January 26, 2023 Project No. GL21467005-4-L-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 2022 GROUNDWATER SAMPLING AT THE BOETTCHER QUARRY

Dear Ms. Eschberger:

On behalf of Holcim (US) Inc., WSP USA Inc. (WSP), is pleased to submit analytical laboratory results for the second semi-annual 2022 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 reports (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 2022 groundwater sampling event was the fifth 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, WSP reviewed the results, and a general analytical data evaluation was performed. Results of this evaluation included the following:

Upon receipt of the laboratory reports, WSP 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.

WSP USA Inc.
7245 W Alaska Drive, Suite 200, Lakewood, Colorado, USA 80226 T: +1 303 980-0540 F: +1 (303) 985 2080

- The analyses were conducted within their respective United States Environmental Protection Agency-recommended hold times, apart from pH, cyanide, and alkalinity.
  - Measurements for pH should be conducted within 15 minutes of sample collection; thus, the laboratory pH measurement will always be out of hold time.
  - Cyanide was out of hold time due to reanalysis at multiple dilutions. A negative interference was suspected; therefore, the samples were analyzed on multiple dilutions to confirm results. Results of undiluted measurements are reported.
  - The reported alkalinity (bicarbonate, carbonate and total) values were analyzed out of hold time for samples collected from MW-2, MW-3, and MW-20. The initial analysis was conducted within hold time; however, carbonate alkalinity values in these samples was higher than historical ranges in for these wells, and the duplicate (MW-20) and original (MW-3) samples had a relative percent difference (RPD) of 22 percent. After re-analysis, the carbonate alkalinity duplicate (MW-20) and original sample (MW-3) had an RPD of 7 percent, and values are within the historic ranges for these wells.

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:

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

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:

- Antimony in MW-1, MW-2, MW-4, MW-6, MW-7, and MW-8
- Arsenic in MW-4, MW-6, MW-7, and MW-8
- Iron in MW-1, MW-3, MW-4, and MW-8
- Thallium in 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.

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

Sincerely,

WSP USA Inc.

Jennifer Thompson
Geochemist

Sara Harkins, PG
Senior Geochemist

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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 Reports
Attachment 2: Field Sheets

https://golderassociates.sharepoint.com/sites/156509/project files/6 deliverables/letters/4-l-second_semiannual_2022_gws-boettcher_quarry/4-l-0/gl21467005-4-l-0_second_semiannual_event_2022_gws_boetcher_quarry_23jan23.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	7.4	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	6/23/2022	11/21/2022
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	0.00145 B	<0.01 U
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	0.0105 B	0.00869 B
Boron, Dissolved (mg/L)	0.75	0.57	0.56	0.58	0.59	0.55	0.57	0.52	0.60	0.51	0.51	0.56	0.61	0.61	0.65	0.62	0.70	0.60	0.68	0.744	0.644	0.658	0.645	**0.770**
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	<0.01 U	<0.02 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	<0.01 U	<0.02 U
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	<0.75 U	<0.75 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	<0.0025 U	<0.005 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	1.13	1.06
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**	**0.053**	**0.074**
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**	0.0174	0.00473
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	<0.00125 U	0.00045 B
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**	**0.0395**	**0.0334**
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	<0.075 U	<0.15 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	25.4 B	<200 U
Fluoride (mg/L)	2.0	0.44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.62	0.60	0.70	0.60	0.62	0.44	0.58	0.54	0.63
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	0.468	<0.1 U
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	0.013 B	<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	0.481	<0.1 U
Lab pH (s.u)	6.5 - 8.5	7.8 H	7.8 H	8.0 H	7.9 H	7.9 H	8.0 H	7.9 H	7.84	7.9 H	8.1 H	8.1 H	8.2 H	8.0 H	8.3 H	8.2	7.9 H	8.2 H	8.2 H	8.2 H	8.1 H	8.2 H	8.2 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	8190	6780 H	6720
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**	**4,400**	**4,170**
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)**	5.2(±24)	**18(±25)**
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)	26(±32)	16(±26)
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	7.38	7.61
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	8,567	6,378
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	15.1	13.4
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	0.10	<0.075 U	<0.15 U
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	0.00212 B	<0.01 U
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	<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	413	454
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	<20 U	<20 U
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	<0.00125 U	<0.0025 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	136	118
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	0.00269	0.00299
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	<0.01 U	<0.01 UH
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	139	125
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	<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	0.0695	0.0587
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	0.00927	0.00695 B
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	10.7	8.52
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	<0.0025 U	<0.005 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	1,630	1,850	1,790	1,750
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	<0.01 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 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	2/18/2014
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	0.004 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	1.74
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	0.7
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	<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	<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**	**1.51**
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	<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	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**	**0.099**
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	<0.001 U
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	<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	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	<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**	**3,180**
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	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	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	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	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	8.0 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	5,720
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	<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	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	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	7.6
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	10,440
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	12.9
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	993	965	978	953	914	995	968	964	978	955	963	979	1020	1,060
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	<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	14	14	14.4	16	15	15.5	14	16	16.3	15.1	18	17	16.9	17.6
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	8	8	7.8	7	7	7.4	8	8	8	7.5	8	7	7.4	7.3
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	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	6.2
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	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	2,440
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 2: Summary of Monitoring Results for MW-2

