ANNUAL GROUNDWATER REPORT

ANNUAL GROUNDWATER REPORT – 2017

GREAT RIVER ENERGY – COAL CREEK STATION

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1.0 INTRODUCTION

Golder Associates Inc. (Golder) has prepared this report for the 2017 groundwater sampling and comparative statistical analysis for Great River Energy's (GRE) Coal Creek Station (CCS) to meet the requirements of the Coal Combustion Residuals (CCR) rule's sections on groundwater monitoring and corrective action, 40 Code of Federal Regulations (CFR) 257.90 through 257.98.

1.1 Purpose

The CCR rule established specific requirements for reporting of actions related to groundwater monitoring and corrective actions in 40 CFR 257.90. Per part (e) of 40 CFR 257.90, no later than January 31, 2018, and annually thereafter, owners or operators of CCR units must prepare an annual groundwater monitoring and corrective action report.

1.2 Site Background

GRE's Coal Creek Station is a coal-fired electric generation facility located in McLean County, North Dakota, approximately 10 miles northwest of Washburn, ND. CCRs are managed in composite-lined surface water impoundment cells and dry waste facilities regulated and permitted by the North Dakota Department of Health (NDDH) in accordance with North Dakota Administrative Code Article 33-10, Solid Waste Management and Land Protection.

Coal Creek Station has four CCR facilities that are within the purview of the United States Environmental Protection Agency (EPA) CCR rule:

- Drains Pond System CCR Surface Impoundment (Drains Pond System)
- Upstream Raise 91 CCR Surface Impoundment (Upstream Raise 91)
- Upstream Raise 92 CCR Surface Impoundment (Upstream Raise 92)
- Southeast Section 16 CCR Landfill (Southeast 16)

These CCR facilities are currently divided into 3 monitoring network units:

- Drains Pond System
- Upstream Raise 91 and Upstream Raise 92
- Southeast 16

Locations of the facilities, groundwater monitoring network units, and groundwater monitoring wells are shown in Figure 1 and Figure 2.

2.0 GROUNDWATER MONITORING NETWORK PROGRAM STATUS

The CCR groundwater monitoring system at CCS consists of a total of 19 monitoring locations (seven upgradient and twelve downgradient wells). An additional 3 monitoring locations were installed in November and December 2017 and are discussed in Section 2.2. The monitoring locations are shown on Figures 1 and 2 and listed on Table 1. Additional information on the groundwater monitoring system can be found in the Coal Combustion Residuals Groundwater Monitoring System Certification (Golder 2017a). Each CCR facility is part of a monitoring network consisting of at least one upgradient and three downgradient monitoring wells.

- The Drains Pond System has two upgradient and three downgradient monitoring wells.
- Upstream Raise 91 and Upstream Raise 92 have three upgradient and four downgradient monitoring wells.
- Southeast 16 has two upgradient and five downgradient monitoring wells.

2.1 Completed Key Actions in 2017

The following key actions were completed in 2017:

- The Coal Combustion Residuals Groundwater Monitoring System Certification, Great River Energy – Coal Creek Station, was placed within the operating record and on the publically accessible CCR website (Golder 2017a).
- The Coal Combustion Residuals Groundwater Statistical Method Certification, Great River Energy – Coal Creek Station, was placed within the operating record and on the publically accessible CCR website (Golder 2017b).
- Baseline samples (a minimum of eight) were collected between September 2015 and August 2017 and were analyzed for both the Appendix III and Appendix IV constituent lists associated with the CCR rule.
- The first detection monitoring samples were collected October 2017 and analyzed for the Appendix III constituents list associated with the CCR rule.
- Three new monitoring wells were installed around Upstream Raise 91 and Upstream Raise 92 in November and December 2017.

2.2 Installation and Decommissioning of Wells

Three wells were installed to expand the CCR monitoring well network in 2017 (Figure 1 and Figure 2).

- Well MW-91-2 – upgradient well in the Upstream Raise 91 and Upstream Raise 92 CCR Unit
- Well MW-91-1 – downgradient well in the Upstream Raise 91 and Upstream Raise 92 CCR Unit
- Well MW-16-0 – downgradient well in the Upstream Raise 91 and Upstream Raise 92 CCR Unit

These wells were installed to allow Upstream Raise 91 and Upstream Raise 92 to be monitored as two separated units in the future. The wells were installed, completed, and developed by Terracon Consultants Inc. in November and December of 2017. Information on the installation and completion of these wells is included in Appendix A.

Following completion of the well installation and registration with the State of North Dakota, sampling of the three wells to establish baseline conditions will begin in the first quarter of 2018. Wells will initially be sampled as often as monthly through 2018 to obtain a minimum of eight baseline samples.

No wells were decommissioned from the CCR monitoring well network during the baseline period or in 2017 following the start of detection monitoring.

2.3 Problems and Resolutions

No problems were encountered during the baseline period or during the first detection monitoring event in October 2017.

2.4 Key Activities for 2018

The following key actions are anticipated to be completed in 2018:

- Comparative statistics for the first detection monitoring event (see Section 3.3 for further details).
- Baseline samples (a minimum of eight) will be collected for the three new wells and will be analyzed for both the Appendix III and Appendix IV constituent lists in the CCR rule.
- Detection monitoring sampling events will occur in the second and fourth quarter of 2018, and will consist of sampling, validation of data, and comparative statistics.

3.0 GROUNDWATER MONITORING ANALYTICAL PROGRAM STATUS

Analytical activities associated with the groundwater monitoring program are described below.

3.1 Collected Samples

Samples for the baseline period were collected by field staff from Minnesota Valley Testing Laboratory (MVTL) between September 2015 and August 2017. Nine baseline samples were collected for each location. Precise dates vary between locations, and can be found in Tables 2 through 20. Additionally, the first detection monitoring event was collected in October 2017 by field staff from MVTL. Results from the first detection monitoring event are shown on Tables 2 through 20.

Samples were collected using low-flow methodology with dedicated bladder pumps. The sampling procedures and analytical test methods are in accordance with EPA accepted procedures.

3.1.1 Groundwater Elevation and Flow Rate

Groundwater elevations were measured in each well during each sampling event prior to purging. Elevation measurements can be found in Tables 2 through 20. Groundwater elevations and interpolated groundwater contours from the May 2017 baseline sampling event are shown on Figure 1. Groundwater elevations and interpolated groundwater contours from the October 2017 detection monitoring sampling event are shown on Figure 2. Based on both the May 2017 and October 2017 groundwater elevations/contours, the shallow groundwater at the CCR facilities generally follows surface topography, flowing to the east and north. The dates for groundwater information shown in the figures generally display site seasonal variability in groundwater levels between the spring/summer and fall/winter.

The groundwater flow rate across each facility was estimated with the equation $V_s = k \times i/n_e$, where:

- V_s is the groundwater flow rate, in feet per day (ft/day);
- k is the hydraulic conductivity, estimated from slug testing results from system wells, in ft/day;
- i is the hydraulic gradient, calculated based on groundwater elevations for each monitoring event, in feet per feet (ft/ft);
- n_e is the effective porosity, estimated to be 0.1 for intact glacial till, which can vary from 0.06 to 0.16 and is reflective of site soils (Duffield 2007).

Table 21 shows the range of groundwater flow rates calculated for each unit during the May 2017 and October 2017 groundwater sampling events. Groundwater flow rates are presented based on a range in measured hydraulic conductivity values.

Table 21. Groundwater Flow Rates

Unit	Date	
	May-17	**Oct-17**
Drains Pond	0.09 – 5.40 ft/day	0.09 – 5.54 ft/day
Upstream Raise 91 Upstream Raise 92	0.04 – 1.32 ft/day	0.03 – 1.31 ft/day
Southeast 16	0.03 - 0.05 ft/day	0.03 – 0.05 ft/day

3.2 Monitoring Data (Analytical Results)

Analytical results for the baseline period, including Appendix III and Appendix IV results for monitoring wells within the network, are shown on Tables 2 through 20. Tables 2 through 20 also include Appendix III detection monitoring results for the October 2017 monitoring event.

3.3 Comparative Statistical Analysis

Based on the timing of the first detection monitoring sample, comparative statistical analysis will occur within 90 days of data validation following receipt of the analytical data, during the first quarter of 2018. A full description of the steps that will be taken for the comparative statistical analysis can be found in the Coal Combustion Residuals Groundwater Statistical Method Certification, Great River Energy – Coal Creek Station (Golder 2017b).

4.0 PROGRAM TRANSITIONS

Beginning in the fourth quarter of 2017, the groundwater monitoring program at CCS transitioned from the baseline period to detection monitoring. During the baseline period, at least eight independent samples from each well within the program were collected and analyzed for the constituents listed in Appendix III and Appendix IV of the rule prior to October 17, 2017, as specified in 40 CFR 257.94(b). The first detection monitoring samples were collected in the fourth quarter of 2017.

4.1 Detection Monitoring

Samples for the detection monitoring program are collected on a semi-annual basis, beginning with the sample collected in the fourth quarter of 2017, as discussed in Section 3.1.

4.2 Assessment Monitoring

Results to date from the current CCR groundwater monitoring program at CCS do not trigger the need to implement assessment monitoring as described in 40 CFR 257.95. As such, no alternative source demonstrations have been made and there are no actions that are required as part of the assessment monitoring program.

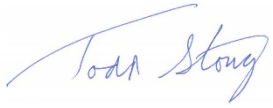
4.3 Corrective Measures and Assessment

Results to date from the CCR groundwater monitoring program at CCS do not trigger the need to assess or implement corrective measures. Since the CCR groundwater monitoring program does not require corrective measures, an assessment of corrective measures, as described in 40 CFR 257.96, has not been initiated and no actions are required.

5.0 CLOSING

This report presents the results from the baseline period and the first detection monitoring event of the CCR program. No comparative statistical analysis was performed in 2017 due to the date of sampling, receipt of analytical data, and finalization of data validation. Comparative statistics will occur within 90 days of finalization of data validation, during the first quarter of 2018. The groundwater monitoring and analytical procedures implemented meet the requirements of the CCR rule and are consistent with the approach described in the Groundwater Monitoring System Certification (Golder 2017a) and the Groundwater Monitoring Statistical Methods Certification (Golder 2017b). Results presented within this report support remaining in detection monitoring, and do not trigger assessment monitoring nor an assessment of corrective measures.

GOLDER ASSOCIATES INC.



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6.0 REFERENCES

Duffield, Glenn M., 2007. AQTESOLV for Windows Version 4.5 User's Guide.

Golder, 2017a. Coal Combustion Residuals Groundwater Monitoring System Certification, Great River Energy – Coal Creek Station. October 12, 2017.

Golder, 2017b. Coal Combustion Residuals Groundwater Monitoring Statistical Method Certification, Great River Energy – Coal Creek Station. October 12, 2017.

