STATE OF COLORADO

Eschberger - DNR, Amy <amy.eschberger@state.co.us>

Boettcher Quarry Groundwater Results

Harkins, Sara <Sara_Harkins@golder.com> Mon, Feb 7, 2022 at 6:27 PM
To: "Eschberger - DNR, Amy" <amy.eschberger@state.co.us>
Cc: "Whitten, Candace" <Candace_Whitten@golder.com>, "McClain, Mark" <Mark_McClain@golder.com>, "Moreno, Joanna" <Joanna_Moreno@golder.com>, Mike Toelle <mike.toelle@lafargeholcim.com>, Travis Weide <travis.weide@lafargeholcim.com>

Hello Amy,

On behalf of Holcim (US) Inc., Golder is pleased to submit the results of the 2nd semi-annual 2021 groundwater sampling event at the Boettcher Limestone Quarry near La Porte, Colorado.

Please let us know if you have any questions or difficultly opening the document.

Thanks,

Sara

Sara Harkins
Senior Geologist/Geochemist

GOLDER
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As of October 28, 2021, Golder Associates Inc. is now Golder Associates USA Inc.

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2 attachments

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21467005-2-TM-0_2021_Second_SemiAnnual_GW_Event_BQ_04FEB22_Unsecured.pdf
12786K

February 4, 2022 Reference No. 21467005-2-TM-0

Ms. Amy Eschberger
Colorado Division of Reclamation Mining and Safety
Department of Natural Resources
1313 Sherman Street, Room 215
Denver, Colorado 80203

SECOND SEMI-ANNUAL EVENT 2021 GROUNDWATER SAMPLING AT THE BOETTCHER QUARRY

Dear Ms. Eschberger:

On behalf of Holcim (US) Inc., Golder Associates Inc. (Golder) is pleased to submit analytical laboratory results for the second semi-annual 2021 groundwater sampling event at the Boettcher Limestone Quarry near La Porte, Colorado. Attached are Tables 1 through 8, summarizing the results, and a copy of the laboratory report (Attachment 1). Field sheets for the purging and sampling are presented in Attachment 2. In addition to sampling wells MW-1 through MW-8, a field duplicate at MW-3 (MW-20) and a field blank (MW-15) were collected. The locations of monitoring wells MW-1 through MW-8 are presented in Figure 1. The second semi-annual 2021 groundwater sampling event was the third time MW-8 was sampled.

In December 2016, the Colorado Division of Reclamation Mining and Safety approved a revision to change the required groundwater monitoring frequency from quarterly to semi-annually (Revision TR07) based on evidence that the groundwater wells were not fully recharging between sampling events. Figure 2 presents a graph of the monitoring well water elevations measured during each sampling event from 2013 to present.

Upon receipt of the laboratory reports, Golder reviewed the results, and a general analytical data evaluation was performed. Results of this evaluation included the following:

- The samples were received by the laboratory at the appropriate temperature.
- The required analyses were performed.
- The analyses were conducted within their respective United States Environmental Protection Agency recommended hold times, apart from pH. Measurements for pH should be conducted within 15 minutes of sample collection; thus, the laboratory pH measurement will always be out of hold time.

Based on the above review, the laboratory results are considered valid for the sampling event. Reported concentrations are consistent with previous events, and the analytes that exceeded the Interim Narrative Standard for this sampling event are listed by sampling location below:

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- MW-1: manganese, selenium, uranium, gross alpha, and sulfate
- MW-2: barium, boron, manganese, and chloride
- MW-3: barium, boron, chloride, and fluoride
- MW-4: barium, chloride, gross alpha, and total dissolved solids
- MW-5: iron, manganese, uranium, sulfate, and gross alpha
- MW-6: barium, iron, manganese, chloride, and gross alpha
- MW-7: barium, iron, manganese, chloride, and gross alpha
- MW-8: boron, uranium, chloride, sulfate, gross alpha, and antimony

Consistent with previous events, some sample dilutions are required by the analytical laboratory due to matrix interferences of non-target analytes and concerns of damaging equipment. This results in practical quantitation limits greater than the Interim Narrative Standard for thallium at MW-1, MW-2, MW-4, MW-6, MW-7, and MW-8. These constituents were not detected above the method detection limit (MDL), which was lower than the Interim Narrative Standard for thallium.

If you have any questions, please call the undersigned at (303) 980-0540.

Sincerely,

Golder Associates USA Inc.

Candace Whitten
Staff Hydrogeologist

Sara Harkins, PG
Senior Geochemist

CW/SH/df

Attachments: Table 1: Summary of Monitoring Results for MW-1
Table 2: Summary of Monitoring Results for MW-2
Table 3: Summary of Monitoring Results for MW-3
Table 4: Summary of Monitoring Results for MW-4
Table 5: Summary of Monitoring Results for MW-5
Table 6: Summary of Monitoring Results for MW-6
Table 7: Summary of Monitoring Results for MW-7
Table 8: Summary of Monitoring Results for MW-8
Figure 1: Location Map
Figure 2: Groundwater Elevations vs. Time
Attachment 1: ACZ Laboratory Report
Attachment 2: Field Sheets

https://golderassociates.sharepoint.com/sites/146499/project files/6 deliverables/techmemos/2-tm-2nd_semi_annual_2021_gws/2-tm-0/21467005-2-tm-a_2021_second_semiannual_gw_event_bq_02feb22.docx

Tables

Table 1: Summary of Monitoring Results for MW-1

Date	Interim Narrative Standard	5/26/1999	7/21/1999	9/16/1999	11/10/1999	1/19/2000	3/13/2000	5/16/2000	7/10/2000	9/27/2010	3/31/2011	6/28/2011	8/31/2011	11/17/2011	3/27/2012	6/27/2012	9/13/2012	11/13/2012	3/19/2013	5/28/2013	8/26/2013	11/14/2013	2/18/2014
Metals																							
Arsenic, Dissolved (mg/L)	0.01	NA	< 0.005 U	0.002 B	0.0046	**0.02** B	**0.027**	0.01 B	**0.013** B	**0.015**	0.005 B	0.01 B	**0.011**	<0.01 U	< 0.01 U	0.003 B	0.001 B	0.002 B	0.002 B	< 0.005 U	0.002 B	< 0.005 U	0.001 B
Barium, Dissolved (mg/L)	2	< 0.05 U	0.013 B	< 0.05 U	< 0.05 U	0.02 B	< 0.05 U	< 0.05 U	0.014	< 0.08 U	0.04 B	0.005 B	< 0.08 U	<0.08 U	0.017 B	< 0.08 U	0.02 B	0.02 B	0.011 B	< 0.08 U	< 0.08 U	0.011 B	0.008 B
Boron, Dissolved (mg/L)	0.75	0.36	0.35	0.41	0.46	0.5	0.46	0.51	0.5	0.54	0.59	0.58	0.64	0.64	0.62	0.59	0.71	0.73	0.64	0.69	0.61	0.6	0.61
Chromium, Dissolved (mg/L)	0.1	< 0.3 U	< 0.1 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	<0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
Copper, Dissolved (mg/L)	0.2	0.06 B	< 0.1 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	<0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.05 U
Iron, Dissolved (mg/L)	0.3	< 0.3 U	< 0.1 U	< 0.3 U	< 0.3 U	0.14 B	< 0.3 U	0.1 B	< 0.05	< 0.3 U	0.3	< 0.05 U	< 0.3 U	0.2 B	0.15	**1.4**	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.05 U
Lead, Dissolved (mg/L)	0.05	< 0.01 U	< 0.005 U	< 0.005 U	< 0.001 U	< 0.05 U	< 0.005 U	0.013	< 0.005	0.0019 B	0.0027 B	0.0052	0.0045	0.0007 B	< 0.003 U	0.0035	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U
Lithium, Dissolved (mg/L)	2.5	1.1	1.21	1	1	1.2	1.1	1.2	1.05	1.3	1.3	1.18	1.2	1.1	1.15	1.1	1.1	1.2	NA	NA	NA	NA	NA
Manganese, Dissolved (mg/L)	0.05	**0.08** B	0.05	**0.09** B	**0.1**	**0.06**	0.04 B	0.05 B	**0.053**	< 0.1 U	0.05 B	0.041	< 0.1 U	< 0.1 U	0.026 B	0.04 B	0.04 B	0.04 B	0.025	< 0.1 U	0.04 B	0.044	**0.054**
Selenium, Dissolved (mg/L)	0.02	**0.35**	**0.27**	**0.19**	**0.093**	**0.078**	**0.054**	**0.046**	**0.101**	**0.4928**	**0.2684**	**0.2656**	**0.2826**	**0.275**	**0.2328**	**0.2204**	**0.1995**	**0.1756**	**0.1826**	**0.2278**	**0.257**	**0.2616**	**0.2067**
Thallium, Dissolved (mg/L)	0.002	< 5 U	< 0.01 U	< 5 U	0.00014 B	< 0.005 U	< 0.001 U	< 0.003 U	0.0007 B	0.0016 B	**0.0025** B	0.0014 B	0.0017 B	<0.003 U	< 0.003 U	0.0007 B	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	0.0192	0.019	0.0205	0.0199	0.0193	**0.0364**	**0.0303**	**0.0397**	**0.0344**	**0.0403**	**0.0338**	**0.0367**	**0.0433**	**0.0371**	NA	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	2	< 0.3 U	< 0.1 U	< 0.3 U	< 0.3 U	0.07 B	< 0.3 U	< 0.3 U	< 0.05	0.13 B	< 0.3 U	< 0.05 U	< 0.3 U	<0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.3 U	0.02	< 0.3 U	< 0.3 U	< 0.05 U	0.01 B
Other																							
Chloride (mg/L)	250	20	18	36	22	31	28	25	25	< 300 U	< 300 U	< 300 U	40 B	36.4 B	50 B	< 250 U	< 250 U	< 250 U	86 B	< 250 U	55.5 B	< 250 U	< 250 U
Fluoride (mg/L)	2	0.7	0.7	0.6	0.6	0.8	0.7	0.6	0.5	0.4 B	0.5	0.4 B	0.4 B	0.6	0.6	0.6	0.6	0.7	0.6	0.5	0.5	0.5	0.5
Nitrate as N (mg/L)	10	**14.3**	**19.5**	**19.6**	**14**	9.4	NA	3.77	3.28	**96**	**88**	**70**	**81.6**	**81**	**76**	**89**	**85**	**78.5**	NA	NA	NA	NA	NA
Nitrite as N (mg/L)	1	0.07	0.16	< 1	0.56	0.03	NA	0.04 B	0.66	0.24	0.36	0.34	0.4	0.26	0.29	0.56	0.21	0.11	NA	NA	NA	NA	NA
Nitrate+Nitrite as N (mg/L)	10	**14.4**	**19.7**	**19.6**	**14.6**	9.5	NA B	3.81	3.94	**96**	**88**	**70**	**82**	**81**	**76**	**90**	**85**	**78.6**	NA	NA	NA	NA	NA
Lab pH (s.u)	6.5 - 8.5	8	7.3	7.4	7.6	8.1	7.5	7.5	7.6	8.1 H	8.1 H	8.0 H	8.0 H	8.0 H	8.0 H	8.1 H	8.2 H	8.2 H	8.1 H	8.0 H	8.0 H	7.8 H	7.9 H
Total Dissolved Solids, filterable residue (mg/L)	8595	7,690.0	7,000.0	6,820.0	7,190.0	6,650.0	6,810.0	6,750.0	6,020.0	7,770	7,560	7,610	7,540	7,110	7,150	6,770	6,770	6,660	6,610	7,420	6,650 H	7,800 H	7,330
Sulfate (mg/L)	250	**5,210**	**4,780**	**4,470**	**5,180**	**4,530**	**4,370**	**4,410**	**4,000**	**4,840**	**4,540**	**4,820**	**4,620**	**4,306**	**4,056**	**4,090**	**4,041**	**3,991**	**3,980**	**4,610**	**4,230**	**5,150**	**4,980**
Gross Alpha (pCi/L)	15.0	**32**	**62**	**45**	**88**	0	**35**	2.7	4.9	**41 (±31)**	**53 (±31)**	**22 (±25)**	5.8 (±29)	**32 (±30)**	**48 (±30)**	**180 (±52)**	**24 (±23)**	-0.51 (±22)	NA	NA	NA	NA	NA
Gross Beta (pCi/L)	**	0	69	25	100	0.7	18	0	53	39 (±28)	36 (±28)	20 (±28)	23 (±32)	27 (±31)	8.1 (±25)	190 (±36)	25 (±29)	12 (±27)	NA	NA	NA	NA	NA
Field Parameters (Not Available pre-2010))																							
Field pH (s.u)	6.5 - 8.5	NA	NA	NA	NA	NA	NA	NA	NA	7.4	7.42	7.27	7.42	7.42	7.6	7.36	7.42	7.62	7.59	7.23	7.34	7.40	7.39
Field Conductivity (µS/cm)	none	NA	NA	NA	NA	NA	NA	NA	NA	904	860	7,390	7,960	6,580	7,830	37.21	6,170	7,740	7,620	8,210	7,800	8,888	8,180
Temperature (Degrees Celsius)	none	NA	NA	NA	NA	NA	NA	NA	NA	16.83	14.6	18.7	20.9	16.1	15.6	18.4	16.1	14.6	14.3	16.3	17.1	13.62	14
Supplementary Analytes (Not Historically analyzed)																							
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate as CaCO3 (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	279	305	309	312	311	333	334	285	337	334	334	330	320	357
Carbonate as CaCO3 (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	323	225	305	270	240	198	222	218	169	178	276	258	302	254
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	336	240	313	272	246	210	213	203	175	180	265	225	308	256
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	22	18	22.7	17	15	14.8	17	17	13	14.5	19	20	20.7	16.5
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	1,660	1,800	1,680	1,670	1,610	1,680	1,630	1,650	1,770	1,670	1,660	1,580	1,820	1,790
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 1: Summary of Monitoring Results for MW-1

Date	Interim Narrative Standard	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016	5/31/2017	11/15/2017	6/6/2018	11/15/2018	6/12/2019	12/12/2019	6/4/2020	12/14/2020	6/23/2021	12/8/2021
Metals																						
Arsenic, Dissolved (mg/L)	0.01	0.001 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.001 B	0.0018	0.002 B	0.0027	0.00163	< 0.005 U	0.00135 B
Barium, Dissolved (mg/L)	2.0	0.004 B	0.006 B	0.007 B	0.009 B	< 0.08 U	< 0.08 U	< 0.08 U	0.03 B	< 0.08 U	< 0.08 U	0.007 B	< 0.08 U	< 0.08 U	< 0.08 U	<0.08 U	<0.2 U	< 0.04 U	0.041	0.0104	0.00929 B	0.00991 B
Boron, Dissolved (mg/L)	0.75	0.57	0.56	0.58	0.59	0.55	0.57	0.52	0.6	0.51	0.51	0.56	0.61	0.61	0.65	0.62	0.7	0.6	0.68	0.744	0.644	0.658
Chromium, Dissolved (mg/L)	0.1	< 0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	<0.002 U	< 0.003 U	0.001 B	< 0.002 U	< 0.01 U	< 0.01 U
Copper, Dissolved (mg/L)	0.2	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	0.0028 U	< 0.004 U	< 0.004 U	< 0.002 U	< 0.01 U	0.0107
Iron, Dissolved (mg/L)	0.3	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.3 U	<0.3 U	0.018 U	< 0.2 U	**0.93**	< 0.3 U	< 0.75 U	< 0.15 U
Lead, Dissolved (mg/L)	0.05	< 0.003 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	<0.0005 U	< 0.0005 U	0.002	< 0.0005 U	< 0.0025 U	< 0.0025 U
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.13	1.23	1.05	1.09	1.09	1.24	1.28
Manganese, Dissolved (mg/L)	0.05	0.033	0.045	0.041	**0.052**	< 0.1 U	0.04 B	< 0.1 U	0.04 B	< 0.1 U	< 0.1 U	0.04	< 0.1 U	< 0.1 U	< 0.1 U	0.022	0.05 B	0.03	0.035	0.038	**0.0741**	**0.0904**
Selenium, Dissolved (mg/L)	0.02	**0.2775**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.0904**	**0.0998**	**0.0474**	**0.0378**	**0.0271**	**0.219**	**0.034**
Thallium, Dissolved (mg/L)	0.002	< 0.003 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	<0.0005 U	< 0.0003 U	< 0.001 U	< 0.00125 U	0.000465 B	< 0.00125 U
Uranium, Dissolved (mg/L)	0.0300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.035**	**0.0352**	**0.0407**	**0.0385**	**0.0308**	**0.0452**	**0.0406**
Zinc, Dissolved (mg/L)	2.0	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.3 U	<0.3 U	< 0.05 U	< 0.03 U	< 0.015 U	< 0.075 U	< 0.075 U
Other																						
Chloride (mg/L)	250	< 250 U	< 250 U	< 250 U	68.9 B	154 B	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	47.5 B	32.2 B	41.3 BH	27.5 B	<200 U	<200 U	36.2 B	36.8 B	36.6 B	< 200 U	< 200 U
Fluoride (mg/L)	2.0	0.44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.62	0.6	0.7	0.6	0.62	0.44	0.58
Nitrate as N (mg/L)	10.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**15**	**17**	5.93	2.42	0.857	**13** H	2.96
Nitrite as N (mg/L)	1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.06	0.17	0.04 B	0.02 B	0.013 B	0.14 H	< 0.05 U
Nitrate+Nitrite as N (mg/L)	10.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**15.2**	**16.8**	5.97	2.44	0.87	**13.5** H	2.96
Lab pH (s.u)	6.5 - 8.5	7.8 H	7.8 H	8 H	7.9 H	7.9 H	8 H	7.9 H	7.84	7.9 H	8.1 H	8.1 H	8.2 H	8 H	8.3 H	8.2	7.9 H	8.2 H	8.2 H	8.2 H	8.1 H	8.2 H
Total Dissolved Solids, filterable residue (mg/L)	8595	6,910 H	6,950	7,900	7,380	8,210 ^	7,760 ^	8,020	7,660	8,450	8,040	7,460	7,010	7,070	7,240	6,910	6,670	6,280	6,320	6,110	8,260	8,190
Sulfate (mg/L)	250	**6,850**	**4,670**	**4,300**	**4,800**	**5,540**	**5,640**	**5,430**	**5,250**	**5,470**	**5,540**	**4,700**	**4,690**	**4,340** H	**4,530**	**5,090**	**5,040**	**4,230**	**4,120**	**4,470**	**5,730**	**5,750**
Gross Alpha (pCi/L)	15.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**40 (±31)**	**20 (±18)**	**54(±26)**	**67 (±26)**	**39 (±25)**	7.6(±18)	**43(±36)**
Gross Beta (pCi/L)	**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33 (±29)	28 (±22)	7.9(±19)	22(±22)	13 (±21)	-5.6(±23)	17(±34)
Field Parameters (Not Available pre-2010))																						
Field pH (s.u)	6.5 - 8.5	7.15	7.35	7.4	7.3	6.99	7.42	7.78	7.84	7.39	7.34	7.56	8.46	7.71	7.46	7.64	7.69	7.85	7.80	7.73	7.46	7.54
Field Conductivity (µS/cm)	none	9,650	8,560	8,600	5,330	8,050	9,130	7,000	6,580	7,650	8,610	8,280	8,380	7,520	8,480	7,900	6,740	4,890	5,700	6,929	7,998	8,895
Temperature (Degrees Celsius)	none	15.9	15.3	9.1	14.3	16	15.8	16.3	13.9	17	18	16.5	16.5	12.9	17	16.6	17.2	13.1	16.5	13.6	17.3	13.84
Supplementary Analytes (Not Historically analyzed)																						
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.8 U	<1 U	< 0.3 U	1.93	0.058	< 0.075 U	0.1
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.004 B	0.0021	0.004 B	0.0024 B	0.00171 B	< 0.01 U	0.00233 B
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.0003 U	< 0.0004 U	< 0.0003 U	< 0.00025 U	< 0.00125 U	< 0.00125 U
Bicarbonate as CaCO3 (mg/L)	none	333	310	325	NA	320	302	306	319	307	329	325	369	361	358	NA	376 H	402	458	421	342	358
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	NA	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	3.1 B	NA	<20 UH	< 2 U	< 20 U	< 20 U	< 20 U	6.7 B
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.0003 U	< 0.0003 U	0.0002 B	< 0.00025 U	< 0.00125 U	< 0.00125 U
Calcium, Dissolved (mg/L)	none	330	287	309	230	301	320	289	279	345	275	269	187	175	220	163	171	131	110	109	299	161
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0018	0.00349	0.0019	0.002	0.00168	0.00708	0.00308
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	<0.01 U	< 0.003 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
Magnesium, Dissolved (mg/L)	none	364	297	303	247	300	342	301	290	376	301	283	202	188	225	175	170	135	116	116	308	178
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.085	0.1 B	0.09	0.084	0.0737	0.0754	0.0826
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.009 B	<0.2 U	0.007	0.0077	0.00692	0.0261	0.00881
Potassium, Dissolved (mg/L)	none	18.9	19.4	21.8	15.6	19	20	18	18.6	22	16	20.5	13	12	16	12	13	10	10.1	9.56	19.3	11.6
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	<0.0005 U	< 0.0005 U	< 0.001 U	< 0.0005 U	< 0.0025 U	< 0.0025 U
Sodium, Dissolved (mg/L)	none	1,910	1,570	1,510	1,770	1,670	1,740	1,770	1,720	1,570	1,710	1,640	1,710	1,660	1,650	1,760	1,730	1,710	1,680	1,640	1630	1850
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	<0.1 U	< 0.003 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.01 U

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 2: Summary of Monitoring Results for MW-2

Date	Interim Narrative Standard	4/28/1999	7/21/1999	9/16/1999	11/10/1999	1/19/2000	3/13/2000	5/16/2000	7/10/2000	9/27/2010	3/31/2011	6/28/2011	8/31/2011	11/17/2011	3/27/2012	6/27/2012	9/13/2012	11/13/2012	3/19/2013	5/28/2013	8/26/2013	11/14/2013
Metals																						
Arsenic, Dissolved (mg/L)	0.01	NA	0.003 B	0.004 B	**0.0567**	**0.05** B	**0.045**	**0.062**	**0.042**	**0.036**	**0.021**	**0.03**	**0.036**	< 0.01 U	< 0.01 U	< 0.01 U	< 0.005 U	0.001 B	0.002 B	0.001 B	0.002 B	0.001 B
Barium, Dissolved (mg/L)	2	0.4	0.42	0.41	0.41	0.4	0.42	0.41	0.398	**2.09**	1.33	1.09	0.96	1.09	1.42	1.55	1.72	1.26	1.3	1.07	1.23	1.22
Boron, Dissolved (mg/L)	0.75	0.73	0.74	0.72	0.74	0.69	0.73	0.74	0.67	0.7	0.64	0.69	**0.78**	0.64	0.73	0.72	0.70	**0.79**	0.71	**0.76**	0.70	0.74
Chromium, Dissolved (mg/L)	0.1	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
Copper, Dissolved (mg/L)	0.2	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U
Iron, Dissolved (mg/L)	0.3	< 0.3 U	< 0.3 U	0.27 B	0.11 B	0.16 B	0.2 B	**0.5**	0.07	< 0.3 U	0.1 B	0.15	< 0.3 U	0.3 B	**0.91**	**0.8**	**0.7**	0.16	**1.1**	0.2 B	**0.9**	**1.3**
Lead, Dissolved (mg/L)	0.05	< 0.005 U	< 0.005 U	0.001 B	< 0.005 U	< 0.005 U	< 0.005 U	0.005 B	0.002 B	< 0.003 U	< 0.003 U	0.0011 B	0.0006 B	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U
Lithium, Dissolved (mg/L)	2.5	1	1	1	1	1	1.1	1	0.91	1.3	1.2	1.12	1.1	1.1	1.16	1.2	1.2	1.36	NA	NA	NA	NA
Manganese, Dissolved (mg/L)	0.05	**0.49**	**0.44**	**0.4**	**0.33**	**0.33**	**0.33**	**0.33**	**0.329**	**0.08** B	**0.12**	**0.139**	**0.1**	**0.12**	**0.102**	**0.06** B	**0.06** B	**0.114**	**0.121**	**0.09**	**0.11**	**0.127**
Selenium, Dissolved (mg/L)	0.02	< 0.005 U	0.002 B	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	0.0006 B	0.0015	0.0006 B	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	0.0008 B	0.0007 B	0.0011	0.0032	< 0.001 U	0.0006 B
Thallium, Dissolved (mg/L)	0.002	< 0.01 U	< 0.01 U	< 5 U	< 0.0003 U	< 0.005 U	< 0.001 U	< 0.003 U	< 0.003 U	< 0.003 U	0.0007 B	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	0.00465	0.005	0.0041	0.0037	0.0042	0.0048	0.0033	0.0025 B	< 0.003 U	0.0011 B	0.0009 B	0.0012 B	0.0012 B	0.0012 B	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	2	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U
Other																						
Chloride (mg/L)	250	**2,890**	**2,260**	**2,670**	**2,700**	**2,240**	**2,880**	**3,100**	**2730**	**3,050**	**3,100**	**3,090**	**3,240**	**3,017**	**3,052**	**3,079**	**3,188**	**2,968**	**3,227**	**3,220**	**2,960**	**3,080**
Fluoride (mg/L)	2	1.7	1.8	1.7	1.5	1.8	1.7	**2.1**	1.8	1.7	1.5	1.5	1.4	1.6	1.5	1.6	1.5	1.7	1.7	1.6	1.6	1.5
Nitrate as N (mg/L)	10	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	0.03	NA	< 0.1 U	< 0.1 U	0.14	0.07 B	0.06 B	0.03 B	< 0.1 U	0.04 B	0.04 B	0.03 B	0.04 B	NA	NA	NA	NA
Nitrite as N (mg/L)	1	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	NA	NA	NA
Nitrate+Nitrite as N (mg/L)	10	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	0.03 B	NA	< 0.1 U	< 0.1 U	0.14	0.07 B	0.06 B	0.03 B	< 0.1 U	0.04 B	0.04 B	0.03 B	0.04 B	NA	NA	NA	NA
Lab pH (s.u)	6.5 - 8.5	8.2	8.2	8.1	8	8.5	7.9	8	8.1	**8.6** H	8.2 H	8.4 H	8.3 H	8.2 H	8.3 H	8.3 H	**8.6** H	8.3 H	8.3 H	8.3 H	8.2 H	8.1 H
Total Dissolved Solids, filterable residue (mg/L)	7084	5,680.0	5,640.0	5,680.0	5,700.0	5,600.0	5,740.0	5,600.0	5,700.0	6,270	6,390	6,350	6,320	6,140	6,340	6,120	6,270	6,180	6,300	6,400	6,210 H	6,150 H
Sulfate (mg/L)	250	140	160	190	210	240	220	220	220	< 300 U	60 B	90 B	< 100 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U
Gross Alpha (pCi/L)	15	NA	**44**	0	**140**	0.9	0	1	8.4	15 (±26)	9.8 (±25)	**18 (±24)**	0 (±26)	**38 (±38)**	-1.1 (±21)	5.1 (±12)	-6.2 (±13)	-12 (±21)	NA	NA	NA	NA
Gross Beta (pCi/L)	**	NA	81	52	80	52	19	26	0	4.5 (±30)	42 (±31)	12 (±29)	0 (±27)	73 (±44)	8.5 (±29)	82 (±30)	21 (±26)	11 (±28)	NA	NA	NA	NA
Field Parameters (Not Available pre-2010))																						
Field pH (s.u)	6.5 - 8.5	NA	NA	NA	NA	NA	NA	NA	NA	8.71	7.84	7.98	7.54	7.91	8.2	7.61	9.58	8.11	7.6	7.74	7.61	7.61
Field Conductivity (µS/cm)	none	NA	NA	NA	NA	NA	NA	NA	NA	1,169	1,088	10,160	10,350	10,500	10,630	11	10,640	10,520	6,840	1,130	10,840	11,220
Temperature (Degrees Celsius)	none	NA	NA	NA	NA	NA	NA	NA	NA	15.47	16	21.4	22.4	12.5	14.5	14.6	19.4	13.9	12.2	20.8	18.7	12.58
Supplementary Analytes (Not Historically analyzed)																						
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate as CaCO3 (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	993	965	978	953	914	995	968	964	978	955	963	979	1020
Carbonate as CaCO3 (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	108	< 20 U	37	22	57	< 20 U	21	< 20 U	23	29	22	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	14	14	14.4	16	15	15.5	14	16	16.3	15.1	18	17	16.9
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	8	8	7.8	7	7	7.4	8	8	8	7.5	8	7	7.4
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	7 B	8 B	7.4	4 B	6 B	6.6	7 B	7 B	10.8 B	7.0	7	6 B	6.1
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	2,480	2,430	2,470	2,410	2,260	2,410	2,420	2,420	2,310	2,550	2,500	2,540	2,490
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit
U = Analyte not detected, reported less than the practical quantitation limit
H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.
NA = Analyte not analyzed
^ = Second and third quarter 2015 reports presented calculated total dissolved solids results
Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)
*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)
Values in **bold** indicate a value greater than the Interim Narrative Standard
**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 2: Summary of Monitoring Results for MW-2