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	6/23/2022	11/21/2022
Metals																								
Arsenic, Dissolved (mg/L)	0.01	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	0.0039 B	<0.01 U
Barium, Dissolved (mg/L)	2.0	**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**	**3.69**	**3.28**
Boron, Dissolved (mg/L)	0.75	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	**0.80**	**0.76**	**0.76**	**0.784**	**0.802**	**0.762**	0.711	0.741
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	<0.002 U	<0.002 U	<0.01 U	<0.01 U	<0.01 U	<0.02 U
Copper, Dissolved (mg/L)	0.2	<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	<0.01 U	<0.02 U
Iron, Dissolved (mg/L)	0.3	**2.5**	**1.16**	**0.82**	**0.38**	**0.60**	**0.70**	**0.40**	**0.40** B	0.20 B	**1.20**	0.28	**0.50**	0.30	0.30	**0.40**	**0.40**	**0.38**	**0.37**	**0.34**	<0.75 U	0.226	**0.588** B	**0.373** B
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	<0.0005 U	<0.0005 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.005 U
Lithium, Dissolved (mg/L)	2.5	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	1.14	1.09
Manganese, Dissolved (mg/L)	0.05	**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**	**0.0529**	**0.0742**
Selenium, Dissolved (mg/L)	0.02	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	<0.00125 U	<0.0025 U
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	<0.00005 U	<0.001 U	<0.00125 U	0.000329 B	<0.00125 U	<0.00125 U	<0.00125 U
Uranium, Dissolved (mg/L)	0.03	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	0.00303	0.00302 B
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	<0.02 U	<0.015 U	<0.075 U	<0.075 U	<0.075 U	<0.15 U
Other																								
Chloride (mg/L)	250	**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**	**3,630**	**3,420**
Fluoride (mg/L)	2	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	1.35	1.34
Nitrate as N (mg/L)	10	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	<0.1 U	<0.1 U
Nitrite as N (mg/L)	1	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	<0.05 U	<0.05 U
Nitrate+Nitrite as N (mg/L)	10	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	<0.1 U	<0.1 U
Lab pH (s.u)	6.5 - 8.5	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	8.0 H	8.1 H	8.1 H	8.1 H	8.3 H	8.0 H	8.2 H	8.4 H
Total Dissolved Solids, filterable residue (mg/L)	7084	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	6,270	6,400	6,280 H	6,370
Sulfate (mg/L)	250	<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	<100 U	<200 U
Gross Alpha (pCi/L)	15	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)	**21 (±28)**	1.6(±27)
Gross Beta (pCi/L)	**	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)	17(±32)	16(±29)
Field Parameters (Not Available pre-2010))																								
Field pH (s.u)	6.5 - 8.5	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	7.47	7.53
Field Conductivity (µS/cm)	none	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	11,428	8,675
Temperature (Degrees Celsius)	none	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	16.1	11
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	<0.05 U	<0.02 U	<0.015 U	<0.075 U	<0.075 U	<0.075 U	<0.15 U
Antimony, Dissolved (mg/L)	0.006	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	0.00349 B	<0.01 U
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	<0.00125 U	<0.00125 U
Bicarbonate as CaCO3 (mg/L)	none	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	1,030	1,080 H
Carbonate as CaCO3 (mg/L)	none	<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	<20 U	<20 UH
Cadmium, Dissolved (mg/L)	0.005	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	<0.00125 U	<0.0025 U
Calcium, Dissolved (mg/L)	none	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	18.5	17.4
Cobalt, Dissolved (mg/L)	0.05	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	<0.00125 U	<0.0025 U
Cyanide, Free (mg/L)	0.2	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	<0.01 U	<0.01 UH
Magnesium, Dissolved (mg/L)	none	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	7.03	6.99
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	<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	<0.01 U	0.0013 U	0.001 B	0.0009 B	0.00102	<0.0025 U	0.00216 B	0.00202 B	0.00279 B
Nickel, Dissolved (mg/L)	0.1	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	<0.005 U	<0.01 U
Potassium, Dissolved (mg/L)	none	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	5.99	4.75 B
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	0.0006 B	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.005 U
Sodium, Dissolved (mg/L)	none	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	2,370	2,360
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	<0.004 U	0.00185 B	<0.01 U	<0.01 U	<0.01 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 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	<0.0005 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	6/23/2022	11/21/2022
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	0.00046 B	<0.005 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**	**2.62**	**2.66**
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**	0.748	**0.770**
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	NA	<0.004 U	<0.002 U	<0.001 U	<0.002 U	<0.002 U	<0.002 U	<0.01 U	<0.004 U	<0.002 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	NA	<0.1 U	<0.1 U	<0.002 U	<0.002 U	<0.002 U	<0.01 U	<0.004 U	<0.002 U	<0.01 U	<0.01 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	0.154 B	<0.3 U
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	NA	<0.001 U	<0.0005 U	<0.0002 U	<0.0005 U	<0.0005 U	<0.0025 U	<0.001 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	0.69	0.86	0.708	0.711	0.747	0.714	0.737	0.690	0.666
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	0.00855	0.0241
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	NA	<0.0005 U	0.0002 B	<0.0002 U	<0.0005 U	0.00025 B	<0.00125 U	<0.0005 U	<0.00025 U	<0.00125 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	NA	<0.001 U	<0.0005 U	<0.00005 U	<0.0005 U	<0.0005 U	<0.0005 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	NA	0.0003 B	0.0008	0.0005 B	0.0004 B	0.0001 B	0.0007 B	<0.001 U	0.00036 B	<0.0025 U	<0.0025 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	NA	<0.1 U	<0.1 U	<0.01 U	<0.02 U	<0.015 U	<0.075 U	<0.03 U	<0.015 U	<0.075 U	<0.075 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**	**1,650**	**1,780**
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**	**2.67**	**2.27**