TABLES

Table 1: Monitoring Network Well Summary

Facility	Location	Well ID	Date Constructed	TOC Elevation (ft amsl)	Ground Surface Elevation (ft amsl)	Screen Interval (ft bgs)	Top of Screen Elevation (ft amsl)	Bottom of Screen Elevation (ft amsl)	Sand Pack Interval (ft bgs)	Geologic Unit(s) Completed In
Drains Pond System	Upgradient	MW-DP3	4/3/2015	1,932.7	1,929.6	9.0-19.0	1,920.6	1,910.6	6.0-19.0	fill, coal, clay
		MW-DP5 [1]	11/18/2015	1,939.2	*1,935.0*	18.0-43.0	1,919.0	1,892.0	16.0-43.0	sandy lean clay, clayey sand
	Downgradient	MW-DP1 [2]	6/10/2014	1,913.6	1,911.1	25.0-45.0	1,886.1	1,866.1	21.0-45.0	silt with sand, silty sand
		MW-DP2	4/3/2015	1,898.1	1,894.9	7.0-17.0	1,887.9	1,877.9	5.0-17.0	sandy lean clay, clay sand
		MW-DP4	4/3/2015	1,917.4	1,914.2	19.0-29.0	1,895.2	1,885.2	17.0-29.0	sandy clay, sand with silt/gravel, clay, clayey sand
Upstream Raise 91 and Upstream Raise 92	Upgradient	MW-75	7/19/1989	1,941.4	1,938.9	30.0-40.0	1,908.9	1,898.9	27.7-40	clayey silt, silty sand
		MW-16-6	7/14/2015	1,917.2	1,913.9	4.0-14.0	1,909.9	1,899.9	3.0-14.0	sandy lean clay, coal, lean clay
		MW-16-7	7/14/2015	1,889.1	1,886.6	22.0-32.0	1,864.6	1,854.6	20.0-32.0	fat clay, clayey sand, sandy clay
	Downgradient	MW-49	5/20/1988	1,905.9	1,903.6	9.85-19.85	1,893.8	1,883.8	4.85-19.85	sandy gravelly clay, sandy silt, shale (rock)
		MW-50	5/20/1988	1,902.6	1,901.1	12.88-22.88	1,888.2	1,878.2	7.88-22.88	f sand, grvly sand, sdy clay
		MW-51	5/20/1988	1,896.9	1,895.5	8.8-18.8	1,886.7	1,876.7	3.8-18.8	sand with silt and gravel
		MW-9	10/28/1979	1,897.7	1,894.7	43-53	1,851.7	1,841.7	20-55	sand
		MW-10	11/2/1979	1,897.8	1,894.8	15-25	1,879.8	1,869.8	13-25	sand
		MW-12	10/28/1979	1,882.1	1,879.1	74-78	1,805.1	1,801.1	67-88	sand
		MW-13	10/28/1979	1,882.6	1,879.6	14-55	1,865.6	1,824.6	44-56	sand
		MW-14	10/28/1979	1,882.3	1,879.3	15-20	1,864.3	1,859.3	14-21	sand
		MW-16-1	10/31/2007	1,879.0	1,875.6	6.5-11.5	1,869.1	1,864.1	4.5-11.5	silty sand
Southeast Section 16 Facility	Upgradient	MW-42	5/28/1986	1,881.6	1,878.8	9.4-14.4	1,869.4	1,864.4	9-14.4	silty sand, lean clay
		MW-72	7/18/1989	1,884.6	1,882.4	7.5-17.5	1,874.9	1,864.9	6.5-23.0	silty clay, silty sand
	Downgradient	MW-15	11/7/1979	1,879.9	1,876.9	10-20	1,866.9	1,856.9	9-20	sand, clay till
		MW-16-2	10/31/2007	1,880.5	1,877.7	7-12	1,870.7	1,865.7	5-12	sandy lean clay
		MW-16-3	10/31/2007	1,877.9	1,875.0	7-12	1,868.0	1,863.0	5-12	sandy lean clay
		MW-16-4	10/31/2007	1,877.4	1,874.5	7-17	1,867.5	1,857.5	5-17	sandy lean clay
		MW-16-5	10/31/2007	1,879.9	1,876.5	6.5-11.5	1,870.0	1,865.0	4.5-11.5	sand with silt and gravel

Notes:
TOC: top of casing
ft amsl: feet above mean sea level
ft bgs: feet below ground surface
1. For MW-DP5, the ground surface elevation is taken from the original bore log, but is inconsistent with the available survey for the top of casing.
2. For MW-DP1 only the top of casing elevation was provided. The PVC riser was assumed to be 2.5 ft above ground surface.
Well construction measurements are from the original bore log, well data sheet, or well construction form.
For some wells, elevations have been updated with more recent survey information than the original driller's logs.

Table 2: Sample Results Summary Table - MW-DP3 (Upgradient, Drains Pond System)

		MW-DP3									
		Baseline Period									Detection Monitoring
	Units	15-Sep-15	4-Nov-15	8-Mar-16	14-Jun-16	2-Aug-16	26-Oct-16	15-Feb-17	2-May-17	13-Jun-17	16-Oct-17
Water Elevation	ft AMSL	1922.4	1921.9	1920.8	1922.2	1922.0	1921.5	1921.4	1921.6	1921.2	1920.9
Appendix III Parameters											
Boron	mg/L	0.80	0.70	0.61	0.61	0.57	0.63	0.67	0.60	0.55	0.61
Calcium	mg/L	295	279	253	241	237	249	250	245	261	246
Chloride	mg/L	13.6	19.8	11.7	9.7	8.6	9.3	13.1	13.3	11.1	10.6
Fluoride	mg/L	0.11	0.13	0.11	0.11	0.11	0.12	0.13	0.13	0.12	< 0.10
pH, Field	s.u.	6.26	6.28	6.35	6.19	6.28	6.38	6.4	6.45	6.36	6.31
Sulfate	mg/L	1270	1260	1340	1320	1230	1290	1140	1050	1090	1080
Total Dissolved Solids	mg/L	2350	2350	2310	2260	2330	2210	2170	2240	2260	2100
Appendix IV Parameters											
Antimony	mg/L	<0.001	<0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	0.0126	0.0061	0.0031	< 0.002	< 0.002	< 0.002	0.0044	< 0.002	< 0.002	---
Barium	mg/L	0.68	0.3926	0.0633	0.0588	0.0552	0.0488	0.179	0.0589	0.0572	---
Beryllium	mg/L	0.0029	<0.0005	<0.001 ^	< 0.0005	< 0.0005	< 0.0005	0.0006	< 0.0005	< 0.0005	---
Cadmium	mg/L	0.0014	0.001	<0.0005	< 0.0005	< 0.0005	< 0.0005	0.001	< 0.0005	< 0.0005	---
Chromium	mg/L	<0.01 ^	0.0278	<0.01 ^	< 0.002	< 0.002	< 0.002	0.012	< 0.002	< 0.002	---
Cobalt	mg/L	0.022	0.0119	0.0022	< 0.002	< 0.002	< 0.002	0.0053	0.0034	0.0028	---
Fluoride	mg/L	0.11	0.13	0.11	0.11	0.11	0.12	0.13	0.13	0.12	---
Lead	mg/L	0.037	0.0154	0.001	0.0008	0.0008	0.0015	0.0099	0.0013	0.001	---
Lithium	mg/L	0.23	0.2	0.18	0.18	0.16	0.16	0.2	0.17	0.17	---
Mercury	mg/L	<0.0002	<0.0002	<0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	<0.01 ^	<0.005 ^	<0.01 ^	< 0.025 ^	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Radium 226	pCi/L	<1	1.3 ± 0.2	<1	0.8 ± 0.1	1.1 ± 0.2	0.8 ± 0.2	1.0 ± 0.2	1.4 ± 0.2	0.5 ± 0.1	---
Radium 228	pCi/L	<2	<2	<2	< 1	< 1	< 2	< 2	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	<2	<2	<2	< 1	1.1 ± 0.2	< 2	< 2	< 2	< 2	---
Selenium	mg/L	<0.002	0.0023	<0.002	< 0.002	< 0.002	< 0.002	< 0.01 ^	< 0.01 ^	< 0.005 ^	---
Thallium	mg/L	<0.0005	<0.0005	<0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 3: Sample Results Summary Table - MW-DP5 (Upgradient, Drains Pond System)

		MW-DP5									
		Baseline Period									Detection Monitoring
	Units	**8-Mar-16**	**14-Jun-16**	**2-Aug-16**	**26-Oct-16**	**15-Feb-17**	**2-May-17**	**13-Jun-17**	**26-Jul-17**	**24-Aug-17**	**17-Oct-17**
Water Elevation	ft AMSL	1914.9	1914.6	1914.4	1914.6	1914.5	1915.6	1915.4	1914.8	1914.8	1914.7
Appendix III Parameters											
Boron	mg/L	<0.50 @	<0.50 @	< 0.20 @	<0.50 @	< 0.20 @	< 0.20 @	< 0.20 @	<0.50 @	<0.50 @	<0.50 @
Calcium	mg/L	330	298	289	311	287	276	312	294	327	292
Chloride	mg/L	83.5	84.8	82	83.9	77.9	78.2	77.2	76.7	79.9	70.7
Fluoride	mg/L	0.24	0.26	0.23	0.24	0.26	0.23	0.24	0.22	0.23	0.24
pH, Field	s.u.	7.16	7.05	7.09	7.22	7.23	7.23	7.2	7.19	7.18	7.19
Sulfate	mg/L	3530	3270	3160	3140	3410	4520	3990	3260	2970	2890
Total Dissolved Solids	mg/L	5410	5070	5200	5270	5260	5310	5290	5430	5290	5210
Appendix IV Parameters											
Antimony	mg/L	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	0.0098	0.0038	0.0036	0.0038	0.0027	< 0.002	0.0027	0.0029	0.0025	---
Barium	mg/L	0.0456	0.0387	0.0269	0.0264	0.0223	0.0177	0.0162	0.0186	0.015	---
Beryllium	mg/L	<0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Cadmium	mg/L	0.001	0.0006	< 0.0005	0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Chromium	mg/L	<0.01 ^	0.007	0.0046	0.0046	0.0035	0.003	0.0023	0.0033	0.0023	---
Cobalt	mg/L	0.0031	0.0021	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Fluoride	mg/L	0.24	0.26	0.23	0.24	0.26	0.23	0.24	0.22	0.23	---
Lead	mg/L	0.0024	0.0018	0.0014	0.0017	< 0.002 ^	0.0023	0.0006	0.001	< 0.001 ^	---
Lithium	mg/L	<0.50 @	0.48	0.42	<0.50 @	0.5	0.46	0.47	<0.50 @	<0.50 @	---
Mercury	mg/L	<0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	<0.01 ^	< 0.025 ^	0.0038	0.0029	0.0026	< 0.002	0.0026	0.0022	0.0024	---
Radium 226	pCi/L	<1	0.2 ± 0.1	0.3 ± 0.2	0.7 ± 0.2	0.3 ± 0.1	0.4 ± 0.1	< 0.2	0.3 ± 0.1	0.2 ± 0.1	---
Radium 228	pCi/L	<2	< 1	< 1	< 2	< 2	< 2	< 2	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	<2	< 1	< 1	< 2	< 2	< 2	< 2	< 2	< 2	---
Selenium	mg/L	0.4408	0.4044	0.4506	0.4228	0.3634	0.3886	0.4072	0.3732	0.316	---
Thallium	mg/L	<0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).
@ = Analyte required a dilution due to sample matrix, resulting in an elevated RL.