Date	Interim Narrative Standard	2/18/2014	1/0/1900	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016	5/31/2017	11/15/2017	6/6/2018	11/15/2018	6/12/2019	12/12/2019	6/4/2020	12/14/2020	6/23/2021	12/8/2021
Metals																							
Arsenic, Dissolved (mg/L)	0.01	0.004 B	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.004 B	0.0063	0.004 B	0.0043	0.00527	0.0041 B	0.00377 B
Barium, Dissolved (mg/L)	2.0	1.74	**2.28**	**2.57**	1.71	**2.03**	**2.65**	**2.04**	1.90	2.0	1.93	**2.23**	1.88	**2.61**	**2.77**	**3.32**	**3.22**	**3.19**	**3.85**	**3.75**	**2.99**	**3.38**	**3.11**
Boron, Dissolved (mg/L)	0.75	0.7	0.75	0.75	0.74	0.73	0.72	0.75	0.68	**0.79**	0.68	0.73	0.71	**0.77**	0.72	**0.78**	0.75	**0.8**	**0.76**	**0.76**	**0.784**	**0.802**	**0.762**
Chromium, Dissolved (mg/L)	0.1	< 0.01 U	< 0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	<0.002 U	< 0.003 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.01 U
Copper, Dissolved (mg/L)	0.2	< 0.05 U	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005 B	<0.002 U	< 0.004 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.01 U
Iron, Dissolved (mg/L)	0.3	**1.51**	**2.5**	**1.16**	**0.82**	**0.38**	**0.6**	**0.7**	**0.4**	**0.4** B	0.2 B	**1.2**	0.28	**0.5**	0.3	0.3	**0.4**	**0.4**	**0.38**	**0.37**	**0.34**	< 0.75 U	0.226
Lead, Dissolved (mg/L)	0.05	< 0.003 U	< 0.003 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	<0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0025 U	< 0.0025 U
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.16	1.31	1.83	1.19	1.16	1.15	1.23
Manganese, Dissolved (mg/L)	0.05	**0.099**	**0.097**	**0.105**	**0.103**	**0.075**	0.05 B	**0.07** B	**0.08** B	**0.08** B	0.05 B	**0.10**	**0.06**	0.05 B	< 0.1 U	**0.06** B	0.04 B	**0.07** B	**0.054**	**0.0639**	**0.0556**	**0.0577**	**0.0598**
Selenium, Dissolved (mg/L)	0.02	< 0.001 U	0.0007 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	0.0004	< 0.0005 U	< 0.001 U	< 0.005 U	< 0.00125 U	< 0.00125 U
Thallium, Dissolved (mg/L)	0.002	< 0.003 U	< 0.003 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	<0.0005 U	< 0.00005 U	< 0.001 U	< 0.00125 U	0.000329 B	< 0.00125 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0028 B	0.0028	0.0026 B	0.0028	0.00232	0.00246 B	0.00227 B
Zinc, Dissolved (mg/L)	2.0	< 0.05 U	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.3 U	<0.3 U	< 0.05 U	< 0.02 U	< 0.015 U	< 0.075 U	< 0.075 U
Other																							
Chloride (mg/L)	250	**3,180**	**3,240**	**2,930**	**2,980**	**2,990**	**3,150**	**3,100**	**3,040**	**3,240**	**3,120**	**3,110**	**3,010**	**3,170**	**3,070**	**3,030**	**3,530**	**3,340**	**3,130**	**3,090**	**3,820**	**3,250**	**3,290**
Fluoride (mg/L)	2	1.5	1.48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.3	1.6	1.4	1.3	1.39	1.46	1.48
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 B	<0.1 U	0.67	0.06	< 0.1	< 0.1 UH	< 0.1 U
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05 U	<0.05 U	< 0.01 U	<0.05 U	< 0.05 U	< 0.05 UH	< 0.05 U
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 B	<0.1 U	0.67	0.06 B	< 0.1 U	< 0.1 UH	< 0.1 U
Lab pH (s.u)	6.5 - 8.5	8.0 H	8.0 H	8.0 H	8.3 H	8.0 H	8.0 H	8.3 H	8.2 H	8.3	8.1 H	8.4 H	8.4 H	8.2 H	8.0 H	8.0 H	8.2 H	8 H	8.1 H	8.1 H	8.1 H	8.3 H	8 H
Total Dissolved Solids, filterable residue (mg/L)	7084	5,720	6,040 H	5,730	6,180	6,230	6,000 ^	5,520 ^	6,020	6,230	6,080	6,010	6,300	6,160	6,400	6,270 H	6,280	6,310	6,210	6,260	6,450	6270	6400
Sulfate (mg/L)	250	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 125 U	< 250 U	< 125 U	< 250 U	< 200 U	22 B	<100 U	<100 U	< 40 U	< 100 U	< 200 U	< 100 U	< 100 U
Gross Alpha (pCi/L)	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**20 (±18)**	0.14 (±18)	10(±24)	**20 (±21)**	11 (±23)	11(±21)	1.4(±27)
Gross Beta (pCi/L)	**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	25 (±21)	-3.9 (±30)	41(±31)	0.8 (±26)	-3.2 (±26)	27(±28)	-8.6(±28)
Field Parameters (Not Available pre-2010))																							
Field pH (s.u)	6.5 - 8.5	7.6	7.32	6.95	7.6	7.56	7.38	7.53	7.99	8.28	7.51	7.63	7.53	8.02	8.06	7.93	7.53	8.15	8.04	8.03	7.82	8.02	7.95
Field Conductivity (µS/cm)	none	10,440	11,040	11,310	11,100	11,440	9,630	11,050	6,750	8,770	10,020	10,890	10,510	10,360	10,570	11,060	11,000	11,080	6,730	8,600	9,622	10,340	11,199
Temperature (Degrees Celsius)	none	12.9	16.7	15.7	7.5	11.7	17.3	17.6	14.9	16.8	15.6	17.1	14.3	18.5	12.2	18.1	13.9	18.6	13.3	20	11.5	20.7	13.8
Supplementary Analytes (Not Historically analyzed)																							
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.8 U	<1 U	< 0.05 U	< 0.02 U	< 0.015 U	< 0.075 U	< 0.075 U
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	0.0023	0.003 B	0.0017 B	< 0.01 U	< 0.01 U	< 0.01 U
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.0003 U	< 0.0004 U	< 0.0003 U	< 0.00025 U	< 0.00125 U	< 0.00125 U
Bicarbonate as CaCO3 (mg/L)	none	1,060	1,100	1,080	1,100	NA	1,070	1,040	1,050	1,040	1,100	1,000	1,010	1,070	1,030	1,080	NA	1,090 H	1080	1,140	1,040	1,030	1,020
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	< 20 U	NA	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	40.9	40.7	< 20 U	< 20 U	< 20 U	NA	<20 UH	< 2 U	< 20 U	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	0.00011 B	< 0.0003 U	< 0.0003 U	0.000077 B	< 0.00125 U	0.000349 B
Calcium, Dissolved (mg/L)	none	17.6	18.2	17.9	17.4	17.5	17.3	17.3	17.2	18	16.9	17.5	16.6	16.7	16.6	16.8	18.6	17.3	18.1	18.6	17.6	18.3	17.6
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	0.00009 B	< 0.0003 U	0.0002 B	0.000073 B	< 0.00125 U	< 0.00125 U
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	0.004 B	< 0.003 U	< 0.01 U	0.003 B	0.0063 B	0.0037 B
Magnesium, Dissolved (mg/L)	none	7.3	6.9	6.6	7.4	7.4	7.0	8.0	7.0	8.0 B	7.0	8.0	6.6	7.0	7.0	7.0	7.0	6	6.6	6.6	6.95	6.26	6.67
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	0.0013 U	0.001 B	0.0009 B	0.00102	< 0.0025 U	0.00216 B
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.02 U	<0.001 U	< 0.002 U	< 0.001 U	< 0.001 U	< 0.005 U	< 0.005 U
Potassium, Dissolved (mg/L)	none	6.2	6.5	6.1	6	6.4	7.0	7.0	6.0	8.0	6.0	6.0	6.7	6.0	6.0	6.0	9.0	6	6.8	7.7	5.7	5.54	7.15
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	<0.0005 U	< 0.0005 U	0.0006 B	< 0.0025 U	< 0.0025 U	< 0.0025 U
Sodium, Dissolved (mg/L)	none	2,440	2,440	2,330	2,260	2,390	2,270	2,370	2,260	2,560	2,350	2,230	2,430	2,430	2,270	2,360	2,460	2,420	2,420	2,440	2,160	2,360	2,450
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	<0.1 U	< 0.003 U	< 0.004 U	0.00185 B	< 0.01 U	< 0.01 U

Notes:
B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit
U = Analyte not detected, reported less than the practical quantitation limit
H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.
NA = Analyte not analyzed
^ = Second and third quarter 2015 reports presented calculated total dissolved solids results
Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)
*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)
Values in **bold** indicate a value greater than the Interim Narrative Standard
**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 3: Summary of Monitoring Results for MW-3

Date	Interim Narrative Standard	4/28/1999	7/21/1999	9/16/1999	11/10/1999	1/19/2000	3/13/2000	5/16/2000	7/10/2000	9/27/2010	3/31/2011	6/30/2011	8/31/2011	11/17/2011	3/27/2012	6/27/2012	9/13/2012	11/13/2012	3/19/2013	5/28/2013	8/26/2013	11/14/2013
Metals																						
Arsenic, Dissolved (mg/L)	0.01	NA	0.005	0.005	**0.0362**	**0.03** B	**0.025**	**0.036**	**0.025**	**0.019**	0.01	**0.011**	**0.02**	< 0.004 U	< 0.01 U	0.0011 B	< 0.005 U	0.0005 B	0.0008 B	< 0.005 U	0.001 B	< 0.002 U
Barium, Dissolved (mg/L)	2	0.177	0.172	0.218	0.213	0.249	0.261	0.287	0.307	**2.4**	**2.95**	**2.23**	**2.73**	**2.25**	**2.51**	**2.08**	**2.52**	**2.23**	**2.5**	**2.20**	**2.41**	**2.25**
Boron, Dissolved (mg/L)	0.75	0.63	0.53	0.62	0.58	0.62	0.62	0.6	0.6	**0.77**	0.75	0.74	**0.8**	**0.78**	**0.77**	**0.76**	**0.76**	**0.85**	**0.79**	**0.84**	0.75	**0.76**
Chromium, Dissolved (mg/L)	0.1	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.05 U	0.003 B	0.001 B	< 0.01 U	0.004 B	< 0.004 U	< 0.01 U	< 0.002 U	< 0.01 U	< 0.01 U	< 0.004 U	< 0.01 U	< 0.01 U	< 0.004 U
Copper, Dissolved (mg/L)	0.2	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.05 U	< 0.1 U	< 0.1 U	< 0.3 U	< 0.1 U	< 0.1 U	< 0.05 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U
Iron, Dissolved (mg/L)	0.3	0.02 B	0.03 B	0.12	0.03 B	0.03 B	0.05 B	0.17	0.02 B	0.04 B	0.27	< 0.3 U	< 0.1 U	0.1	0.22	**0.32**	< 0.3 U	0.1	0.11	< 0.3 U	< 0.3 U	0.14
Lead, Dissolved (mg/L)	0.05	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	0.0031	< 0.003 U	< 0.001 U	0.0007 B	0.0002 *B	0.0004 B	< 0.001 U	< 0.003 U	0.0007	< 0.003 U	0.0003 B	< 0.001 U	< 0.003 U	< 0.003 U	< 0.001 U
Lithium, Dissolved (mg/L)	2.5	0.71	0.65	0.6	0.7	0.75	0.74	0.7	0.67	0.8	0.74	0.8	0.71	0.64	0.72	0.7	0.7	0.83	NA	NA	NA	NA
Manganese, Dissolved (mg/L)	0.05	**0.19**	0.05	**0.06**	0.05 B	0.05	0.05	**0.07**	**0.06**	0.04 B	0.05	0.03 B	0.04 B	0.03 B	0.021 B	0.034	< 0.1 U	0.047	0.026	< 0.1	< 0.1 U	0.031
Selenium, Dissolved (mg/L)	0.02	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	0.0006	0.0012	< 0.001 U	0.0005	< 0.005 U	0.0065	0.0007	< 0.001 U	0.0005 B	0.0006	0.0043	< 0.001 U	0.0003 B
Thallium, Dissolved (mg/L)	0.002	< 0.01 U	< 0.01 U	< 2 U	< 0.0003 U	< 0.005 U	< 0.005 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.003 U	< 0.001 U	< 0.001 U	< 0.003 U	< 0.0005 U	< 0.003 U	< 0.003 U	< 0.001 U	< 0.003 U	< 0.003 U	< 0.001 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	0.00871	0.007	0.0065	0.0058	0.0058	0.0015	0.0008 B	0.001 B	0.0006 B	0.0012	0.0006 B	0.0011	0.0005 B	0.0005 B	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	2	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.05 U	< 0.1 U	< 0.1 U	< 0.3 U	< 0.1 U	< 0.1 U	< 0.05 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U
Other																						
Chloride (mg/L)	250	**1,480**	**1,350**	**1,310**	**1,450**	**1,360**	**1,480**	**1,400**	**1,460**	**1,550**	**1,530**	**1,550**	**1,620**	**1,530**	**1,565**	**1,505**	**1,681**	**1,721**	**1,665**	**1,620**	**1,570**	**1,610**
Fluoride (mg/L)	2	**2.4**	**2.8**	**3** B	**2.2**	**3** B	**2.6**	**2.8**	**2.6**	**2.4**	**2.3**	**2.2**	**2.4**	**2.4**	**2.3**	**2.5**	**2.3**	**2.4**	**2.3**	**2.4**	**2.4**	**2.3**
Nitrate as N (mg/L)	10	< 0.1 U	< 0.1 U	0.02	< 0.1 U	< 0.1 U	NA	< 0.1 U	0.17	< 0.1 U	0.37	0.79	0.03 B	< 0.1 U	< 0.1 U	0.02 B	0.17	0.09 B	NA	NA	NA	NA
Nitrite as N (mg/L)	1	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	NA	NA	NA
Nitrate+Nitrite as N (mg/L)	10	< 0.1 U	< 0.1 U	0.02 B	< 1 U	< 0.1 U	NA	< 0.1 U	0.17	< 0.1 U	0.37	0.79	0.03 B	< 0.1 U	< 0.1 U	0.02 B	0.17	0.09 B	NA	NA	NA	NA
Lab pH (s.u)	6.5 - 8.5	8.5	**8.9**	**8.6**	8.4	**8.6**	8.2	8.2	8.4	**8.6** H	8.4 H	**8.6** H	8.5 H	8.2 H	8.4 H	8.4 H	8.5 H	8.5 H	8.5 H	8.4 H	8.5 H	8.4 H
Total Dissolved Solids, filterable residue (mg/L)	4620	3,780.0	3,740.0	3,690.0	3,720.0	3,660.0	3,680.0	3,620.0	3,680.0	3,930	3,940	4,000	3,940	3,860	4,000	3,790	4,000	3,950	3,990	4,000	4,000	3,880 H
Sulfate (mg/L)	250	140	110	100	100	90	90	90	90	< 100 U	< 100 U	< 300 U	< 50 U	< 125 U	< 125 U	30.1 B	< 125 U	< 125 U	< 125 U	< 125 U	< 125 U	< 125 U
Gross Alpha (pCi/L)	15	NA	**54**	0	**77**	15	8.4	6.2	9.6	5.7 (±13)	**33 (±20)**	5.7 (±17)	15 (±18)	**20 (±18)**	8 (±13)	**66 (±27)**	0.85 (±14)	-8.2 (±8.6)	NA	NA	NA	NA
Gross Beta (pCi/L)	**	NA	25	0	64	19	6.7	32	4.7	3.2 (±17)	25 (±21)	7.2 (±18)	5 (±19)	5.4 (±18)	13 (±18)	110 (±24)	15 (±17)	-4.9 (±18)	NA	NA	NA	NA
Field Parameters (Not Available pre-2010))																						
Field pH (s.u)	6.5 - 8.5	NA	NA	NA	NA	NA	NA	NA	NA	8.01	8.06	NA	8.46	7.98	8.36	7.95	8.14	8.34	8.24	8.31	8.25	8.15
Field Conductivity (µS/cm)	none	NA	NA	NA	NA	NA	NA	NA	NA	6186	675	NA	6,660	5,240	6,710	7	6,270	6,980	6,840	7,010	6,920	7,093
Temperature (Degrees Celsius)	none	NA	NA	NA	NA	NA	NA	NA	NA	17.55	16	NA	30.4	13.8	17.7	22.2	20.4	13.6	14.3	19.1	23.9	14.35
Supplementary Analytes (Not Historically analyzed)																						
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate as CaCO3 (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	1,110	1,130	1,100	1,090	1,100	1,160	1,130	1,130	1,130	1,140	1,130	1,130	1,170
Carbonate as CaCO3 (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	98	31	96	75	78	50	52	51	78	71	60	75	40
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	6.6	11.9	7	7.5	6.8	6.3	9.4	7	7.5	6.1	7	8	6.8
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	3	3.4	3 B	2.7	2.8	2.9	2.9	4 B	3.6	3.0	3	3 B	2.8
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	4.4	5.5	5.0 B	3.2	3.6	4.2	4.1	4.0 B	6.9	4.4	4.0	4.0 B	3.9
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	1,600	1,450	1,560	1,490	1,370	1,550	1,530	1,580	1,550	1,620	1,590	1,600	1,600
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 3: Summary of Monitoring Results for MW-3

Date	Interim Narrative Standard	2/18/2014	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016	5/31/2017	11/15/2017	6/6/2018	11/15/2018	6/12/2019	12/12/2019	6/4/2020	12/14/2020	6/23/2021	12/8/2021
Metals																							
Arsenic, Dissolved (mg/L)	0.01	0.0009 B	0.0005 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.002 U	0.0009 B	0.0004 B	0.0004 B	< 0.001 U	< 0.005 U	< 0.002 U
Barium, Dissolved (mg/L)	2.0	**2.31**	**2.02**	**2.23**	**2.62**	**2.25**	**2.83**	**2.47**	**2.81**	**2.58**	**3.16**	**3.16**	**2.57**	**2.45**	**2.93**	**2.18**	**2.4**	**2.93**	**2.77**	**2.42**	1.93	**2.66**	**2.52**
Boron, Dissolved (mg/L)	0.75	0.74	**0.76**	**0.76**	**0.78**	**0.81**	0.74	**0.79**	0.74	**0.76**	0.74	**0.79**	**0.77**	0.75	0.74	**0.81**	**0.77**	**0.80**	**0.77**	**0.76**	**0.841**	**0.782**	**0.786**
Chromium, Dissolved (mg/L)	0.1	< 0.004 U	< 0.004 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.004 U	<0.002 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.004 U
Copper, Dissolved (mg/L)	0.2	< 0.05 U	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	<0.1 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.004 U
Iron, Dissolved (mg/L)	0.3	0.19	0.30	0.29	0.29	**0.79**	0.19	0.26	0.21	0.2 B	0.2 B	0.17	0.29	0.11	0.14	**0.41**	0.18	<0.2 U	0.07 B	0.16 B	< 0.3 U	< 0.3 U	0.154
Lead, Dissolved (mg/L)	0.05	< 0.001 U	0.0002 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.0005 U	< 0.0002 U	< 0.0005 U	< 0.0005 U	< 0.0025 U	< 0.001 U
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.69	0.86	0.708	0.711	0.747	0.714	0.737
Manganese, Dissolved (mg/L)	0.05	0.043	0.05	0.05	**0.061**	**0.054**	0.02 B	0.03 B	0.03 B	< 0.1 U	< 0.1 U	0.02 B	0.033	0.01 B	0.01 B	**0.06**	<0.05 U	0.02 B	0.0195	0.0223	0.0259	0.016	0.0154
Selenium, Dissolved (mg/L)	0.02	< 0.0005 U	0.0002 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0005 U	0.0002 B	< 0.0002 U	< 0.0005 U	0.00025 B	< 0.00125 U	< 0.0005 U
Thallium, Dissolved (mg/L)	0.002	< 0.001 U	< 0.001 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.0005 U	< 0.00005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0003 B	0.0008	0.0005 B	0.0004 B	0.0001 B	0.0007 B	< 0.001 U
Zinc, Dissolved (mg/L)	2.0	0.02 B	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	<0.1 U	< 0.01 U	< 0.02 U	< 0.015 U	< 0.075 U	< 0.03 U
Other																							
Chloride (mg/L)	250	**1,570**	**1,580**	**1,520**	**1,540**	**1,530**	**1,620**	**1,570**	**1,560**	**1,640**	**1,690**	**1,550**	**1,550**	**1,550**	**1,580**	**1,560**	**1,750**	**1,660**	**1,620**	**1,640**	**1,670**	**1,670**	**1,670**
Fluoride (mg/L)	2	**2.4**	**2.4**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.38**	**2.4**	**2.5**	**2.5**	**2.44**	**2.48**	**2.49**
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	<0.1 U	1.2	0.02 B	< 0.1	< 0.1 UH	0.055 B
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05 U	<0.05 U	< 0.01 U	< 0.05 U	< 0.05 U	< 0.05 UH	< 0.05 U
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	<0.1 U	1.2	0.02 B	< 0.1 U	< 0.1 UH	0.055 B
Lab pH (s.u)	6.5 - 8.5	8.4 H	8.3 H	8.3 H	8.4 H	8.2 H	8.3 H	8.4 H	8.3 H	8.4	8.3 H	8.5 H	8.4 H	8.5 H	8.3 H	8.3 H	8.4 H	8.4 H	8.4 H	8.5 H	8.4 H	8.5 H	8.4 H
Total Dissolved Solids, filterable residue (m	4620	3,890	3,910 H	3,920	3,890	3,920	3,930 ^	3,910 ^	3,970	3,970	4,040	3,790	4,000	3,820	3,940	4,020 H	3,850	3,960	3,940	3,910	3,890	3,890	3,930
Sulfate (mg/L)	250	< 125 U	< 125 U	< 125 U	< 125 U	< 125 U	< 125 U	< 125 U	< 125 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 40 U	< 40 U	<40 U	<40 U	< 8 U	< 40 U	< 40 U	< 100 U	< 40 U
Gross Alpha (pCi/L)	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15 (±7.4)	3.5	-1.5(±14)	10 (±13)	-7.4 (±13)	5.1(±11)	-3.4(±15)
Gross Beta (pCi/L)	**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.7 (±15)	1.6	12(±18)	-2.2 (±16)	-5.4 (±20)	1.9(±17)	-10(±21)
Field Parameters (Not Available pre-2010))																							
Field pH (s.u)	6.5 - 8.5	8.12	7.78	7.94	7.9	7.78	7.78	7.83	8.02	8.4	8.05	7.52	7.77	NA	8.61	7.98	7.83	8.25	8.23	8.25	8.1	8.02	8.04
Field Conductivity (µS/cm)	none	6,610	7,140	7,220	6,800	7,140	6,120	7,010	5,820	4,850	6,290	6,710	7,030	NA	6,730	7,160	6,790	7,030	4,348	5,730	6,140	6,452	6,743
Temperature (Degrees Celsius)	none	14.8	17.1	17.0	9.0	14	19.7	18.5	17.3	11.4	18.6	20.7	20.7	NA	10.8	20.1	16	21.8	12.4	25.1	13.2	26	16.7
Supplementary Analytes (Not Historically analyzed)																							
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.3 U	<0.5 U	< 0.05 U	0.008 B	0.0057 B	< 0.075 U	< 0.03 U
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.004 U	0.0007 B	< 0.0008 U	< 0.002 U	< 0.004 U	< 0.01 U	< 0.004 U
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0005 U	<0.0003 U	< 0.0002 U	< 0.0003 U	< 0.00025 U	< 0.00125 U	< 0.0005 U
Bicarbonate as CaCO3 (mg/L)	none	1,220	982	1,270	1,260	NA	1,200	1,170	1,230	1,210	1,300	1,170	1200	1160	1160	1250	NA	1,260 H	1190	1,240	1,160	1,140	1,120
Carbonate as CaCO3 (mg/L)	none	37	57	< 20 U	41.6	NA	56.5	98.5	30.6	37.4	21.4	71.5	44.9	54.5	26.7	19.6 B	NA	<20 UH	55.1	60.4	51.2	74.5	54.3
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0005 U	<0.0003 U	< 0.0001 U	< 0.0003 U	< 0.00025 U	< 0.00125 U	< 0.0005 U
Calcium, Dissolved (mg/L)	none	6.7	7.2	6.7	7.7	8.7	7	7.6	6.9	6.7	7.4	7.8	7.3	6.8	6.5	6.9	7.4	6.7	6.9	6.7	6.69	6.45	6.25
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.0003 U	< 0.0001 U	0.0001 B	< 0.00025 U	< 0.00125 U	< 0.0005 U
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	<0.01 U	< 0.003 U	< 0.01 U	< 0.01 U	0.0031 B	< 0.01 U
Magnesium, Dissolved (mg/L)	none	3	3.1	3.4	3.2	3.3	2.8	3.1	2.9	2.8	3.0 B	3.2	2.6	2.5	2.6	3.1	2.5	2.5	2.6	2.5	2.91	2.57	2.78
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.2 U	<0.2 U	0.0004 B	< 0.001 U	0.00032 B	< 0.0025 U	< 0.001 U
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.08 U	<0.08 U	< 0.0008 U	< 0.001 U	< 0.001 U	< 0.005 U	< 0.002 U
Potassium, Dissolved (mg/L)	none	4.0	3.8	4.0	4.1	4.0	5.3	4.0	4.0	4.1	4.0	4	4.4	3.5	4.0	3.4	3.6	3.9	3.7	3.3	3.82	3.86	3.95
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05 U	<0.0005 U	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.0025 U	< 0.001 U
Sodium, Dissolved (mg/L)	none	1,570	1,610	1,500	1,490	1,430	1,480	1,450	1,480	1,540	1,510	1,470	1600	1430	1410	1490	1500	1,560	1,540	1,490	1,460	1,460	1,530
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05 U	<0.05 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.004 U

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 4: Summary of Monitoring Results for MW-4