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	<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	<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	<0.1 UH	<0.1 U
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	8.2 H	8.5 H
Total Dissolved Solids, filterable residue (r	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	3,960	3,990
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	<100 U	<100 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)	3.7(±11)	13(±21)
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)	-9.8(±17)	18(±22)
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	7.95	8.22
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	7,225	5,585
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	22.2	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	<0.3 U	<0.5 U	<0.05 U	0.008 B	0.0057 B	<0.075 U	<0.03 U	0.0146 B	<0.075 U
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.004 U	0.0007 B	<0.0008 U	<0.002 U	<0.004 U	<0.01 U	<0.004 U	<0.002 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	<0.00025 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	1,190	1,200 H
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	<20 U	71.2 H
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	<0.00025 U	<0.00125 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	7.36	6.21
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	<0.00025 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	<0.01 U	<0.003 U	<0.01 U	<0.01 U	0.0031 B	<0.01 U	<0.01 U	<0.01 UH
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	2.60	2.73
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	<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	0.00047 B	<0.0025 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	0.0006 B	<0.005 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	3.61	3.22
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	<0.0005 U	<0.0025 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	1,440	1,490
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	<0.002 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 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	6/23/2022	11/21/2022
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	<0.02 U	<0.02 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**	**8.73**	**9.18**
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	0.705 B	0.71 B
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	<0.002 U	<0.04 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	<0.04 U	<0.04 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	<1.5 U	<1.5 U
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	<0.01 U	<0.01 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	1.78	1.67
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	0.00752	<0.04 U
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	0.00026	<0.005 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	<0.0025 U	<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	<0.01 U	<0.01 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	<0.015 U	<0.3 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**	**6,490** H	**7,670**
Fluoride (mg/L)	2	1.1	1.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.03	1.10	1.10	1.10	1.07	1.10	1.11	1.25	1.00
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	<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	<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	<0.1 UH	<0.1 U
Lab pH (s.u)	6.5 - 8.5	8.00 H	7.9 H	8.1 H	8.2 H	8.00 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	8.00 H	8.2 H	8.1 H	8.00 H	8.1 H	8.00 H	8.00 H	8.20 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	**10,600** H	**11,000**
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	<400 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)**	9.7(±22)	**15(±54)**
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)	88(±74)	17(±58)
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	7.71	7.78
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	20,248	14,998
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	16.1	11.4
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	<0.015 U	<0.3 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	<0.002 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	<0.00025 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	586	605
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	<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	<0.00025 U	<0.005 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	36.00	34.6
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	0.000119 B	<0.005 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	<0.01 U	<0.01 UH
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	16.00	16.4	15.6	15.8	16.2	16.0
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	<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	<0.0005 U	<0.01 U
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	<0.02 U	<0.02 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	10.90	8.60 B	6.55 B
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	<0.0005 U	<0.01 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	3,940	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	0.00059 B	<0.04 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	6/23/2022	11/21/2022
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	0.00284	<0.005 U
Barium, Dissolved (mg/L)	2	0.01 B	<0.03 U	<0.03 U	<0.03 U	0.02 B	0.01 B	0.011	0.0106	0.00986	0.0128	0.0121	0.0116 B
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	0.315	0.347
Chromium, Dissolved (mg/L)	0.1	NA	NA	NA	<0.004 U	<0.002 U	<0.001 U	<0.002 U	<0.002 U	<0.004 U	<0.004 U	<0.002 U	<0.01 U
Copper, Dissolved (mg/L)	0.2	NA	NA	NA	<0.1 U	<0.1 U	<0.002 U	<0.002 U	<0.002 U	<0.004 U	<0.004 U	<0.004 U	<0.01 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**	**39.7**	**15**
Lead, Dissolved (mg/L)	0.05	NA	NA	NA	<0.001 U	<0.0005 U	<0.0002 U	<0.0005 U	<0.0005 U	<0.001 U	<0.001 U	<0.001 U	<0.0025 U
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	0.3	0.39	0.417	0.364	0.385	0.242	0.344	0.317	0.363
Manganese, Dissolved (mg/L)	0.05	**0.09**	**0.09**	**0.08**	**0.09**	**0.09** B	**0.0772**	**0.0775**	**0.0935**	**0.0767**	**0.0899**	**0.105**	**0.0946**
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	0.00055	<0.00125 U
Thallium, Dissolved (mg/L)	0.002	NA	NA	NA	<0.001 U	0.0001 B	0.00007 B	0.0002 B	0.00021 B	0.00044 B	<0.0005 U	<0.0005 U	<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**	**0.0381**	0.0217