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 4: Sample Results Summary Table - MW-DP1 (Downgradient, Drains Pond System)

		MW-DP1									
		Baseline Period									Detection Monitoring
	Units	**14-Sep-15**	**4-Nov-15**	**8-Mar-16**	**14-Jun-16**	**2-Aug-16**	**26-Oct-16**	**15-Feb-17**	**3-May-17**	**13-Jun-17**	**17-Oct-17**
Water Elevation	ft AMSL	1885.5	1884.7	1884.1	1884.2	1883.7	1883.3	1883.3	1884.6	1884.2	1882.9
Appendix III Parameters											
Boron	mg/L	1.6	1.11	0.98	0.78	0.74	0.88	0.82	0.79	0.71	0.87
Calcium	mg/L	385	157	147	89	83.6	173	124	117	157	74.9
Chloride	mg/L	4.4	9.8	2.3	35.2	14.6	8	7.3	12.7	8.6	2.4
Fluoride	mg/L	0.29	0.28	0.28	0.26	0.26	0.29	0.3	0.26	0.28	0.29
pH, Field	s.u.	7.28	7.27	7.36	7.22	7.28	7.4	7.46	7.32	7.38	7.41
Sulfate	mg/L	465	500	447	1330	846	715	688	665	593	423
Total Dissolved Solids	mg/L	1300	1370	1250	2350	1760	1340	1430	1660	1480	1280
Appendix IV Parameters											
Antimony	mg/L	<0.005 ^	<0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	0.087	0.0373	0.0195	0.0065	0.0032	0.0068	0.0072	0.0045	< 0.002	---
Barium	mg/L	3.66	1.374	0.7138	0.2278	0.0918	0.2407	0.2948	0.1698	0.0578	---
Beryllium	mg/L	0.012	0.0057	0.003	0.0009	< 0.0005	0.0011	0.0013	0.0007	< 0.0005	---
Cadmium	mg/L	0.0048	0.0016	0.0012	0.001	0.0006	0.0009	0.0018	0.0008	< 0.0005	---
Chromium	mg/L	0.49	0.2021	0.1149	0.0366	0.0116	0.0323	0.0412	0.0238	0.0055	---
Cobalt	mg/L	0.1771	0.067	0.0342	0.0094	0.0034	0.011	0.0123	0.0066	< 0.0020	---
Fluoride	mg/L	0.29	0.28	0.28	0.26	0.26	0.29	0.3	0.26	0.28	---
Lead	mg/L	0.1698	0.0584	0.0306	0.0076	0.003	0.0092	0.0115	0.0058	0.0014	---
Lithium	mg/L	0.49	0.24	0.21	0.16	0.13	0.17	0.18	0.16	0.15	---
Mercury	mg/L	<0.0002	<0.0002	<0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	<0.005 ^	<0.005 ^	<0.01 ^	< 0.025 ^	< 0.002	< 0.002	< 0.002	< 0.002	0.002	---
Radium 226	pCi/L	2.4 ± 0.4	1.4 ± 0.2	1.4 ± 0.2	< 0.2	1.0 ± 0.2	0.7 ± 0.1	0.5 ± 0.1	0.9 ± 0.2	0.5 ± 0.1	---
Radium 228	pCi/L	5.0 ± 2.3	<2	<2	< 1	< 1	< 2	< 2	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	7.4 ± 2.7	<2	<2	< 1	1.0 ± 0.2	< 2	< 2	< 2	< 2	---
Selenium	mg/L	0.0187	0.0043	0.0097	< 0.0020	< 0.002	< 0.002	< 0.01 ^	0.0114	0.0081	---
Thallium	mg/L	0.0013	0.0007	<0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 5: Sample Results Summary Table - MW-DP2 (Downgradient, Drains Pond System)

		MW-DP2									
		Baseline Period									Detection Monitoring
	Units	**14-Sep-15**	**4-Nov-15**	**8-Mar-16**	**14-Jun-16**	**2-Aug-16**	**26-Oct-16**	**15-Feb-17**	**3-May-17**	**13-Jun-17**	**17-Oct-17**
Water Elevation	ft AMSL	1881.7	1881.3	1880.8	1880.7	1880.5	1880.5	1880.5	1881.1	1880.7	1880.5
Appendix III Parameters											
Boron	mg/L	2.52	2.39	1.87	1.74	1.78	2.2	1.75	1.48	1.5	2.06
Calcium	mg/L	243	242	226	215	228	253	271	266	290	286
Chloride	mg/L	39.7	52	38.6	39.5	40.4	46	55.6	59.2	58.6	56.3
Fluoride	mg/L	1.25	1.31	1.23	1.23	1.18	1.2	1.15	1.02	1.05	1.18
pH, Field	s.u.	6.9	6.83	6.89	6.76	6.9	6.94	6.92	6.85	6.89	6.86
Sulfate	mg/L	1570	1470	1560	1610	1600	1670	1650	1590	1740	1490
Total Dissolved Solids	mg/L	2850	2850	2970	2800	2910	3080	3150	3270	3300	3310
Appendix IV Parameters											
Antimony	mg/L	< 0.005 ^	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	0.0067	0.0089	0.0032	< 0.002	0.0043	0.0021	< 0.002	< 0.002	< 0.002	---
Barium	mg/L	0.23	0.3164	0.0464	0.0539	0.1044	0.063	0.0425	0.0282	0.033	---
Beryllium	mg/L	0.001	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Cadmium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0011	< 0.0005	< 0.0005	< 0.0005	---
Chromium	mg/L	0.0158	0.0189	< 0.01 ^	< 0.002	0.0083	0.004	< 0.002	< 0.002	< 0.002	---
Cobalt	mg/L	0.0065	0.0079	< 0.002	< 0.002	0.0032	0.0023	< 0.002	< 0.002	< 0.002	---
Fluoride	mg/L	1.25	1.31	1.23	1.23	1.18	1.2	1.15	1.02	1.05	---
Lead	mg/L	0.0107	0.0131	0.0013	0.0012	0.0042	0.002	< 0.002 ^	< 0.0005	< 0.0005	---
Lithium	mg/L	0.25	0.24	0.24	0.22	0.21	0.24	0.29	0.25	0.25	---
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	< 0.005 ^	< 0.005 ^	< 0.01 ^	< 0.025 ^	0.0034	0.0035	0.0028	0.0023	0.0024	---
Radium 226	pCi/L	< 1	< 1	< 1	0.3 ± 0.1	0.6 ± 0.2	1.1 ± 0.2	< 0.2	0.3 ± 0.1	< 0.2	---
Radium 228	pCi/L	< 2	< 2	< 2	< 1	1.2 ± 3.2	< 2	< 2	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	< 2	< 2	< 2	< 1	1.8 ± 3.4	< 2	< 2	< 2	< 2	---
Selenium	mg/L	0.0026	0.0022	< 0.002	< 0.002	< 0.002	< 0.002	< 0.01 ^	< 0.01 ^	< 0.005 ^	---
Thallium	mg/L	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 6: Sample Results Summary Table - MW-DP4 (Downgradient, Drains Pond System)

		MW-DP4									
		Baseline Period									Detection Monitoring
	Units	**14-Sep-15**	**4-Nov-15**	**8-Mar-16**	**14-Jun-16**	**2-Aug-16**	**26-Oct-16**	**15-Feb-17**	**3-May-17**	**13-Jun-17**	**17-Oct-17**
Water Elevation	ft AMSL	1898.5	1897.2	1897.4	1896.8	1897.7	1896.0	1896.5	1898.0	1896.7	1894.9
Appendix III Parameters											
Boron	mg/L	0.41	0.33	0.35	0.37	0.48	0.34	0.37	0.37	0.3	< 0.5 @
Calcium	mg/L	280	284	281	278	262	278	270	280	325	308
Chloride	mg/L	41.4	44	39.5	40.9	48.6	40.2	42.9	50.9	56	53.8
Fluoride	mg/L	0.14	0.13	0.14	0.16	0.19	0.16	0.16	0.15	0.14	0.11
pH, Field	s.u.	6.97	6.94	6.98	6.87	7.03	7.06	7.08	7.03	7.03	7.04
Sulfate	mg/L	2490	2340	2400	2300	2810	2480	2500	2270	2710	2320
Total Dissolved Solids	mg/L	4040	3930	3940	4000	4590	3820	3810	4350	4400	4290
Appendix IV Parameters											
Antimony	mg/L	< 0.005 ^	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	0.0138	0.0113	0.0051	< 0.002	< 0.002	< 0.002	0.003	< 0.002	< 0.002	---
Barium	mg/L	0.0404	0.0306	0.0322	0.0287	0.0263	0.024	0.0792	0.0255	0.0258	---
Beryllium	mg/L	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Cadmium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Chromium	mg/L	0.0029	< 0.002	< 0.01 ^	< 0.002	< 0.002	< 0.002	0.0054	< 0.002	< 0.002	---
Cobalt	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.0033	< 0.002	< 0.002	---
Fluoride	mg/L	0.14	0.13	0.14	0.16	0.19	0.16	0.16	0.15	0.14	---
Lead	mg/L	0.0012	0.0006	0.0008	0.0007	0.0006	< 0.001 ^	0.0044	< 0.0005	0.0014	---
Lithium	mg/L	0.36	0.34	0.36	0.34	0.31	0.3	0.41	0.33	0.34	---
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	< 0.005 ^	< 0.005 ^	< 0.01 ^	< 0.025 ^	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Radium 226	pCi/L	< 1	< 1	< 1	< 0.2	0.2 ± 0.1	< 0.2	0.4 ± 0.1	0.3 ± 0.1	< 0.2	---
Radium 228	pCi/L	< 2	< 2	< 2	< 1	< 1	< 2	< 2	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	< 2	< 2	< 2	< 1	< 1	< 2	< 2	< 2	< 2	---
Selenium	mg/L	0.2395	0.2569	0.2258	0.272	0.276	0.2218	0.2167	0.209	0.2553	---
Thallium	mg/L	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).
@ = Analyte required a dilution due to sample matrix, resulting in an elevated RL.