Date	Interim Narrative Standard	5/26/1999	7/21/1999	9/23/1999	11/10/1999	1/19/2000	3/13/2000	5/16/2000	7/10/2000	9/27/2010	3/31/2011	6/28/2011	8/31/2011	11/172011	3/27/2012	6/27/2012	9/13/2012	11/13/2012	3/19/2013	5/28/2013	8/26/2013	11/15/2013
Metals																						
Arsenic, Dissolved (mg/L)	0.01	NA	< 0.005 U	NA	0.0894	0.08	0.075	0.103	0.08	**0.068**	**0.04**	**0.055**	**0.076**	<0.02 U	< 0.02 U	0.0009 B	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
Barium, Dissolved (mg/L)	2	0.14	0.29	0.461	0.55	0.69	0.81	0.92	0.972	**8.69**	**8.84**	**7.83** *	**8.93**	**7.94**	**8.73**	**8.41**	**8.91**	**8.67**	**9.22**	**8.74**	**9.13**	**8.8**
Boron, Dissolved (mg/L)	0.75	0.49	0.54	0.53	0.59	0.56	0.6	0.6	0.55	0.7	0.5 B	0.62 *	0.7	0.7	0.7	**0.8** B	0.5	0.72	0.7	0.7	0.6	0.7
Chromium, Dissolved (mg/L)	0.1	< 0.3 U	< 0.3 U	< 0.25 U	< 0.3 U	< 0.3 U	NA	< 0.3 U	< 0.05 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	0.0014 B	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U
Copper, Dissolved (mg/L)	0.2	< 0.3 U	< 0.3 U	0.11 B	< 0.3 U	< 0.3 U	NA	< 0.3 U	< 0.05 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 1 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Iron, Dissolved (mg/L)	0.3	< 0.3 U	< 0.3 U	1.13	0.07 B	0.05 B	0.17 B	0.44	0.04 B	0.3 B	0.3 B	0.28 *	**0.8**	< 0.5 U	**0.6**	**1.0**	< 0.5 U	**0.32** U	**0.8**	**0.5** U	**0.4** B	0.3 B
Lead, Dissolved (mg/L)	0.05	< 0.01 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	NA	0.009	< 0.01 U	< 0.005 U	< 0.005 U	0.002 B	0.001 B	< 0.005 U	< 0.005 U	< 0.01 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U
Lithium, Dissolved (mg/L)	2.5	0.9	1.2	1.3	1.4	1.5	1.6	1.5	1.51	2	1.9	2.25 *	1.8	1.6	1.8	1.9 B	1.9	2.38	NA	NA	NA	NA
Manganese, Dissolved (mg/L)	0.05	0.21	0.89	0.977	0.94	0.87	0.81	0.75	0.703	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.5 U	< 0.3 U	0.018 B	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U
Selenium, Dissolved (mg/L)	0.02	< 0.5 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.003 U	0.012	< 0.003 U	< 0.003 U	<0.003 U	0.007	0.0029	< 0.003 U	0.002 B	0.003 B	0.006	< 0.003 U	< 0.003 U
Thallium, Dissolved (mg/L)	0.002	< 5 U	< 0.01 U	< 5 U	< 0.0003 U	< 0.005 U	< 0.001 U	< 0.003 U	< 0.005 U	< 0.005 U	0.001 B	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.01 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	0.0235	0.019	0.0168	0.0138	0.015	< 0.005 U	0.001 B	< 0.005 U	0.002 B	< 0.005 U	< 0.005 U	< 0.01 U	< 0.005 U	< 0.005 U	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	2	1.07	1.03	1.71	< 0.3 U	< 3 U	< 0.3 U	< 0.3 U	0.01 B	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 1.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Other																						
Chloride (mg/L)	250	2,770	2,940	4,260	4,800	4,970	5,200	6,900	5,300	**6,300**	**6,200**	**6,200**	**6,500**	**6,282**	**6,063**	**6,105**	**6,566**	**6,077**	**6,744**	**6,490**	**6,470**	**6,750**
Fluoride (mg/L)	2	1	1.1	0.9	0.9	1.1	1.1	1.4	1.1	1.1	1.1	1	1.1	1.1	1.0	1.1	1.2	1.1	1.1	1.1	1.1	1.1
Nitrate as N (mg/L)	10	< 0.1 U	0.07	< 0.1 U	< 0.1 U	0.13	NA	< 0.1 U	0.73	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	1.83	0.04 B	0.04 B	0.04 B	NA	NA	NA	NA
Nitrite as N (mg/L)	1	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	< 0.05 U	< 0.05 U	< 0.05 U	0.01 B	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	NA	NA	NA
Nitrate+Nitrite as N (mg/L)	10	< 0.1 U	0.07 B	< 0.1 U	< 0.1 U	0.13	NA	< 0.1 U	0.73	< 0.1 U	0.02 B	< 0.1 U	< 0.1 U	< 0.1 U	1.83	0.04 B	0.04 B	0.04 B	NA	NA	NA	NA
Lab pH (s.u)	6.5 - 8.5	8.1	7.7	7.8	7.8	8.1	7.6	8	8	8.3 H	8.2 H	8.2	8.2 H	8.3 U	8.1 H	8.1 H	8.1 H	8.2 H	8.1 H	8.2 H	8.1 H	8.1 H
Total Dissolved Solids, filterable residue (mg/L)	10,212*	5,870.0	7,610.0	8,170.0	8,660.0	8,670.0	9,110.0	8,980.0	9,350.0	**11,000**	**11,100**	**11,100**	**10,900**	**11,100**	**11,200**	**10,800**	**11,100**	**10,800**	**11,100**	**11,000**	**10,900**	**10,300** H
Sulfate (mg/L)	250	970	600	460	390	3150	290	270	250	< 500 U	< 500 U	< 500 U	< 300 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U
Gross Alpha (pCi/L)	15	26	12	53	-4.3	57	4.7	0	65	-10 (±39)	73 (±47)	16 (±37)	40 (±52)	19 (±52)	-33 (±18)	260 (±76)	-0.11 (±17)	-15 (±30)	NA	NA	NA	NA
Gross Beta (pCi/L)	**	23	37	27	-24	18	20	4.7	8.6	-7.5 (±53)	80 (±49)	22 (±45)	51 (±57)	66 (±63)	38 (±51)	270 (±61)	53 (±53)	9.9 (±42)	NA	NA	NA	NA
Field Paramters (Not Avalible pre-2010))																						
Field pH (s.u)	6.5 - 8.5	NA	NA	NA	NA	NA	NA	NA	NA	7.95	7.85	7.68	7.97	7.92	8.23	7.48	7.84	8.05	7.53	7.36	7.73	6.57
Field Conductivity (µS/cm)	none	NA	NA	NA	NA	NA	NA	NA	NA	1,825	1,959	17,420	18,450	18,230	18,500	9	17,080	18,790	11,720	18,800	18,750	19,055
Temperature (Degrees Celsius)	none	NA	NA	NA	NA	NA	NA	NA	NA	17.7	15	19.9	23.4	14	14.6	18.6	22.0	12.3	12.1	16.7	18.8	11.46
Supplementary Analytes (Not Historically analyzed)																						
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate as CaCO3 (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	585	565	569	562	573	597	580	576	571	573	567	590	576
Carbonate as CaCO3 (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	16 B	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	37	38	79	37	35	36	42	38	39.2	37	37	37	36
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	18	18	38	16	16	17	22	19	18.9	18	18	17	16
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	10 B	12 B	20 B	7.0 B	9.0 B	7.0 B	15 B	10 B	22	10 B	10 B	9.0 B	9 B
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	4,270	4,180	4,280	4,200	3,930	4,220	4,240	4,250	4,150	4,390	4,260	4,350	4070
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 4: Summary of Monitoring Results for MW-4

Date	Interim Narrative Standard	2/18/2014	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016	5/31/2017	11/15/2017	6/6/2018	11/15/2018	6/12/2019	12/12/2019	6/4/2020	12/14/2020	6/23/2021	12/8/2021
Metals																							
Arsenic, Dissolved (mg/L)	0.01	< 0.01 U	< 0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	0.0004 B	< 0.002 U	< 0.02 U	0.00055 B	< 0.01 U	< 0.01 U
Barium, Dissolved (mg/L)	2.0	**8.58**	**9.64**	**8.01**	**8.56**	**8.77**	**8.76**	**8.81**	**8.80**	**8.66**	**8.79**	**8.91**	**8.61**	**8.95**	**8.60**	**9.00**	**8.90**	**8.42**	**8.94**	**9.17**	**7.95**	**8.80**	**8.58**
Boron, Dissolved (mg/L)	0.75	0.63	0.6	0.7	0.7	**0.8** B	0.6	0.7	0.6	0.7	0.6	0.6	0.61	0.7	0.6	**0.8**	0.6	0.7 B	0.63	0.63	**0.76**	0.747 B	0.67
Chromium, Dissolved (mg/L)	0.1	< 0.02 U	< 0.02 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.02 U	<0.002 U	< 0.005 U	< 0.002 U	< 0.002 U	< 0.02 U	< 0.02 U
Copper, Dissolved (mg/L)	0.2	< 0.3 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.02 U	<0.002 U	< 0.008 U	< 0.002 U	< 0.002 U	< 0.02 U	< 0.02 U
Iron, Dissolved (mg/L)	0.3	**0.8**	0.2 B	**0.5**	0.3 B	< 1 U	0.3 B	0.1 B	**0.4** B	0.2 B	0.14	< 0.5 U	0.15	< 0.5 U	< 0.5 U	< 0.5 U	0.15	0.114 U	0.12	0.11 B	< 0.75 U	< 1.5 U	< 0.15
Lead, Dissolved (mg/L)	0.05	< 0.005 U	< 0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005 U	<0.0005 U	< 0.001 U	< 0.0005 U	< 0.0005 U	< 0.005 U	< 0.005 U
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.76	1.93	1.81	1.91	1.81	1.80	1.98
Manganese, Dissolved (mg/L)	0.05	< 0.1 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.5 U	< 0.3 U	< 0.1 U	< 0.3 U	< 0.3 U	< 0.03 U	< 0.3 U	< 0.03 U	< 0.3 U	< 0.3 U	< 0.3 U	0.008 B	0.0065 U	0.007 B	0.011 B	0.00724	0.00612 B	0.00886 B
Selenium, Dissolved (mg/L)	0.02	< 0.003 U	< 0.003 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.017	0.0014	< 0.001 U	< 0.003 U	< 0.002 U	< 0.0025 U	< 0.0025 U
Thallium, Dissolved (mg/L)	0.002	< 0.005 U	< 0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005 U	<0.0005 U	< 0.0001 U	< 0.003 U	< 0.0025 U	0.000825 B	< 0.0025 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005 U	0.0001 B	< 0.001 U	< 0.01 U	0.0003 B	< 0.005 U	< 0.005 U
Zinc, Dissolved (mg/L)	2.0	< 0.3 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5 U	<0.5 U	< 0.01 U	< 0.02 U	< 0.015 U	< 0.15 U	< 0.15 U
Other																							
Chloride (mg/L)	250	**7,080**	**6,450**	**5,600**	**6,260**	**6,650**	**6,410**	**6,630**	**6,880**	**6,530**	**6,290**	**6,350**	**5,960**	**6,390**	**6,170** H	**6,150**	**7,780**	**7,140**	**7,100**	**7,020**	**6,160**	**6,680**	**7,010**
Fluoride (mg/L)	2	1.1	1.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.03	1.1	1.1	1.1	1.07	1.1	1.11
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	0.12	< 0.02 U	<0.1 U	< 0.1 U	< 0.1 UH	< 0.1 U
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05 U	<0.05 U	0.01 B	<0.05 U	< 0.05 U	< 0.05 UH	< 0.05 U
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	0.12	< 0.02 U	<0.1 U	< 0.1 U	< 0.1 UH	< 0.1 U
Lab pH (s.u)	6.5 - 8.5	8 H	7.9 H	8.1 H	8.2 H	8 H	8.1 H	8.2 H	8.2 H	8.2	7.9 H	8.3 H	8.2 H	8.3 H	7.9 H	8.1 H	8.1	8 H	8.2 H	8.1 H	8 H	8.1 H	8 H
Total Dissolved Solids, filterable residue (mg/L)	10,212	**10,800** H	**10,300** H	9,530	**10,900**	**10,600**	**10,600** ^	9,720 ^	**10,800**	**10,900**	10,100	**10,800**	**11,100**	**10,500**	**11,000**	**10,900**	**11,200**	**11,000**	**10,600**	**11,700**	**11,000**	**11,200**	**11,500**
Sulfate (mg/L)	250	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 250 U	< 250 U	< 250 U	< 250 U	< 200 UH	< 200 U	<200 U	<200 U	< 40 U	< 200 U	< 400 U	< 200 U	< 200 U
Gross Alpha (pCi/L)	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.83 (±26)	-17 (±22)	-3.9(±37)	**19(±31)**	**19 (±44)**	11(±30)	**87(±72)**
Gross Beta (pCi/L)	**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	38 (±39)	-11 (±57)	40(±44)	1.3(±43)	-2.6 (±53)	16(±57)	28(±61)
Field Parameters (Not Available pre-2010))																							
Field pH (s.u)	6.5 - 8.5	7.27	7.25	7.52	7.56	7.54	9.09	7.49	8.26	8.2	7.74	7.31	7.65	8.05	7.81	7.89	7.63	7.96	7.79	8.28	7.86	7.9	7.94
Field Conductivity (µS/cm)	none	18,020	19,380	19,500	18,510	19,550	16,610	19,050	14,650	13,890	16,140	18,530	19,320	17,800	18,260	19,620	18,570	18,390	11,030	15,330	16,872	17,690	19,307
Temperature (Degrees Celsius)	none	12.1	14.9	14.5	11.7	12.5	17.5	16.6	13.1	11.6	16	18.3	16.1	14.7	12.4	16.8	14	15.6	7.3	22.4	11.3	20.7	14.8
Supplementary Analytes (Not Historically analyzed)																							
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2 U	<3 U	< 0.05 U	< 0.02 U	< 0.015 U	< 0.15 U	< 0.15 U
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.006 B	<0.002 U	0.005 B	< 0.04 U	< 0.02 U	< 0.02 U	< 0.02 U
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	<0.0003 U	< 0.0008 U	< 0.0003 U	< 0.00025 U	< 0.0025 U	< 0.0025 U
Bicarbonate as CaCO3 (mg/L)	none	606	623	616	611	NA	604	599	615	606	664	613	619	612	592	602	NA	601 H	606	644	585	595	567
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	< 20 U	NA	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	6.2 B	< 20 U	< 20 U	< 20 U	< 20 U	NA	<20 UH	< 2 U	< 20 U	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	0.00007 B	< 0.0005 U	< 0.0003 U	< 0.00025 U	< 0.0025 U	< 0.0025 U
Calcium, Dissolved (mg/L)	none	36.1	38	37	37	38	38	36.9	38	38	36	37	35.8	36	36	36	36	35	37	35.6	35.7	36.8	34.1
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	0.00015 B	0.0012 B	< 0.005 U	0.000116 B	< 0.0025 U	< 0.0025 U
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.004 B	0.009 B	< 0.003 U	< 0.01 U	0.0061 B	0.0097 B	< 0.01 U
Magnesium, Dissolved (mg/L)	none	16	17	18	18	21	17	18	17	17	16.4	18	16.1	16	16	17	17	15	16.6	16	16.4	15.6	15.8
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0002 B	<0.001 U	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.03 U	0.0002 U	< 0.002 U	< 0.01 U	0.00045 B	< 0.005 U	0.00216 B
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.03 U	<0.001 U	< 0.004 U	< 0.001 U	< 0.001 U	< 0.01 U	< 0.01 U
Potassium, Dissolved (mg/L)	none	9	9 B	9 B	10	12 B	9	9	10	11	9.1	9	9	10	9	8 B	10	8 B	11.7	15.3	8.34	8.04 B	10.9
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005 U	<0.0005 U	< 0.001 U	< 0.01 U	< 0.005 U	< 0.005 U	< 0.005 U
Sodium, Dissolved (mg/L)	none	4120	4360	4050	3950	4070	4040	4030	4050	4290	4020	4000	4160	4080	3950	4030	4130	4,030	4,180	4,240	3,830	4,050	4,050
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.02 U	<0.002 U	< 0.005 U	< 0.04 U	0.00067 B	< 0.02 U	< 0.02 U

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 5: Summary of Monitoring Results for MW-5

Date	Interim Narrative Standard	3/19/2013	5/28/2013	8/26/2013	11/14/2013	2/18/2014	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016
Metals																	
Arsenic, Dissolved (mg/L)	0.01	0.002 B	0.0004 B	0.005	< 0.002 U	0.0004 B	< 0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium, Dissolved (mg/L)	2	0.015 B	0.014 B	0.015 B	0.014 B	0.015 B	0.006 B	0.008 B	0.011 B	0.012 B	0.009 B	< 0.03 U	0.015 B	0.017 B	0.013 B	0.006 B	0.013 B
Boron, Dissolved (mg/L)	0.75	0.37	0.33	0.25	0.32	0.33	0.36	0.33	0.36	0.36	0.26	0.3	0.29	0.33	0.26	0.26	0.29
Chromium, Dissolved (mg/L)	0.1	< 0.01 U	< 0.004 U	< 0.004 U	< 0.004 U	< 0.004 U	< 0.004 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper, Dissolved (mg/L)	0.2	< 0.05 U	< 0.1 U	< 0.1 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron, Dissolved (mg/L)	0.3	**17.5**	**15.6**	**85.4**	**1.39**	**9.56**	0.15	**0.7**	**8.11**	**19.6**	0.05	**0.6**	**20.3**	**7.11**	**0.58**	**11.6**	**33.5**
Lead, Dissolved (mg/L)	0.05	< 0.003 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese, Dissolved (mg/L)	0.05	**0.168**	**0.13**	**0.16**	**0.074**	**0.091**	**0.069**	**0.12**	**0.093**	**0.109**	**0.072**	< 0.3 B	**0.11**	**0.1**	**0.07**	**0.09**	**0.11**
Selenium, Dissolved (mg/L)	0.02	0.0008 B	**0.0593**	0.0013	0.0027	0.0005	**0.023**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium, Dissolved (mg/L)	0.002	< 0.003 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	2	0.01 B	< 0.1 U	< 0.1 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other																	
Chloride (mg/L)	250	79.4 B	27.6 B	36.3 B	18.6	26.4 B	27.9 B	< 125 U	< 125 U	50.8 B	27 B	44.5 B	< 250 U	< 250 U	18.5 B	18.6 B	42.4 B
Fluoride (mg/L)	2	0.8	0.7	1.3	0.6	0.7	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lab pH (s.u)	6.5 - 8.5	7.5 H	7.7 H	7.3 H	7.4 H	7.4 H	7.6 H	7.5 H	7.7 H	7.4 H	7.6 H	7.5 H	7.5 H	7.2	7.3 H	7.9 H	7.7 H
Total Dissolved Solids, filterable residue (mg/L)	1.25 x Background*	4,950	3,360	3,710	3,110	3,100	3,010 H	2,970	3,140	3,240	3,160 ^	3070 ^	3220	3540	3140	2850	3310
Sulfate (mg/L)	250	**3,273**	**2,050**	**2,200**	**1,690**	**1,770**	**1,870**	**1,630**	**1,690**	**1,900**	**1,860**	**1,720**	**1,940**	**2,250**	**1,920**	**1,770**	**1,940**
Gross Alpha (pCi/L)	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gross Beta (pCi/L)	**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters (Not Available pre-2010))																	
Field pH (s.u)	6.5 - 8.5	6.65	6.67	7	6.74	6.83	6.56	6.76	6.77	6.67	6.47	6.76	7.06	7.2	6.77	6.74	6.59
Field Conductivity (µS/cm)	none	2,631	3,735	3,774	3324	3,262	3,370	3,345	33,200	3,787	3,016	3,340	2,900	2,800	2,649	3,192	3,546
Temperature (Degrees Celsius)	none	12	14.3	15.8	11.34	12.3	13.9	13.8	10.5	11.1	15.1	14.4	13.9	10.7	14.1	16.1	12.8
Supplementary Analytes (Not Historically analyzed)																	
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate as CaCO3 (mg/L)	none	225	320	205	343	380	410	378	377	NA	347	376	377	361	409	357	311
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	NA	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium, Dissolved (mg/L)	none	426	464	523	446	433	441	442	461	453	505	520	478	464	486	495	494
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium, Dissolved (mg/L)	none	147	126	131	101	109	106	101	111	118	112	115	115	124	112	113	122
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium, Dissolved (mg/L)	none	10.1	8.1	10.2	6.2	7.1	6.5	6.3	6.9	7.7	6	6	7.1	7.6	6	6.6	8.7
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium, Dissolved (mg/L)	none	865	373	312	269	332	308	257	285	344	232	209	260	450	229	221	281
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 5: Summary of Monitoring Results for MW-5

Date	Interim Narrative Standard	5/31/2017	11/15/2017	6/6/2018	11/15/2018	6/12/2019	12/12/2019	6/4/2020	12/14/2020	6/23/2021	12/8/2021
Metals											
Arsenic, Dissolved (mg/L)	0.01	NA	NA	NA	0.0019 B	0.0018	0.0011 B	0.0037	0.00273	< 0.002 U	0.00167 B
Barium, Dissolved (mg/L)	2	0.01 B	< 0.03 U	< 0.03 U	<0.03 U	0.02	0.01 B	0.011	0.0106	0.00986	0.0128
Boron, Dissolved (mg/L)	0.75	0.36	0.36	0.35	0.33	0.35	0.35	0.33	0.32	0.307	0.344
Chromium, Dissolved (mg/L)	0.1	NA	NA	NA	<0.004 U	<0.002	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
Copper, Dissolved (mg/L)	0.2	NA	NA	NA	<0.1 U	<0.1	< 0.002 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
Iron, Dissolved (mg/L)	0.3	**2.15**	**10.3**	**0.97**	**32.8**	**7.67**	**9.22**	**38**	**28.1**	**0.404**	**17**
Lead, Dissolved (mg/L)	0.05	NA	NA	NA	<0.001 U	<0.0005	< 0.0002 U	< 0.0005 U	< 0.0005 U	< 0.001 U	< 0.001 U
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	0.3	0.39	0.417	0.364	0.385	0.242	0.344
Manganese, Dissolved (mg/L)	0.05	**0.09**	**0.09**	**0.08**	**0.09**	**0.09**	**0.0772**	**0.0775**	**0.0935**	**0.0767**	**0.0899**
Selenium, Dissolved (mg/L)	0.02	NA	NA	NA	0.0017	0.0005	0.0002 B	0.001	0.00154	0.00503	< 0.0005 U
Thallium, Dissolved (mg/L)	0.002	NA	NA	NA	<0.001 U	0.0001	0.00007 B	0.0002 B	0.00021 B	0.00044 B	< 0.0005 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	**0.0379**	0.0261	0.0241	**0.0465**	0.0243	**0.0416**	**0.031**
Zinc, Dissolved (mg/L)	2	NA	NA	NA	<0.1 U	<0.1	< 0.01 U	0.007 B	0.0075 B	< 0.03 U	< 0.03 U
Other											
Chloride (mg/L)	250	45.4 B	25.8 BH	19.7 B	36.2 B	29.8	36 B	27.3 B	30.8 B	11.8 B	< 100 U
Fluoride (mg/L)	2	NA	NA	NA	0.72	0.6	0.7	0.7	0.73	0.47	0.74
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	0.57	<0.1 U	< 0.1 U	< 0.1 UH	0.188
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	< 0.01 U	<0.05 U	< 0.05 U	< 0.05 UH	0.014 B
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	0.57	0.1 U	< 0.1 U	< 0.1 UH	0.202
Lab pH (s.u)	6.5 - 8.5	7.8 H	7.3 H	7.7 H	7.5	7.7	7.7 H	7.6 H	7.4 H	7.6 H	7.4 H
Total Dissolved Solids, filterable residue (mg/L)	1.25 x Background*	3,970	3,160	3,020 H	3,340	3,630	3,800	3630	3830	2,910	3,300
Sulfate (mg/L)	250	**2,540**	**1,820** H	**1,780**	**2,190**	**2,180**	**2,480**	**2,290**	**2,530**	**1,860**	**2,120**
Gross Alpha (pCi/L)	15	NA	NA	NA	8.6 (±11)	8.5 (±9.2)	**24(±14)**	**32(±15)**	**26 (±13)**	**31(±13)**	**38(±19)**
Gross Beta (pCi/L)	**	NA	NA	NA	18 (±13)	8.2 (±13)	25(±12)	12(±12)	19 (±13)	20(±9.2)	8.6(±12)
Field Parameters (Not Available pre-2010))											
Field pH (s.u)	6.5 - 8.5	7.23	7.04	6.81	6.85	7.06	7.08	7.06	7.27	6.93	6.79
Field Conductivity (µS/cm)	none	4,530,000	3,280	3,397	3,622	3,983	2,416	2,808	3,810	2,928	3,921
Temperature (Degrees Celsius)	none	15.4	12.8	16	13.6	15.2	12.2	14.3	11.2	15.9	12.5
Supplementary Analytes (Not Historically analyzed)											
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	<0.3 U	<0.5	< 0.05 U	< 0.02 U	0.013 B	< 0.03 U	< 0.03 U
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	<0.004 U	<0.002	< 0.0008 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	<0.0005 U	<0.0003	< 0.0002 U	< 0.0003 U	< 0.00025 U	< 0.0005 U	< 0.0005 U
Bicarbonate as CaCO3 (mg/L)	none	348	375	401	NA	392	354	328	304	360	323
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	NA	<20	< 2 U	< 20 U	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	<0.0005 U	<0.0003	< 0.0001 U	0.00014 B	< 0.00025 U	< 0.0005 U	< 0.0005 U
Calcium, Dissolved (mg/L)	none	429	461	425	490	402	405	474	427	477	433
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	0.0047	0.00595	0.0046	0.00805	0.00527	0.00582	0.00508
Cyanide, Free (mg/L)	0.2	NA	NA	NA	<0.01 U	<0.01	< 0.003 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
Magnesium, Dissolved (mg/L)	none	128	119	109	121	113	116	117	120	104	109
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	<0.001 U	<0.001	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	<0.2 U	<0.2	0.0045	0.0146	0.0089	0.00157	0.00892
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	0.05 B	0.04	0.021	0.0511	0.0436	0.0237	0.0268
Potassium, Dissolved (mg/L)	none	8.2	7.2	6.6	8.1	8.1	9.4	9.7	9.03	6.08	8.49
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	<0.05 U	<0.0005	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U
Sodium, Dissolved (mg/L)	none	614	322	329	317	501	617	439	497	230	413
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	<0.05 U	<0.05	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 6: Summary of Monitoring Results for MW-6

Date	Interim Narrative Standard	3/19/2013	5/28/2013	8/27/2013	11/14/2013	2/18/2014	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016
Metals																	
Arsenic, Dissolved (mg/L)	0.01	0.002 B	< 0.01 U	< 0.01 U	< 0.01 U	0.004 B	0.007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium, Dissolved (mg/L)	2	0.97	**3.22**	**3.56**	**4.12**	**5.95**	**3.32**	**3.46**	**4.37**	**7.37**	**7.47**	**8.74**	**8.12**	**8.34**	**8.26**	**8.42**	**8.25**
Boron, Dissolved (mg/L)	0.75	0.6	0.7	0.6	0.6	0.58	0.7	0.6	0.7	0.6 B	0.6	0.65	0.6	0.57	0.5	0.5	0.55
Chromium, Dissolved (mg/L)	0.1	< 0.01 U	< 0.02 U	0.018 B	< 0.02 U	< 0.02 U	< 0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper, Dissolved (mg/L)	0.2	< 0.5 U	< 0.5 U	< 0.5 U	< 0.3 U	< 0.3 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron, Dissolved (mg/L)	0.3	**1.0**	**1.3**	**0.6**	**0.6**	**0.6**	**2.1**	**1.9**	**1.3**	**2.5**	**4.1**	**3.9**	**5.2**	**5.3**	**5.5**	**5.4**	**5**
Lead, Dissolved (mg/L)	0.05	< 0.003 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.003 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese, Dissolved (mg/L)	0.05	**0.33**	**0.29** B	**0.2** B	**0.19**	**0.19**	**0.21** B	**0.2** B	**0.25** B	**0.3** B	**0.31**	**0.39**	**0.42**	**0.45**	**0.37**	**0.35**	**0.31**
Selenium, Dissolved (mg/L)	0.02	0.0048	0.007	0.0016	0.002 B	0.001 B	0.0033	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium, Dissolved (mg/L)	0.002	< 0.003 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.003 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	2	< 0.5 U	< 0.5 U	< 0.5 U	< 0.3 U	< 0.3 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other																	
Chloride (mg/L)	250	**5,090**	**5,680**	**6,080** U	**5,860**	**6,020**	**6,520**	**5,610**	**6,110**	**5,960**	**5,680**	**5,880**	**5,800**	**5,590**	**5,520**	**6,050**	**5620**
Fluoride (mg/L)	2	1.3	1.4	1.4	1.3	1.3	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lab pH (s.u)	6.5 - 8.5	8.1 H	8.2 H	8.2 H	8.2 H	8.2 H	7.9 H	8.0 H	8.1 H	7.7 H	7.8 H	7.8 H	7.7 H	7.78	7.4 H	7.6 H	7.7 H
Total Dissolved Solids, filterable residue (mg/L)	1.25 x Background*	9,110	10,200	9,340 H	10,100 H	10,900	8,800 H	9,350	10,400	10,600	10,300 ^	8,840 ^	10,200	9,780	10,800	10,400	10500
Sulfate (mg/L)	250	249.7	< 250 U	< 250 U	98.6 B	< 250 U	52.5 B	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U
Gross Alpha (pCi/L)	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gross Beta (pCi/L)	**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters (Not Available pre-2010))																	
Field pH (s.u)	6.5 - 8.5	7.91	7.67	7.58	7.46	7.85	7.47	7.46	7.75	7.43	7.55	7.2	7.51	7.78	7.32	6.6	7.24
Field Conductivity (µS/cm)	none	9,340	16,470	17,850	18,064	17,460	18,250	18,670	17,940	18,880	16,370	18,670	13,820	14,380	16,600	17,790	17,570
Temperature (Degrees Celsius)	none	12.8	17	18.4	13.72	11.3	16.1	17.1	7.9	14.5	17.1	19.8	12.7	15.3	17.8	18.3	18.9
Supplementary Analytes																	
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate as CaCO3 (mg/L)	none	463	507	513	529	558	580	608	632	NA	656	673	702	691	736	716	715
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	NA	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium, Dissolved (mg/L)	none	58	44	33	34	32.2	40	41	45	51	49	57.9	63	68	67	69	66.1
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium, Dissolved (mg/L)	none	21	20	18	17	16	16	17	18	22	17	18	17	18	16	19	17.3
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium, Dissolved (mg/L)	none	14 B	12 B	12 B	11	10	11	10	10	13 B	10	10	10	11	9 B	10	10.7
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium, Dissolved (mg/L)	none	3,600	3,920	3,860	4,000	3,960	4,060	3,770	3,710	3,840	3,930	3,850	3,840	4,100	3,770	3,780	3,960
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 6: Summary of Monitoring Results for MW-6

