	6020A	511890
280-141144-1 MSD	MW-2016-2	Total/NA	Water	6020A	511890

Analysis Batch: 512550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-141144-1	MW-2016-2	Total/NA	Water	6020A	511890
280-141144-2	MW-2016-3	Total/NA	Water	6020A	511890
280-141144-3	MW-2016-4	Total/NA	Water	6020A	511890
MB 280-511890/1-A	Method Blank	Total/NA	Water	6020A	511890
LCS 280-511890/2-A	Lab Control Sample	Total/NA	Water	6020A	511890
280-141144-1 MS	MW-2016-2	Total/NA	Water	6020A	511890
280-141144-1 MSD	MW-2016-2	Total/NA	Water	6020A	511890

Prep Batch: 512652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-141144-1	MW-2016-2	Total Recoverable	Water	3005A	
280-141144-2	MW-2016-3	Total Recoverable	Water	3005A	
280-141144-3	MW-2016-4	Total Recoverable	Water	3005A	
280-141144-4	MW-2016-5	Total Recoverable	Water	3005A	
280-141144-5	MW-2016-6	Total Recoverable	Water	3005A	
280-141144-6	MW-2016-8	Total Recoverable	Water	3005A	
280-141144-7	MW-2016-9	Total Recoverable	Water	3005A	

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QC Association Summary

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

Metals (Continued)

Prep Batch: 512652 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-141144-8	MW-2016-10	Total Recoverable	Water	3005A	
280-141144-9	MW-2016-11	Total Recoverable	Water	3005A	
280-141144-10	Dup-1	Total Recoverable	Water	3005A	
MB 280-512652/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-512652/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-141144-1 MS	MW-2016-2	Total Recoverable	Water	3005A	
280-141144-1 MSD	MW-2016-2	Total Recoverable	Water	3005A	

Prep Batch: 512934

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-141144-1	MW-2016-2	Total/NA	Water	7470A	
280-141144-2	MW-2016-3	Total/NA	Water	7470A	
280-141144-3	MW-2016-4	Total/NA	Water	7470A	
280-141144-4	MW-2016-5	Total/NA	Water	7470A	
280-141144-5	MW-2016-6	Total/NA	Water	7470A	
280-141144-6	MW-2016-8	Total/NA	Water	7470A	
280-141144-7	MW-2016-9	Total/NA	Water	7470A	
280-141144-8	MW-2016-10	Total/NA	Water	7470A	
280-141144-9	MW-2016-11	Total/NA	Water	7470A	
280-141144-10	Dup-1	Total/NA	Water	7470A	
MB 280-512934/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-512934/2-A	Lab Control Sample	Total/NA	Water	7470A	
280-141144-1 MS	MW-2016-2	Total/NA	Water	7470A	
280-141144-1 MSD	MW-2016-2	Total/NA	Water	7470A	

Analysis Batch: 512972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-141144-1	MW-2016-2	Total/NA	Water	7470A	512934
280-141144-2	MW-2016-3	Total/NA	Water	7470A	512934
280-141144-3	MW-2016-4	Total/NA	Water	7470A	512934
280-141144-4	MW-2016-5	Total/NA	Water	7470A	512934
280-141144-5	MW-2016-6	Total/NA	Water	7470A	512934
280-141144-6	MW-2016-8	Total/NA	Water	7470A	512934
280-141144-7	MW-2016-9	Total/NA	Water	7470A	512934
280-141144-8	MW-2016-10	Total/NA	Water	7470A	512934
280-141144-9	MW-2016-11	Total/NA	Water	7470A	512934
280-141144-10	Dup-1	Total/NA	Water	7470A	512934
MB 280-512934/1-A	Method Blank	Total/NA	Water	7470A	512934
LCS 280-512934/2-A	Lab Control Sample	Total/NA	Water	7470A	512934
280-141144-1 MS	MW-2016-2	Total/NA	Water	7470A	512934
280-141144-1 MSD	MW-2016-2	Total/NA	Water	7470A	512934

Analysis Batch: 513134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-141144-1	MW-2016-2	Total Recoverable	Water	6010C	512652
280-141144-2	MW-2016-3	Total Recoverable	Water	6010C	512652
280-141144-3	MW-2016-4	Total Recoverable	Water	6010C	512652
280-141144-4	MW-2016-5	Total Recoverable	Water	6010C	512652
280-141144-5	MW-2016-6	Total Recoverable	Water	6010C	512652
280-141144-6	MW-2016-8	Total Recoverable	Water	6010C	512652
280-141144-7	MW-2016-9	Total Recoverable	Water	6010C	512652

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QC Association Summary

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

Metals (Continued)