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 7: Sample Results Summary Table - MW-75 (Upgradient, Upstream Raise 91 and Upstream Raise 92)

		MW-75									
		Baseline Period									Detection Monitoring
	Units	16-Sep-15	5-Nov-15	8-Mar-16	15-Jun-16	2-Aug-16	31-Oct-16	12-Feb-17	2-May-17	13-Jun-17	16-Oct-17
Water Elevation	ft AMSL	1916.5	1916.0	1914.8	1914.9	1914.8	1915.0	1914.1	1916.2	1915.6	1914.0
Appendix III Parameters											
Boron	mg/L	0.26	0.21	0.21	0.17	0.23	0.21	0.18	0.2	0.18	0.23
Calcium	mg/L	9	6	6.3	6.2	5.8	5.6	6	4.9	5.4	4.9
Chloride	mg/L	2.2	1.9	1.9	1.5	1.2	1.5	1.3	1.5	1.8	1.1
Fluoride	mg/L	0.45	0.45	0.49	0.52	0.48	0.48	0.55	0.48	0.47	0.5
pH, Field	s.u.	7.98	7.93	8.12	8.04	8.07	8.1	8.18	8.16	8.15	8.07
Sulfate	mg/L	80.1	69.9	79.6	68.7	74.2	72.8	74.1	70.8	75.1	56.5
Total Dissolved Solids	mg/L	841	857	820	823	849	811	837	811	870	2630
Appendix IV Parameters											
Antimony	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	< 0.0026 ^	< 0.002	< 0.002	< 0.002	< 0.002	< 0.005 ^	< 0.002	< 0.002	< 0.002	---
Barium	mg/L	0.0478	0.0371	0.0369	0.0349	0.0363	0.0356	0.0338	0.0312	0.0365	---
Beryllium	mg/L	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Cadmium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0008	< 0.0005	< 0.0005	< 0.0005	---
Chromium	mg/L	< 0.01 ^	< 0.005 ^	< 0.01 ^	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Cobalt	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Fluoride	mg/L	0.45	0.45	0.49	0.52	0.48	0.48	0.55	0.48	0.47	---
Lead	mg/L	0.0012	< 0.005 ^	< 0.0005	< 0.0005	< 0.0005	< 0.002 ^	< 0.0005	< 0.0005	< 0.0005	---
Lithium	mg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	---
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	0.0041	< 0.005 ^	< 0.01 ^	< 0.025 ^	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Radium 226	pCi/L	< 1	< 1	< 1	< 0.2	< 0.2	< 0.2	0.3 ± 0.1	0.2 ± 0.1	0.3 ± 0.1	---
Radium 228	pCi/L	< 2	< 2	< 2	< 2	3.4 ± 3.0	< 2	< 2	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	< 2	< 2	< 2	< 2	3.4 ± 3.0	< 2	< 2	< 2	< 2	---
Selenium	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.01 ^	< 0.01 ^	< 0.005 ^	---
Thallium	mg/L	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	0.0007	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 8: Sample Results Summary Table - MW-16-6 (Upgradient, Upstream Raise 91 and Upstream Raise 92)

		MW-16-6									
		Baseline Period									Detection Monitoring
	Units	**4-Nov-15**	**17-Mar-16**	**22-Jun-16**	**5-Aug-16**	**1-Nov-16**	**15-Feb-17**	**1-May-17**	**15-Jun-17**	**26-Jul-17**	**16-Oct-17**
Water Elevation	ft AMSL	1912.0	1911.2	1912.0	1911.6	1911.3	1910.9	1912.1	1911.6	1911.2	1910.7
Appendix III Parameters											
Boron	mg/L	5.31	4.3	4.69	4.63	5.4	4.49	3.98	3.98	4.7	5.76
Calcium	mg/L	550	492	505	505	540	570	490	505	550	545
Chloride	mg/L	42.4	40.8	35.5	35.1	41.9	41.8	42.1	42.2	44.6	43.7
Fluoride	mg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
pH, Field	s.u.	5.71	5.76	5.72	5.69	5.67	5.68	5.77	5.75	5.77	5.73
Sulfate	mg/L	3460	3390	4250	3860	3380	3870	2940	3360	3810	3350
Total Dissolved Solids	mg/L	5600	5680	5500	5540	5370	5650	5600	5600	5920	5810
Appendix IV Parameters											
Antimony	mg/L	0.0011	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	0.0037	< 0.01 ^	< 0.002	< 0.002	< 0.005 ^	0.0021	< 0.002	< 0.002	< 0.002	---
Barium	mg/L	0.0612	0.2041	0.0421	0.04	0.0346	0.051	0.0272	0.0296	0.0272	---
Beryllium	mg/L	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Cadmium	mg/L	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Chromium	mg/L	< 0.005 ^	0.0116	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Cobalt	mg/L	0.0025	0.0036	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Fluoride	mg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	---
Lead	mg/L	0.0009	0.0035	< 0.001 ^	< 0.0005	< 0.001 ^	0.0006	< 0.0005	< 0.0005	< 0.0005	---
Lithium	mg/L	0.54	0.62	0.57	0.57	0.58	0.64	0.54	0.58	0.6	---
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	0.0058	< 0.005 ^	< 0.025 ^	0.0037	0.0029	0.0022	0.0022	< 0.005 ^	0.0025	---
Radium 226	pCi/L	< 1	2.0 ± 0.4	< 0.4	0.4 ± 0.1	< 0.2	< 0.2	< 0.2	< 0.2	0.2 ± 0.1	---
Radium 228	pCi/L	< 2	< 2	3.6 ± 2.8	< 1	< 2	< 2	< 2	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	< 2	2.0 ± 0.4	3.6 ± 2.8	< 1	< 2	< 2	< 2	< 2	< 2	---
Selenium	mg/L	0.0319	0.0278	< 0.025 ^	0.0208	0.0143	0.0128	< 0.01 ^	0.0138	0.0155	---
Thallium	mg/L	0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 9: Sample Results Summary Table - MW-16-7 (Upgradient, Upstream Raise 91 and Upstream Raise 92)

		MW-16-7									
		Baseline Period									Detection Monitoring
	Units	16-Sep-15	4-Nov-15	9-Mar-16	22-Jun-16	5-Aug-16	1-Nov-16	16-Feb-17	1-May-17	15-Jun-17	16-Oct-17
Water Elevation	ft AMSL	1878.6	1878.5	1878.4	1879.9	1878.6	1878.0	1879.0	1880.5	1878.9	1876.6
Appendix III Parameters											
Boron	mg/L	0.11	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Calcium	mg/L	355	354	430	320	362	356	363	331	350	359
Chloride	mg/L	81.8	71.8	74.6	78.4	76.4	77.9	84.2	74.4	72.5	90.8
Fluoride	mg/L	0.11	0.12	0.10	< 0.10	0.11	0.10	0.12	0.11	0.10	0.11
pH, Field	s.u.	6.89	6.85	6.73	6.9	6.88	6.82	6.94	6.91	6.93	6.9
Sulfate	mg/L	2460	2170	2380	2710	2490	2300	2540	2020	2360	2550
Total Dissolved Solids	mg/L	4240	3790	3900	3730	3880	4010	3860	4180	3880	4080
Appendix IV Parameters											
Antimony	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	0.0103	0.0041	< 0.005 ^	< 0.002	< 0.002	< 0.005 ^	< 0.002	< 0.002	< 0.002	---
Barium	mg/L	0.0999	0.0516	0.091	0.0831	0.0582	0.0328	0.0716	0.0271	0.0304	---
Beryllium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Cadmium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Chromium	mg/L	< 0.01 ^	< 0.005 ^	< 0.01 ^	0.0027	< 0.002	< 0.002	0.0042	< 0.002	< 0.002	---
Cobalt	mg/L	0.0038	0.0028	0.004	0.0051	0.0025	< 0.002	0.0056	< 0.002	< 0.002	---
Fluoride	mg/L	0.11	0.12	0.10	< 0.10	0.11	0.10	0.12	0.11	0.10	---
Lead	mg/L	0.0025	0.0013	0.0031	0.0022	0.0013	< 0.001 ^	0.0031	0.0006	0.0006	---
Lithium	mg/L	0.46	0.43	0.47	0.41	0.41	0.42	0.48	0.44	0.42	---
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	< 0.002	< 0.005 ^	< 0.01 ^	< 0.025 ^	< 0.002	< 0.002	< 0.002	< 0.002	< 0.005 ^	---
Radium 226	pCi/L	< 1	< 1	< 1	0.5 ± 0.1	0.9 ± 0.2	0.3 ± 0.1	0.3 ± 0.1	0.4 ± 0.1	0.3 ± 0.1	---
Radium 228	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 1	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 1	< 2	< 2	---
Selenium	mg/L	0.1828	0.1784	0.1601	0.1708	0.178	0.1978	0.1808	0.1712	0.1807	---
Thallium	mg/L	< 0.0005	< 0.0005	< 0.001 ^	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 10: Sample Results Summary Table - MW-49 (Downgradient, Upstream Raise 91 and Upstream Raise 92)

		MW-49									
		Baseline Period									Detection Monitoring
	Units	**16-Sep-15**	**4-Nov-15**	**8-Mar-16**	**15-Jun-16**	**2-Aug-16**	**31-Oct-16**	**14-Feb-17**	**2-May-17**	**12-Jun-17**	**16-Oct-17**
Water Elevation	ft AMSL	1888.0	1888.0	1887.9	1887.7	1887.6	1887.8	1887.6	1888.5	1888.0	1887.7
Appendix III Parameters											
Boron	mg/L	5.4	5.2	4.8	4.74	4.89	5.17	4.94	4.47	4.48	5.12
Calcium	mg/L	207	201	207	196	190	187	207	190	207	195
Chloride	mg/L	60.8	60.3	62	67.1	62.5	64.3	65.1	61.4	59.2	62.3
Fluoride	mg/L	0.18	0.19	0.18	0.18	0.18	0.18	0.2	0.18	0.18	0.22
pH, Field	s.u.	6.94	6.9	6.99	6.95	7.03	7.05	7.31	7.1	7.06	6.99
Sulfate	mg/L	1340	1280	1110	1300	1390	1340	1170	992	1260	1240
Total Dissolved Solids	mg/L	2700	2680	2650	2560	2620	2600	2610	2630	2650	2700
Appendix IV Parameters											
Antimony	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	0.0037	0.0023	0.0028	0.0025	0.0025	< 0.005 ^	0.0027	0.0022	0.0023	---
Barium	mg/L	0.0292	0.0262	0.0266	0.0234	0.0262	0.0268	0.0262	0.0264	0.0256	---
Beryllium	mg/L	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Cadmium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Chromium	mg/L	< 0.01 ^	< 0.005 ^	< 0.01 ^	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Cobalt	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Fluoride	mg/L	0.18	0.19	0.18	0.18	0.18	0.18	0.2	0.18	0.18	---
Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.002 ^	< 0.0005	< 0.0005	< 0.0005	---
Lithium	mg/L	0.23	0.22	0.24	0.21	0.2	0.2	0.26	0.22	0.21	---
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	0.0102	< 0.005 ^	< 0.01 ^	< 0.025 ^	0.0021	< 0.002	0.0023	0.0024	0.0022	---
Radium 226	pCi/L	< 1	< 1	< 1	< 0.2	< 0.2	< 0.2	0.2 ± 0.1	0.3 ± 0.1	< 0.2	---
Radium 228	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 2	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 2	< 2	< 2	---
Selenium	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.01 ^	< 0.01 ^	< 0.005 ^	---
Thallium	mg/L	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 11: Sample Results Summary Table - MW-51 (Downgradient, Upstream Raise 91 and Upstream Raise 92)