Date	Interim Narrative Standard	5/31/2017	11/15/2017	6/6/2018	11/15/2018	6/12/2019	12/12/2019	6/4/2020	12/14/2020	6/23/2021	12/8/2021
Metals											
Arsenic, Dissolved (mg/L)	0.01	NA	NA	NA	0.007 B	0.0074	0.007 B	0.009 B	0.00928	0.00574 B	0.00479 B
Barium, Dissolved (mg/L)	2	**7.85**	**7.77**	**7.65**	**7.25**	**6.66**	**6.84**	**6.64**	**6**	**5.81**	**6.01**
Boron, Dissolved (mg/L)	0.75	0.7	**0.8**	0.6	0.6	0.6 B	0.67	0.58	**0.757**	**0.765** B	0.657
Chromium, Dissolved (mg/L)	0.1	NA	NA	NA	<0.02 U	<0.002 U	< 0.005 U	< 0.04 U	< 0.002 U	< 0.02 U	< 0.02 U
Copper, Dissolved (mg/L)	0.2	NA	NA	NA	<0.02 U	<0.002 U	< 0.008 U	0.05	0.00195 B	< 0.02 U	< 0.02 U
Iron, Dissolved (mg/L)	0.3	**1.7**	**3.4**	**3.0**	**2.9**	**2.2**	**2.87**	**1.93**	**2.99**	**3.14**	**3.62**
Lead, Dissolved (mg/L)	0.05	NA	NA	NA	<0.005 U	<0.0005 U	< 0.001 U	< 0.01 U	< 0.0005 U	< 0.005 U	< 0.005 U
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	1.74	1.87	2.21	1.81	1.79	1.76	1.96
Manganese, Dissolved (mg/L)	0.05	**0.14** B	**0.07** B	**0.06** B	**0.09**	**0.0733** U	**0.079**	**0.072**	**0.0585**	**0.0862**	**0.0831**
Selenium, Dissolved (mg/L)	0.02	NA	NA	NA	<0.003 U	0.0009	< 0.001 U	< 0.003 U	< 0.0025 U	< 0.0025 U	< 0.0025 U
Thallium, Dissolved (mg/L)	0.002	NA	NA	NA	<0.005 U	<0.0005 U	< 0.0001 U	< 0.003 U	< 0.0025 U	0.00092 B	< 0.0025 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	0.004	0.0023	0.004 B	0.003 B	0.00322	0.00264 B	0.00306 B
Zinc, Dissolved (mg/L)	2	NA	NA	NA	<0.5 U	<0.5 U	< 0.05 U	< 0.02 U	< 0.015 U	< 0.15 U	< 0.15 U
Other											
Chloride (mg/L)	250	**6,130**	**5,900**	**5,880**	**6,490**	**6,610** H	**6,390**	**7,100**	**6,110**	**6,810**	**6,190**
Fluoride (mg/L)	2	NA	NA	NA	1.09	1.2	1.2	1.1	1.12	1.18	1.27
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	< 0.02 U	< 0.1 U	< 0.1 U	< 0.1 UH	< 0.1 U
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	< 0.01 U	< 0.05 U	< 0.05 U	< 0.05 UH	< 0.05 U
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	< 0.02 U	< 0.1 U	< 0.1 U	< 0.1 UH	< 0.1 U
Lab pH (s.u)	6.5 - 8.5	8.1 H	7.7 H	7.8 H	8 H	7.9 H	8.1 H	8.1 H	8 H	7.9 H	7.9 H
Total Dissolved Solids, filterable residue (mg/L)	1.25 x Background*	10,500	10,400	10,500	10,700	10,600	10,300	10,700	10,600	11,100	10,500
Sulfate (mg/L)	250	< 250 U	< 200 U	51 B	<200 U	<200 U	< 40 U	< 200 U	< 200 U	< 200 U	< 200 U
Gross Alpha (pCi/L)	15	NA	NA	NA	**47 (±36)**	-33 (±24)	0.0(±52)	**16(±29)**	14 (±33)	**65(±40)**	**21(±56)**
Gross Beta (pCi/L)	**	NA	NA	NA	43 (±35)	56 (±47)	0.78(±63)	33(±46)	-28 (±47)	57(±44)	-0.71(±50)
Field Parameters (Not Available pre-2010)]											
Field pH (s.u)	6.5 - 8.5	7.79	7.86	7.76	7.34	7.76	7.72	7.29	7.72	7.52	7.52
Field Conductivity (µS/cm)	none	17,850	17,470	18,950	17,560	18,000	11,290	14,930	16,067	16,612	19,008
Temperature (Degrees Celsius)	none	16.6	11.3	17.7	11.1	17.9	10	21.5	12.1	19.4	11.95
Supplementary Analytes (Not Historically analyzed											
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	<2 U	<3 U	< 0.05 U	< 0.3 U	< 0.015 U	< 0.15 U	< 0.15 U
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	<0.02 U	0.0014 B	< 0.004 U	< 0.04 U	< 0.02 U	< 0.02 U	< 0.02 U
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	<0.003 U	<0.0003 U	< 0.0008 U	< 0.0003 U	< 0.00025 U	< 0.0025 U	< 0.0025 U
Bicarbonate as CaCO3 (mg/L)	none	658	639	652	NA	685 H	702	720	647	625	629
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	NA	<20 UH	< 2 U	< 20 U	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	<0.003 U	0.00006 B	< 0.0005 U	< 0.0003 U	< 0.00025 U	< 0.0025 U	< 0.0025 U
Calcium, Dissolved (mg/L)	none	51	44	41	47	40	45.4	43.2	41.1	45.7	40.3
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	<0.003 U	0.00024 B	< 0.0005 U	< 0.005 U	0.000315	0.00069 B	0.000723 B
Cyanide, Free (mg/L)	0.2	NA	NA	NA	0.009 B	0.012	< 0.003 U	0.004 B	0.005 B	0.008 B	0.0088 B
Magnesium, Dissolved (mg/L)	none	16	16	16	16	14	15.8	15	15.8	14.7	14.7
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	<0.001 U	<0.001 U	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	0.025 B	0.0208 U	0.021	0.022	0.0279	0.0177	0.0254
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	0.007 B	0.0063 U	0.01	0.02	0.023	0.0204	0.0167
Potassium, Dissolved (mg/L)	none	9 B	9 B	8 B	10	9 B	11.6	14.8	8.7	7.67 B	10.6
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	<0.005 U	<0.0005 U	< 0.001 U	< 0.01 U	< 0.005 U	< 0.005 U	< 0.005 U
Sodium, Dissolved (mg/L)	none	3,920	4,060	3,870	3,960	3,910	3,960	3,890	3,710	3,860	3,900
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	<0.02 U	0.0005 U	< 0.005 U	< 0.04 U	0.00145 B	< 0.02 U	< 0.02 U

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 7: Summary of Monitoring Results for MW-7

Date	Interim Narrative Standard	3/19/2013	5/29/2013	8/27/2013	11/14/2013	2/18/2014	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016
Metals																	
Arsenic, Dissolved (mg/L)	0.01	0.010	0.010 B	**0.011**	0.008 B	**0.015**	0.009 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium, Dissolved (mg/L)	2	0.16 B	0.14 B	0.33	**2.08**	1.78	**3.52**	**2.35**	**3.7**	**5.43**	**4.74**	**2.66**	**2.65**	**4.66**	**3.79**	1.24	**4.19**
Boron, Dissolved (mg/L)	0.75	0.6	**0.9**	**0.79**	0.75	0.75	0.7	**0.8**	**0.8**	0.7 B	0.6	0.73	0.7	**0.8**	0.6	0.5	0.63
Chromium, Dissolved (mg/L)	0.1	< 0.01 U	< 0.02 U	0.009 B	< 0.02 U	< 0.02 U	< 0.02 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper, Dissolved (mg/L)	0.2	< 0.5 U	< 0.5 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron, Dissolved (mg/L)	0.3	**1.6**	**3.4**	**1.5**	**2.9**	**2.9**	**2.8**	**4.4**	**3.8**	**4.6**	**5.8**	**4.7**	**4.6**	**6.3**	**5.9**	**2.3**	**3.26**
Lead, Dissolved (mg/L)	0.05	< 0.003 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese, Dissolved (mg/L)	0.05	**0.27**	**0.66**	**0.51**	**0.61**	**0.53**	**0.41**	**0.66**	**0.45**	**0.3** B	**0.38**	**0.37**	**0.36**	**0.3**	**0.3**	**0.26** B	**0.205**
Selenium, Dissolved (mg/L)	0.02	0.0025	0.006	< 0.003 U	0.002 B	0.001 B	0.001 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium, Dissolved (mg/L)	0.002	< 0.003 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	2	< 0.5 U	< 0.5 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other																	
Chloride (mg/L)	250	**3,701**	**5,280**	**6,040**	**6,430**	**6,030**	**6,510**	**5,330**	**5,850**	**6,140**	**6,330**	**5,860**	**5,680**	**6,230**	**5,850**	**5,550**	**5,990**
Fluoride (mg/L)	2	1.3	1.0	1.1	1.1	1	1.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lab pH (s.u)	6.5 - 8.5	8.1 H	8.0 H	7.9 H	7.9 H	8.0 H	7.6 H	7.9 H	7.9 H	7.8 H	7.8 H	7.9 H	7.8 H	7.75	7.6 H	7.6 H	8 H
Total Dissolved Solids, filterable residue (mg/L)	1.25 x Background*	8,640	11,500	10,200 H	10,700 H	10,300	10,600 H	10,100	10,600	10,500	10,200 ^	8,800 ^	10,400	10,800	10,900	10,100	10,700
Sulfate (mg/L)	250	**1,589**	**1,240**	**510**	130 B	104 B	60.9 B	80.2 B	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	179 B	101 B
Gross Alpha (pCi/L)	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gross Beta (pCi/L)	**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters (Not Available pre-2010))																	
Field pH (s.u)	6.5 - 8.5	7.85	7.08	6.86	7.55	7.27	6.95	7.37	6.94	7.05	6.27	7.08	7.42	7.75	7.22	6.91	7.3
Field Conductivity (µS/cm)	none	13	19,280	19,810	19,358	18,640	18,880	18,970	18,440	8,770	16,170	18,020	14,000	13,820	16,530	17,520	18,050
Temperature (Degrees Celsius)	none	13.4	12.2	20.5	13	11.3	16.2	15.1	8	13.5	17.2	18.3	12.1	13.3	17.6	18.1	16.1
Supplementary Analytes																	
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate as CaCO3 (mg/L)	none	458	596	696	715	838	822	785	837	NA	765	853	828	821	828	844	836
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	NA	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium, Dissolved (mg/L)	none	105	142	103	72	67.8	58	56	51	50	47	52	53	54	50	54	47.1
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium, Dissolved (mg/L)	none	40	43	30	25	22	21	21	20	23	19	19	18	20	18	19	18
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium, Dissolved (mg/L)	none	11 B	13 B	12	11	10	10	11	9 B	13 B	9 B	9	10	11	10	10	8.8
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium, Dissolved (mg/L)	none	3,200	4,150	4,720	4,280	4,020	4,350	3,910	3,740	3,970	4,010	3,930	3,880	4,240	3,930	3,820	4,330
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the BSGW

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 7: Summary of Monitoring Results for MW-7

Date	Interim Narrative Standard	5/31/2017	11/15/2017	6/6/2018	11/15/2018	6/12/2019	12/12/2019	6/4/2020	12/14/2020	6/23/2021	12/8/2021
Metals											
Arsenic, Dissolved (mg/L)	0.01	NA	NA	NA	0.002 B	0.0031	0.002 B	0.0039	0.00175	< 0.01 U	0.0026 B
Barium, Dissolved (mg/L)	2	**3.96**	**3.8**	**5.5**	**3.42**	**4.42**	**2.86**	1.06	**2.54**	**4.32**	**2.28**
Boron, Dissolved (mg/L)	0.75	0.7	**0.8**	0.7	0.7	0.7 B	0.64	0.65	0.735	0.717 B	0.634
Chromium, Dissolved (mg/L)	0.1	NA	NA	NA	<0.02 U	<0.002 U	< 0.005 U	< 0.004 U	< 0.002 U	< 0.02 U	< 0.02 U
Copper, Dissolved (mg/L)	0.2	NA	NA	NA	<0.02 U	<0.002 U	< 0.008 U	< 0.004 U	0.00177 B	< 0.02 U	< 0.02 U
Iron, Dissolved (mg/L)	0.3	**5.5**	**6.1**	**3.2**	**3.9**	**2**	**2.81**	**11.6**	**0.932**	**2.95**	**1.96**
Lead, Dissolved (mg/L)	0.05	NA	NA	NA	<0.005 U	<0.0005 U	< 0.001 U	< 0.0005 U	0.00012 B	< 0.005 U	< 0.005 U
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	1.84	2.02	2.30	1.92	1.84	1.88	2.06
Manganese, Dissolved (mg/L)	0.05	**0.19** B	**0.18** B	**0.14** B	**0.11** B	**0.2** B	**0.122**	**0.166**	**0.117**	**0.112**	**0.14**
Selenium, Dissolved (mg/L)	0.02	NA	NA	NA	<0.003 U	0.001	< 0.001 U	< 0.003 U	< 0.001 U	< 0.0025 U	< 0.0025 U
Thallium, Dissolved (mg/L)	0.002	NA	NA	NA	<0.005 U	<0.0005 U	< 0.0001 U	< 0.003 U	< 0.0025 U	0.000757 B	< 0.0025 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	0.005	0.004	0.005	0.0093	0.00185	0.00426 B	0.00494 B
Zinc, Dissolved (mg/L)	2	NA	NA	NA	<0.5 U	0.1 B	0.19 B	0.01 B	< 0.015 U	< 0.15 U	< 0.15 U
Other											
Chloride (mg/L)	250	**6,480**	**6,240**	**6,440**	**7,310**	**7,480** H	**6,780**	**6,550**	**6,690**	**7,410**	**6,420**
Fluoride (mg/L)	2	NA	NA	NA	0.88	1	0.9	0.8	1	0.95	0.9
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	0.57	< 0.1 U	0.083	0.05 BH	< 0.1 U
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	< 0.01 U	0.02 B	< 0.05 U	< 0.05 UH	< 0.05 U
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	0.57	0.03 B	0.083 B	0.052 BH	< 0.1 U
Lab pH (s.u)	6.5 - 8.5	8 H	7.8 H	7.7 H	7.9 H	7.9 H	7.9 H	8 H	7.8 H	7.8 H	7.8 H
Total Dissolved Solids, filterable residue (mg/L)	1.25 x Background*	11,100	11,300	11,500 H	11,300	11,300	11,200	11,200	11,300	12,100	11,100
Sulfate (mg/L)	250	59 B	58 B	75 B	83.9 B	63.8 B	54.1 B	125 B	< 200 U	43 B	< 200 U
Gross Alpha (pCi/L)	15	NA	NA	NA	5.8 (±29)	**23 (±41)**	-50(±26)	2.4(±37)	-21 (±31)	**64(±53)**	-19(±51)
Gross Beta (pCi/L)	**	NA	NA	NA	34 (±42)	42 (±252)	35(±59)	11(±53)	1.9 (±53)	92(±58)	26(±67)
Field Parameters (Not Available pre-2010))											
Field pH (s.u)	6.5 - 8.5	7.65	7.17	7.37	7.19	7.61	7.58	7.85	7.69	7.71	7.32
Field Conductivity (µS/cm)	none	19,350	18,550	20,050	19,200	19,110	11,900	15,310	17,263	17,831	19,845
Temperature (Degrees Celsius)	none	22.5	12.3	16.4	12.9	16.3	8.3	19.8	12.5	20.9	12.14
Supplementary Analytes (Not Historically analyzed)											
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	<2 U	<3 U	< 0.05 U	< 0.02 U	0.0067 B	< 0.15 U	< 0.15 U
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	<0.02 U	0.0015 B	< 0.004 U	0.0045	< 0.02 U	**0.00691** B	< 0.02 U
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	<0.003 U	<0.0003 U	< 0.0008 U	< 0.0003 U	< 0.00025 U	< 0.0025 U	< 0.0025 U
Bicarbonate as CaCO3 (mg/L)	none	745	700	714	NA	681 H	701	876	663	650	713
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	NA	<20 UH	< 2 U	< 20 U	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	<0.003 U	0.00007 B	< 0.0005 U	< 0.0005 U	0.000056 B	< 0.0025 U	< 0.0025 U
Calcium, Dissolved (mg/L)	none	52	55	52	54	53	54.4	54.2	52.5	56.8	52
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	<0.003 U	0.00025 B	< 0.0005 U	0.0004 B	0.000208 B	0.000587 B	< 0.0025 U
Cyanide, Free (mg/L)	0.2	NA	NA	NA	0.005 B	0.012	0.003 B	0.003 B	0.0096 B	0.0098 B	0.0197
Magnesium, Dissolved (mg/L)	none	19	20	20	19	18	18.5	17.9	18.4	17.9	17.1
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	<0.001 U	<0.001 U	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	0.022 B	0.0182 U	0.017	0.0416	0.00375	0.0148	0.0103
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	<0.03 U	<0.001 U	< 0.004 U	0.0015 B	< 0.001 U	< 0.01 U	< 0.01 U
Potassium, Dissolved (mg/L)	none	11	9 B	9 B	11	11	12.7	17.6	8.85	9.09 B	10.9
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	<0.005 U	<0.0005 U	< 0.001 U	< 0.001 U	< 0.005 U	< 0.005 U	< 0.005 U
Sodium, Dissolved (mg/L)	none	4,240	4,320	4,170	4,250	4,220	4,250	4,070	3,840	4,160	4,160
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	<0.02 U	0.0008 U	< 0.005 U	< 0.004 U	0.00118 B	< 0.02 U	< 0.02 U

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 8: Summary of Monitoring Results for MW-8

Date	Interim Narrative Standard	12/14/2020	6/23/2021	12/8/2021
Metals				
Arsenic, Dissolved (mg/L)	0.01	0.00546	< 0.01 U	0.0025 B
Barium, Dissolved (mg/L)	2	0.299	0.137	0.161
Boron, Dissolved (mg/L)	0.75	**0.90**	**0.823** B	**0.763**
Chromium, Dissolved (mg/L)	0.1	< 0.002 U	< 0.02 U	< 0.02 U
Copper, Dissolved (mg/L)	0.2	0.00306	< 0.02 U	< 0.02 U
Iron, Dissolved (mg/L)	0.3	< 0.75 U	< 1.5 U	0.13 B
Lead, Dissolved (mg/L)	0.05	< 0.0005 U	< 0.005 U	< 0.005 U
Lithium, Dissolved (mg/L)	2.5	1.55	1.7	1.97
Manganese, Dissolved (mg/L)	0.05	0.0161	0.0336	0.0455
Selenium, Dissolved (mg/L)	0.02	0.00179 B	< 0.0025 U	< 0.0025 U
Thallium, Dissolved (mg/L)	0.002	< 0.0025 U	0.000826 B	< 0.0025 U
Uranium, Dissolved (mg/L)	0.03	0.0167	**0.056**	**0.0452**
Zinc, Dissolved (mg/L)	2	0.0091 B	< 0.15 U	< 0.15 U
Other				
Chloride (mg/L)	250	**5,910**	**7,000**	**6,910**
Fluoride (mg/L)	2	1.66	1.54	1.4
Nitrate as N (mg/L)	10	< 0.1 U	< 0.1 UH	< 0.1 U
Nitrite as N (mg/L)	1	< 0.05 U	< 0.05 UH	< 0.05 U
Nitrate+Nitrite as N (mg/L)	10	< 0.1 U	< 0.1 UH	< 0.1 U
Lab pH (s.u)	6.5 - 8.5	8.3 H	8.0 H	8.0 H
Total Dissolved Solids, filterable residue (mg/L)	1.25 x Background*	10,100	12,600	12,300
Sulfate (mg/L)	250	**529**	**885**	**444**
Gross Alpha (pCi/L)	15	**45 (±45)**	-1.4(±38)	**36(±60)**
Gross Beta (pCi/L)	**	9.1 (±44)	-1.9(±57)	7.8(±67)
Field Parameters (Not Available pre-2010))				
Field pH (s.u)	6.5 - 8.5	8.15	8.00	7.47
Field Conductivity (µS/cm)	none	14,360	18,379	21,344
Temperature (Degrees Celsius)	none	12.5	21.3	13.3
Supplementary Analytes (Not Historically analyzed)				
Aluminum, Dissolved (mg/L)	5	0.0057 B	< 0.15 U	< 0.15 U
Antimony, Dissolved (mg/L)	0.006	**0.0125** B	**0.0102** B	**0.0109** B
Beryllium, Dissolved (mg/L)	0.004	< 0.00025 U	< 0.0025 U	< 0.0025 U
Bicarbonate as CaCO3 (mg/L)	none	664	612	582
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	< 0.00025 U	< 0.0025 U	< 0.0025 U
Calcium, Dissolved (mg/L)	none	23.4	56.1	93.6
Cobalt, Dissolved (mg/L)	0.05	0.000745	0.000951 B	0.00158 B
Cyanide, Free (mg/L)	0.2	< 0.01 U	0.0128	0.0158
Magnesium, Dissolved (mg/L)	none	18.8	18.4	19.7
Mercury, Dissolved (mg/L)	0.002	< 0.001 U	< 0.001 U	< 0.001 U
Molybdenum, Dissolved (mg/L)	0.21	0.0225	0.0469	0.0425
Nickel, Dissolved (mg/L)	0.1	0.00469	0.00575 B	0.00905 B
Potassium, Dissolved (mg/L)	none	16.6	12.5	14.4
Silver, Dissolved (mg/L)	0.05	< 0.005 U	< 0.005 U	< 0.005 U
Sodium, Dissolved (mg/L)	none	3,380	4,260	4,490
Vanadium, Dissolved (mg/L)	0.1	0.0044	< 0.02 U	< 0.02 U

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

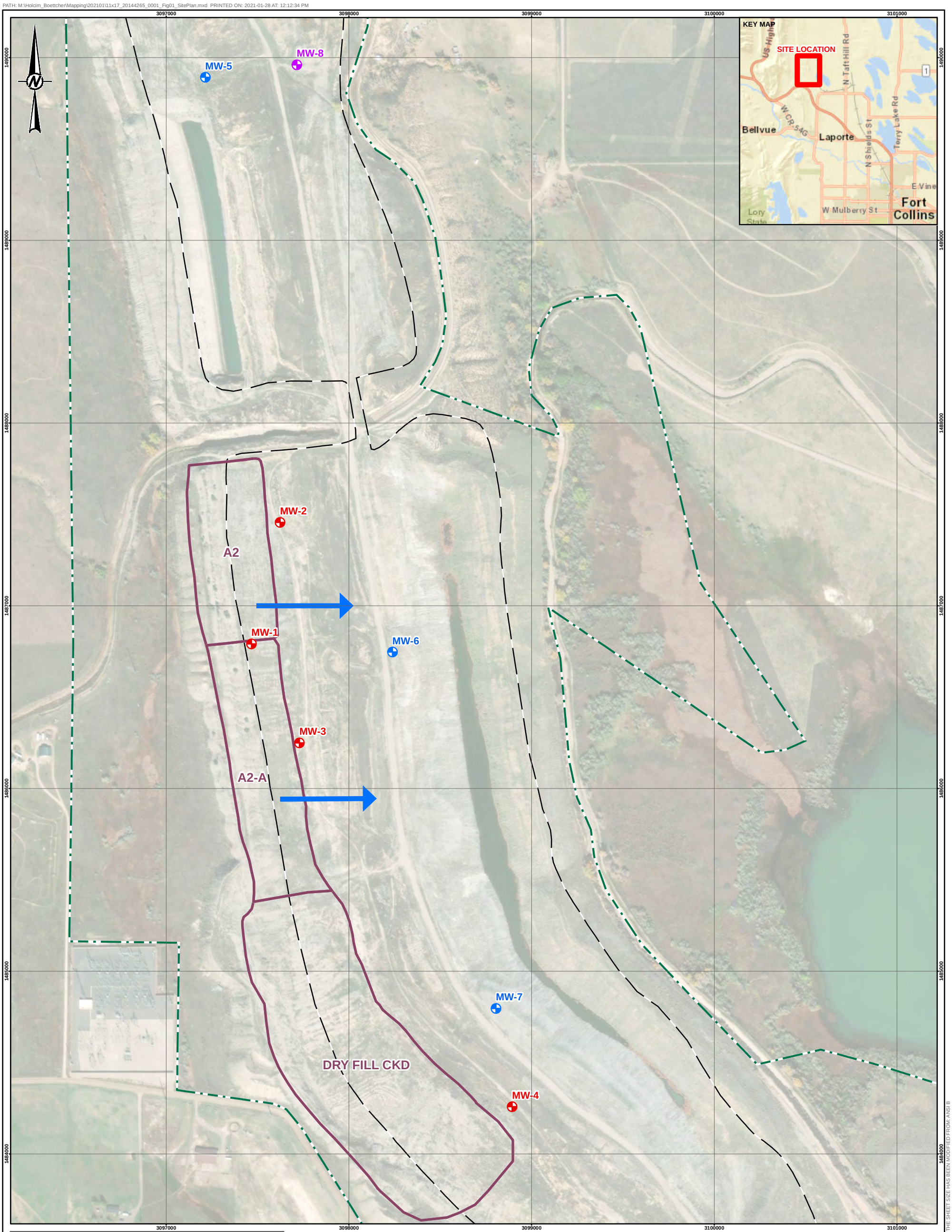
*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Figures

PATH: M:\Holcim_Boettcher\Mapping\202101\11x17_20144265_0001_Fig01_SitePlan.mxd PRINTED ON: 2021-01-28 AT: 12:12:34 PM



LEGEND

- MW-1 PRE-2012 MONITORING WELL
- MW-6 MONITORING WELL INSTALLED 2012
- MW-8 MONITORING WELL INSTALLED 2020
- APPROXIMATE CKD DISPOSAL AREA BOUNDARY
- AMENDED PERMIT BOUNDARY
- PROPERTY BOUNDARY
- APPROXIMATE GROUNDWATER FLOW DIRECTION

0 500 1,000
Feet

NOTES

CLIENT
HOLCIM (US) INC.