Zinc, Dissolved (mg/L)	2	NA	NA	NA	<0.1 U	<0.1 U	<0.01 U	0.007 B	0.0075 B	<0.03 U	<0.03 U	0.0123 B	<0.075 U
Other													
Chloride (mg/L)	250	45.4 B	25.8 BH	19.7 B	36.2 B	29.8 B	36 B	27.3 B	30.8 B	11.8 B	<100 U	31.6 U	31.6 B
Fluoride (mg/L)	2	NA	NA	NA	0.72	0.60	0.70	0.70	0.73	0.47	0.74	0.95	0.66
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	0.57	<0.1 U	<0.1 U	<0.1 UH	0.188	<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	0.014 B	<0.05 UH	<0.05 U
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	<0.1 UH	<0.1 U
Lab pH (s.u)	6.5 - 8.5	7.8 H	7.3 H	7.7 H	7.5	7.7 H	7.7 H	7.6 H	7.4 H	7.6 H	7.4 H	7.3 H	7.8 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	3640	3,780
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**	**2,190**	**2,300**
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)**	**20(±16)**	13(±17)
Gross Beta (pCi/L)	**	NA	NA	NA	18 (±13)	8.2 (±13)	25(±12)	12(±12)	19 (±13)	20(±9.2)	8.6(±12)	31(±17)	3.1(±13)
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	6.78	7.08
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	3,899	3,350
Temperature (Degrees Celsius)	none	15.4	12.8	16	13.6	15.2	12.2	14.3	11.2	15.9	12.5	13.6	12.4
Supplementary Analytes (Not Historically analyzed)													
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	<0.3 U	<0.5 U	<0.05 U	<0.02 U	0.013 B	<0.03 U	<0.03 U	<0.015 U	<0.075 U
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	<0.004 U	<0.002 U	<0.0008 U	<0.002 U	<0.002 U	<0.004 U	<0.004 U	<0.002 U	<0.004 U
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	<0.0005 U	<0.0003 U	<0.0002 U	<0.0003 U	<0.00025 U	<0.0005 U	<0.0005 U	<0.00025 U	<0.0005 U
Bicarbonate as CaCO3 (mg/L)	none	348	375	401	NA	392 H	354	328	304	360	323	258	346
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	<20 U	<20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	<0.0005 U	<0.0003 U	<0.0001 U	0.00014 B	<0.00025 U	<0.0005 U	<0.0005 U	<0.00025 U	<0.00125 U
Calcium, Dissolved (mg/L)	none	429	461	425	490	402	405	474	427	477	433	475	385
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	0.0047	0.00595	0.0046	0.00805	0.00527	0.00582	0.00508	0.00554	0.00491
Cyanide, Free (mg/L)	0.2	NA	NA	NA	<0.01 U	<0.01 U	<0.003 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 UH
Magnesium, Dissolved (mg/L)	none	128	119	109	121	113	116	117	120	104	109	114	113
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	<0.001 U	<0.001 U
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	<0.2 U	<0.2 U	0.0045	0.0146	0.0089	0.00157	0.00892	0.0126	0.00913
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	0.05 B	0.04 B	0.021	0.0511	0.0436	0.0237	0.0268	0.0477	0.0214
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	8.08	8.77
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	<0.05 U	<0.0005 U	<0.0002 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.0005 U	<0.0025 U
Sodium, Dissolved (mg/L)	none	614	322	329	317	501	617	439	497	230	413	356	569
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	<0.05 U	<0.05 U	<0.001 U	<0.002 U	<0.002 U	<0.004 U	<0.004 U	<0.002 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 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	6/23/2022	11/21/2022
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	0.00603 B	<0.02 U
Barium, Dissolved (mg/L)	2	**7.85**	**7.77**	**7.65**	**7.25**	**6.66**	**6.84**	**6.64**	**6.00**	**5.81**	**6.01**	**6.57**	**6.27**
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	0.594 B	0.659 B
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	<0.02 U	<0.04 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	<0.02 U	<0.04 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**	**3.69**	**2.57**
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	<0.005 U	<0.01 U
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	1.74	1.87	2.21	1.81	1.79	1.76	1.96	1.74	1.60
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**	**0.0667**	**0.0513**
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	<0.0025 U	<0.005 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	0.000924 B	<0.0025 U	<0.0025 U	<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	0.00361 B	0.00398 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	<0.15 U	<0.3 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**	**6,730**	**6,130**
Fluoride (mg/L)	2	NA	NA	NA	1.09	1.20	1.20	1.10	1.12	1.18	1.27	1.01	1.00
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	0.032 B	<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	<0.05 U	<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	0.032 B	<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	8.1 H	8.3 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	10,400 H	10,600
Sulfate (mg/L)	250	<250 U	<200 U	51 B	<200 U	<200 U	<40 U	<200 U	<200 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)**	**19(±53)**	**32(±66)**
Gross Beta (pCi/L)	**	NA	NA	NA	43 (±35)	56 (±47)	0.78(±63)	33(±46)	-28 (±47)	57(±44)	-0.71(±50)	630(±110)	6(±60)
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	7.56	7.76
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	19,509	13,868
Temperature (Degrees Celsius)	none	16.6	11.3	17.7	11.1	17.9	10	21.5	12.1	19.4	11.95	16.6	12.0
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	<0.15 U	<0.3 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	<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	<0.0025 U	<0.0025 U
Bicarbonate as CaCO3 (mg/L)	none	658	639	652	NA	685 H	702	720	647	625	629	624	691
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	<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	<0.0025 U	<0.005 U
Calcium, Dissolved (mg/L)	none	51	44	41	47	40	45.4	43.2	41.1	45.7	40.3	44.4	40.8
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	<0.003 U	0.00024 B	<0.0005 U	<0.005 U	0.000315	0.000693 B	0.000723 B	0.000533 B	<0.005 U
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	<0.01 U	<0.01 UH
Magnesium, Dissolved (mg/L)	none	16	16	16	16	14	15.8	15	15.8	14.7	14.7	16.2	15.4
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	<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	0.0291	0.0369
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	0.019	0.0195 B
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	9.1 B	7.11 B
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	<0.005 U	<0.01 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	3,940	3,910
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	<0.02 U	<0.04 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.