		MW-51									
		Baseline Period									Detection Monitoring
	Units	16-Sep-15	4-Nov-15	8-Mar-16	15-Jun-16	2-Aug-16	31-Oct-16	14-Feb-17	2-May-17	12-Jun-17	16-Oct-17
Water Elevation	ft AMSL	1880.2	1879.8	1879.3	1880.0	1879.7	1879.3	1878.9	1881.5	1880.9	1879.5
Appendix III Parameters											
Boron	mg/L	3.76	3.35	3.02	3.62	2.84	3.51	5.65	3.26	3.19	3.56
Calcium	mg/L	311	301	296	300	275	268	369	210	215	240
Chloride	mg/L	70	67.8	72.9	76.2	71.7	73.8	145	45.7	39.8	49.6
Fluoride	mg/L	0.34	0.37	0.35	0.36	0.34	0.38	0.5	0.36	0.36	0.36
pH, Field	s.u.	6.92	6.88	7.05	6.95	6.98	7.06	7.31	7.11	7.04	6.98
Sulfate	mg/L	3380	3020	3230	3120	3280	3150	4430	2130	2430	2770
Total Dissolved Solids	mg/L	5430	5470	5380	5060	5060	5230	6220	4500	4280	4830
Appendix IV Parameters											
Antimony	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	0.003	< 0.002	0.0021	< 0.002	< 0.002	< 0.005 ^	< 0.002	< 0.002	< 0.002	---
Barium	mg/L	0.0312	0.0287	0.0229	0.0215	0.0247	0.0247	0.0281	0.0166	0.0163	---
Beryllium	mg/L	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Cadmium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Chromium	mg/L	< 0.01 ^	< 0.005 ^	< 0.01 ^	< 0.002	< 0.002	0.0021	< 0.002	< 0.002	< 0.002	---
Cobalt	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Fluoride	mg/L	0.34	0.37	0.35	0.36	0.34	0.38	0.5	0.36	0.36	---
Lead	mg/L	< 0.0005	< 0.0005	0.0008	< 0.0005	< 0.0005	< 0.002 ^	< 0.0005	< 0.0005	< 0.0005	---
Lithium	mg/L	0.57	< 0.50	< 0.50 @	0.47	0.44	0.51	0.46	< 0.50 @	0.39	---
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	0.0069	0.006	< 0.01 ^	< 0.025 ^	0.0057	0.0066	0.0081	0.0041	0.0045	---
Radium 226	pCi/L	< 1	< 1	< 1	< 0.2	0.2 ± 0.1	< 0.2	0.3 ± 0.1	< 0.2	< 0.2	---
Radium 228	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 2	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 2	< 2	< 2	---
Selenium	mg/L	0.0196	0.0197	0.0169	0.0151	0.0166	0.0124	0.017	0.018	0.0191	---
Thallium	mg/L	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).
@ = Analyte required a dilution due to sample matrix, resulting in an elevated RL.

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 12: Sample Results Summary Table - MW-10 (Downgradient, Upstream Raise 91 and Upstream Raise 92)

		MW-10									
		Baseline Period									Detection Monitoring
	Units	**16-Sep-15**	**2-Nov-15**	**11-Mar-16**	**16-Jun-16**	**3-Aug-16**	**27-Oct-16**	**14-Feb-17**	**3-May-17**	**14-Jun-17**	**16-Oct-17**
Water Elevation	ft AMSL	1881.8	1881.5	1881.0	1871.5	1881.3	1880.9	1880.6	1882.5	1882.4	1881.2
Appendix III Parameters											
Boron	mg/L	2.95	2.38	1.81	1.93	1.86	2.46	2.16	2.21	2.05	2.84
Calcium	mg/L	310	272	257	246	235	251	242	253	278	322
Chloride	mg/L	20.3	16.8	18.1	15.6	13.6	15.9	15.8	17.4	16.9	22.4
Fluoride	mg/L	0.19	0.21	0.2	0.2	0.2	0.22	0.23	0.22	0.21	0.22
pH, Field	s.u.	6.74	6.77	6.87	6.78	6.78	6.77	6.95	6.86	6.86	6.81
Sulfate	mg/L	1240	1040	947	910	932	936	896	855	1010	1470
Total Dissolved Solids	mg/L	2630	2330	2140	2080	2160	1870	1950	2280	2470	2980
Appendix IV Parameters											
Antimony	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	< 0.0026 ^	< 0.01 ^	< 0.01 ^	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.005 ^	---
Barium	mg/L	0.0323	0.0246	0.0265	0.0244	0.0238	0.0247	0.0267	0.0301	0.03	---
Beryllium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Cadmium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	0.0007	< 0.0005	< 0.0005	< 0.0005	---
Chromium	mg/L	< 0.01 ^	< 0.002	< 0.01 ^	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Cobalt	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Fluoride	mg/L	0.19	0.21	0.2	0.2	0.2	0.22	0.23	0.22	0.21	---
Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	---
Lithium	mg/L	0.25	0.22	0.21	0.19	0.18	0.18	0.22	0.21	0.21	---
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	0.0037	< 0.01 ^	< 0.005 ^	< 0.005 ^	< 0.002	0.002	< 0.002	< 0.002	< 0.005 ^	---
Radium 226	pCi/L	< 1	< 1	< 1	< 0.2	< 0.2	1.2 ± 0.2	< 0.2	0.4 ± 0.1	< 0.2	---
Radium 228	pCi/L	< 2	< 2	< 2	< 1	< 1	< 1	< 2	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	< 2	< 2	< 2	< 1	< 1	1.2 ± 0.2	< 2	< 2	< 2	---
Selenium	mg/L	0.0052	< 0.002	< 0.002	< 0.025 ^	< 0.002	< 0.002	< 0.01 ^	< 0.01 ^	0.0113	---
Thallium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 13: Sample Results Summary Table - MW-16-1 (Downgradient, Upstream Raise 91 and Upstream Raise 92)

		MW-16-1									
		Baseline Period									Detection Monitoring
	Units	**17-Sep-15**	**2-Nov-15**	**11-Mar-16**	**16-Jun-16**	**3-Aug-16**	**27-Oct-16**	**14-Feb-17**	**3-May-17**	**14-Jun-17**	**16-Oct-17**
Water Elevation	ft AMSL	1871.9	1872.3	1871.9	1872.0	1870.8	1871.1	1871.9	1872.8	1871.4	1869.4
Appendix III Parameters											
Boron	mg/L	7.08	6.22	5.26	10.9	9.65	11.7	12.8	13.6	13.6	16.8
Calcium	mg/L	520	498	630	500	515	620	560	505	575	600
Chloride	mg/L	230	224	236	260	259	272	260	279	267	257
Fluoride	mg/L	0.25	0.26	0.18	0.46	0.35	0.32	0.28	0.32	0.29	0.27
pH, Field	s.u.	7.06	7.14	7.21	7.13	7.08	7.06	7.07	7.21	7.16	7.1
Sulfate	mg/L	1940	1980	2250	2970	2670	2790	2970	2860	2820	3050
Total Dissolved Solids	mg/L	3730	3770	3670	4440	3800	4270	4680	5020	4850	4980
Appendix IV Parameters											
Antimony	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	0.0056	< 0.01 ^	< 0.01 ^	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.005 ^	---
Barium	mg/L	0.0418	0.0281	0.0199	0.0206	0.0224	0.0212	0.0223	0.0175	0.0189	---
Beryllium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Cadmium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Chromium	mg/L	< 0.01 ^	< 0.002	< 0.01 ^	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Cobalt	mg/L	0.0046	0.0037	0.0026	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Fluoride	mg/L	0.25	0.26	0.18	0.46	0.35	0.32	0.28	0.32	0.29	---
Lead	mg/L	0.0006	< 0.0005	< 0.0005	< 0.001 ^	0.0006	< 0.001 ^	< 0.002 ^	< 0.0005	< 0.0005	---
Lithium	mg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20 @	< 0.20 @	< 0.20 @	---
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	0.0399	0.0376	0.0221	0.0482	0.0429	0.0373	0.0262	0.0367	0.0267	---
Radium 226	pCi/L	< 1	< 1	< 1	0.2 ± 0.1	0.2 ± 0.1	< 0.2	0.4 ± 0.1	< 0.2	< 0.2	---
Radium 228	pCi/L	< 2	< 2	< 2	< 1	< 1	< 2	< 2	2.5 ± 2.8	< 2	---
Radium 226 and 228 combined	pCi/L	< 2	< 2	< 2	< 1	< 1	< 2	< 2	2.5 ± 2.8	< 2	---
Selenium	mg/L	< 0.002	< 0.002	< 0.002	< 0.025 ^	0.0062	0.0158	0.0383	0.0446	0.0525	---
Thallium	mg/L	< 0.0005	0.0006	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).
@ = Analyte required a dilution due to sample matrix, resulting in an elevated RL.

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 14: Sample Results Summary Table - MW-72 (Upgradient, Southeast Section 16)

		MW-72									
		Baseline Period									Detection Monitoring
	Units	14-Sep-15	4-Nov-15	11-Mar-16	15-Jun-16	3-Aug-16	27-Oct-16	14-Feb-17	3-May-17	13-Jun-17	17-Oct-17
Water Elevation	ft AMSL	1878.3	1878.5	1880.8	1878.6	1878.2	1878.3	1881.4	1879.7	1877.7	1877.5
Appendix III Parameters											
Boron	mg/L	0.16	0.14	< 0.10	0.14	0.10	0.15	< 0.20 @	< 0.10	< 0.20 @	< 0.50 @
Calcium	mg/L	785	795	840	790	770	860	840	785	855	905
Chloride	mg/L	28.4	29.6	27.5	26.8	24.8	28.6	26	30	28.1	28.5
Fluoride	mg/L	0.24	0.25	0.23	0.23	0.24	0.26	0.25	0.20	0.22	0.21
pH, Field	s.u.	6.77	6.72	6.81	6.72	6.68	6.63	6.61	6.79	6.8	6.74
Sulfate	mg/L	2750	3230	2970	3150	3250	3080	3430	2860	2950	2870
Total Dissolved Solids	mg/L	4530	4590	4590	4740	4990	4880	5130	5070	5200	5160
Appendix IV Parameters											
Antimony	mg/L	< 0.005 ^	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	0.0149	0.0049	< 0.01 ^	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.005 ^	---
Barium	mg/L	0.0205	0.0239	0.0279	0.0222	0.0223	0.0222	0.0232	0.0203	0.0211	---
Beryllium	mg/L	< 0.002 ^	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Cadmium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Chromium	mg/L	< 0.002	< 0.005 ^	< 0.01 ^	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Cobalt	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Fluoride	mg/L	0.24	0.25	0.23	0.23	0.24	0.26	0.25	0.20	0.22	---
Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	---
Lithium	mg/L	0.14	0.13	0.13	0.14	0.13	0.15	< 0.20 @	0.12	< 0.20 @	---
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	< 0.01 ^	0.0085	< 0.005 ^	< 0.005 ^	0.0036	0.004	0.0036	0.0022	< 0.005 ^	---
Radium 226	pCi/L	< 1	< 1	< 1	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	---
Radium 228	pCi/L	< 2	< 2	< 2	< 1	1.9 ± 3.2	< 2	< 2	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	< 2	< 2	< 2	< 1	1.9 ± 3.2	< 2	< 2	< 2	< 2	---
Selenium	mg/L	0.2344	0.2494	0.2205	0.241	0.245	0.2404	0.185	0.1152	0.1947	---
Thallium	mg/L	< 0.002 ^	0.0013	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).
@ = Analyte required a dilution due to sample matrix, resulting in an elevated RL.