Analysis Batch: 513134 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-141144-8	MW-2016-10	Total Recoverable	Water	6010C	512652
280-141144-9	MW-2016-11	Total Recoverable	Water	6010C	512652
280-141144-10	Dup-1	Total Recoverable	Water	6010C	512652
MB 280-512652/1-A	Method Blank	Total Recoverable	Water	6010C	512652
LCS 280-512652/2-A	Lab Control Sample	Total Recoverable	Water	6010C	512652
280-141144-1 MS	MW-2016-2	Total Recoverable	Water	6010C	512652
280-141144-1 MSD	MW-2016-2	Total Recoverable	Water	6010C	512652

General Chemistry

Analysis Batch: 511560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-141144-1	MW-2016-2	Total/NA	Water	SM 2540C	
280-141144-2	MW-2016-3	Total/NA	Water	SM 2540C	
280-141144-3	MW-2016-4	Total/NA	Water	SM 2540C	
280-141144-4	MW-2016-5	Total/NA	Water	SM 2540C	
280-141144-5	MW-2016-6	Total/NA	Water	SM 2540C	
280-141144-6	MW-2016-8	Total/NA	Water	SM 2540C	
280-141144-7	MW-2016-9	Total/NA	Water	SM 2540C	
280-141144-8	MW-2016-10	Total/NA	Water	SM 2540C	
280-141144-9	MW-2016-11	Total/NA	Water	SM 2540C	
280-141144-10	Dup-1	Total/NA	Water	SM 2540C	
MB 280-511560/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-511560/2	Lab Control Sample	Total/NA	Water	SM 2540C	
280-141144-7 DU	MW-2016-9	Total/NA	Water	SM 2540C	

Analysis Batch: 513327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-141144-1	MW-2016-2	Total/NA	Water	9056A	
280-141144-2	MW-2016-3	Total/NA	Water	9056A	
280-141144-3	MW-2016-4	Total/NA	Water	9056A	
280-141144-4	MW-2016-5	Total/NA	Water	9056A	
280-141144-5	MW-2016-6	Total/NA	Water	9056A	
280-141144-6	MW-2016-8	Total/NA	Water	9056A	
280-141144-7	MW-2016-9	Total/NA	Water	9056A	
280-141144-8	MW-2016-10	Total/NA	Water	9056A	
280-141144-9	MW-2016-11	Total/NA	Water	9056A	
280-141144-10	Dup-1	Total/NA	Water	9056A	
MB 280-513327/6	Method Blank	Total/NA	Water	9056A	
LCS 280-513327/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-513327/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-513327/3	Lab Control Sample	Total/NA	Water	9056A	
280-141144-3 MS	MW-2016-4	Total/NA	Water	9056A	
280-141144-3 MSD	MW-2016-4	Total/NA	Water	9056A	
280-141144-10 MS	Dup-1	Total/NA	Water	9056A	
280-141144-10 MSD	Dup-1	Total/NA	Water	9056A	
280-141144-3 DU	MW-2016-4	Total/NA	Water	9056A	
280-141144-10 DU	Dup-1	Total/NA	Water	9056A	

QC Association Summary

Client: Basin Electric Power Cooperative
Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
SDG: LOS Landfill

General Chemistry

Analysis Batch: 513527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-141144-1	MW-2016-2	Total/NA	Water	9056A	
280-141144-2	MW-2016-3	Total/NA	Water	9056A	
280-141144-3	MW-2016-4	Total/NA	Water	9056A	
280-141144-4	MW-2016-5	Total/NA	Water	9056A	
280-141144-5	MW-2016-6	Total/NA	Water	9056A	
280-141144-6	MW-2016-8	Total/NA	Water	9056A	
280-141144-7	MW-2016-9	Total/NA	Water	9056A	
280-141144-8	MW-2016-10	Total/NA	Water	9056A	
280-141144-9	MW-2016-11	Total/NA	Water	9056A	
280-141144-10	Dup-1	Total/NA	Water	9056A	
MB 280-513527/6	Method Blank	Total/NA	Water	9056A	
LCS 280-513527/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-513527/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-513527/3	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

Client Sample ID: MW-2016-2

Lab Sample ID: 280-141144-1

Date Collected: 10/01/20 13:05

Matrix: Water

Date Received: 10/03/20 09:30

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	512652	10/14/20 20:28	MRJ	TAL DEN
Total Recoverable	Analysis	6010C		1			513134	10/16/20 15:16	MRJ	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	511890	10/12/20 08:18	EAS	TAL DEN
Total/NA	Analysis	6020A		1			512346	10/12/20 23:53	LMT	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	511890	10/12/20 08:18	EAS	TAL DEN
Total/NA	Analysis	6020A		1			512550	10/13/20 19:47	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	512934	10/16/20 15:15	NK	TAL DEN
Total/NA	Analysis	7470A		1			512972	10/16/20 18:38	NK	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	513327	10/20/20 16:47	CJ	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	513527	10/21/20 22:27	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	511560	10/06/20 16:35	BAR	TAL DEN