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

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*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	6/23/2022	11/21/2022
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	0.00265 B	<0.02 U
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**	**3.05**	**2.52**
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	0.604 B	0.55 B
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	<0.02 U	<0.04 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	<0.02 U	<0.04 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**	**2.07**	**0.622** B
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	<0.005 U	<0.01 U
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	1.84	2.02	2.30	1.92	1.84	1.88	2.06	1.85	1.66
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**	**0.109**	**0.119**
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	<0.0025 U	<0.005 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	<0.0025 U	<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	0.00423 B	0.00344 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	0.116 B	<0.3 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**	**6,650** H	**6,480**
Fluoride (mg/L)	2	NA	NA	NA	0.88	1.00	0.90	0.80	1.00	0.95	0.90	0.91	0.90
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	0.57	<0.1 U	0.083	0.05 BH	<0.1 U	<0.1 U	<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	<0.05 U	<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	<0.1 U	<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	8 H	8.2 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	11,200 H	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	94.8 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)	-23(±35)	**150(±85)**
Gross Beta (pCi/L)	**	NA	NA	NA	34 (±42)	42 (±252)	35(±59)	11(±53)	1.9 (±53)	92(±58)	26(±67)	39(±66)	-2.3(±56)
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	7.18	7.33
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	20,634	14,884
Temperature (Degrees Celsius)	none	22.5	12.3	16.4	12.9	16.3	8.3	19.8	12.5	20.9	12.14	17.4	13.2
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	<0.15 U	<0.3 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	<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	<0.0025 U	<0.0025 U
Bicarbonate as CaCO3 (mg/L)	none	745	700	714	NA	681 H	701	876	663	650	713	688	765
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	<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	<0.0025 U	<0.005 U
Calcium, Dissolved (mg/L)	none	52	55	52	54	53	54.4	54.2	52.5	56.8	52	54	52.1
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	<0.0025 U	<0.005 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	<0.01 U	<0.01 UH
Magnesium, Dissolved (mg/L)	none	19	20	20	19	18	18.5	17.9	18.4	17.9	17.1	18.8	17.7
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	<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	0.012	0.00734 B
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	<0.01 U	<0.02 U
Potassium, Dissolved (mg/L)	none	11	9 B	9 B	11	11	12.7	17.6	8.85	9.09 B	10.9	9.98 B	7.47 B
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	<0.005 U	<0.01 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	4,260	4,030