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 15: Sample Results Summary Table - MW-42 (Upgradient, Southeast Section 16)

		MW-42									
		Baseline Period									Detection Monitoring
	Units	16-Sep-15	4-Nov-15	10-Mar-16	20-Jun-16	3-Aug-16	31-Oct-16	13-Feb-17	4-May-17	14-Jun-17	17-Oct-17
Water Elevation	ft AMSL	1875.5	1876.3	1876.6	1876.2	1876.0	1876.4	1877.3	1876.3	1876.0	1875.3
Appendix III Parameters											
Boron	mg/L	1.67	1.27	1.05	1.09	1.12	1.36	0.83	0.75	0.71	5.31
Calcium	mg/L	262	265	259	267	255	219	297	226	216	240
Chloride	mg/L	19.4	21.1	20.6	21.6	16.8	17.2	20.7	20.5	17.8	19.1
Fluoride	mg/L	0.32	0.33	0.32	0.27	0.30	0.31	0.28	0.25	0.30	0.26
pH, Field	s.u.	7.18	7.18	7.41	7.23	7.17	7.31	7.32	7.39	7.38	7.29
Sulfate	mg/L	1560	1500	1580	1610	1420	1270	1690	1050	1120	1280
Total Dissolved Solids	mg/L	2640	2560	2500	2480	2510	2080	2710	2240	2090	2440
Appendix IV Parameters											
Antimony	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	< 0.0026 ^	< 0.002	< 0.005 ^	< 0.002	< 0.002	< 0.005 ^	< 0.002	< 0.002	< 0.002	---
Barium	mg/L	0.0515	0.0422	0.0381	0.0374	0.0379	0.0408	0.0572	0.0338	0.0354	---
Beryllium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Cadmium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Chromium	mg/L	< 0.01 ^	< 0.005 ^	< 0.01 ^	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Cobalt	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Fluoride	mg/L	0.32	0.33	0.32	0.27	0.30	0.31	0.28	0.25	0.30	---
Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.001 ^	0.0006	< 0.0005	< 0.0005	---
Lithium	mg/L	0.14	0.14	0.13	0.16	0.14	0.14	0.16	0.13	0.13	---
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	0.0039	< 0.005 ^	< 0.01 ^	< 0.005 ^	0.0032	0.0043	0.0031	0.0029	< 0.005 ^	---
Radium 226	pCi/L	< 1	< 1	< 1	< 0.4	< 0.2	1.1 ± 0.2	0.3 ± 0.1	< 0.2	< 0.2	---
Radium 228	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 2	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 2	< 2	< 2	---
Selenium	mg/L	< 0.002	< 0.002	< 0.002	< 0.025 ^	< 0.002	< 0.002	< 0.01 ^	< 0.01 ^	< 0.005 ^	---
Thallium	mg/L	< 0.0005	< 0.0005	< 0.001 ^	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 16: Sample Results Summary Table - MW-16-2 (Downgradient, Southeast Section 16)

		MW-16-2									
		Baseline Period									Detection Monitoring
	Units	**17-Sep-15**	**2-Nov-15**	**10-Mar-16**	**20-Jun-16**	**3-Aug-16**	**1-Nov-16**	**13-Feb-17**	**4-May-17**	**14-Jun-17**	**17-Oct-17**
Water Elevation	ft AMSL	1872.2	1872.5	1871.7	1872.1	1871.2	1871.4	1871.7	1873.3	1871.8	1869.9
Appendix III Parameters											
Boron	mg/L	11.1	10.7	8.98	10.6	11.2	10.9	10.1	9.93	9.17	11.1
Calcium	mg/L	446	466	535	389	414	390	441	386	372	410
Chloride	mg/L	172	169	197	164	163	162	175	165	168	166
Fluoride	mg/L	0.54	0.54	0.4	0.84	0.72	0.66	0.61	0.67	0.82	0.61
pH, Field	s.u.	6.97	7.04	7.16	7.16	7.02	7.13	7.17	7.19	7.2	7.15
Sulfate	mg/L	2400	2140	2500	2340	2730	2260	2150	1870	2560	2040
Total Dissolved Solids	mg/L	4030	4010	3940	3620	4030	3700	3700	3700	3650	3750
Appendix IV Parameters											
Antimony	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	0.0028	< 0.01 ^	< 0.005 ^	< 0.002	< 0.002	< 0.005 ^	0.0032	< 0.002	< 0.002	---
Barium	mg/L	0.0407	0.0283	0.0263	0.0194	0.018	0.0222	0.1046	0.021	0.0171	---
Beryllium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Cadmium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Chromium	mg/L	< 0.01 ^	0.002	< 0.01 ^	< 0.002	< 0.002	< 0.002	0.0037	< 0.002	< 0.002	---
Cobalt	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.0021	< 0.002	< 0.002	---
Fluoride	mg/L	0.54	0.54	0.4	0.84	0.72	0.66	0.61	0.67	0.82	---
Lead	mg/L	0.0007	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.002 ^	0.0026	< 0.0005	< 0.0005	---
Lithium	mg/L	0.13	0.12	< 0.10	0.12	0.11	0.12	0.13	0.12	0.11	---
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	0.004	< 0.01 ^	< 0.01 ^	< 0.005 ^	< 0.002	0.0022	< 0.002	< 0.002	< 0.005 ^	---
Radium 226	pCi/L	< 1	< 1	< 1	< 0.4	< 0.2	0.3 ± 0.1	< 0.2	0.2 ± 0.1	< 0.2	---
Radium 228	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 2	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 2	< 2	< 2	---
Selenium	mg/L	0.0062	0.0038	0.0022	< 0.025 ^	0.0075	0.0054	< 0.01 ^	< 0.01 ^	0.0078	---
Thallium	mg/L	< 0.0005	< 0.0005	< 0.001 ^	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 17: Sample Results Summary Table - MW-16-3 (Downgradient, Southeast Section 16)

		MW-16-3									
		Baseline Period									Detection Monitoring
	Units	**17-Sep-15**	**2-Nov-15**	**10-Mar-16**	**20-Jun-16**	**3-Aug-16**	**1-Nov-16**	**13-Feb-17**	**4-May-17**	**14-Jun-17**	**17-Oct-17**
Water Elevation	ft AMSL	1871.6	1871.8	1870.8	1871.6	1870.3	1870.6	1870.9	1872.6	1871.1	1869.0
Appendix III Parameters											
Boron	mg/L	20	19.4	16.4	17.4	17.2	21.2	18.5	17.5	17.8	20.5
Calcium	mg/L	491	425	535	420	412	412	432	414	418	396
Chloride	mg/L	437	634	629	679	566	579	518	588	624	528
Fluoride	mg/L	1.6	1.7	1.44	1.59	1.63	1.63	1.66	1.35	1.59	1.77
pH, Field	s.u.	6.95	7.05	7.16	7.05	6.98	7.1	7.15	7.06	7.07	7.09
Sulfate	mg/L	6000	4730	5590	5050	4800	5790	4850	4700	4650	3720
Total Dissolved Solids	mg/L	10300	9290	9260	8650	8320	8790	8940	8920	9230	8420
Appendix IV Parameters											
Antimony	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	0.0163	< 0.01 ^	< 0.005 ^	< 0.002	< 0.002	< 0.005 ^	< 0.002	< 0.002	< 0.004 +	---
Barium	mg/L	0.0237	0.018	0.0177	0.0168	0.019	0.0188	0.0186	0.0159	0.0177	---
Beryllium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Cadmium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Chromium	mg/L	< 0.01 ^	0.002	< 0.01 ^	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.004 +	---
Cobalt	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.004 +	---
Fluoride	mg/L	1.6	1.7	1.44	1.59	1.63	1.63	1.66	1.35	1.59	---
Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.002 ^	< 0.0005	< 0.0005	< 0.0005	---
Lithium	mg/L	< 0.50 @	< 0.50 @	< 0.50 @	< 0.50 @	< 0.50 @	< 0.50 @	< 0.50 @	< 0.50 @	< 0.50 @	---
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	0.0058	< 0.01 ^	< 0.01 ^	< 0.005 ^	0.0032	0.0034	0.0021	< 0.002	< 0.005 ^	---
Radium 226	pCi/L	< 1	< 1	< 1	< 0.4	< 0.2	< 0.2	0.4 ± 0.1	< 0.2	< 0.2	---
Radium 228	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 2	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 2	< 2	< 2	---
Selenium	mg/L	< 0.002	< 0.002	0.0023	< 0.025 ^	< 0.002	< 0.002	< 0.01 ^	< 0.01 ^	< 0.005 ^	---
Thallium	mg/L	0.0009	< 0.0005	< 0.001 ^	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).
@ = Analyte required a dilution due to sample matrix, resulting in an elevated RL.
+ = Analyte required a dilution due to internal standard response.

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 18: Sample Results Summary Table - MW-16-4 (Downgradient, Southeast Section 16)

		MW-16-4									
		Baseline Period									Detection Monitoring
	Units	**15-Sep-15**	**3-Nov-15**	**10-Mar-16**	**20-Jun-16**	**4-Aug-16**	**1-Nov-16**	**13-Feb-17**	**4-May-17**	**14-Jun-17**	**17-Oct-17**
Water Elevation	ft AMSL	1870.9	1871.2	1870.0	1871.3	1870.6	1870.3	1870.2	1871.9	1870.9	1868.9
Appendix III Parameters											
Boron	mg/L	0.74	0.67	0.61	0.71	0.56	0.72	0.46	0.38	0.35	0.75
Calcium	mg/L	472	460	510	364	430	442	446	266	360	457
Chloride	mg/L	35.9	32.1	30.6	42.8	28	30.4	30.9	34.1	36.8	32.2
Fluoride	mg/L	0.30	0.32	0.32	0.33	0.31	0.34	0.34	0.33	0.35	0.35
pH, Field	s.u.	6.72	6.83	6.93	6.9	6.6	6.75	6.91	7.15	6.93	6.88
Sulfate	mg/L	3470	3210	3460	3420	3460	3650	3210	1970	2930	3190
Total Dissolved Solids	mg/L	5080	5080	5200	4620	4870	4930	5100	3790	4540	4930
Appendix IV Parameters											
Antimony	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	< 0.0026 ^	< 0.002	< 0.005 ^	< 0.002	< 0.002	< 0.005 ^	< 0.002	< 0.002	< 0.002	---
Barium	mg/L	0.011	0.0082	0.0079	0.0058	0.0082	0.0079	0.0068	0.0048	0.0061	---
Beryllium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Cadmium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Chromium	mg/L	< 0.01 ^	< 0.002	< 0.01 ^	< 0.002	< 0.002	0.0028	< 0.002	0.0037	0.0023	---
Cobalt	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Fluoride	mg/L	0.30	0.32	0.32	0.33	0.31	0.34	0.34	0.33	0.35	---
Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.002 ^	< 0.0005	< 0.0005	< 0.0005	---
Lithium	mg/L	0.59	0.56	0.56	0.61	0.55	0.56	0.64	0.61	0.6	---
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	0.0039	< 0.005 ^	< 0.01 ^	0.0077	0.0024	0.003	0.0029	0.0158	0.0079	---
Radium 226	pCi/L	< 1	< 1	< 1	< 0.4	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	---
Radium 228	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 2	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 2	< 2	< 2	---
Selenium	mg/L	< 0.002	< 0.002	< 0.002	< 0.025 ^	< 0.002	< 0.002	< 0.01 ^	< 0.01 ^	< 0.005 ^	---
Thallium	mg/L	< 0.0005	< 0.0005	< 0.001 ^	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 19: Sample Results Summary Table - MW-15 (Downgradient, Southeast Section 16)