Client Sample ID: MW-2016-3

Lab Sample ID: 280-141144-2

Date Collected: 10/01/20 10:48

Matrix: Water

Date Received: 10/03/20 09:30

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	512652	10/14/20 20:28	MRJ	TAL DEN
Total Recoverable	Analysis	6010C		1			513134	10/16/20 15:33	MRJ	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	511890	10/12/20 08:18	EAS	TAL DEN
Total/NA	Analysis	6020A		1			512346	10/13/20 00:11	LMT	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	511890	10/12/20 08:18	EAS	TAL DEN
Total/NA	Analysis	6020A		1			512550	10/13/20 20:05	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	512934	10/16/20 15:15	NK	TAL DEN
Total/NA	Analysis	7470A		1			512972	10/16/20 18:51	NK	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	513327	10/20/20 17:03	CJ	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	513527	10/21/20 22:43	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	511560	10/06/20 16:35	BAR	TAL DEN

Client Sample ID: MW-2016-4

Lab Sample ID: 280-141144-3

Date Collected: 09/30/20 13:15

Matrix: Water

Date Received: 10/03/20 09:30

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	512652	10/14/20 20:28	MRJ	TAL DEN
Total Recoverable	Analysis	6010C		1			513134	10/16/20 15:49	MRJ	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	511890	10/12/20 08:18	EAS	TAL DEN
Total/NA	Analysis	6020A		1			512346	10/13/20 00:15	LMT	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	511890	10/12/20 08:18	EAS	TAL DEN
Total/NA	Analysis	6020A		1			512550	10/13/20 20:09	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	512934	10/16/20 15:15	NK	TAL DEN
Total/NA	Analysis	7470A		1			512972	10/16/20 18:53	NK	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	513327	10/20/20 17:20	CJ	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	513527	10/21/20 23:00	CJ	TAL DEN

Eurofins TestAmerica, Denver

Lab Chronicle

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

Client Sample ID: MW-2016-4

Lab Sample ID: 280-141144-3

Date Collected: 09/30/20 13:15

Matrix: Water

Date Received: 10/03/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	511560	10/06/20 16:35	BAR	TAL DEN

Client Sample ID: MW-2016-5

Lab Sample ID: 280-141144-4

Date Collected: 10/01/20 11:20

Matrix: Water

Date Received: 10/03/20 09:30

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	512652	10/14/20 20:28	MRJ	TAL DEN
Total Recoverable	Analysis	6010C		1			513134	10/16/20 15:53	MRJ	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	511890	10/12/20 08:18	EAS	TAL DEN
Total/NA	Analysis	6020A		1			512346	10/13/20 00:30	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	512934	10/16/20 15:15	NK	TAL DEN
Total/NA	Analysis	7470A		1			512972	10/16/20 18:56	NK	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	513327	10/20/20 18:58	CJ	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	513527	10/22/20 02:01	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	511560	10/06/20 16:35	BAR	TAL DEN

Client Sample ID: MW-2016-6

Lab Sample ID: 280-141144-5

Date Collected: 10/01/20 10:20

Matrix: Water

Date Received: 10/03/20 09:30

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	512652	10/14/20 20:28	MRJ	TAL DEN
Total Recoverable	Analysis	6010C		1			513134	10/16/20 15:56	MRJ	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	511890	10/12/20 08:18	EAS	TAL DEN
Total/NA	Analysis	6020A		1			512346	10/13/20 00:34	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	512934	10/16/20 15:15	NK	TAL DEN
Total/NA	Analysis	7470A		1			512972	10/16/20 18:58	NK	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	513327	10/20/20 19:15	CJ	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	513527	10/22/20 02:17	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	511560	10/06/20 16:35	BAR	TAL DEN

Client Sample ID: MW-2016-8

Lab Sample ID: 280-141144-6

Date Collected: 09/30/20 10:40

Matrix: Water

Date Received: 10/03/20 09:30

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	512652	10/14/20 20:28	MRJ	TAL DEN
Total Recoverable	Analysis	6010C		1			513134	10/16/20 16:00	MRJ	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	511890	10/12/20 08:18	EAS	TAL DEN
Total/NA	Analysis	6020A		1			512346	10/13/20 00:37	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	512934	10/16/20 15:15	NK	TAL DEN
Total/NA	Analysis	7470A		1			512972	10/16/20 19:01	NK	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	513327	10/20/20 19:31	CJ	TAL DEN