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	<0.02 U	<0.04 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	6/23/2022	11/21/2022
Metals						
Arsenic, Dissolved (mg/L)	0.01	0.00546	<0.01 U	0.0025 B	0.00361 B	<0.02 U
Barium, Dissolved (mg/L)	2	0.299	0.137	0.161	0.847	0.885
Boron, Dissolved (mg/L)	0.75	**0.9**	**0.823** B	**0.763**	0.682 B	**0.763** B
Chromium, Dissolved (mg/L)	0.1	<0.002 U	<0.02 U	<0.02 U	<0.02 U	<0.04 U
Copper, Dissolved (mg/L)	0.2	0.00306	<0.02 U	<0.02 U	<0.02 U	<0.04 U
Iron, Dissolved (mg/L)	0.3	<0.75 U	<1.5 U	0.13 B	<1.5 U	<1.5 U
Lead, Dissolved (mg/L)	0.05	<0.0005 U	<0.005 U	<0.005 U	<0.005 U	<0.01 U
Lithium, Dissolved (mg/L)	2.5	1.55	1.70	1.97	1.80	1.71
Manganese, Dissolved (mg/L)	0.05	0.0161	0.0336	0.0455	0.0233	0.0174 B
Selenium, Dissolved (mg/L)	0.02	0.00179 B	<0.0025 U	<0.0025 U	<0.0025 U	<0.005 U
Thallium, Dissolved (mg/L)	0.002	<0.0025 U	0.000826 B	<0.0025 U	<0.0025 U	<0.0025 U
Uranium, Dissolved (mg/L)	0.03	0.0167	**0.056**	**0.0452**	**0.0311**	0.0046 B
Zinc, Dissolved (mg/L)	2	0.0091 B	<0.15 U	<0.15 U	<0.15 U	<0.3 U
Other						
Chloride (mg/L)	250	**5,910**	**7,000**	**6,910**	**7,130**	**7,130**
Fluoride (mg/L)	2	1.66	1.54	1.40	1.34	1.15
Nitrate as N (mg/L)	10	<0.1 U	<0.1 UH	<0.1 U	0 B	<0.1 U
Nitrite as N (mg/L)	1	<0.05 U	<0.05 UH	<0.05 U	<0.05 U	<0.05 U
Nitrate+Nitrite as N (mg/L)	10	<0.1 U	<0.1 UH	<0.1 U	0 B	<0.1 U
Lab pH (s.u)	6.5 - 8.5	8.3 H	8.0 H	8.0 H	8.1 H	8.2 H
Total Dissolved Solids, filterable residue (mg/L)	1.25 x Background*	10,100	12,600	12,300	11,600 H	12,000
Sulfate (mg/L)	250	**529**	**885**	**444**	135 B	<200 U
Gross Alpha (pCi/L)	15	**45 (±45)**	**-1.4(±38)**	**36(±60)**	4.9(±46)	6.1(±54)
Gross Beta (pCi/L)	**	9.1 (±44)	-1.9(±57)	7.8(±67)	-5.8(±56)	-35(±57)
Field Parameters (Not Available pre-2010))						
Field pH (s.u)	6.5 - 8.5	8.15	8.00	7.47	7.62	7.32
Field Conductivity (µS/cm)	none	14,360	18,379	21,344	21,985	17,322
Temperature (Degrees Celsius)	none	12.5	21.3	13.3	18.5	12.7
Supplementary Analytes (Not Historically analyzed)						
Aluminum, Dissolved (mg/L)	5	0.0057 B	<0.15 U	<0.15 U	<0.15 U	<0.3 U
Antimony, Dissolved (mg/L)	0.006	**0.0125** B	**0.0102** B	**0.0109** B	**0.0134** B	<0.02 U
Beryllium, Dissolved (mg/L)	0.004	<0.00025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U
Bicarbonate as CaCO3 (mg/L)	none	664	612	582	545	615
Carbonate as CaCO3 (mg/L)	none	<20 U	<20 U	<20 U	<20 U	<20 U
Cadmium, Dissolved (mg/L)	0.005	<0.00025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.005 U
Calcium, Dissolved (mg/L)	none	23.4	56.1	93.6	92.4	91
Cobalt, Dissolved (mg/L)	0.05	0.000745	0.000951 B	0.00158 B	0.00122 B	0.00113 B
Cyanide, Free (mg/L)	0.2	<0.01 U	0.0128	0.0158	<0.01 U	<0.01 UH
Magnesium, Dissolved (mg/L)	none	18.8	18.4	19.7	21.2	20.1
Mercury, Dissolved (mg/L)	0.002	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U
Molybdenum, Dissolved (mg/L)	0.21	0.0225	0.0469	0.0425	0.0193	<0.01 U
Nickel, Dissolved (mg/L)	0.1	0.00469	0.00575 B	0.00905 B	0.00634 B	<0.02 U
Potassium, Dissolved (mg/L)	none	16.6	12.5	14.4	12.5	8.03 B
Silver, Dissolved (mg/L)	0.05	<0.005 U	<0.005 U	<0.005 U	<0.005 U	<0.01 U
Sodium, Dissolved (mg/L)	none	3,380	4,260	4,490	4,530	4,410
Vanadium, Dissolved (mg/L)	0.1	0.0044	<0.02 U	<0.02 U	<0.02 U	<0.04 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)