PROJECT
BOETTCHER LIMESTONE QUARRY
LARIMER COUNTY, COLORADO

TITLE
SITE LOCATION PLAN

CONSULTANT
GOLDER

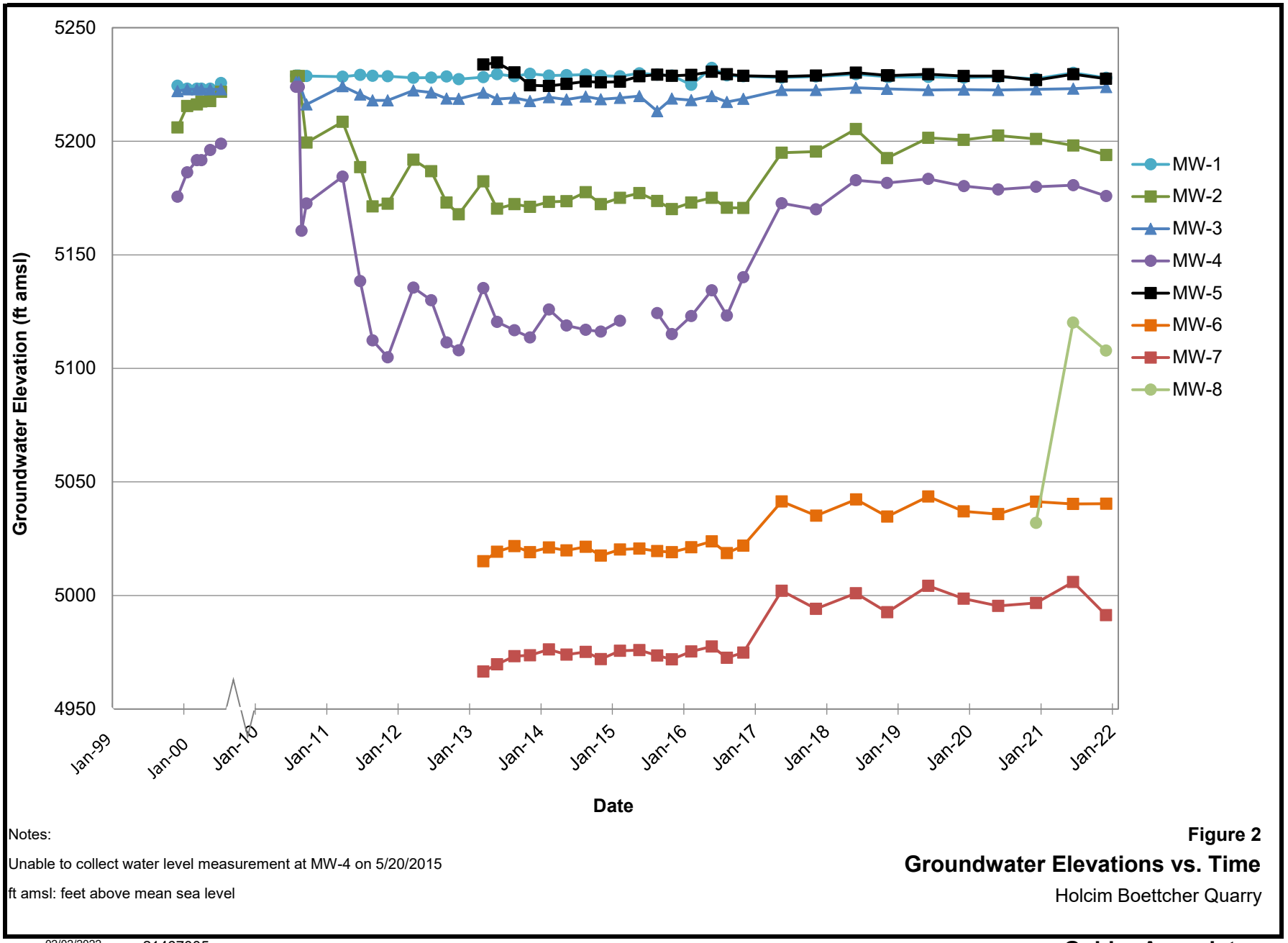
YYYY-MM-DD	2021-01-28
DESIGNED	SAH
PREPARED	KJC
REVIEWED	SAH
APPROVED	RSM

PROJECT NO.
21467005

FIGURE
1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

1 in
0



Notes:

Unable to collect water level measurement at MW-4 on 5/20/2015

ft amsl: feet above mean sea level

Figure 2

Groundwater Elevations vs. Time

Holcim Boettcher Quarry

02/02/2022 21467005

Golder Associates

GOLDER
MEMBER OF WSP

ATTACHMENT 1

ACZ Laboratory Report

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

Analytical Report

January 18, 2022

Report to:
Sara Harkins
Golder Associates
44 Union Blvd., Suite 300
Lakewood, CO 80228

cc: Tricia Hall

Bill to:
Accounts Payable
Golder Associates
7245 W Alaska Dr Suite 200
Lakewood, CO 80226

Project ID: 21467005
ACZ Project ID: L70355

Sara Harkins:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 09, 2021. This project has been assigned to ACZ's project number, L70355. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L70355. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after February 17, 2022. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

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

S. Habermehl

Scott Habermehl has reviewed
and approved this report.

Golder Associates
Project ID: 21467005
Sample ID: MW-1

ACZ Sample ID: ***L70355-01***
Date Sampled: *12/08/21 12:15*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	5	0.1000			mg/L	0.025	0.075	12/20/21 15:14	mfm
Antimony, dissolved	M200.8 ICP-MS	5	0.00233	B		mg/L	0.002	0.01	12/20/21 15:14	mfm
Arsenic, dissolved	M200.8 ICP-MS	5	0.00135	B		mg/L	0.001	0.005	12/20/21 15:14	mfm
Barium, dissolved	M200.8 ICP-MS	5	0.00991	B		mg/L	0.0025	0.0125	12/20/21 15:14	mfm
Beryllium, dissolved	M200.8 ICP-MS	5	<0.0004	U	*	mg/L	0.0004	0.00125	12/20/21 15:14	mfm
Boron, dissolved	M200.7 ICP	1	0.658			mg/L	0.03	0.1	12/14/21 18:17	kja
Cadmium, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	12/20/21 15:14	mfm
Calcium, dissolved	M200.7 ICP	1	161			mg/L	0.1	0.5	12/14/21 18:17	kja
Chromium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	12/20/21 15:14	mfm
Cobalt, dissolved	M200.8 ICP-MS	5	0.00308			mg/L	0.00025	0.00125	12/20/21 15:14	mfm
Copper, dissolved	M200.8 ICP-MS	5	0.0107			mg/L	0.004	0.01	12/20/21 15:14	mfm
Iron, dissolved	M200.7 ICP	1	<0.06	U		mg/L	0.06	0.15	12/14/21 18:17	kja
Lead, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	12/20/21 15:14	mfm
Lithium, dissolved	M200.7 ICP	1	1.28			mg/L	0.008	0.04	12/14/21 18:17	kja
Magnesium, dissolved	M200.7 ICP	1	178			mg/L	0.2	1	12/14/21 18:17	kja
Manganese, dissolved	M200.8 ICP-MS	5	0.0904			mg/L	0.002	0.01	12/20/21 15:14	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	12/14/21 17:47	mlh
Molybdenum, dissolved	M200.8 ICP-MS	5	0.0826			mg/L	0.001	0.0025	12/20/21 15:14	mfm
Nickel, dissolved	M200.8 ICP-MS	5	0.00881			mg/L	0.002	0.005	12/20/21 15:14	mfm
Potassium, dissolved	M200.7 ICP	1	11.6			mg/L	0.2	1	12/14/21 18:17	kja
Selenium, dissolved	M200.8 ICP-MS	5	0.0340			mg/L	0.0005	0.00125	12/20/21 15:14	mfm
Silver, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	12/20/21 15:14	mfm
Sodium, dissolved	M200.7 ICP	2	1850			mg/L	0.4	2	12/15/21 15:00	kja
Thallium, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	01/14/22 15:01	bsu
Uranium, dissolved	M200.8 ICP-MS	5	0.0406			mg/L	0.0005	0.0025	12/20/21 15:14	mfm
Vanadium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	12/20/21 15:14	mfm
Zinc, dissolved	M200.8 ICP-MS	5	<0.03	U		mg/L	0.03	0.075	12/20/21 15:14	mfm

Golder Associates
Project ID: 21467005
Sample ID: MW-1

ACZ Sample ID: ***L70355-01***
Date Sampled: *12/08/21 12:15*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	358			mg/L	2	20	12/18/21 0:00	eep
Carbonate as CaCO3		1	6.7	B		mg/L	2	20	12/18/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	12/18/21 0:00	eep
Total Alkalinity		1	364		*	mg/L	2	20	12/18/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-10.3			%			01/17/22 0:00	calc
Sum of Anions			128			meq/L			01/17/22 0:00	calc
Sum of Cations			104			meq/L			01/17/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	<40	U	*	mg/L	40	200	12/14/21 20:04	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U		mg/L	0.003	0.01	12/16/21 11:49	md
Fluoride	SM4500F-C	1	0.58			mg/L	0.15	0.35	12/21/21 18:00	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		2.96			mg/L	0.06	0.3	01/17/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	3	2.96		*	mg/L	0.06	0.3	12/10/21 0:54	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	12/10/21 0:22	pjb
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	12/20/21 0:00	jck
pH measured at		1	22.8			C	0.1	0.1	12/20/21 0:00	jck
Residue, Filterable (TDS) @180C	SM2540C	2	7360			mg/L	40	80	12/14/21 9:28	scd
Sulfate	M300.0 - Ion Chromatography	100	5750			mg/L	40	200	12/14/21 20:04	krh
TDS (calculated)	Calculation		8190			mg/L			01/17/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.90						01/17/22 0:00	calc

Golder Associates
Project ID: 21467005
Sample ID: MW-2

ACZ Sample ID: ***L70355-02***
Date Sampled: *12/08/21 08:30*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	5	<0.025	U		mg/L	0.025	0.075	12/20/21 15:19	mfm
Antimony, dissolved	M200.8 ICP-MS	5	<0.002	U		mg/L	0.002	0.01	12/20/21 15:19	mfm
Arsenic, dissolved	M200.8 ICP-MS	5	0.00377	B		mg/L	0.001	0.005	12/20/21 15:19	mfm
Barium, dissolved	M200.8 ICP-MS	5	3.11			mg/L	0.0025	0.0125	12/20/21 15:19	mfm
Beryllium, dissolved	M200.8 ICP-MS	5	<0.0004	U	*	mg/L	0.0004	0.00125	12/20/21 15:19	mfm
Boron, dissolved	M200.7 ICP	1	0.762			mg/L	0.03	0.1	12/14/21 18:20	kja
Cadmium, dissolved	M200.8 ICP-MS	5	0.000349	B		mg/L	0.00025	0.00125	12/20/21 15:19	mfm
Calcium, dissolved	M200.7 ICP	1	17.6			mg/L	0.1	0.5	12/14/21 18:20	kja
Chromium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	12/20/21 15:19	mfm
Cobalt, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	12/20/21 15:19	mfm
Copper, dissolved	M200.8 ICP-MS	5	<0.004	U		mg/L	0.004	0.01	12/20/21 15:19	mfm
Iron, dissolved	M200.7 ICP	1	0.226			mg/L	0.06	0.15	12/14/21 18:20	kja
Lead, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	12/20/21 15:19	mfm
Lithium, dissolved	M200.7 ICP	1	1.23			mg/L	0.008	0.04	12/14/21 18:20	kja
Magnesium, dissolved	M200.7 ICP	1	6.67			mg/L	0.2	1	12/14/21 18:20	kja
Manganese, dissolved	M200.8 ICP-MS	5	0.0598			mg/L	0.002	0.01	12/20/21 15:19	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	12/14/21 17:50	mlh
Molybdenum, dissolved	M200.8 ICP-MS	5	0.00216	B		mg/L	0.001	0.0025	12/20/21 15:19	mfm
Nickel, dissolved	M200.8 ICP-MS	5	<0.002	U		mg/L	0.002	0.005	12/20/21 15:19	mfm
Potassium, dissolved	M200.7 ICP	1	7.15			mg/L	0.2	1	12/14/21 18:20	kja
Selenium, dissolved	M200.8 ICP-MS	5	<0.0005	U	*	mg/L	0.0005	0.00125	12/29/21 17:13	mfm
Silver, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	12/20/21 15:19	mfm
Sodium, dissolved	M200.7 ICP	5	2450			mg/L	1	5	12/16/21 17:58	jlw
Thallium, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	01/14/22 15:02	bsu
Uranium, dissolved	M200.8 ICP-MS	5	0.00227	B		mg/L	0.0005	0.0025	12/20/21 15:19	mfm
Vanadium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	12/20/21 15:19	mfm
Zinc, dissolved	M200.8 ICP-MS	5	<0.03	U		mg/L	0.03	0.075	12/20/21 15:19	mfm

Golder Associates
Project ID: 21467005
Sample ID: MW-2

ACZ Sample ID: ***L70355-02***
Date Sampled: *12/08/21 08:30*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	1020			mg/L	2	20	12/18/21 0:00	eep
Carbonate as CaCO3		1	<2	U		mg/L	2	20	12/18/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	12/18/21 0:00	eep
Total Alkalinity		1	1020		*	mg/L	2	20	12/18/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-1.8			%			01/17/22 0:00	calc
Sum of Anions			113			meq/L			01/17/22 0:00	calc
Sum of Cations			109			meq/L			01/17/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	50	3290			mg/L	20	100	12/15/21 20:37	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	0.0037	B		mg/L	0.003	0.01	12/16/21 11:57	md
Fluoride	SM4500F-C	1	1.48			mg/L	0.15	0.35	12/21/21 18:08	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	01/17/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	U	*	mg/L	0.02	0.1	12/10/21 0:25	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	12/10/21 0:25	pjb
pH (lab)	SM4500H+ B									
pH		1	8.0	H		units	0.1	0.1	12/20/21 0:00	jck
pH measured at		1	22.7			C	0.1	0.1	12/20/21 0:00	jck
Residue, Filterable (TDS) @180C	SM2540C	2	6320			mg/L	40	80	12/14/21 9:30	scd
Sulfate	M300.0 - Ion Chromatography	50	<20	U	*	mg/L	20	100	12/15/21 20:37	krh
TDS (calculated)	Calculation		6400			mg/L			01/17/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.99						01/17/22 0:00	calc

Golder Associates
Project ID: 21467005
Sample ID: MW-3

ACZ Sample ID: ***L70355-03***
Date Sampled: *12/08/21 09:30*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	2	<0.01	U	*	mg/L	0.01	0.03	12/20/21 15:21	mfm
Antimony, dissolved	M200.8 ICP-MS	2	<0.0008	U		mg/L	0.0008	0.004	12/20/21 15:21	mfm
Arsenic, dissolved	M200.8 ICP-MS	2	<0.0004	U		mg/L	0.0004	0.002	12/20/21 15:21	mfm
Barium, dissolved	M200.8 ICP-MS	2	2.52			mg/L	0.001	0.005	12/20/21 15:21	mfm
Beryllium, dissolved	M200.8 ICP-MS	2	<0.00016	U	*	mg/L	0.00016	0.0005	12/20/21 15:21	mfm
Boron, dissolved	M200.7 ICP	1	0.786			mg/L	0.03	0.1	12/14/21 18:24	kja
Cadmium, dissolved	M200.8 ICP-MS	2	<0.0001	U		mg/L	0.0001	0.0005	12/20/21 15:21	mfm
Calcium, dissolved	M200.7 ICP	1	6.25			mg/L	0.1	0.5	12/14/21 18:24	kja
Chromium, dissolved	M200.8 ICP-MS	2	<0.001	U		mg/L	0.001	0.004	12/20/21 15:21	mfm
Cobalt, dissolved	M200.8 ICP-MS	2	<0.0001	U	*	mg/L	0.0001	0.0005	12/20/21 15:21	mfm
Copper, dissolved	M200.8 ICP-MS	2	<0.0016	U		mg/L	0.0016	0.004	12/20/21 15:21	mfm
Iron, dissolved	M200.7 ICP	1	0.154			mg/L	0.06	0.15	12/14/21 18:24	kja
Lead, dissolved	M200.8 ICP-MS	2	<0.0002	U		mg/L	0.0002	0.001	12/20/21 15:21	mfm
Lithium, dissolved	M200.7 ICP	1	0.737			mg/L	0.008	0.04	12/14/21 18:24	kja
Magnesium, dissolved	M200.7 ICP	1	2.78			mg/L	0.2	1	12/14/21 18:24	kja
Manganese, dissolved	M200.8 ICP-MS	2	0.0154			mg/L	0.0008	0.004	01/08/22 16:43	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	12/14/21 17:51	mlh
Molybdenum, dissolved	M200.8 ICP-MS	2	<0.0004	U		mg/L	0.0004	0.001	12/20/21 15:21	mfm
Nickel, dissolved	M200.8 ICP-MS	2	<0.0008	U		mg/L	0.0008	0.002	12/20/21 15:21	mfm
Potassium, dissolved	M200.7 ICP	1	3.95			mg/L	0.2	1	12/14/21 18:24	kja
Selenium, dissolved	M200.8 ICP-MS	2	<0.0002	U	*	mg/L	0.0002	0.0005	12/29/21 17:15	mfm
Silver, dissolved	M200.8 ICP-MS	2	<0.0002	U		mg/L	0.0002	0.001	12/20/21 15:21	mfm
Sodium, dissolved	M200.7 ICP	2	1530			mg/L	0.4	2	12/15/21 15:07	kja
Thallium, dissolved	M200.8 ICP-MS	2	<0.0001	U		mg/L	0.0001	0.0005	01/14/22 15:07	bsu
Uranium, dissolved	M200.8 ICP-MS	2	<0.0002	U		mg/L	0.0002	0.001	12/20/21 15:21	mfm
Vanadium, dissolved	M200.8 ICP-MS	2	<0.001	U		mg/L	0.001	0.004	12/20/21 15:21	mfm
Zinc, dissolved	M200.8 ICP-MS	2	<0.012	U	*	mg/L	0.012	0.03	12/20/21 15:21	mfm

Golder Associates
Project ID: 21467005
Sample ID: MW-3

ACZ Sample ID: ***L70355-03***
Date Sampled: *12/08/21 09:30*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	1120			mg/L	2	20	12/18/21 0:00	eep
Carbonate as CaCO3		1	54.3			mg/L	2	20	12/18/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	12/18/21 0:00	eep
Total Alkalinity		1	1170		*	mg/L	2	20	12/18/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-1.4			%			01/17/22 0:00	calc
Sum of Anions			70			meq/L			01/17/22 0:00	calc
Sum of Cations			68.0			meq/L			01/17/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	20	1670			mg/L	8	40	12/14/21 20:40	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U		mg/L	0.003	0.01	12/16/21 11:59	md
Fluoride	SM4500F-C	1	2.49			mg/L	0.15	0.35	12/21/21 18:16	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.055	B		mg/L	0.02	0.1	01/17/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.055	B	*	mg/L	0.02	0.1	12/10/21 0:27	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	12/10/21 0:27	pjb
pH (lab)	SM4500H+ B									
pH		1	8.4	H		units	0.1	0.1	12/20/21 0:00	jck
pH measured at		1	22.7			C	0.1	0.1	12/20/21 0:00	jck
Residue, Filterable (TDS) @180C	SM2540C	2	3960			mg/L	40	80	12/14/21 9:32	scd
Sulfate	M300.0 - Ion Chromatography	20	<8	U	*	mg/L	8	40	12/14/21 20:40	krh
TDS (calculated)	Calculation		3930			mg/L			01/17/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.01						01/17/22 0:00	calc

Golder Associates
Project ID: 21467005
Sample ID: MW-4

ACZ Sample ID: ***L70355-04***
Date Sampled: *12/08/21 10:20*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	10	<0.05	U		mg/L	0.05	0.15	12/20/21 15:23	mfm
Antimony, dissolved	M200.8 ICP-MS	10	<0.004	U		mg/L	0.004	0.02	12/20/21 15:23	mfm
Arsenic, dissolved	M200.8 ICP-MS	10	<0.002	U		mg/L	0.002	0.01	12/20/21 15:23	mfm
Barium, dissolved	M200.8 ICP-MS	10	8.58			mg/L	0.005	0.025	12/20/21 15:23	mfm
Beryllium, dissolved	M200.8 ICP-MS	10	<0.0008	U	*	mg/L	0.0008	0.0025	12/20/21 15:23	mfm
Boron, dissolved	M200.7 ICP	1	0.670			mg/L	0.03	0.1	12/14/21 18:33	kja
Cadmium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	12/20/21 15:23	mfm
Calcium, dissolved	M200.7 ICP	1	34.1			mg/L	0.1	0.5	12/14/21 18:33	kja
Chromium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	12/20/21 15:23	mfm
Cobalt, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	12/20/21 15:23	mfm
Copper, dissolved	M200.8 ICP-MS	10	<0.008	U		mg/L	0.008	0.02	12/20/21 15:23	mfm
Iron, dissolved	M200.7 ICP	1	0.150			mg/L	0.06	0.15	12/14/21 18:33	kja
Lead, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	12/20/21 15:23	mfm
Lithium, dissolved	M200.7 ICP	1	1.98			mg/L	0.008	0.04	12/14/21 18:33	kja
Magnesium, dissolved	M200.7 ICP	1	15.8			mg/L	0.2	1	12/14/21 18:33	kja
Manganese, dissolved	M200.8 ICP-MS	10	0.00886	B		mg/L	0.004	0.02	12/20/21 15:23	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	12/14/21 17:52	mlh
Molybdenum, dissolved	M200.8 ICP-MS	10	0.00216	B		mg/L	0.002	0.005	12/20/21 15:23	mfm
Nickel, dissolved	M200.8 ICP-MS	10	<0.004	U		mg/L	0.004	0.01	12/20/21 15:23	mfm
Potassium, dissolved	M200.7 ICP	1	10.9			mg/L	0.2	1	12/14/21 18:33	kja
Selenium, dissolved	M200.8 ICP-MS	10	<0.001	U	*	mg/L	0.001	0.0025	12/29/21 17:22	mfm
Silver, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	12/20/21 15:23	mfm
Sodium, dissolved	M200.7 ICP	5	4050			mg/L	1	5	12/15/21 15:10	kja
Thallium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	01/14/22 15:08	bsu
Uranium, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	12/20/21 15:23	mfm
Vanadium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	12/20/21 15:23	mfm
Zinc, dissolved	M200.8 ICP-MS	10	<0.06	U		mg/L	0.06	0.15	12/20/21 15:23	mfm

Golder Associates
Project ID: 21467005
Sample ID: MW-4

ACZ Sample ID: ***L70355-04***
Date Sampled: *12/08/21 10:20*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	567			mg/L	2	20	12/18/21 0:00	eep
Carbonate as CaCO3		1	<2	U		mg/L	2	20	12/18/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	12/18/21 0:00	eep
Total Alkalinity		1	567		*	mg/L	2	20	12/18/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-6.9			%			01/17/22 0:00	calc
Sum of Anions			208			meq/L			01/17/22 0:00	calc
Sum of Cations			181			meq/L			01/17/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	7010			mg/L	40	200	12/15/21 20:55	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U		mg/L	0.003	0.01	12/16/21 12:01	md
Fluoride	SM4500F-C	1	1.11			mg/L	0.15	0.35	12/21/21 18:24	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	01/17/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	U	*	mg/L	0.02	0.1	12/10/21 0:29	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	12/10/21 0:29	pjb
pH (lab)	SM4500H+ B									
pH		1	8.0	H		units	0.1	0.1	12/20/21 0:00	jck
pH measured at		1	22.7			C	0.1	0.1	12/20/21 0:00	jck
Residue, Filterable (TDS) @180C	SM2540C	5	10800	H	*	mg/L	100	200	12/17/21 14:23	anc
Sulfate	M300.0 - Ion Chromatography	100	<40	U	*	mg/L	40	200	12/15/21 20:55	krh
TDS (calculated)	Calculation		11500			mg/L			01/17/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.94						01/17/22 0:00	calc

Golder Associates
Project ID: 21467005
Sample ID: MW-5

ACZ Sample ID: ***L70355-05***
Date Sampled: *12/08/21 13:10*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	2	<0.01	U		mg/L	0.01	0.03	12/20/21 15:25	mfm
Antimony, dissolved	M200.8 ICP-MS	2	<0.0008	U		mg/L	0.0008	0.004	12/20/21 15:25	mfm
Arsenic, dissolved	M200.8 ICP-MS	2	0.00167	B		mg/L	0.0004	0.002	12/20/21 15:25	mfm
Barium, dissolved	M200.8 ICP-MS	2	0.0128			mg/L	0.001	0.005	12/20/21 15:25	mfm
Beryllium, dissolved	M200.8 ICP-MS	2	<0.00016	U	*	mg/L	0.00016	0.0005	12/20/21 15:25	mfm
Boron, dissolved	M200.7 ICP	1	0.344			mg/L	0.03	0.1	12/14/21 18:36	kja
Cadmium, dissolved	M200.8 ICP-MS	2	<0.0001	U		mg/L	0.0001	0.0005	12/20/21 15:25	mfm
Calcium, dissolved	M200.7 ICP	1	433			mg/L	0.1	0.5	12/14/21 18:36	kja
Chromium, dissolved	M200.8 ICP-MS	2	<0.001	U		mg/L	0.001	0.004	12/20/21 15:25	mfm
Cobalt, dissolved	M200.8 ICP-MS	2	0.00508			mg/L	0.0001	0.0005	12/20/21 15:25	mfm
Copper, dissolved	M200.8 ICP-MS	2	<0.0016	U		mg/L	0.0016	0.004	12/20/21 15:25	mfm
Iron, dissolved	M200.7 ICP	1	17.0			mg/L	0.06	0.15	12/14/21 18:36	kja
Lead, dissolved	M200.8 ICP-MS	2	<0.0002	U		mg/L	0.0002	0.001	12/20/21 15:25	mfm
Lithium, dissolved	M200.7 ICP	1	0.344			mg/L	0.008	0.04	12/14/21 18:36	kja
Magnesium, dissolved	M200.7 ICP	1	109			mg/L	0.2	1	12/14/21 18:36	kja
Manganese, dissolved	M200.8 ICP-MS	2	0.0899			mg/L	0.0008	0.004	12/20/21 15:25	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	12/14/21 17:54	mlh
Molybdenum, dissolved	M200.8 ICP-MS	2	0.00892			mg/L	0.0004	0.001	12/20/21 15:25	mfm
Nickel, dissolved	M200.8 ICP-MS	2	0.0268			mg/L	0.0008	0.002	12/20/21 15:25	mfm
Potassium, dissolved	M200.7 ICP	1	8.49			mg/L	0.2	1	12/14/21 18:36	kja
Selenium, dissolved	M200.8 ICP-MS	2	<0.0002	U		mg/L	0.0002	0.0005	12/20/21 15:25	mfm
Silver, dissolved	M200.8 ICP-MS	2	<0.0002	U		mg/L	0.0002	0.001	12/20/21 15:25	mfm
Sodium, dissolved	M200.7 ICP	1	413		*	mg/L	0.2	1	12/14/21 18:36	kja
Thallium, dissolved	M200.8 ICP-MS	2	<0.0001	U		mg/L	0.0001	0.0005	01/14/22 15:15	bsu
Uranium, dissolved	M200.8 ICP-MS	2	0.0310			mg/L	0.0002	0.001	12/20/21 15:25	mfm
Vanadium, dissolved	M200.8 ICP-MS	2	<0.001	U		mg/L	0.001	0.004	12/20/21 15:25	mfm
Zinc, dissolved	M200.8 ICP-MS	2	<0.012	U		mg/L	0.012	0.03	12/20/21 15:25	mfm