		MW-15									
		Baseline Period									Detection Monitoring
	Units	**15-Sep-15**	**3-Nov-15**	**10-Mar-16**	**20-Jun-16**	**4-Aug-16**	**1-Nov-16**	**13-Feb-17**	**4-May-17**	**14-Jun-17**	**17-Oct-17**
Water Elevation	ft AMSL	1872.9	1873.0	1872.6	1873.4	1872.6	1872.4	1872.4	1874.3	1873.4	1871.1
Appendix III Parameters											
Boron	mg/L	30	29.5	26.4	26	25.4	25	28	27	26.2	28.3
Calcium	mg/L	442	435	505	461	450	458	463	420	438	463
Chloride	mg/L	271	279	252	327	252	241	284	309	290	238
Fluoride	mg/L	0.62	0.66	0.57	0.58	0.55	0.54	0.62	0.52	0.56	0.52
pH, Field	s.u.	6.98	7.12	7.11	7.04	6.86	7	7.15	7.06	7.11	7.04
Sulfate	mg/L	4120	3710	3890	3930	4170	3530	4110	3420	3910	3660
Total Dissolved Solids	mg/L	6320	6200	6140	6080	4360	5680	6330	6420	6190	5800
Appendix IV Parameters											
Antimony	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	0.0057	0.0056	< 0.005 ^	< 0.002	< 0.002	< 0.005 ^	< 0.002	< 0.002	< 0.002	---
Barium	mg/L	0.0281	0.0242	0.0536	0.0249	0.0274	0.0375	0.0283	0.028	0.0233	---
Beryllium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Cadmium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Chromium	mg/L	< 0.01 ^	< 0.002	< 0.01 ^	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Cobalt	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Fluoride	mg/L	0.62	0.66	0.57	0.58	0.55	0.54	0.62	0.52	0.56	---
Lead	mg/L	< 0.0005	< 0.0005	0.0012	< 0.001 ^	< 0.0005	< 0.002 ^	< 0.0005	< 0.0005	< 0.0005	---
Lithium	mg/L	0.38	< 0.50 @	< 0.50 @	0.31	0.3	< 0.50 @	0.34	0.37	0.33	---
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	< 0.002	< 0.005 ^	< 0.01 ^	< 0.005 ^	< 0.002	0.0022	< 0.002	< 0.002	< 0.005 ^	---
Radium 226	pCi/L	< 1	< 1	< 1	< 0.4	< 0.2	0.4 ± 0.1	0.3 ± 0.1	< 0.2	< 0.2	---
Radium 228	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 2	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 2	< 2	< 2	---
Selenium	mg/L	< 0.002	< 0.002	< 0.002	< 0.025 ^	< 0.002	< 0.002	< 0.01 ^	< 0.01 ^	< 0.005 ^	---
Thallium	mg/L	< 0.0005	< 0.0005	< 0.001 ^	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).
@ = Analyte required a dilution due to sample matrix, resulting in an elevated RL.

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

Table 20: Sample Results Summary Table - MW-16-5 (Downgradient, Southeast Section 16)

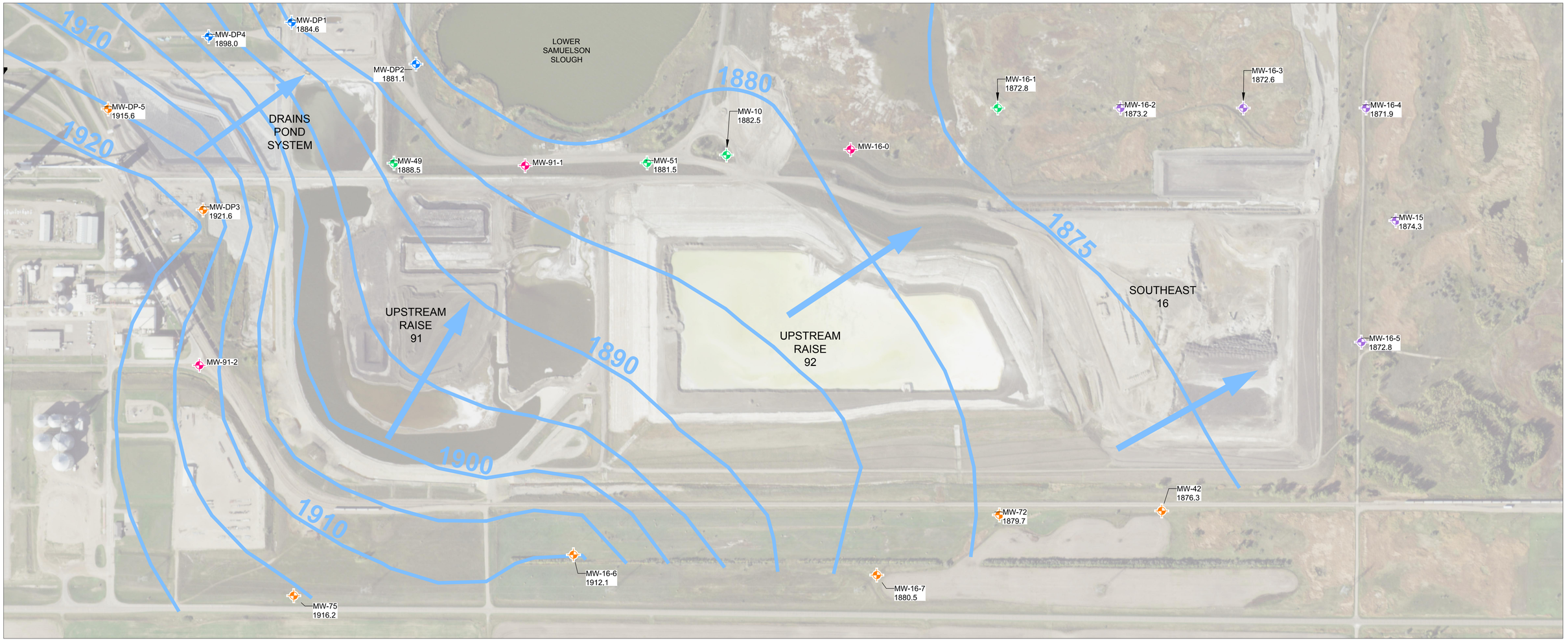
		MW-16-5									
		Baseline Period									Detection Monitoring
	Units	15-Sep-15	3-Nov-15	10-Mar-16	20-Jun-16	4-Aug-16	31-Oct-16	13-Feb-17	4-May-17	15-Jun-17	17-Oct-17
Water Elevation	ft AMSL	1871.1	1871.1	1871.0	1872.3	1871.4	1871.1	1871.2	1872.8	1871.7	1869.9
Appendix III Parameters											
Boron	mg/L	17.3	17.5	14.9	13.4	14.2	14	12.8	11.3	11	14.8
Calcium	mg/L	351	366	477	360	342	305	317	350	346	368
Chloride	mg/L	135	146	142	138	122	120	114	126	128	121
Fluoride	mg/L	0.86	0.93	0.88	0.84	0.89	0.92	0.88	0.73	0.8	0.98
pH, Field	s.u.	7	7.11	7.25	7.14	7.01	7.18	7.24	7.15	7.2	7.13
Sulfate	mg/L	2230	2220	2420	2400	2290	2170	1770	1820	2220	1950
Total Dissolved Solids	mg/L	3600	3770	3820	3660	3600	3400	3270	3830	3680	3560
Appendix IV Parameters											
Antimony	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---
Arsenic	mg/L	< 0.0026 ^	0.0025	< 0.005 ^	< 0.002	< 0.002	< 0.005 ^	< 0.002	< 0.002	< 0.002	---
Barium	mg/L	0.0203	0.0189	0.0163	0.0192	0.0185	0.0187	0.0237	0.0172	0.0179	---
Beryllium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Cadmium	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---
Chromium	mg/L	< 0.01 ^	< 0.002	< 0.01 ^	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Cobalt	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---
Fluoride	mg/L	0.86	0.93	0.88	0.84	0.89	0.92	0.88	0.73	0.8	---
Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.001 ^	< 0.0005	< 0.002 ^	0.002	0.0006	< 0.0005	---
Lithium	mg/L	0.23	0.24	0.21	0.2	0.2	0.2	0.23	0.2	0.2	---
Mercury	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	---
Molybdenum	mg/L	0.0026	< 0.005 ^	< 0.01 ^	< 0.005 ^	0.0026	0.002	< 0.002	< 0.002	< 0.005 ^	---
Radium 226	pCi/L	< 1	< 1	< 1	< 0.4	< 0.2	< 0.2	0.3 ± 0.1	0.3 ± 0.1	< 0.2	---
Radium 228	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 2	< 2	< 2	---
Radium 226 and 228 combined	pCi/L	< 2	< 2	< 2	< 2	< 1	< 2	< 2	< 2	< 2	---
Selenium	mg/L	< 0.002	< 0.002	< 0.002	< 0.025 ^	< 0.002	< 0.002	< 0.01 ^	< 0.01 ^	< 0.005 ^	---
Thallium	mg/L	< 0.0005	< 0.0005	< 0.001 ^	< 0.001 ^	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---

Legend:
--, not analyzed
ft AMSL, feet above mean sea level
mg/L, milligrams per liter
s.u., standard units for pH
pCi/L, picocuries per liter

Laboratory Provided Qualifiers:
^ = Reporting limit elevated due to instrument performance at the lower limit of quantification (LLOQ).

Notes:
Non-detects have been listed at the reported primary quantitation limit.
Metal concentrations represent the total fraction (i.e. samples have not been filtered).
Precision is not recorded for samples with radiological concentrations below the reporting limit.

FIGURES



LEGEND

- MW-75 — UPGRADIENT MONITORING WELL
- MW-DP1 — DOWNGRADIENT MONITORING WELL - DRAINS POND SYSTEM
- MW-51 — DOWNGRADIENT MONITORING WELL - UPSTREAM RAISE 91 AND UPSTREAM RAISE 92
- MW-16-3 — DOWNGRADIENT MONITORING WELL - SOUTHEAST 16
- MW-91-1 — NEW WELL (SEE NOTE 4)
- GENERAL DIRECTION OF GROUNDWATER FLOW
- POTENTIOMETRIC SURFACE (SEE NOTE)

NOTES

1. GROUNDWATER ELEVATIONS SHOWN WERE MEASURED MAY 2017.
2. GROUNDWATER CONTOURS ARE BASED ON MAY 2017 GROUNDWATER ELEVATIONS. ADDITIONAL SITE INFORMATION WAS USED IN THE CREATION OF GROUNDWATER CONTOURS. GROUNDWATER CONTOUR INTERVAL IS 5 FEET.
3. AERIAL IMAGERY TAKEN IN 2015 (OBTAINED FROM THE USDA NATIONAL AGRICULTURE IMAGERY PROGRAM).
4. NEW WELLS WERE INSTALLED IN NOVEMBER AND DECEMBER, 2017. NO ANALYTICAL DATA HAS BEEN COLLECTED TO DATE.