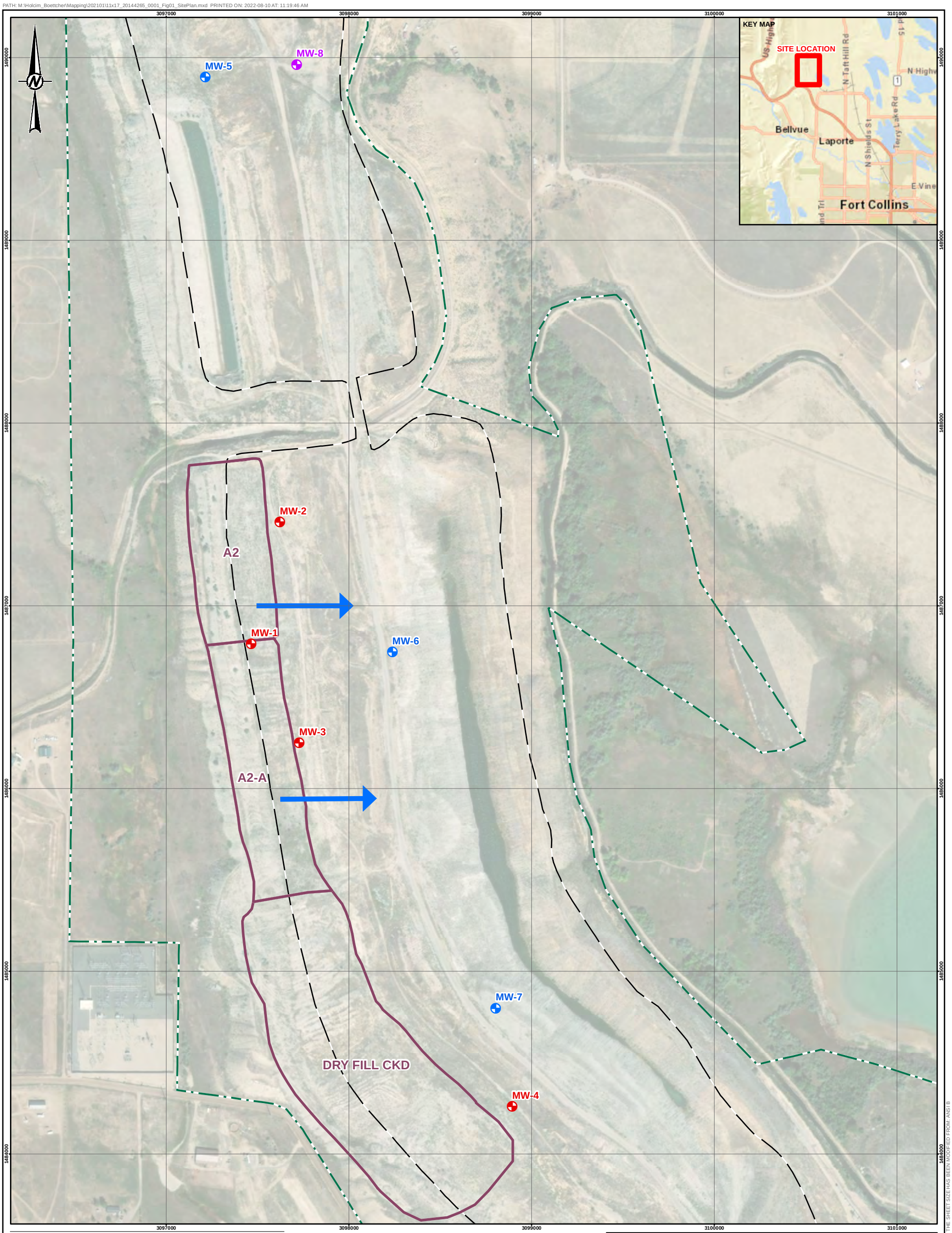
*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

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: 2022-08-10 AT: 11:19:46 AM



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

1. PROPERTY AND PERMIT BOUNDARIES PROVIDED BY HOLCIM (US) INC.
2. COORDINATE SYSTEM: NAD83 STATE PLANE COLORADO NORTH (US FT).
3. AERIAL IMAGERY: ESRI BASEMAPS, VIVID. MAXAR. IMAGERY COLLECTED 09/22/2021.

CLIENT
HOLCIM (US) INC.