Golder Associates
Project ID: 21467005
Sample ID: MW-5

ACZ Sample ID: ***L70355-05***
Date Sampled: *12/08/21 13:10*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	323			mg/L	2	20	12/18/21 0:00	eep
Carbonate as CaCO3		1	<2	U		mg/L	2	20	12/18/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	12/18/21 0:00	eep
Total Alkalinity		1	323		*	mg/L	2	20	12/18/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-1.0			%			01/17/22 0:00	calc
Sum of Anions			51.0			meq/L			01/17/22 0:00	calc
Sum of Cations			50			meq/L			01/17/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	50	<20	U	*	mg/L	20	100	12/14/21 21:51	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U		mg/L	0.003	0.01	12/16/21 12:03	md
Fluoride	SM4500F-C	1	0.74			mg/L	0.15	0.35	12/20/21 15:04	emk
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.188			mg/L	0.02	0.1	01/17/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.202		*	mg/L	0.02	0.1	12/10/21 0:34	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.014	B	*	mg/L	0.01	0.05	12/10/21 0:34	pjb
pH (lab)	SM4500H+ B									
pH		1	7.4	H	*	units	0.1	0.1	12/20/21 0:00	jck
pH measured at		1	22.7			C	0.1	0.1	12/20/21 0:00	jck
Residue, Filterable (TDS) @180C	SM2540C	2	3460			mg/L	40	80	12/14/21 9:36	scd
Sulfate	M300.0 - Ion Chromatography	50	2120			mg/L	20	100	12/14/21 21:51	krh
TDS (calculated)	Calculation		3300			mg/L			01/17/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.05						01/17/22 0:00	calc

Golder Associates
Project ID: 21467005
Sample ID: MW-6

ACZ Sample ID: ***L70355-06***
Date Sampled: *12/08/21 15:25*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	10	<0.05	U		mg/L	0.05	0.15	12/20/21 15:26	mfm
Antimony, dissolved	M200.8 ICP-MS	10	<0.004	U		mg/L	0.004	0.02	12/20/21 15:26	mfm
Arsenic, dissolved	M200.8 ICP-MS	10	0.00479	B		mg/L	0.002	0.01	12/20/21 15:26	mfm
Barium, dissolved	M200.8 ICP-MS	10	6.01			mg/L	0.005	0.025	12/20/21 15:26	mfm
Beryllium, dissolved	M200.8 ICP-MS	10	<0.0008	U	*	mg/L	0.0008	0.0025	12/20/21 15:26	mfm
Boron, dissolved	M200.7 ICP	1	0.657			mg/L	0.03	0.1	12/14/21 18:40	kja
Cadmium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	12/20/21 15:26	mfm
Calcium, dissolved	M200.7 ICP	1	40.3			mg/L	0.1	0.5	12/14/21 18:40	kja
Chromium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	12/20/21 15:26	mfm
Cobalt, dissolved	M200.8 ICP-MS	10	0.000723	B		mg/L	0.0005	0.0025	12/20/21 15:26	mfm
Copper, dissolved	M200.8 ICP-MS	10	<0.008	U		mg/L	0.008	0.02	12/20/21 15:26	mfm
Iron, dissolved	M200.7 ICP	1	3.62			mg/L	0.06	0.15	12/14/21 18:40	kja
Lead, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	12/20/21 15:26	mfm
Lithium, dissolved	M200.7 ICP	1	1.96			mg/L	0.008	0.04	12/14/21 18:40	kja
Magnesium, dissolved	M200.7 ICP	1	14.7			mg/L	0.2	1	12/14/21 18:40	kja
Manganese, dissolved	M200.8 ICP-MS	10	0.0831			mg/L	0.004	0.02	12/20/21 15:26	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	12/14/21 17:55	mlh
Molybdenum, dissolved	M200.8 ICP-MS	10	0.0254			mg/L	0.002	0.005	12/20/21 15:26	mfm
Nickel, dissolved	M200.8 ICP-MS	10	0.0167			mg/L	0.004	0.01	12/20/21 15:26	mfm
Potassium, dissolved	M200.7 ICP	1	10.6			mg/L	0.2	1	12/14/21 18:40	kja
Selenium, dissolved	M200.8 ICP-MS	10	<0.001	U	*	mg/L	0.001	0.0025	12/29/21 17:28	mfm
Silver, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	12/20/21 15:26	mfm
Sodium, dissolved	M200.7 ICP	5	3900			mg/L	1	5	12/15/21 15:13	kja
Thallium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	01/14/22 15:17	bsu
Uranium, dissolved	M200.8 ICP-MS	10	0.00306	B		mg/L	0.001	0.005	12/20/21 15:26	mfm
Vanadium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	12/20/21 15:26	mfm
Zinc, dissolved	M200.8 ICP-MS	10	<0.06	U		mg/L	0.06	0.15	12/20/21 15:26	mfm

Golder Associates
Project ID: 21467005
Sample ID: MW-6

ACZ Sample ID: ***L70355-06***
Date Sampled: *12/08/21 15:25*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	629			mg/L	2	20	12/18/21 0:00	eep
Carbonate as CaCO3		1	<2	U		mg/L	2	20	12/18/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	12/18/21 0:00	eep
Total Alkalinity		1	629		*	mg/L	2	20	12/18/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-3.0			%			01/17/22 0:00	calc
Sum of Anions			186			meq/L			01/17/22 0:00	calc
Sum of Cations			175			meq/L			01/17/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	6190			mg/L	40	200	12/14/21 22:09	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	0.0088	B		mg/L	0.003	0.01	12/16/21 12:05	md
Fluoride	SM4500F-C	1	1.27			mg/L	0.15	0.35	12/20/21 15:28	emk
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	01/17/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	U	*	mg/L	0.02	0.1	12/10/21 0:36	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	12/10/21 0:36	pjb
pH (lab)	SM4500H+ B									
pH		1	7.9	H		units	0.1	0.1	12/20/21 0:00	jck
pH measured at		1	22.7			C	0.1	0.1	12/20/21 0:00	jck
Residue, Filterable (TDS) @180C	SM2540C	5	10100	H	*	mg/L	100	200	12/17/21 14:25	anc
Sulfate	M300.0 - Ion Chromatography	100	<40	U	*	mg/L	40	200	12/14/21 22:09	krh
TDS (calculated)	Calculation		10500			mg/L			01/17/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.96						01/17/22 0:00	calc

Golder Associates
Project ID: 21467005
Sample ID: MW-7

ACZ Sample ID: ***L70355-07***
Date Sampled: *12/08/21 14:45*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	10	<0.05	U		mg/L	0.05	0.15	12/20/21 15:28	mfm
Antimony, dissolved	M200.8 ICP-MS	10	<0.004	U		mg/L	0.004	0.02	12/20/21 15:28	mfm
Arsenic, dissolved	M200.8 ICP-MS	10	0.00260	B		mg/L	0.002	0.01	12/20/21 15:28	mfm
Barium, dissolved	M200.8 ICP-MS	10	2.28			mg/L	0.005	0.025	12/20/21 15:28	mfm
Beryllium, dissolved	M200.8 ICP-MS	10	<0.0008	U	*	mg/L	0.0008	0.0025	12/20/21 15:28	mfm
Boron, dissolved	M200.7 ICP	1	0.634			mg/L	0.03	0.1	12/14/21 18:43	kja
Cadmium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	12/20/21 15:28	mfm
Calcium, dissolved	M200.7 ICP	1	52.0			mg/L	0.1	0.5	12/14/21 18:43	kja
Chromium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	12/20/21 15:28	mfm
Cobalt, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	12/20/21 15:28	mfm
Copper, dissolved	M200.8 ICP-MS	10	<0.008	U		mg/L	0.008	0.02	12/20/21 15:28	mfm
Iron, dissolved	M200.7 ICP	1	1.96			mg/L	0.06	0.15	12/14/21 18:43	kja
Lead, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	12/20/21 15:28	mfm
Lithium, dissolved	M200.7 ICP	1	2.06			mg/L	0.008	0.04	12/14/21 18:43	kja
Magnesium, dissolved	M200.7 ICP	1	17.1			mg/L	0.2	1	12/14/21 18:43	kja
Manganese, dissolved	M200.8 ICP-MS	10	0.140			mg/L	0.004	0.02	12/20/21 15:28	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	12/14/21 17:56	mlh
Molybdenum, dissolved	M200.8 ICP-MS	10	0.0103			mg/L	0.002	0.005	12/20/21 15:28	mfm
Nickel, dissolved	M200.8 ICP-MS	10	<0.004	U		mg/L	0.004	0.01	12/20/21 15:28	mfm
Potassium, dissolved	M200.7 ICP	1	10.9			mg/L	0.2	1	12/14/21 18:43	kja
Selenium, dissolved	M200.8 ICP-MS	10	<0.001	U	*	mg/L	0.001	0.0025	12/29/21 17:31	mfm
Silver, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	12/20/21 15:28	mfm
Sodium, dissolved	M200.7 ICP	5	4160			mg/L	1	5	12/15/21 15:23	kja
Thallium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	01/14/22 15:18	bsu
Uranium, dissolved	M200.8 ICP-MS	10	0.00494	B		mg/L	0.001	0.005	12/20/21 15:28	mfm
Vanadium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	12/20/21 15:28	mfm
Zinc, dissolved	M200.8 ICP-MS	10	<0.06	U		mg/L	0.06	0.15	12/20/21 15:28	mfm

Golder Associates
Project ID: 21467005
Sample ID: MW-7

ACZ Sample ID: ***L70355-07***
Date Sampled: *12/08/21 14:45*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	713			mg/L	2	20	12/18/21 0:00	eep
Carbonate as CaCO3		1	<2	U		mg/L	2	20	12/18/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	12/18/21 0:00	eep
Total Alkalinity		1	713		*	mg/L	2	20	12/18/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-1.8			%			01/17/22 0:00	calc
Sum of Anions			194			meq/L			01/17/22 0:00	calc
Sum of Cations			187			meq/L			01/17/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	6420			mg/L	40	200	12/14/21 22:27	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	0.0197			mg/L	0.003	0.01	12/16/21 12:11	md
Fluoride	SM4500F-C	1	0.90			mg/L	0.15	0.35	12/21/21 18:36	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	01/17/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	U	*	mg/L	0.02	0.1	12/10/21 0:37	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	12/10/21 0:37	pjb
pH (lab)	SM4500H+ B									
pH		1	7.8	H	*	units	0.1	0.1	12/20/21 0:00	jck
pH measured at		1	22.6			C	0.1	0.1	12/20/21 0:00	jck
Residue, Filterable (TDS) @180C	SM2540C	5	10900	H	*	mg/L	100	200	12/17/21 14:28	anc
Sulfate	M300.0 - Ion Chromatography	100	<40	U	*	mg/L	40	200	12/14/21 22:27	krh
TDS (calculated)	Calculation		11100			mg/L			01/17/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.98						01/17/22 0:00	calc

Golder Associates
Project ID: 21467005
Sample ID: MW-8

ACZ Sample ID: ***L70355-08***
Date Sampled: *12/08/21 13:50*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	10	<0.05	U		mg/L	0.05	0.15	12/20/21 15:30	mfm
Antimony, dissolved	M200.8 ICP-MS	10	0.0109	B		mg/L	0.004	0.02	12/20/21 15:30	mfm
Arsenic, dissolved	M200.8 ICP-MS	10	0.00250	B		mg/L	0.002	0.01	12/29/21 17:33	mfm
Barium, dissolved	M200.8 ICP-MS	10	0.161			mg/L	0.005	0.025	12/20/21 15:30	mfm
Beryllium, dissolved	M200.8 ICP-MS	10	<0.0008	U	*	mg/L	0.0008	0.0025	12/20/21 15:30	mfm
Boron, dissolved	M200.7 ICP	1	0.763			mg/L	0.03	0.1	12/14/21 18:52	kja
Cadmium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	12/20/21 15:30	mfm
Calcium, dissolved	M200.7 ICP	1	93.6			mg/L	0.1	0.5	12/14/21 18:52	kja
Chromium, dissolved	M200.8 ICP-MS	10	<0.005	U	*	mg/L	0.005	0.02	12/20/21 15:30	mfm
Cobalt, dissolved	M200.8 ICP-MS	10	0.00158	B		mg/L	0.0005	0.0025	12/20/21 15:30	mfm
Copper, dissolved	M200.8 ICP-MS	10	<0.008	U	*	mg/L	0.008	0.02	12/20/21 15:30	mfm
Iron, dissolved	M200.7 ICP	1	0.130	B		mg/L	0.06	0.15	12/14/21 18:52	kja
Lead, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	12/20/21 15:30	mfm
Lithium, dissolved	M200.7 ICP	1	1.97			mg/L	0.008	0.04	12/14/21 18:52	kja
Magnesium, dissolved	M200.7 ICP	1	19.7			mg/L	0.2	1	12/14/21 18:52	kja
Manganese, dissolved	M200.8 ICP-MS	10	0.0455			mg/L	0.004	0.02	12/20/21 15:30	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	12/14/21 17:57	mlh
Molybdenum, dissolved	M200.8 ICP-MS	10	0.0425			mg/L	0.002	0.005	12/20/21 15:30	mfm
Nickel, dissolved	M200.8 ICP-MS	10	0.00905	B		mg/L	0.004	0.01	12/29/21 17:33	mfm
Potassium, dissolved	M200.7 ICP	5	14.4			mg/L	1	5	12/15/21 15:27	kja
Selenium, dissolved	M200.8 ICP-MS	10	<0.001	U	*	mg/L	0.001	0.0025	12/29/21 17:33	mfm
Silver, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	12/20/21 15:30	mfm
Sodium, dissolved	M200.7 ICP	5	4490			mg/L	1	5	12/15/21 15:27	kja
Thallium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	01/14/22 15:20	bsu
Uranium, dissolved	M200.8 ICP-MS	10	0.0452			mg/L	0.001	0.005	12/20/21 15:30	mfm
Vanadium, dissolved	M200.8 ICP-MS	10	<0.005	U	*	mg/L	0.005	0.02	12/20/21 15:30	mfm
Zinc, dissolved	M200.8 ICP-MS	10	<0.06	U		mg/L	0.06	0.15	12/20/21 15:30	mfm

Golder Associates
Project ID: 21467005
Sample ID: MW-8

ACZ Sample ID: ***L70355-08***
Date Sampled: *12/08/21 13:50*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	582			mg/L	2	20	12/18/21 0:00	eep
Carbonate as CaCO3		1	<2	U		mg/L	2	20	12/18/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	12/18/21 0:00	eep
Total Alkalinity		1	582		*	mg/L	2	20	12/18/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-2.6			%			01/17/22 0:00	calc
Sum of Anions			215			meq/L			01/17/22 0:00	calc
Sum of Cations			204			meq/L			01/17/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	6910			mg/L	40	200	12/14/21 22:45	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	0.0158			mg/L	0.003	0.01	12/16/21 12:13	md
Fluoride	SM4500F-C	1	1.40			mg/L	0.15	0.35	12/21/21 18:44	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	01/17/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	U	*	mg/L	0.02	0.1	12/10/21 0:38	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	12/10/21 0:38	pjb
pH (lab)	SM4500H+ B									
pH		1	8.0	H		units	0.1	0.1	12/20/21 0:00	jck
pH measured at		1	22.7			C	0.1	0.1	12/20/21 0:00	jck
Residue, Filterable (TDS) @180C	SM2540C	5	11900	H	*	mg/L	100	200	12/17/21 14:31	anc
Sulfate	M300.0 - Ion Chromatography	100	444			mg/L	40	200	12/14/21 22:45	krh
TDS (calculated)	Calculation		12300			mg/L			01/17/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.97						01/17/22 0:00	calc

Golder Associates
Project ID: 21467005
Sample ID: MW-15

ACZ Sample ID: ***L70355-09***
Date Sampled: *12/08/21 14:25*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	1	<0.005	U		mg/L	0.005	0.015	12/20/21 15:32	mfm
Antimony, dissolved	M200.8 ICP-MS	1	<0.0004	U		mg/L	0.0004	0.002	12/20/21 15:32	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	<0.0002	U	*	mg/L	0.0002	0.001	12/20/21 15:32	mfm
Barium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.0025	12/20/21 15:32	mfm
Beryllium, dissolved	M200.8 ICP-MS	1	<0.00008	U	*	mg/L	0.00008	0.00025	12/20/21 15:32	mfm
Boron, dissolved	M200.7 ICP	1	<0.03	U		mg/L	0.03	0.1	12/14/21 18:56	kja
Cadmium, dissolved	M200.8 ICP-MS	1	<0.00005	U		mg/L	0.00005	0.00025	12/20/21 15:32	mfm
Calcium, dissolved	M200.7 ICP	1	0.10	B		mg/L	0.1	0.5	12/14/21 18:56	kja
Chromium, dissolved	M200.8 ICP-MS	1	<0.0005	U	*	mg/L	0.0005	0.002	12/20/21 15:32	mfm
Cobalt, dissolved	M200.8 ICP-MS	1	<0.00005	U		mg/L	0.00005	0.00025	12/20/21 15:32	mfm
Copper, dissolved	M200.8 ICP-MS	1	<0.0008	U	*	mg/L	0.0008	0.002	12/20/21 15:32	mfm
Iron, dissolved	M200.7 ICP	1	<0.06	U		mg/L	0.06	0.15	12/14/21 18:56	kja
Lead, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	12/20/21 15:32	mfm
Lithium, dissolved	M200.7 ICP	1	<0.008	U		mg/L	0.008	0.04	12/14/21 18:56	kja
Magnesium, dissolved	M200.7 ICP	1	<0.2	U		mg/L	0.2	1	12/14/21 18:56	kja
Manganese, dissolved	M200.8 ICP-MS	1	<0.0004	U		mg/L	0.0004	0.002	12/20/21 15:32	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	12/14/21 17:58	mlh
Molybdenum, dissolved	M200.8 ICP-MS	1	<0.0002	U		mg/L	0.0002	0.0005	12/20/21 15:32	mfm
Nickel, dissolved	M200.8 ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	12/20/21 15:32	mfm
Potassium, dissolved	M200.7 ICP	1	0.24	B		mg/L	0.2	1	12/14/21 18:56	kja
Selenium, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.00025	12/20/21 15:32	mfm
Silver, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	12/20/21 15:32	mfm
Sodium, dissolved	M200.7 ICP	1	1.70		*	mg/L	0.2	1	12/14/21 18:56	kja
Thallium, dissolved	M200.8 ICP-MS	1	<0.00005	U		mg/L	0.00005	0.00025	01/14/22 15:21	bsu
Uranium, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	12/20/21 15:32	mfm
Vanadium, dissolved	M200.8 ICP-MS	1	<0.0005	U	*	mg/L	0.0005	0.002	12/20/21 15:32	mfm
Zinc, dissolved	M200.8 ICP-MS	1	<0.006	U		mg/L	0.006	0.015	12/20/21 15:32	mfm

Golder Associates
Project ID: 21467005
Sample ID: MW-15

ACZ Sample ID: ***L70355-09***
Date Sampled: *12/08/21 14:25*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	2.1	B		mg/L	2	20	12/18/21 0:00	eep
Carbonate as CaCO3		1	<2	U		mg/L	2	20	12/18/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	12/18/21 0:00	eep
Total Alkalinity		1	2.1	B	*	mg/L	2	20	12/18/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			n/a			%			01/17/22 0:00	calc
Sum of Anions			<	U		meq/L			01/17/22 0:00	calc
Sum of Cations			<	U		meq/L			01/17/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	1	0.71	B	*	mg/L	0.4	2	12/15/21 21:13	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U		mg/L	0.003	0.01	12/16/21 12:15	md
Fluoride	SM4500F-C	1	<0.15	U		mg/L	0.15	0.35	12/21/21 18:51	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	01/17/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	U	*	mg/L	0.02	0.1	12/10/21 0:39	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	12/10/21 0:39	pjb
pH (lab)	SM4500H+ B									
pH		1	7.7	H		units	0.1	0.1	12/20/21 0:00	jck
pH measured at		1	22.5			C	0.1	0.1	12/20/21 0:00	jck
Residue, Filterable (TDS) @180C	SM2540C	1	<20	U	*	mg/L	20	40	12/14/21 9:44	scd
Sulfate	M300.0 - Ion Chromatography	1	<0.4	U		mg/L	0.4	2	12/15/21 21:13	krh
TDS (calculated)	Calculation		4.03			mg/L			01/17/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		n/a						01/17/22 0:00	calc

Golder Associates
Project ID: 21467005
Sample ID: MW-20

ACZ Sample ID: ***L70355-10***
Date Sampled: *12/08/21 09:25*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	2	<0.01	U	*	mg/L	0.01	0.03	12/20/21 15:34	mfm
Antimony, dissolved	M200.8 ICP-MS	2	<0.0008	U		mg/L	0.0008	0.004	12/20/21 15:34	mfm
Arsenic, dissolved	M200.8 ICP-MS	2	<0.0004	U	*	mg/L	0.0004	0.002	12/20/21 15:34	mfm
Barium, dissolved	M200.8 ICP-MS	2	2.43			mg/L	0.001	0.005	12/20/21 15:34	mfm
Beryllium, dissolved	M200.8 ICP-MS	2	<0.00016	U	*	mg/L	0.00016	0.0005	12/20/21 15:34	mfm
Boron, dissolved	M200.7 ICP	1	0.789			mg/L	0.03	0.1	12/14/21 18:59	kja
Cadmium, dissolved	M200.8 ICP-MS	2	<0.0001	U		mg/L	0.0001	0.0005	12/20/21 15:34	mfm
Calcium, dissolved	M200.7 ICP	1	6.23			mg/L	0.1	0.5	12/14/21 18:59	kja
Chromium, dissolved	M200.8 ICP-MS	2	<0.001	U	*	mg/L	0.001	0.004	12/20/21 15:34	mfm
Cobalt, dissolved	M200.8 ICP-MS	2	<0.0001	U	*	mg/L	0.0001	0.0005	12/20/21 15:34	mfm
Copper, dissolved	M200.8 ICP-MS	2	<0.0016	U	*	mg/L	0.0016	0.004	12/20/21 15:34	mfm
Iron, dissolved	M200.7 ICP	1	0.185			mg/L	0.06	0.15	12/14/21 18:59	kja
Lead, dissolved	M200.8 ICP-MS	2	<0.0002	U		mg/L	0.0002	0.001	12/20/21 15:34	mfm
Lithium, dissolved	M200.7 ICP	1	0.744			mg/L	0.008	0.04	12/14/21 18:59	kja
Magnesium, dissolved	M200.7 ICP	1	2.74			mg/L	0.2	1	12/14/21 18:59	kja
Manganese, dissolved	M200.8 ICP-MS	2	0.0144			mg/L	0.0008	0.004	12/29/21 17:35	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	12/14/21 17:59	mlh
Molybdenum, dissolved	M200.8 ICP-MS	2	<0.0004	U		mg/L	0.0004	0.001	12/20/21 15:34	mfm
Nickel, dissolved	M200.8 ICP-MS	2	<0.0008	U	*	mg/L	0.0008	0.002	12/20/21 15:34	mfm
Potassium, dissolved	M200.7 ICP	1	4.02			mg/L	0.2	1	12/14/21 18:59	kja
Selenium, dissolved	M200.8 ICP-MS	2	<0.0002	U	*	mg/L	0.0002	0.0005	12/29/21 17:35	mfm
Silver, dissolved	M200.8 ICP-MS	2	<0.0002	U		mg/L	0.0002	0.001	12/20/21 15:34	mfm
Sodium, dissolved	M200.7 ICP	2	1620			mg/L	0.4	2	12/15/21 15:30	kja
Thallium, dissolved	M200.8 ICP-MS	2	<0.0001	U		mg/L	0.0001	0.0005	01/14/22 15:23	bsu
Uranium, dissolved	M200.8 ICP-MS	2	<0.0002	U		mg/L	0.0002	0.001	12/20/21 15:34	mfm
Vanadium, dissolved	M200.8 ICP-MS	2	<0.001	U	*	mg/L	0.001	0.004	12/20/21 15:34	mfm
Zinc, dissolved	M200.8 ICP-MS	2	<0.012	U	*	mg/L	0.012	0.03	12/20/21 15:34	mfm

Golder Associates
Project ID: 21467005
Sample ID: MW-20

ACZ Sample ID: ***L70355-10***
Date Sampled: *12/08/21 09:25*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	1050			mg/L	2	20	12/18/21 0:00	eep
Carbonate as CaCO3		1	129			mg/L	2	20	12/18/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	12/18/21 0:00	eep
Total Alkalinity		1	1180			mg/L	2	20	12/18/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			0.7			%			01/17/22 0:00	calc
Sum of Anions			71.0			meq/L			01/17/22 0:00	calc
Sum of Cations			72			meq/L			01/17/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	20	1690		*	mg/L	8	40	12/15/21 21:30	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U		mg/L	0.003	0.01	12/16/21 12:23	md
Fluoride	SM4500F-C	1	2.49			mg/L	0.15	0.35	12/21/21 18:59	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.086	B		mg/L	0.02	0.1	01/17/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.086	B		mg/L	0.02	0.1	12/10/21 0:41	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	12/10/21 0:41	pjb
pH (lab)	SM4500H+ B									
pH		1	8.5	H		units	0.1	0.1	12/18/21 0:00	eep
pH measured at		1	22.0			C	0.1	0.1	12/18/21 0:00	eep
Residue, Filterable (TDS) @180C	SM2540C	1	3990			mg/L	20	40	12/14/21 9:46	scd
Sulfate	M300.0 - Ion Chromatography	20	<8	U	*	mg/L	8	40	12/15/21 21:30	krh
TDS (calculated)	Calculation		4040			mg/L			01/17/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.99						01/17/22 0:00	calc

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:
https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf

REP001.03.15.02

GOLDER

ACZ Project ID: ***L70355***

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

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533845													
WG533845PBW1	PBW	12/17/21 19:46				U	mg/L		-20	20			
WG533845LCSW3	LCSW	12/17/21 20:08	WC211215-1	820.0001		786.4	mg/L	96	90	110			
WG533845LCSW6	LCSW	12/17/21 23:11	WC211215-1	820.0001		768.9	mg/L	94	90	110			
WG533845PBW2	PBW	12/17/21 23:19				2.9	mg/L		-20	20			
L70355-09DUP	DUP	12/18/21 3:15			2.1	U	mg/L				200	20	RA
WG533845LCSW9	LCSW	12/18/21 3:35	WC211215-1	820.0001		771.4	mg/L	94	90	110			
WG533845PBW3	PBW	12/18/21 3:43				3	mg/L		-20	20			
L70362-03DUP	DUP	12/18/21 5:17			86.6	87.1	mg/L				1	20	
WG533845LCSW12	LCSW	12/18/21 7:56	WC211215-1	820.0001		794.9	mg/L	97	90	110			
WG533845PBW4	PBW	12/18/21 8:05				3	mg/L		-20	20			
WG533845LCSW15	LCSW	12/18/21 12:48	WC211215-1	820.0001		803.8	mg/L	98	90	110			

Aluminum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.1		.1038	mg/L	104	90	110			
WG533938ICB	ICB	12/20/21 14:55				U	mg/L		-0.011	0.011			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.050065		.0517	mg/L	103	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.050065	U	.048	mg/L	96	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.050065	U	.0491	mg/L	98	70	130	2	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.050065	U	.052	mg/L	104	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.050065	U	.0532	mg/L	106	70	130	2	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.0201		.01928	mg/L	96	90	110			
WG533938ICB	ICB	12/20/21 14:55				.00042	mg/L		-0.00088	0.00088			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.01		.00933	mg/L	93	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.01	.00048	.00911	mg/L	86	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.01	.00048	.00932	mg/L	88	70	130	2	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.01	.00051	.00885	mg/L	83	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.01	.00051	.00938	mg/L	89	70	130	6	20	

GOLDER

ACZ Project ID: ***L70355***

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

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.05		.05115	mg/L	102	90	110			
WG533938ICB	ICB	12/20/21 14:55				U	mg/L		-0.00044	0.00044			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.05005		.05205	mg/L	104	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.05005	.002	.05667	mg/L	109	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.05005	.002	.05591	mg/L	108	70	130	1	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.05005	.181	.22728	mg/L	92	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.05005	.181	.23211	mg/L	102	70	130	2	20	
WG534247													
WG534247ICV	ICV	12/29/21 16:58	MS211013-2	.05		.05076	mg/L	102	90	110			
WG534247ICB	ICB	12/29/21 17:00				U	mg/L		-0.00044	0.00044			
WG534247LFB	LFB	12/29/21 17:02	MS211216-3	.05005		.05184	mg/L	104	85	115			
L70355-03AS	AS	12/29/21 17:18	MS211216-3	.1001	U	.10135	mg/L	101	70	130			
L70355-03ASD	ASD	12/29/21 17:20	MS211216-3	.1001	U	.09808	mg/L	98	70	130	3	20	
L70443-02AS	AS	12/29/21 17:44	MS211216-3	.05005	U	.05393	mg/L	108	70	130			
L70443-02ASD	ASD	12/29/21 17:46	MS211216-3	.05005	U	.049	mg/L	98	70	130	10	20	