Eurofins TestAmerica, Denver

Lab Chronicle

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

Client Sample ID: MW-2016-8

Lab Sample ID: 280-141144-6

Date Collected: 09/30/20 10:40

Matrix: Water

Date Received: 10/03/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		10	5 mL	5 mL	513527	10/22/20 02:33	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	511560	10/06/20 16:35	BAR	TAL DEN

Client Sample ID: MW-2016-9

Lab Sample ID: 280-141144-7

Date Collected: 10/01/20 13:30

Matrix: Water

Date Received: 10/03/20 09:30

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	512652	10/14/20 20:28	MRJ	TAL DEN
Total Recoverable	Analysis	6010C		1			513134	10/16/20 16:03	MRJ	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	511890	10/12/20 08:18	EAS	TAL DEN
Total/NA	Analysis	6020A		1			512346	10/13/20 00:41	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	512934	10/16/20 15:15	NK	TAL DEN
Total/NA	Analysis	7470A		1			512972	10/16/20 19:03	NK	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	513327	10/20/20 19:47	CJ	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	513527	10/22/20 02:50	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	511560	10/06/20 16:35	BAR	TAL DEN

Client Sample ID: MW-2016-10

Lab Sample ID: 280-141144-8

Date Collected: 10/01/20 09:55

Matrix: Water

Date Received: 10/03/20 09:30

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	512652	10/14/20 20:28	MRJ	TAL DEN
Total Recoverable	Analysis	6010C		1			513134	10/16/20 16:06	MRJ	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	511890	10/12/20 08:18	EAS	TAL DEN
Total/NA	Analysis	6020A		1			512346	10/13/20 00:45	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	512934	10/16/20 15:15	NK	TAL DEN
Total/NA	Analysis	7470A		1			512972	10/16/20 19:06	NK	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	513327	10/20/20 20:04	CJ	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	513527	10/22/20 03:06	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	511560	10/06/20 16:35	BAR	TAL DEN

Client Sample ID: MW-2016-11

Lab Sample ID: 280-141144-9

Date Collected: 10/01/20 12:40

Matrix: Water

Date Received: 10/03/20 09:30

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	512652	10/14/20 20:28	MRJ	TAL DEN
Total Recoverable	Analysis	6010C		1			513134	10/16/20 16:10	MRJ	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	511890	10/12/20 08:18	EAS	TAL DEN
Total/NA	Analysis	6020A		1			512346	10/13/20 00:48	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	512934	10/16/20 15:15	NK	TAL DEN
Total/NA	Analysis	7470A		1			512972	10/16/20 19:09	NK	TAL DEN

Eurofins TestAmerica, Denver

Lab Chronicle

Client: Basin Electric Power Cooperative
 Project/Site: CCR Groundwater - North Dakota Sites

Job ID: 280-141144-1
 SDG: LOS Landfill

Client Sample ID: MW-2016-11

Lab Sample ID: 280-141144-9

Date Collected: 10/01/20 12:40

Matrix: Water

Date Received: 10/03/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	513327	10/20/20 20:20	CJ	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	513527	10/22/20 03:23	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	511560	10/06/20 16:35	BAR	TAL DEN

Client Sample ID: Dup-1

Lab Sample ID: 280-141144-10

Date Collected: 10/01/20 00:00

Matrix: Water

Date Received: 10/03/20 09:30

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	512652	10/14/20 20:28	MRJ	TAL DEN
Total Recoverable	Analysis	6010C		1			513134	10/16/20 16:13	MRJ	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	511890	10/12/20 08:18	EAS	TAL DEN
Total/NA	Analysis	6020A		1			512346	10/13/20 00:52	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	512934	10/16/20 15:15	NK	TAL DEN
Total/NA	Analysis	7470A		1			512972	10/16/20 19:11	NK	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	513327	10/20/20 20:37	CJ	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	513527	10/22/20 04:12	CJ	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	511560	10/06/20 16:35	BAR	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 - North Dakota Sites