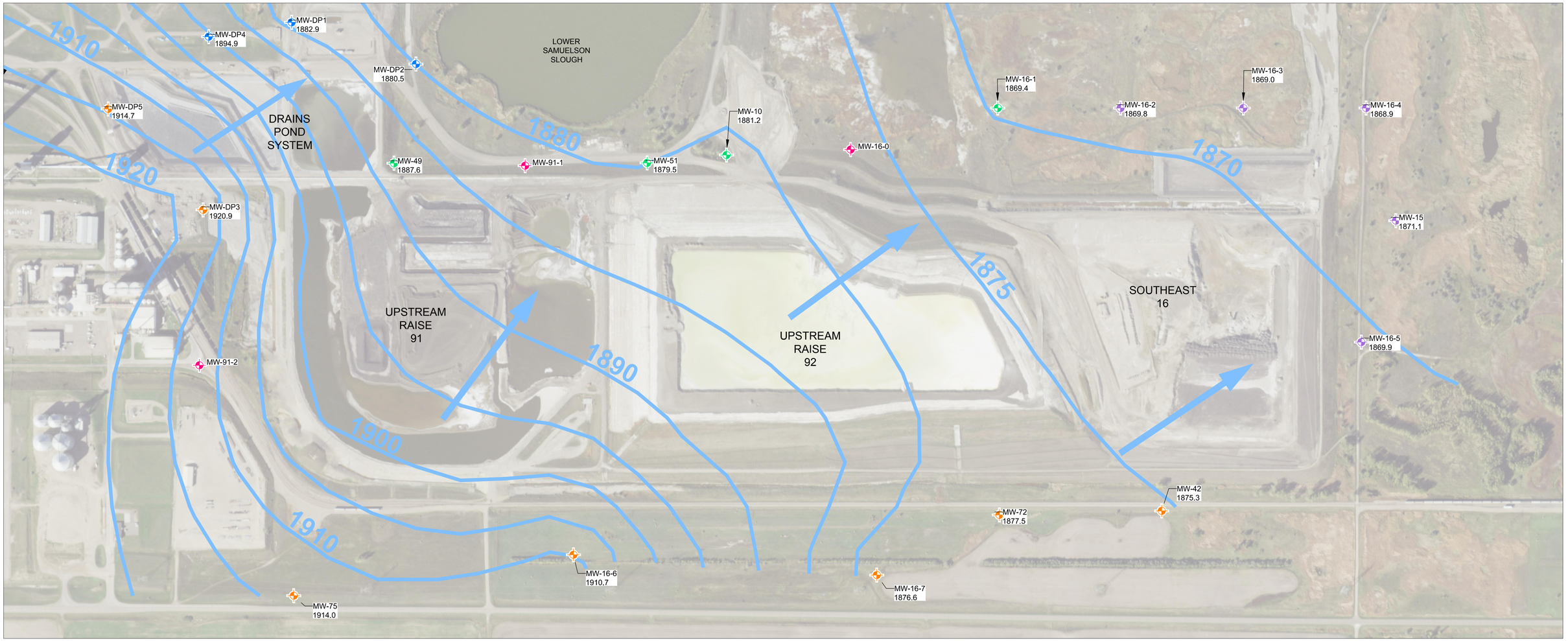
N

0 300 600
1" = 300' FEET

Golder Associates

MONITORING WELL LOCATIONS AND MAY 2017 GROUNDWATER CONTOURS
GREAT RIVER ENERGY - COAL CREEK STATION

FIGURE 1



LEGEND

- MW-75 — UPGRADIENT MONITORING WELL
- MW-DP1 — DOWNGRADIENT MONITORING WELL - DRAINS POND SYSTEM
- MW-51 — DOWNGRADIENT MONITORING WELL - UPSTREAM RAISE 91 AND UPSTREAM RAISE 92
- MW-16-3 — DOWNGRADIENT MONITORING WELL - SOUTHEAST 16
- MW-91-1 — NEW WELL (SEE NOTE4)
- GENERAL DIRECTION OF GROUNDWATER FLOW
- POTENTIOMETRIC SURFACE (SEE NOTE)

NOTES

1. GROUNDWATER ELEVATIONS SHOWN WERE MEASURED OCTOBER 2017.
2. GROUNDWATER CONTOURS ARE BASED ON OCTOBER 2017 GROUNDWATER ELEVATIONS. ADDITIONAL SITE INFORMATION WAS USED IN THE CREATION OF GROUNDWATER CONTOURS. GROUNDWATER CONTOUR INTERVAL IS 5 FEET.
3. AERIAL IMAGERY TAKEN IN 2015 (OBTAINED FROM THE USDA NATIONAL AGRICULTURE IMAGERY PROGRAM).
4. NEW WELLS WERE INSTALLED IN NOVEMBER AND DECEMBER, 2017. NO ANALYTICAL DATA HAS BEEN COLLECTED TO DATE.

N

0 300 600
1" = 300' FEET

Golder Associates

MONITORING WELL LOCATIONS AND OCTOBER 2017 GROUNDWATER CONTOURS
GREAT RIVER ENERGY - COAL CREEK STATION

FIGURE 2

APPENDIX A
NEW MONITORING WELL INSTALLATION INFORMATION

BORING LOG NO. MW-91-1

PROJECT: Monitoring Well Installations

CLIENT: Golder Associates, Inc.
Lakewood, CO

SITE: GRE Coal Creek Station
McLean County, ND

LOCATION: See Exhibit A-2

Northing: 138918 Easting: 1841128

Surface Elev.: 1901.3 (Ft.)

DEPTH		ELEVATION (Ft.)
0.3	**FILL - TOPSOIL**, dark brown	1901
1.5	**FILL - CLAYEY SAND**, brown	1900
	SANDY LEAN CLAY, brown	
7.0		1894.5
	SANDY LEAN CLAY (CL), trace gravel, brown, medium stiff	
10.5		1891
	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), fine to coarse grained, brown, loose to medium dense	
25.0		1876.5
26.0	**FAT CLAY (CH)**, brownish-gray, very stiff, silt laminations	1875.5
	Boring Terminated at 26 Feet	

INSTALLATION DETAILS: PVC Cap; PVC Riser; Bentonite; Silica Sand; PVC Screen; PVC End Cap

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS
		7-10-10 N=20
5		5-7-9 N=16
		2-3-3 N=6
10		3-4-4 N=8
		3-5-4 N=9
15		4-5-5 N=10
20		4-7-6 N=13
25		5-7-9 N=16

WATER LEVEL OBSERVATIONS

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3¼" ID Hollow Stem Auger 0-24½'

Abandonment Method:
Boring converted to monitoring well upon completion.

See Exhibit A-3 for description of field procedures.

See Appendix B for explanation of symbols and abbreviations.

Notes:
Northing, easting and elevation provided by Golder Associates, Inc.

WATER LEVEL OBSERVATIONS

None encountered

Terracon
1805 Hancock Dr PO Box 2084
Bismarck, ND

Boring Started: 11-06-2017 | Boring Completed: 11-06-2017

Drill Rig: D-90 | Driller: E. Mayer

Project No.: M2175093 | Exhibit: A-4

BORING LOG NO. MW-91-2

PROJECT: Monitoring Well Installations

CLIENT: Golder Associates, Inc.
Lakewood, CO

SITE: GRE Coal Creek Station
McLean County, ND

LOCATION: See Exhibit A-2

Northing: 137705 Easting: 1839142

Surface Elev.: 1939.1 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
1.5	1937.5	**FILL - POORLY GRADED SAND WITH SILT AND GRAVEL**, dark brown
4.5	1934.5	**FILL - SANDY LEAN CLAY**, trace gravel, brown
5.5	1933.5	**ORIGINAL TOPSOIL (CL)**, dark brown, stiff
10.5	1928.5	**FAT CLAY (CH)**, brownish gray, stiff
15.5	1923.5	**COAL**, black waterbearing at 15'
18.0	1921	**FAT CLAY (CH)**, grayish-brown, stiff, silt laminations
29.0	1910	**FAT CLAY (CH)**, gray, hard, silt laminations
31.0	1908	**COAL**, black, waterbearing
		Boring Terminated at 31 Feet

INSTALLATION DETAILS: PVC Cap; Bentonite; PVC Riser; Silica Sand; PVC Screen; PVC End Cap

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS
		3-4-6 N=10
5		3-4-5 N=9
		4-5-6 N=11
10		3-3-6 N=9
		3-3-3 N=6
15		3-4-4 N=8
20		15-22-21 N=43
25		8-13-19 N=32
30		32-51-49 N=100

WATER LEVEL OBSERVATIONS: ▽ While drilling

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3¼" ID Hollow Stem Auger 0-29½'

Abandonment Method:
Boring converted to monitoring well upon completion.

See Exhibit A-3 for description of field procedures.

See Appendix B for explanation of symbols and abbreviations.

Notes:
Northing, easting and elevation provided by Golder Associates, Inc.

Terracon
1805 Hancock Dr PO Box 2084
Bismarck, ND

Boring Started: 11-06-2017	Boring Completed: 11-06-2017
Drill Rig: D-90	Driller: E. Mayer
Project No.: M2175093	Exhibit: A-5

BORING LOG NO. MW-16-0

PROJECT: Monitoring Well Installations

CLIENT: Golder Associates, Inc.
Lakewood, CO

SITE: GRE Coal Creek Station
McLean County, ND

LOCATION: See Exhibit A-2

Northing: 139015 Easting: 1843118

Surface Elev.: 1880.4 (Ft.)

DEPTH	ELEVATION (Ft.)	GRAPHIC LOG	INSTALLATION DETAILS
			PVC Cap
			PVC Riser
SANDY LEAN CLAY WITH GRAVEL (CL)			
1.5	1879		Bentonite
LEAN CLAY WITH SAND (CL), with gravel			
4.5	1876		Silica Sand
LEAN CLAY WITH SAND (CL)			
			PVC Screen
9.5	1871		PVC End Cap
Boring Terminated at 9.5 Feet			

DEPTH (Ft.): 5

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3¼" ID Hollow Stem Auger 0-9½'

Abandonment Method:
Boring converted to monitoring well upon completion.

See Exhibit A-3 for description of field procedures.

See Appendix B for explanation of symbols and abbreviations.

Notes:
Northing, easting and elevation provided by Golder Associates, Inc. No sampling performed at the direction of a Golder Associates, Inc. representative on site.

WATER LEVEL OBSERVATIONS

None encountered

Terracon
1805 Hancock Dr PO Box 2084
Bismarck, ND

Boring Started: 12-08-2017	Boring Completed: 12-08-2017
Drill Rig: D-90	Driller: E. Mayer
Project No.: M2175093	Exhibit: A-6

Established in 1960, Golder Associates is a global, employee-owned organization that helps clients find sustainable solutions to the challenges of finite resources, energy and water supply and management, waste management, urbanization, and climate change. We provide a wide range of independent consulting, design, and construction services in our specialist areas of earth, environment, and energy. By building strong relationships and meeting the needs of clients, our people have created one of the most trusted professional services organizations in the world.

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Golder Associates

Engineering Earth's Development, Preserving Earth's Integrity