Barium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.05		.05444	mg/L	109	90	110			
WG533938ICB	ICB	12/20/21 14:55				U	mg/L		-0.0011	0.0011			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.049985		.05396	mg/L	108	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.049985	.0533	.10756	mg/L	109	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.049985	.0533	.1083	mg/L	110	70	130	1	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.049985	.0559	.10926	mg/L	107	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.049985	.0559	.11	mg/L	108	70	130	1	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.05		.054886	mg/L	110	90	110			
WG533938ICB	ICB	12/20/21 14:55				U	mg/L		-0.000176	0.000176			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.05005		.054376	mg/L	109	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.05005	U	.052026	mg/L	104	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.05005	U	.051769	mg/L	103	70	130	0	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.05005	U	.055932	mg/L	112	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.05005	U	.056768	mg/L	113	70	130	1	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533523													
WG533523ICV	ICV	12/14/21 17:56	II211214-2	2		2.037	mg/L	102	95	105			
WG533523ICB	ICB	12/14/21 18:01				U	mg/L		-0.09	0.09			
WG533523LFB	LFB	12/14/21 18:14	II211118-4	.5005		.548	mg/L	109	85	115			
L70355-03AS	AS	12/14/21 18:27	II211118-4	.5005	.786	1.283	mg/L	99	85	115			
L70355-03ASD	ASD	12/14/21 18:30	II211118-4	.5005	.786	1.284	mg/L	100	85	115	0	20	

GOLDER

ACZ Project ID: ***L70355***

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

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.05		.05422	mg/L	108	90	110			
WG533938ICB	ICB	12/20/21 14:55				U	mg/L		-0.00011	0.00011			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.05005		.053474	mg/L	107	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.05005	.000074	.054478	mg/L	109	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.05005	.000074	.054388	mg/L	109	70	130	0	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.05005	U	.054569	mg/L	109	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.05005	U	.054941	mg/L	110	70	130	1	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533523													
WG533523ICV	ICV	12/14/21 17:56	II211214-2	100		98.27	mg/L	98	95	105			
WG533523ICB	ICB	12/14/21 18:01				U	mg/L		-0.3	0.3			
WG533523LFB	LFB	12/14/21 18:14	II211118-4	67.98808		70.02	mg/L	103	85	115			
L70355-03AS	AS	12/14/21 18:27	II211118-4	67.98808	6.25	72.7	mg/L	98	85	115			
L70355-03ASD	ASD	12/14/21 18:30	II211118-4	67.98808	6.25	73.32	mg/L	99	85	115	1	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG531660													
WG531660ICV	ICV	11/12/21 16:42	WI211108-9	19.96		20.32	mg/L	102	90	110			
WG531660ICB	ICB	11/12/21 16:59				U	mg/L		-0.4	0.4			
WG533509													
WG533509LFB1	LFB	12/14/21 18:34	WI211112-6	30		30.27	mg/L	101	90	110			
L70354-01AS	AS	12/14/21 19:46	WI211112-6	30	2.96	33.96	mg/L	103	90	110			
L70377-02AS	AS	12/15/21 0:33	WI211112-6	300	12.9	320.26	mg/L	102	90	110			
WG533509LFB2	LFB	12/15/21 3:14	WI211112-6	30		30.21	mg/L	101	90	110			
L70351-01DUP	DUP	12/15/21 19:43			73.3	73.63	mg/L				0	20	
L70377-01DUP	DUP	12/15/21 22:42			17.9	17.62	mg/L				2	20	

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.05		.0522	mg/L	104	90	110			
WG533938ICB	ICB	12/20/21 14:55				U	mg/L		-0.0011	0.0011			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.05		.05133	mg/L	103	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.05	U	.05004	mg/L	100	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.05	U	.0503	mg/L	101	70	130	1	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.05	U	.04647	mg/L	93	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.05	U	.04782	mg/L	96	70	130	3	20	

GOLDER

ACZ Project ID: ***L70355***

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

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.05		.052807	mg/L	106	90	110			
WG533938ICB	ICB	12/20/21 14:55				U	mg/L		-0.00011	0.00011			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.05005		.052648	mg/L	105	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.05005	.000877	.048713	mg/L	96	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.05005	.000877	.048855	mg/L	96	70	130	0	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.05005	U	.046869	mg/L	94	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.05005	U	.048428	mg/L	97	70	130	3	20	

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.05		.05296	mg/L	106	90	110			
WG533938ICB	ICB	12/20/21 14:55				U	mg/L		-0.00176	0.00176			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.05		.05272	mg/L	105	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.05	U	.04898	mg/L	98	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.05	U	.04934	mg/L	99	70	130	1	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.05	.00087	.04632	mg/L	91	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.05	.00087	.0478	mg/L	94	70	130	3	20	

Cyanide, Free D6888-09/OIA-1677-09

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533666													
WG533666ICV	ICV	12/16/21 11:25	WI211208-13	.3003		.3079	mg/L	103	90	110			
WG533666ICB	ICB	12/16/21 11:27				U	mg/L		-0.003	0.003			
WG533666LFB	LFB	12/16/21 11:31	WI211208-10	.1001		.0998	mg/L	100	90	110			
L70283-01AS	AS	12/16/21 11:35	WI211208-10	.1001	.004	.1043	mg/L	100	90	110			
L70283-01ASD	ASD	12/16/21 11:37	WI211208-10	.1001	.004	.1028	mg/L	99	90	110	1	20	
L70355-06AS	AS	12/16/21 12:07	WI211208-10	.1001	.0088	.1121	mg/L	103	90	110			
L70355-06ASD	ASD	12/16/21 12:09	WI211208-10	.1001	.0088	.1112	mg/L	102	90	110	1	20	

GOLDER

ACZ Project ID: ***L70355***

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

Fluoride SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533901													
WG533901ICV	ICV	12/20/21 10:50	WC211211-1	2.002		2.08	mg/L	104	90	110			
WG533901ICB	ICB	12/20/21 10:55				U	mg/L		-0.3	0.3			
WG533901LFB1	LFB	12/20/21 11:05	WC210803-9	5.02		5.09	mg/L	101	90	110			
WG533901LFB2	LFB	12/20/21 14:56	WC210803-9	5.02		5.26	mg/L	105	90	110			
L70355-05AS	AS	12/20/21 15:12	WC210803-9	5.02	.74	5.7	mg/L	99	90	110			
L70355-05ASD	ASD	12/20/21 15:20	WC210803-9	5.02	.74	5.7	mg/L	99	90	110	0	20	
WG533987													
WG533987ICV	ICV	12/21/21 14:19	WC211221-1	2.002		2.05	mg/L	102	90	110			
WG533987ICB	ICB	12/21/21 14:23				U	mg/L		-0.3	0.3			
WG533987LFB1	LFB	12/21/21 14:31	WC210803-9	5.02		5.19	mg/L	103	90	110			
L70293-01AS	AS	12/21/21 16:29	WC210803-9	5.02	.27	5.41	mg/L	102	90	110			
L70293-01ASD	ASD	12/21/21 16:37	WC210803-9	5.02	.27	5.44	mg/L	103	90	110	1	20	
WG533987LFB2	LFB	12/21/21 18:28	WC210803-9	5.02		5.39	mg/L	107	90	110			
L70397-01AS	AS	12/21/21 19:28	WC210803-9	5.02	.7	5.86	mg/L	103	90	110			
L70397-01ASD	ASD	12/21/21 19:36	WC210803-9	5.02	.7	5.91	mg/L	104	90	110	1	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533523													
WG533523ICV	ICV	12/14/21 17:56	II211214-2	2		1.976	mg/L	99	95	105			
WG533523ICB	ICB	12/14/21 18:01				U	mg/L		-0.18	0.18			
WG533523LFB	LFB	12/14/21 18:14	II211118-4	1.0001		1.02	mg/L	102	85	115			
L70355-03AS	AS	12/14/21 18:27	II211118-4	1.0001	.154	1.124	mg/L	97	85	115			
L70355-03ASD	ASD	12/14/21 18:30	II211118-4	1.0001	.154	1.127	mg/L	97	85	115	0	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.05		.05277	mg/L	106	90	110			
WG533938ICB	ICB	12/20/21 14:55				U	mg/L		-0.00022	0.00022			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.05005		.05257	mg/L	105	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.05005	U	.05261	mg/L	105	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.05005	U	.05299	mg/L	106	70	130	1	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.05005	U	.05231	mg/L	105	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.05005	U	.05293	mg/L	106	70	130	1	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533523													
WG533523ICV	ICV	12/14/21 17:56	II211214-2	2		2.0095	mg/L	100	95	105			
WG533523ICB	ICB	12/14/21 18:01				U	mg/L		-0.024	0.024			
WG533523LFB	LFB	12/14/21 18:14	II211118-4	.999		1.022	mg/L	102	85	115			
L70355-03AS	AS	12/14/21 18:27	II211118-4	.999	.737	1.751	mg/L	102	85	115			
L70355-03ASD	ASD	12/14/21 18:30	II211118-4	.999	.737	1.73	mg/L	99	85	115	1	20	

GOLDER

ACZ Project ID: ***L70355***

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

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533523													
WG533523ICV	ICV	12/14/21 17:56	II211214-2	100		96.07	mg/L	96	95	105			
WG533523ICB	ICB	12/14/21 18:01				U	mg/L		-0.6	0.6			
WG533523LFB	LFB	12/14/21 18:14	II211118-4	49.99847		49.56	mg/L	99	85	115			
L70355-03AS	AS	12/14/21 18:27	II211118-4	49.99847	2.78	49.33	mg/L	93	85	115			
L70355-03ASD	ASD	12/14/21 18:30	II211118-4	49.99847	2.78	49.93	mg/L	94	85	115	1	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.05		.05314	mg/L	106	90	110			
WG533938ICB	ICB	12/20/21 14:55				U	mg/L		-0.00088	0.00088			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.0498		.05383	mg/L	108	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.0498	.167	.21298	mg/L	92	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.0498	.167	.21493	mg/L	96	70	130	1	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.0498	.00901	.05619	mg/L	95	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.0498	.00901	.05721	mg/L	97	70	130	2	20	
WG534247													
WG534247ICV	ICV	12/29/21 16:58	MS211013-2	.05		.0524	mg/L	105	90	110			
WG534247ICB	ICB	12/29/21 17:00				U	mg/L		-0.00088	0.00088			
WG534247LFB	LFB	12/29/21 17:02	MS211216-3	.0498		.05022	mg/L	101	85	115			
L70355-03AS	AS	12/29/21 17:18	MS211216-3	.0996	.0173	.09454	mg/L	78	70	130			
L70355-03ASD	ASD	12/29/21 17:20	MS211216-3	.0996	.0173	.09371	mg/L	77	70	130	1	20	
L70443-02AS	AS	12/29/21 17:44	MS211216-3	.0498	U	.06154	mg/L	124	70	130			
L70443-02ASD	ASD	12/29/21 17:46	MS211216-3	.0498	U	.05644	mg/L	113	70	130	9	20	
WG534658													
WG534658ICV	ICV	01/08/22 16:38	MS220105-1	.05		.05408	mg/L	108	90	110			
WG534658ICB	ICB	01/08/22 16:40				U	mg/L		-0.00088	0.00088			
WG534658LFB	LFB	01/08/22 16:41	MS211216-3	.0498		.05382	mg/L	108	85	115			
L70479-01AS	AS	01/08/22 16:51	MS211216-3	.0498	.0286	.08058	mg/L	104	70	130			
L70479-01ASD	ASD	01/08/22 16:53	MS211216-3	.0498	.0286	.08109	mg/L	105	70	130	1	20	

Mercury, dissolved M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533524													
WG533524ICV1	ICV	12/14/21 17:30	HG211213-3	.00501		.00515	mg/L	103	95	105			
WG533524ICB	ICB	12/14/21 17:31				U	mg/L		-0.0002	0.0002			
WG533524LRB	LRB	12/14/21 17:33				U	mg/L		-0.00044	0.00044			
WG533524LFB	LFB	12/14/21 17:34	HG211213-6	.002002		.00206	mg/L	103	85	115			
L70283-01LFM	LFM	12/14/21 17:36	HG211213-6	.002002	U	.00211	mg/L	105	85	115			
L70283-01LFMD	LFMD	12/14/21 17:37	HG211213-6	.002002	U	.002	mg/L	100	85	115	5	20	
L70355-01LFM	LFM	12/14/21 17:48	HG211213-6	.002002	U	.00193	mg/L	96	85	115			
L70355-01LFMD	LFMD	12/14/21 17:49	HG211213-6	.002002	U	.00198	mg/L	99	85	115	3	20	

GOLDER

ACZ Project ID: ***L70355***

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

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.01992		.0214	mg/L	107	90	110			
WG533938ICB	ICB	12/20/21 14:55				U	mg/L		-0.00044	0.00044			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.05005		.05296	mg/L	106	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.05005	.00101	.05312	mg/L	104	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.05005	.00101	.05364	mg/L	105	70	130	1	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.05005	.0167	.06977	mg/L	106	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.05005	.0167	.07216	mg/L	111	70	130	3	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.05		.0534	mg/L	107	90	110			
WG533938ICB	ICB	12/20/21 14:55				U	mg/L		-0.00088	0.00088			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.05		.05239	mg/L	105	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.05	.00078	.05012	mg/L	99	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.05	.00078	.0499	mg/L	98	70	130	0	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.05	U	.04624	mg/L	92	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.05	U	.04728	mg/L	95	70	130	2	20	
WG534247													
WG534247ICV	ICV	12/29/21 16:58	MS211013-2	.05		.05103	mg/L	102	90	110			
WG534247ICB	ICB	12/29/21 17:00				U	mg/L		-0.00088	0.00088			
WG534247LFB	LFB	12/29/21 17:02	MS211216-3	.05		.05014	mg/L	100	85	115			
L70355-03AS	AS	12/29/21 17:18	MS211216-3	.1	U	.08989	mg/L	90	70	130			
L70355-03ASD	ASD	12/29/21 17:20	MS211216-3	.1	U	.08698	mg/L	87	70	130	3	20	
L70443-02AS	AS	12/29/21 17:44	MS211216-3	.05	.00072	.04694	mg/L	92	70	130			
L70443-02ASD	ASD	12/29/21 17:46	MS211216-3	.05	.00072	.04285	mg/L	84	70	130	9	20	

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533310													
WG533310ICV	ICV	12/10/21 0:15	WI211205-1	2.4161		2.344	mg/L	97	90	110			
WG533310ICB	ICB	12/10/21 0:16				U	mg/L		-0.02	0.02			
WG533310LFB	LFB	12/10/21 0:20	WI211001-5	2		1.949	mg/L	97	90	110			
L70355-02DUP	DUP	12/10/21 0:26			U	U	mg/L				0	20	RA
L70355-10AS	AS	12/10/21 0:42	WI211001-5	2	.086	1.955	mg/L	93	90	110			
L70355-01AS	AS	12/10/21 0:56	WI211001-5	6	2.96	8.639	mg/L	95	90	110			
L70357-01DUP	DUP	12/10/21 0:58			5.55	5.514	mg/L				1	20	

GOLDER

ACZ Project ID: ***L70355***

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

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533310													
WG533310ICV	ICV	12/10/21 0:15	WI211205-1	.6089		.623	mg/L	102	90	110			
WG533310ICB	ICB	12/10/21 0:16				U	mg/L		-0.01	0.01			
WG533310LFB	LFB	12/10/21 0:20	WI211001-5	1		.954	mg/L	95	90	110			
L70355-01AS	AS	12/10/21 0:24	WI211001-5	1	U	.953	mg/L	95	90	110			
L70355-02DUP	DUP	12/10/21 0:26			U	U	mg/L				0	20	RA
L70355-10AS	AS	12/10/21 0:42	WI211001-5	1	U	.961	mg/L	96	90	110			
L70357-01DUP	DUP	12/10/21 0:44			.074	.076	mg/L				3	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533845													
WG533845LCSW1	LCSW	12/17/21 19:52	PCN62948	6		6.1	units	102	5.9	6.1			
WG533845LCSW4	LCSW	12/17/21 22:56	PCN62948	6		6.1	units	102	5.9	6.1			
WG533845LCSW7	LCSW	12/18/21 3:20	PCN62948	6		6.1	units	102	5.9	6.1			
L70362-03DUP	DUP	12/18/21 5:17			7.6	7.6	units				0	20	
WG533845LCSW10	LCSW	12/18/21 7:40	PCN62948	6		6.1	units	102	5.9	6.1			
WG533845LCSW13	LCSW	12/18/21 12:33	PCN62948	6		6.1	units	102	5.9	6.1			
WG533951													
WG533951LCSW1	LCSW	12/20/21 19:19	PCN62948	6		6.1	units	102	5.9	6.1			
L70436-01DUP	DUP	12/20/21 21:00			12.3	12.3	units				0	20	
WG533951LCSW4	LCSW	12/20/21 22:46	PCN62948	6		6.1	units	102	5.9	6.1			
WG533951LCSW7	LCSW	12/21/21 2:22	PCN62948	6		6.1	units	102	5.9	6.1			
WG533951LCSW10	LCSW	12/21/21 6:21	PCN62948	6		6.1	units	102	5.9	6.1			
WG533951LCSW13	LCSW	12/21/21 10:14	PCN62948	6		6.1	units	102	5.9	6.1			

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533523													
WG533523ICV	ICV	12/14/21 17:56	II211214-2	20		19.82	mg/L	99	95	105			
WG533523ICB	ICB	12/14/21 18:01				U	mg/L		-0.6	0.6			
WG533523LFB	LFB	12/14/21 18:14	II211118-4	99.96008		101.9	mg/L	102	85	115			
L70355-03AS	AS	12/14/21 18:27	II211118-4	99.96008	3.95	104.8	mg/L	101	85	115			
L70355-03ASD	ASD	12/14/21 18:30	II211118-4	99.96008	3.95	104.3	mg/L	100	85	115	0	20	
WG533599													
WG533599ICV	ICV	12/15/21 14:25	II211214-2	20		19.71	mg/L	99	95	105			
WG533599ICB	ICB	12/15/21 14:31				U	mg/L		-0.6	0.6			
WG533599LFB	LFB	12/15/21 14:44	II211118-4	99.96008		99.15	mg/L	99	85	115			
L70320-01AS	AS	12/15/21 14:51	II211118-4	99.96008	1.16	95.96	mg/L	95	85	115			
L70320-01ASD	ASD	12/15/21 14:54	II211118-4	99.96008	1.16	97.91	mg/L	97	85	115	2	20	

GOLDER

ACZ Project ID: ***L70355***

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

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533491													
WG533491PBW	PBW	12/14/21 9:15				U	mg/L		-20	20			
WG533491LCSW	LCSW	12/14/21 9:16	PCN64712	1000		992	mg/L	99	80	120			
L70323-01DUP	DUP	12/14/21 9:20			2060	2054	mg/L				0	10	
L70447-02DUP	DUP	12/14/21 9:59			474	474	mg/L				0	10	
WG533833													
WG533833PBW	PBW	12/17/21 13:57				U	mg/L		-20	20			
WG533833LCSW	LCSW	12/17/21 13:59	PCN64713	1000		984	mg/L	98	80	120			
L70515-01DUP	DUP	12/17/21 14:49			386	380	mg/L				2	10	
L70517-01DUP	DUP	12/17/21 14:57			354	352	mg/L				1	10	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.05		.05155	mg/L	103	90	110			
WG533938ICB	ICB	12/20/21 14:55				U	mg/L		-0.00022	0.00022			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.05		.05176	mg/L	104	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.05	U	.05483	mg/L	110	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.05	U	.05528	mg/L	111	70	130	1	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.05	U	.05028	mg/L	101	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.05	U	.05126	mg/L	103	70	130	2	20	
WG534247													
WG534247ICV	ICV	12/29/21 16:58	MS211013-2	.05		.05039	mg/L	101	90	110			
WG534247ICB	ICB	12/29/21 17:00				U	mg/L		-0.00022	0.00022			
WG534247LFB	LFB	12/29/21 17:02	MS211216-3	.05		.04977	mg/L	100	85	115			
L70355-03AS	AS	12/29/21 17:18	MS211216-3	.1		.10106	mg/L	101	70	130			
L70355-03ASD	ASD	12/29/21 17:20	MS211216-3	.1		.09951	mg/L	100	70	130	2	20	
L70443-02AS	AS	12/29/21 17:44	MS211216-3	.05	.00011	.05905	mg/L	118	70	130			
L70443-02ASD	ASD	12/29/21 17:46	MS211216-3	.05	.00011	.05444	mg/L	109	70	130	8	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.02		.02085	mg/L	104	90	110			
WG533938ICB	ICB	12/20/21 14:55				U	mg/L		-0.00022	0.00022			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.01		.00996	mg/L	100	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.01	U	.00863	mg/L	86	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.01	U	.00851	mg/L	85	70	130	1	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.01	U	.00783	mg/L	78	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.01	U	.00771	mg/L	77	70	130	2	20	

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ACZ Project ID: ***L70355***

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

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533523													
WG533523ICV	ICV	12/14/21 17:56	II211214-2	100		98.97	mg/L	99	95	105			
WG533523ICB	ICB	12/14/21 18:01				U	mg/L		-0.6	0.6			
WG533523LFB	LFB	12/14/21 18:14	II211118-4	100.0086		102.1	mg/L	102	85	115			
L70355-03AS	AS	12/14/21 18:27	II211118-4	100.0086	1300	1355	mg/L	55	85	115			M3
L70355-03ASD	ASD	12/14/21 18:30	II211118-4	100.0086	1300	1354	mg/L	54	85	115	0	20	M3
WG533599													
WG533599ICV	ICV	12/15/21 14:25	II211214-2	100		98.67	mg/L	99	95	105			
WG533599ICB	ICB	12/15/21 14:31				U	mg/L		-0.6	0.6			
WG533599LFB	LFB	12/15/21 14:44	II211118-4	100.0086		99.42	mg/L	99	85	115			
L70320-01AS	AS	12/15/21 14:51	II211118-4	100.0086	13.5	108.3	mg/L	95	85	115			
L70320-01ASD	ASD	12/15/21 14:54	II211118-4	100.0086	13.5	110.4	mg/L	97	85	115	2	20	
WG533669													
WG533669ICV	ICV	12/16/21 16:07	II211214-2	100		100.24	mg/L	100	95	105			
WG533669ICB	ICB	12/16/21 16:13				U	mg/L		-0.6	0.6			
WG533669LFB	LFB	12/16/21 16:26	II211118-4	100.0086		102.7	mg/L	103	85	115			
L67721-18AS	AS	12/16/21 17:36	II211118-4	100.0086	.26	104.6	mg/L	104	85	115			
L67721-18ASD	ASD	12/16/21 17:45	II211118-4	100.0086	.26	105.6	mg/L	105	85	115	1	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG531660													
WG531660ICV	ICV	11/12/21 16:42	WI211108-9	51.15		51.15	mg/L	100	90	110			
WG531660ICB	ICB	11/12/21 16:59				U	mg/L		-0.4	0.4			
WG533509													
WG533509LFB1	LFB	12/14/21 18:34	WI211112-6	30		29.74	mg/L	99	90	110			
L70377-02AS	AS	12/15/21 0:33	WI211112-6	300	U	294.09	mg/L	98	90	110			
WG533509LFB2	LFB	12/15/21 3:14	WI211112-6	30		29.79	mg/L	99	90	110			
L70351-01DUP	DUP	12/15/21 19:43			179	177.3	mg/L				1	20	
L70377-01DUP	DUP	12/15/21 22:42			133	132.85	mg/L				0	20	
L70354-01AS	AS	12/16/21 16:27	WI211112-6	1500	1920	3362.27	mg/L	96	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG535031													
WG535031ICV	ICV	01/14/22 14:55	MS220105-1	.05		.05289	mg/L	106	90	110			
WG535031ICB	ICB	01/14/22 14:58				U	mg/L		-0.00011	0.00011			
WG535031LFB	LFB	01/14/22 14:59	MS211216-3	.05		.050767	mg/L	102	85	115			
L70355-02AS	AS	01/14/22 15:09	MS211216-3	.25	U	.268288	mg/L	107	70	130			
L70355-02ASD	ASD	01/14/22 15:14	MS211216-3	.25	U	.268941	mg/L	108	70	130	0	20	

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ACZ Project ID: ***L70355***

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

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.05		.05244	mg/L	105	90	110			
WG533938ICB	ICB	12/20/21 14:55				U	mg/L		-0.00022	0.00022			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.05		.05149	mg/L	103	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.05	.00059	.05518	mg/L	109	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.05	.00059	.05558	mg/L	110	70	130	1	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.05	.00012	.05323	mg/L	106	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.05	.00012	.05408	mg/L	108	70	130	2	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.05		.05255	mg/L	105	90	110			
WG533938ICB	ICB	12/20/21 14:55				U	mg/L		-0.0011	0.0011			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.05005		.05184	mg/L	104	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.05005	U	.05213	mg/L	104	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.05005	U	.05233	mg/L	105	70	130	0	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.05005	U	.049	mg/L	98	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.05005	U	.05065	mg/L	101	70	130	3	20	

Zinc, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG533938													
WG533938ICV	ICV	12/20/21 14:53	MS211013-2	.05		.0532	mg/L	106	90	110			
WG533938ICB	ICB	12/20/21 14:55				U	mg/L		-0.0132	0.0132			
WG533938LFB	LFB	12/20/21 14:57	MS211216-3	.050075		.0569	mg/L	114	85	115			
L70247-02AS	AS	12/20/21 15:03	MS211216-3	.050075	.036	.0915	mg/L	111	70	130			
L70247-02ASD	ASD	12/20/21 15:04	MS211216-3	.050075	.036	.0924	mg/L	113	70	130	1	20	
L70421-01AS	AS	12/20/21 15:41	MS211216-3	.050075	U	.055	mg/L	110	70	130			
L70421-01ASD	ASD	12/20/21 15:43	MS211216-3	.050075	U	.0565	mg/L	113	70	130	3	20	

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ACZ Project ID: ***L70355***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L70355-01	WG533938	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG533509	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
	WG533310	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG533951	pH	SM4500H+ B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG533845	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
L70355-02	WG533938	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG533310	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG534247	Selenium, dissolved	M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
	WG533509	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
	WG533845	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L70355-03	WG533938	Aluminum, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
		Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
		Cobalt, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG533310	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG534247	Selenium, dissolved	M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
	WG533509	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
	WG533845	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG533938	Zinc, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.

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ACZ Project ID: ***L70355***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L70355-04	WG533938	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG533310	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG533833	Residue, Filterable (TDS) @180C	SM2540C	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
	WG534247	Selenium, dissolved	M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
	WG533509	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
	WG533845	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L70355-05	WG533938	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG533509	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
	WG533310	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG533951	pH	SM4500H+ B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG533523	Sodium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG533845	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
L70355-06	WG533938	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG533310	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG533833	Residue, Filterable (TDS) @180C	SM2540C	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
	WG534247	Selenium, dissolved	M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
	WG533509	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
	WG533845	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ Project ID: ***L70355***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L70355-07	WG533938	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG533310	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG533951	pH	SM4500H+ B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG533833	Residue, Filterable (TDS) @180C	SM2540C	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
	WG534247	Selenium, dissolved	M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
	WG533509	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
	WG533845	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L70355-08	WG533938	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
		Chromium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
		Copper, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG533310	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG533833	Residue, Filterable (TDS) @180C	SM2540C	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
	WG534247	Selenium, dissolved	M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
	WG533845	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG533938	Vanadium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.

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ACZ Project ID: ***L70355***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L70355-09	WG533938	Arsenic, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
		Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG533509	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG533938	Chromium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
		Copper, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
		Nickel, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG533310	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG533491	Residue, Filterable (TDS) @180C	SM2540C	Z3	Sample volume yielded a residue less than 2.5 mg
	WG533523	Sodium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG533845	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG533938	Vanadium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.