Job ID: 280-141144-1
SDG: LOS Landfill

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	01-08-21

- 1
- 2
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- 14

Chain of Custody Record



Client Information Company: Basin Electric Power Cooperative Address: 1717 East Interstate Avenue City: Bismarck State, Zip: ND, 58503 Phone: 701-202-5096(Tel) Email: ksollie@bepec.com Project Name: CCR Groundwater - North Dakota Site Site: LOS LANDFILL		Lab PM: Turner, Shelby R E-Mail: Shelby.Turner@Eurofins.com Lab Phone: 701-745-7238		Carrier Tracking No(s): COC No: Page: 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): PO #: Standard Purchase Order Requested WO #:		Analysis Requested 6010C - Total Calcium and Boron 9315 Ra226, 9320 Ra228, Combined Radium-226 and Radium-228 9056A, 28D - Chloride, Fluoride, Sulfate 2540C - Calcd - TDS 6010C - Total B, Ca, Li (1 of 3), 6020A - Total 11 Metals (2 of 3), 7470A - Total Mercury (3 of 3) (APP III + IV) Patten MS/MSD (Yes or No) Field Filtered Sample (Yes or No)			
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 - PNTA M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)		280-141144 Chain of Custody 			
Sample Identification		Special Instructions/Note: PH - 7.91 PH - 7.92 PH - 8.13 PH - 7.90 PH - 7.92 PH - 7.70 PH - 7.97 PH 7.84			
Sample ID MW-2016-2 MW-2016-3 MW-2016-4 MW-2016-5 MW-2016-6 MW-2016-8 MW-2016-9 MW-2016-10 MW-2016-11 Dup-1	Sample Date 10-1-20 10-1-20 9-30-20 10-1-20 10-1-20 9-30-20 10-1-20 10-1-20 10-1-20	Sample Time 1305 1048 1315 1120 1020 1040 1330 0955 1240	Sample Type (C=Comp, G=grab) G G G G G G G G G G	Matrix (Water, Seawater, Other) Water Water Water Water Water Water Water Water Water Water	Preservation Code G G G G G G G G G G
Possible Hazard Identification <input checked="" 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 checked="" 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: Relinquished by: [Signature] Date: 10-2-20 1050 Relinquished by: Date: Relinquished by: Date:		Method of Shipment: Received by: [Signature] Date: 10/13/20 0930 Company: EPA Denver Received by: Date: Company: Received by: Date: Company:			
Custody Seal No.: 1341890, 1341891 Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Cooler Temperature(s) °C and Other Remarks: 4.9C, 1.3C CF-0.3C - FPH			





280-141144 Waybill

ORIGIN ID BISA (901) 349-7289
DUSTINE SIMMONS

3901 HWY 200A

STANTON, ND 58571
UNITED STATES US

SHIP DATE 02/02/20
ACT WGT 50.00 LB
CAD 251286197ANET4180

BILL SENDER

TO SHELBY TURNER
EUROFINS TESTAMERICA, DENVER
4955 YARROW ST

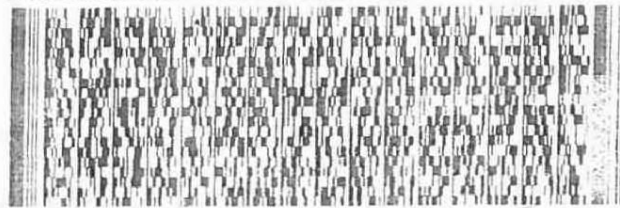
ARVADA CO 80002

(303) 736-0100

REF: OOR GROUNDWATER - ND SITE

5800007E0156

FedEx Ship Manager - Print Your Label(s)



FedEx
Express



J0202200116100

2 of 2

MPS# 7716 9115 0662
0263
Mstr# 7716 9115 0835

0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

DSR

80002

CO-US DEN

XO LAAA



10/2/2020

RT 887
ST 25

5 12:00 B
0662 10.03

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ORIGIN ID: BISA (701) 745-7289
DUSTINE SIMMONS

3901 HWY 200A

STANTON, ND 58571
UNITED STATES US

SHIP DATE: 02OCT20
ACTWGT: 18.00 LB
CAD: 251286197/INET4280

BILL SENDER

TO **SHELBY TURNER**
EUROFINS TESTAMERICA, DENVER
4955 YARROW ST

ARVADA CO 80002

(303) 736-0100
INV
PO

REF: CCR.GROUNDWATER - ND SITE
DEPT:

55B12/AZ7E1B766

FedEx Ship Manager - Print Your Label(s)



FedEx
Express



SATURDAY 12:00P
PRIORITY OVERNIGHT

1 of 2
TRK# **7716 9115 0835**
0201
MASTER

DSR
80002
CO-US **DEN**

X0 LAAA



10/2/2020

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- 11
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- 13
- 14

Login Sample Receipt Checklist

Client: Basin Electric Power Cooperative

Job Number: 280-141144-1

SDG Number: LOS Landfill

Login Number: 141144

List Number: 1

Creator: Hall, Scott 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.	False	Refer to Job Narrative for details.
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.	False	Refer to Job Narrative for details.
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	