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ACZ Project ID: ***L70355***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L70355-10	WG533938	Aluminum, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
		Arsenic, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
		Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG533509	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG533938	Chromium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
		Cobalt, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
		Copper, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
		Nickel, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG533310	Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG534247	Selenium, dissolved	M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
	WG533509	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
	WG533938	Vanadium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
		Zinc, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.

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RadioChemistry Analytical Results

Golder Associates
Project ID: 21467005
Sample ID: MW-1
Locator:

ACZ Sample ID: ***L70355-01***
Date Sampled: *12/08/21 12:15*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/21/21 0:14		43	36	280	pCi/L	*	ttg
Gross Beta	12/21/21 0:14		17	34	230	pCi/L	*	ttg

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RadioChemistry Analytical Results

Golder Associates
Project ID: 21467005
Sample ID: MW-2
Locator:

ACZ Sample ID: ***L70355-02***
Date Sampled: *12/08/21 8:30*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/21/21 0:17		1.4	27	160	pCi/L	*	ttg
Gross Beta	12/21/21 0:17		-8.6	28	87	pCi/L	*	ttg

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RadioChemistry Analytical Results

Golder Associates
Project ID: 21467005
Sample ID: MW-3
Locator:

ACZ Sample ID: ***L70355-03***
Date Sampled: *12/08/21 9:30*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/21/21 0:20		-3.4	15	65	pCi/L	*	ttg
Gross Beta	12/21/21 0:20		-10	21	71	pCi/L	*	ttg

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RadioChemistry Analytical Results

Golder Associates
Project ID: 21467005
Sample ID: MW-4
Locator:

ACZ Sample ID: ***L70355-04***
Date Sampled: *12/08/21 10:20*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/21/21 0:21		87	72	380	pCi/L	*	ttg
Gross Beta	12/21/21 0:21		28	61	290	pCi/L	*	ttg

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RadioChemistry Analytical Results

Golder Associates
Project ID: 21467005
Sample ID: MW-5
Locator:

ACZ Sample ID: ***L70355-05***
Date Sampled: *12/08/21 13:10*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/21/21 0:23		38	19	38	pCi/L		ttg
Gross Beta	12/21/21 0:23		8.6	12	44	pCi/L		ttg

RadioChemistry Analytical Results

Golder Associates
Project ID: 21467005
Sample ID: MW-6
Locator:

ACZ Sample ID: ***L70355-06***
Date Sampled: *12/08/21 15:25*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/21/21 0:24		21	56	220	pCi/L		ttg
Gross Beta	12/21/21 0:24		-0.71	50	140	pCi/L		ttg

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RadioChemistry Analytical Results

Golder Associates
Project ID: 21467005
Sample ID: MW-7
Locator:

ACZ Sample ID: ***L70355-07***
Date Sampled: *12/08/21 14:45*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/21/21 0:25		-19	51	240	pCi/L		ttg
Gross Beta	12/21/21 0:25		26	67	210	pCi/L		ttg

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RadioChemistry Analytical Results

Golder Associates
Project ID: 21467005
Sample ID: MW-8
Locator:

ACZ Sample ID: ***L70355-08***
Date Sampled: *12/08/21 13:50*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/21/21 0:27		36	60	580	pCi/L		ttg
Gross Beta	12/21/21 0:27		7.8	67	460	pCi/L		ttg

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RadioChemistry Analytical Results

Golder Associates
Project ID: 21467005
Sample ID: MW-15
Locator:

ACZ Sample ID: ***L70355-09***
Date Sampled: *12/08/21 14:25*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/21/21 0:28		1.5	1.4	12	pCi/L		ttg
Gross Beta	12/21/21 0:28		-0.83	2.6	21	pCi/L		ttg

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RadioChemistry Analytical Results

Golder Associates
Project ID: 21467005
Sample ID: MW-20
Locator:

ACZ Sample ID: ***L70355-10***
Date Sampled: *12/08/21 9:25*
Date Received: *12/09/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/21/21 0:30		-2	16	98	pCi/L		ttg
Gross Beta	12/21/21 0:30		15	18	52	pCi/L		ttg

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Error(+/-)	Calculated sample specific uncertainty
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
LCL	Lower Control Limit, in % (except for LCSS, mg/Kg)
LLD	Calculated sample specific Lower Limit of Detection
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RER	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
UCL	Upper Control Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

DUP	Sample Duplicate	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSS	Laboratory Control Sample - Soil	*PBS*	Prep Blank - Soil
LCSW	Laboratory Control Sample - Water	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Matrix Spikes	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.

Method Prefix Reference

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

Comments

(1)	Solid matrices are reported on a dry weight basis.
(2)	Preparation method: "Method" indicates preparation defined in analytical method.
(3)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:
https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf

GOLDER

ACZ Project ID: ***L70355***

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

Alpha M900.0 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG533476																
WG533476PBW	PBW	12/21/21						.95	0.98	4.2			8.4			
WG533476LCSWA	LCSW	12/21/21	PCN64375	100				120	9.3	4.7	120	67	144			
L70164-01DUP	DUP-RPD	12/21/21			-0.36	1.7	7.6	2.6	2.4	13				264	20	RG
L70164-01DUP	DUP-RER	12/21/21			-0.36	1.7	7.6	2.6	2.4	13				1.01	2	
L70355-01MSA	MS	12/21/21	PCN64375	1000	43	36	280	760	110	270	72	67	144			
L70385-01DUP	DUP-RPD	12/21/21			180	22	17	160	19	13				12	20	

Beta M900.0 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG533476																
WG533476PBW	PBW	12/21/21						1.2	1.8	5.1			10.2			
WG533476LCSWB	LCSW	12/21/21	PCN63439	99.8				110	6.9	13	110	82	122			
L70164-01DUP	DUP-RPD	12/21/21			1.9	3.2	9.7	5	3.2	14				90	20	RG
L70164-01DUP	DUP-RER	12/21/21			1.9	3.2	9.7	5	3.2	14				0.69	2	
L70355-02MSB	MS	12/21/21	PCN63439	998	-8.6	28	87	1100	75	66	111	82	122			
L70385-01DUP	DUP-RPD	12/21/21			55	7.2	9.2	56	7.5	16				2	20	

Golder Associates

ACZ Project ID: ***L70355***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L70355-01	WG533476	Gross Alpha	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
		Gross Beta	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
L70355-02	WG533476	Gross Alpha	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
		Gross Beta	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
L70355-03	WG533476	Gross Alpha	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
		Gross Beta	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
L70355-04	WG533476	Gross Alpha	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
		Gross Beta	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.

Golder Associates

ACZ Project ID: ***L70355***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
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Sample Receipt

Golder Associates
21467005

ACZ Project ID: L70355
Date Received: 12/09/2021 11:13
Received By:
Date Printed: 12/10/2021

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	X		

A change was made in the # of Containers Line 2 section prior to ACZ custody.

A change was made in the # of Containers Line 2 section prior to ACZ custody.

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Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		

ACZ Laboratories, Inc.
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Sample Receipt

Golder Associates
21467005

ACZ Project ID: L70355
Date Received: 12/09/2021 11:13
Received By:
Date Printed: 12/10/2021

13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Quote "HOLCIM-TAB1" used to match sample quote bag labels.

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
7197	0.2	<=6.0	15	N/A
6903	1.9	<=6.0	15	N/A

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

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

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

ACZ Laboratories, Inc. L70355

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Sara Harkins
Company: Golder Associates
E-mail: Sara_Harkins@golder.com
Address: 2121 Abbott Rd Ste 100 Anchorage, Alaska 99507
Telephone: 907-920-2532

Copy of Report to:

Name: Tricia Hall
Company: Golder Associates
E-mail: Tricia_Hall@golder.com
Telephone: 720-920-4517

Invoice to:

Name: Sara Harkins
Company: Golder Associates
E-mail: Sara_Harkins@golder.com
Address:
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: J. Hall **Sampler's Site Information** **State** CO **Zip code** 80535 **Time Zone** MT

***Sampler's Signature:** J. Hall

*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

Quote #: Holcim Bottle Order
PO#: 21467005
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	see quote							
MW-1	12/8/21 1215	GW	5	X							
MW-2	12/8/21 0830	GW	5	X							
MW-3	12/8/21 0930	GW	5	X							
MW-4	12/8/21 1020	GW	5	X							
MW-5	12/8/21 1310	GW	5	X							
MW-6	12/8/21 1525	GW	5	X							
MW-7	12/8/21 1445	GW	5	X							
MW-8	12/8/21 1350	GW	5	X							
MW-15	12/8/21 1425	GW	5	X							
MW-20	12/8/21 [illegible]	GW	5	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

2 coolers

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Juan Hall	12/8/21 1600		12/9/21 11:18

L70355 Chain of Custod

ATTACHMENT 2

Field Sheets

GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2021Boettcher Quarry GW/CO **Project No.: 21467005**

Location MW-2

Monitored By: T. Hall Date 12/1/21 Time 1457

Well Piezometer Data

(circle one)

Depth of Well (from top of PVC or ground)	112	feet
Depth of Water (from top of PVC or ground)	72.05	feet
Radius of Casing	2	inches
		feet
Casing Volume		cubic feet
	6.5	gallons

0.163 gal/ft

Development / Purging Discharge Data

Purging Method		disposable, dedicated bailer		
Start Purging	Date	12/1/21	Time	1457
Stop Purging	Date	12/1/21	Time	1559

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
12/1/21	1511	2	15.5	8.11	10,472	mod		soapy, light yellowish
12/1/21	1523	4	14.7	8.06	10,764	mod		brown
12/1/21	1533	6	14.4	7.94	10872	mod		sulfur odor
12/1/21	1547	8	14.3	7.91	11,241	mod		
12/1/21	1558	12	13.8	7.95	11,199	mod		
		Bailed dry			12/1/21	after 12		gallons

GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2021Boettcher Quarry GW/CO **Project No.: 21467005**

Location MW-3

Monitored By: T. Hall Date 12/1/21 Time 1350

Well Piezometer Data

(circle one)

Depth of Well (from top of PVC or ground)	107.2	feet
Depth of Water (from top of PVC or ground)	37.21	feet
Radius of Casing	2	inches
		feet
Casing Volume		cubic feet
	11.4	gallons

0.163 gal/ft

Development / Purging Discharge Data

Purging Method: disposable, dedicated bailer

Start Purging Date 12/1/21 Time 1350

Stop Purging Date 12/1/21 Time 1415

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
12/1/21	1357	3	17.3	8.25	7091	low		light gray, sulfur odor
12/1/21	1402	5	16.6	8.09	6794	low		
12/1/21	1410	7	16.7	8.04	6743	low		
	Bailed dry 12/1/21 after purging 10 gallons							

GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2021Boettcher Quarry GW/CO **Project No.: 21467005**

Location MW-4

Monitored By: T. Hall Date 12/1/21 Time 1048

Well Piezometer Data

(circle one)

Depth of Well (from top of PVC or ground)	182	feet
Depth of Water (from top of PVC or ground)	70.30	feet
Radius of Casing	2	inches
		feet
Casing Volume		cubic feet
	18.2	gallons

0.163 gal/ft

Development / Purging Discharge Data

Purging Method: disposable, dedicated bailer

Start Purging Date 12/1/21 Time 1048

Stop Purging Date 12/1/21 Time 1307

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
12/1/21	1104	5	14.7	7.89	19,067	low		some rust particles
12/1/21	1124	10	14.5	7.90	19,455	low		light gray, slightly ~~sloop~~ soapy, sulfur odor
12/1/21	1144	15	15.6	7.77	18,943	low		
12/1/21	1204	20	14.7	8.01	19,381	low		
12/1/21	1236	25	14.7	7.96	19,054	mod		darker gray
12/1/21	1304	30	14.8	7.94	19,307	mod		
		Bailed dry			12/1/21			

GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2021Boettcher Quarry GW/CO **Project No.: 21467005**

Location MW-6

Monitored By: C.Whitten Date 12/1/21 Time 0750

Well Piezometer Data

(circle one)

Depth of Well (from top of PVC or ground)	~~198.4~~ 229.7	feet
Depth of Water (from top of PVC or ground)	199.32	feet
Radius of Casing	2	inches
		feet
Casing Volume		cubic feet
	19.8	gallons

0.653 gal/ft

Development / Purging Discharge Data

Purging Method: disposable, dedicated bailer

Start Purging Date 12/1/21 Time 0750

Stop Purging Date 12/1/21 Time 0855

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
12/1/21	0800	5	12.3	8.15	17475	–		Black; surface sheen
	0819	10	12.0	8.00	17,573	–		
	0832	15	11.8	7.87	17,765	–		
	0845	20	12.0	7.82	18,101	–		
	0855	25	12.2	7.80	18,350	–		

GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2021Boettcher Quarry GW/CO **Project No.: 21467005**

Location MW-7

Monitored By: T. Hall Date 11/30/21 Time 1230

Well Piezometer Data

(circle one)

Depth of Well (from top of PVC or ground)	259.2	feet
Depth of Water (from top of PVC or ground)	228.25	feet
Radius of Casing	4	inches
		feet
Casing Volume		cubic feet
	20.2	gallons

0.653 gal/ft

Development / Purging Discharge Data

Purging Method	disposable, dedicated bailer			
Start Purging	Date	11/30/21	Time	1230
Stop Purging	Date	11/30/21	Time	1435

Monitoring

15,730

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
11/30/21	1253	5	~~12.9~~ 13.5	~~7.69~~ 7.49	~~15,730~~	mod		light gray, soapy, sulfur odor
11/30/21	1312	10	13.0	7.51	16,253	mod		
11/30/21	1327	15	12.6	7.47	16,861	mod		dark gray at 5 gal
11/30/21	1351	20	12.8	7.56	18,931	mod		
11/30/21	1413	24	12.9	7.58	18,639	mod		
11/30/21	1435	~~29~~ 30	~~13.5~~ 12.8	~~7.63~~ 7.80	19,204	high		
		Purged dry 11/30/21						

GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2021Boettcher Quarry GW/CO **Project No.: 21467005**

Location MW-8

Monitored By: _____ Date _____ Time _____

Well Piezometer Data

(circle one)

Depth of Well (from top of PVC or ground)	226	feet
Depth of Water (from top of PVC or ground)	142.69	feet
Radius of Casing	4	inches
		feet
Casing Volume		cubic feet
	54.4	gallons

0.653 gal/ft

Development / Purging Discharge Data

Purging Method: disposable, dedicated bailer

Start Purging Date 11/30/21 Time 0900

Stop Purging Date 11/30/21 * Time 1130 *

*purged dry

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
11/30/21	0912	5	12.2	8.18	20,751	–		soapy, light brown, sulfur odor
	0923	10	12.9	8.31	19,580	–		
	0932	15	13.2	8.35	21,063	–		
	0945	20	12.6	8.33	20,763	–		
	0956	25	13.1	8.32	20,604	–		
	1010	30	13.4	8.30	20,371	–		
	1021	35	~~8.17~~	8.17	20,694	–		temp 13.1°C
	1032	40	13.2	8.08	20,628	–		
	1044	45	13.3	7.89	20,427	–		
	1052	50	13.5	7.72	20,516	–		
	1104	55	13.6	7.62	20,619	–		
	1118	60	13.6	7.55	20,383	–		
		64						dark gray color, soapy, sulfur odor

RECORD OF WATER LEVEL READINGS

GOLDER

Project Name: Holcim Boettcher 2021 2nd semi-annual sampling **Location:** Laporte, CO **Project No. 21467005**

Borehole No.	Date	Time	Measuring Device / Serial No.	Measurement Point (M.P)	Water Level Below M.P.	Correction To Survey Mark	Survey Mark Elevation	Water Level Elevation	By	Comments
MW-1	12/1/21	1430	WLM - 300'	TPVC	44.19	--	--	--	CW	
MW-2	12/1/21	1445	WLM - 300'	TPVC	72.05	--	--	--	TH	
MW-3	12/1/21	1350	WLM - 300'	TPVC	37.21	--	--	--	TH	
MW-4	12/1/21	1648	WLM - 300'	TPVC	76.30	--	--	--	TH	
MW-5	11/30/21	1143	WLM - 300'	TPVC	48.86	--	--	--	TH	
MW-6	11/30/21	1455	WLM - 300'	TPVC	199.32	--	--	--	CW	
MW-7	11/30/21	1221	WLM - 300'	TPVC	228.25	--	--	--	CW	
MW-8	11/30/21	0825	WLM - 300'	TPVC	142.69	--	--	--	TH	

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2020 Groundwater Monitoring**	Sampler Name(s): **Tricia Hall**
Project Number: **21467005**	Date: **12/8/2021**
Monitoring Well I.D.: **MW-1**	Weather Conditions: ~40 °F
Wellhead Inspection (note conditions): concrete pad undercut	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	44.13	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	65.59 ft btoc	9. Dedicated? (Yes or No)	yes
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	3.5	11. Time to Purge Well (min)	21
5. 3 x Casing Volume (gallons)	10.5	12. Immiscible Layer Observed (yes or no)	NO
6. Actual Volume of Water Purged	11	13. Thickness if Immiscible layer (if present)	—
7. Water Level Measuring Equip.	300' electronic		

[1]Measured from a defined point on the edge of casing (surveyed top of casing)

Purge Parameters:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
12/8/21	1146	3	14.22	7.20	8,520.0	low/8.35 NTU	
12/8/21	1154	6	13.80	7.31	8,136.0	low/6.32 NTU	
12/8/21	1201	9	13.90	7.48	8,402.7	low/35.21 NTU	
12/8/21	1207	11	13.84	7.54	8,895.0	mod/291.14	light brown

Well Evacuated to Dryness? (Yes or No) NO

Time to recharge? —

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
12/8/21	1215	11	13.84	7.54	8,895.0	mod/291.14	light brown

1. Sampling Equipment Used	Bailer				**Other Information:**		
2. Pump Rate	N/A				**Decontamination Procedures**	Alconox, DI rinse	
3. Sample Appearance:	clear ☐	low ☐	medium ☑	high ☐			
Color	brown				**Instrument Calibrations**	pH, conductivity	
4. Odor	sulfur						
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	—	

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2021 Groundwater Monitoring**	Sampler Name(s): **Tricia Hall**
Project Number: **21467005**	Date: **12/8/2021**
Monitoring Well I.D.: **MW-2**	Weather Conditions: ~21 °F
Wellhead Inspection (note conditions): good condition	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	106.51	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	112 ft btoc	9. Dedicated? (Yes or No)	yes
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	0.89	11. Time to Purge Well (min)	—
5. 3 x Casing Volume (gallons)	—	12. Immiscible Layer Observed (yes or no)	—
6. Actual Volume of Water Purged	—	13. Thickness if Immiscible layer (if present)	—
7. Water Level Measuring Equip.	300' electronic		

[1]Measured from a defined point on the edge of casing (surveyed top of casing)

Purge Parameters:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (__S/cm)	Relative Turbidity	Other
		Purged dry		12-11/21			

Well Evacuated to Dryness? (Yes or No) yes

Time to recharge? 7 days

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
12/8/21	0830	—	13.8	7.95	11,199	mod	12/1/21 purge measurement

1. Sampling Equipment Used	Bailer				**Other Information:**	
2. Pump Rate	N/A				**Decontamination Procedures**	Alconox, DI rinse
3. Sample Appearance:	clear ☐	low ☒	medium ☐	high ☐		
Color	light gray				**Instrument Calibrations**	pH, conductivity
4. Odor	sulfur					
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	—

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2021 Groundwater Monitoring**	Sampler Name(s): **Tricia Hall**
Project Number: **21467005**	Date: **12/8/2021**
Monitoring Well I.D.: **MW-3**	Weather Conditions: ~30°F
Wellhead Inspection (note conditions): well head ok, debris down well (pump, tubing)	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	62.82	8. Purge Equipment Used	HDPE tubing ~~with hydrolift~~
2. Bottom of Casing[1] (±0.01ft.)	107.2 ft btoc	9. Dedicated? (Yes or No)	yes
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	7.2	11. Time to Purge Well (min)	—
5. 3 x Casing Volume (gallons)	—	12. Immiscible Layer Observed (yes or no)	—
6. Actual Volume of Water Purged	—	13. Thickness if Immiscible layer (if present)	—
7. Water Level Measuring Equip.	300' electronic		

[1]Measured from a defined point on the edge of casing (surveyed top of casing)

Purge Parameters:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
		Purged dry 12/1/21					

Well Evacuated to Dryness? (Yes or No) yes

Time to recharge? 7 days

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
12/8/21	0930	—	16.7	8.04	6,743	Low	12/1/21 purge parameters

1. Sampling Equipment Used	HDPE tubing				**Other Information:**		
2. Pump Rate	N/A				**Decontamination Procedures**	Alconox, DI rinse	
3. Sample Appearance:	clear ☐	low ☑	medium ☐	high ☐	MW-20 field dup		
Color	light gray				**Instrument Calibrations**	pH, conductivity	
4. Odor	sulfur						
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	—	

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2021 Groundwater Monitoring**	Sampler Name(s): **Tricia Hall**
Project Number: **21467005**	Date: **12/8/2021**
Monitoring Well I.D.: **MW-4**	Weather Conditions: ~30°F
Wellhead Inspection (note conditions): good condition	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	143.27	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	182 ft btoc	9. Dedicated? (Yes or No)	yes
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	6.31	11. Time to Purge Well (min)	—
5. 3 x Casing Volume (gallons)	—	12. Immiscible Layer Observed (yes or no)	—
6. Actual Volume of Water Purged	—	13. Thickness if Immiscible layer (if present)	—
7. Water Level Measuring Equip.	300' electronic		

[1]Measured from a defined point on the edge of casing (surveyed top of casing)

Purge Parameters:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (__S/cm)	Relative Turbidity	Other
		purged dry 12/1/21					

Well Evacuated to Dryness? (Yes or No) yes

Time to recharge? 7 days

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
12/8/21	1020	—	14.8	7.94	19,307	mod	12/1/21 purge parameters

1. Sampling Equipment Used	Bailer				**Other Information:**		
2. Pump Rate	N/A				**Decontamination Procedures**	Alconox, DI rinse	
3. Sample Appearance:	clear ☐	low ☑	medium ☐	high ☐			
Color	light gray				**Instrument Calibrations**	pH, conductivity	
4. Odor	sulfur						
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	—	

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2021 Groundwater Monitoring**	Sampler Name(s): **Tricia Hall**
Project Number: **21467005**	Date: **12/8/2020**
Monitoring Well I.D.: **MW-5**	Weather Conditions: ~48 °F
Wellhead Inspection (note conditions): good condition	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	48.89	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	60.3 ft btoc	9. Dedicated? (Yes or No)	dedicated
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	1.86	11. Time to Purge Well (min)	9
5. 3 x Casing Volume (gallons)	5.6	12. Immiscible Layer Observed (yes or no)	NO
6. Actual Volume of Water Purged	6	13. Thickness if Immiscible layer (if present)	—
7. Water Level Measuring Equip.	300' electronic		

[1]Measured from a defined point on the edge of casing (surveyed top of casing)

Purge Parameters:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
12/8/21	1252	2	12.66	6.84	3,917.6	Mod/17.92 NTU	Yellowish/brown color
12/8/21	1257	4	12.43	6.85	3,920.7	mod/59.07NTU	|
12/8/21	1301	6	12.52	6.79	3,920.8	mod/79.00 NTU	

Well Evacuated to Dryness? (Yes or No) no

Time to recharge? —

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
12/8/21	1310	6	12.52	6.79	3,920.8	mod/79.00	

1. Sampling Equipment Used	Bailer				**Other Information:**	
2. Pump Rate	N/A				**Decontamination Procedures**	Alconox, DI rinse
3. Sample Appearance:	clear ☐	low ☐	medium ☑	high ☐		
Color	brown				**Instrument Calibrations**	pH, conductivity
4. Odor	none					
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	—

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2021 Groundwater Monitoring**	Sampler Name(s): **Tricia Hall**
Project Number: **21467005**	Date: **12/8/2021**
Monitoring Well I.D.: **MW-6**	Weather Conditions: ~40 °F
Wellhead Inspection (note conditions): good condition	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	225.63	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	229.7 ft btoc	9. Dedicated? (Yes or No)	Yes
3. Casing Diameter (in.)	4	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	2.66	11. Time to Purge Well (min)	—
5. 3 x Casing Volume (gallons)	—	12. Immiscible Layer Observed (yes or no)	—
6. Actual Volume of Water Purged	—	13. Thickness if Immiscible layer (if present)	—
7. Water Level Measuring Equip.	300' electronic		

[1]Measured from a defined point on the edge of casing (surveyed top of casing)

Purge Parameters:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
		Purged dry	12/1/2021				

Well Evacuated to Dryness? (Yes or No) Yes

Time to recharge? 7 days

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
12/8/21	1525	—	11.95	7.52	19,008	mod/11.74NTU	dark gray

1. Sampling Equipment Used	Bailer				**Other Information:**		
2. Pump Rate	N/A				**Decontamination Procedures**	Alconox, DI rinse	
3. Sample Appearance:	clear ☐	low ☐	medium ☑	high ☐			
Color	dark gray				**Instrument Calibrations**	pH, conductivity	
4. Odor	sulfur						
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	—	

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2021 Groundwater Monitoring**	Sampler Name(s): **Tricia Hall**
Project Number: **21467005**	Date: **12/8/2021**
Monitoring Well I.D.: **MW-7**	Weather Conditions: ~45 °F
Wellhead Inspection (note conditions): good condition	

Groundwater Measurements and Purge Data:

could not measure, WLM stuck to casing wall

1. Static Water Level[1] (±0.01ft.)	—	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	259.2 ft btoc	9. Dedicated? (Yes or No)	yes
3. Casing Diameter (in.)	4	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	—	11. Time to Purge Well (min)	—
5. 3 x Casing Volume (gallons)	—	12. Immiscible Layer Observed (yes or no)	—
6. Actual Volume of Water Purged	—	13. Thickness if Immiscible layer (if present)	—
7. Water Level Measuring Equip.	300' electronic		

[1]Measured from a defined point on the edge of casing (surveyed top of casing)

Purge Parameters:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (__S/cm)	Relative Turbidity	Other
		Bailed dry 11/30/2021					

Well Evacuated to Dryness? (Yes or No) yes

Time to recharge? 8 days

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
12/8/21	1445	—	12.14	7.32	19,845	mod / 31.89 NTU	

1. Sampling Equipment Used	Bailer				**Other Information:**		
2. Pump Rate	N/A				**Decontamination Procedures**	Alconox, DI rinse	
3. Sample Appearance:	clear ☐	low ☐	medium ☒	high ☐			
Color	Dark Gray				**Instrument Calibrations**	pH, conductivity	
4. Odor	Sulfur Odor						
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	~~N/A~~	

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2021 Groundwater Monitoring**	Sampler Name(s): **Tricia Hall**
Project Number: **21467005**	Date: **12/8/2021**
Monitoring Well I.D.: **MW-8**	Weather Conditions: ~48 °F
Wellhead Inspection (note conditions): good condition	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	224.68	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	~229 ft btoc	9. Dedicated? (Yes or No)	yes
3. Casing Diameter (in.)	4	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	~~4.32~~ 2.82	11. Time to Purge Well (min)	—
5. 3 x Casing Volume (gallons)	—	12. Immiscible Layer Observed (yes or no)	—
6. Actual Volume of Water Purged	—	13. Thickness if Immiscible layer (if present)	—
7. Water Level Measuring Equip.	300' electronic		

[1]Measured from a defined point on the edge of casing (surveyed top of casing)

Purge Parameters:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (__S/cm)	Relative Turbidity	Other
		purged dry		11/30/2021			

Well Evacuated to Dryness? (Yes or No) Yes

Time to recharge? 7 days

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
12/8/21	1350	—	13.31	7.47	21,344	7.13 NTU	—

1. Sampling Equipment Used	Bailer				**Other Information:**	
2. Pump Rate	N/A				**Decontamination Procedures**	Alconox, DI rinse
3. Sample Appearance:	clear ☐	low ☒	medium ☐	high ☐		
Color	light gray				**Instrument Calibrations**	pH, conductivity
4. Odor	Sulfur odor					
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	None