PROJECT
BOETTCHER LIMESTONE QUARRY
LARIMER COUNTY, COLORADO

TITLE
SITE LOCATION PLAN

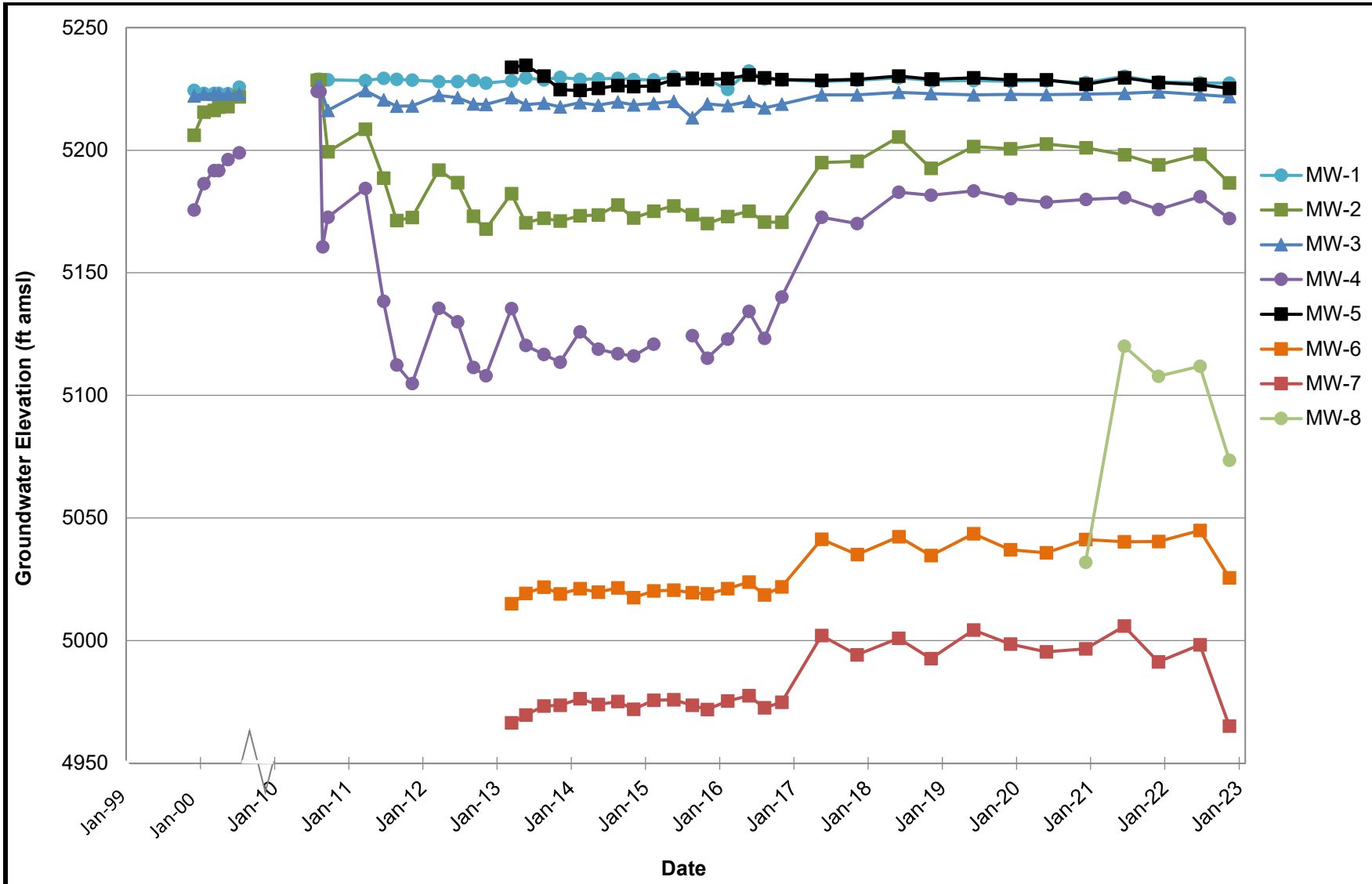
CONSULTANT
wsp

YYYY-MM-DD	2022-08-10
DESIGNED	SAH
PREPARED	KJC
REVIEWED	SAH
APPROVED	RSM

PROJECT NO.
GL21467005.000

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

ATTACHMENT 1

ACZ Laboratory Reports

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

Revised Analytical Report

January 18, 2023

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

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

cc: Jennifer Thompson

Project ID: GL21467005.000
ACZ Project ID: L77370

Sara Harkins:

Enclosed are revised analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on November 22, 2022 and originally reported on December 21, 2022. Refer to the case narrative for an explanation of the changes. This project was assigned to ACZ's project number, L77370. 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 L77370. 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 January 20, 2023. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/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 reports for five years.

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

Mark McNeal
Mark McNeal has reviewed and approved this report.

Golder Associates

January 18, 2023

Project ID: GL21467005.000
ACZ Project ID: L77370

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 10 groundwater samples from Golder Associates on November 22, 2022. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L77370. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic, radiochemistry parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

This report is being reissued to include requested reanalysis values for ALK on samples -02, -03 and -10. The is report is being reissued again to clarify the wording of the first case narrative below due to client request.

1. Qualifier: N1 Applies to: L77370-01/CYANIDE
L77370-02/CYANIDE
L77370-03/CYANIDE
L77370-04/CYANIDE
L77370-05/CYANIDE
L77370-06/CYANIDE
L77370-07/CYANIDE
L77370-08/CYANIDE
L77370-09/CYANIDE
L77370-10/CYANIDE

Negative interference suspected due to sample matrix. Samples were analyzed on multiple dilutions to confirm results. Results of undiluted measurements are reported.

2. Qualifier: N1 Applies to: L77370-01/BETA
L77370-02/BETA
L77370-03/BETA

LCSW out of acceptance limits. MS within acceptance limits and used for positive control.

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-1

ACZ Sample ID: ***L77370-01***
Date Sampled: *11/21/22 09:26*
Date Received: *11/22/22*
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	12/05/22 20:17	kja
Antimony, dissolved	M200.8 ICP-MS	5	<0.002	U		mg/L	0.002	0.01	12/02/22 20:58	kja
Arsenic, dissolved	M200.8 ICP-MS	10	<0.002	U		mg/L	0.002	0.01	12/05/22 20:17	kja
Barium, dissolved	M200.8 ICP-MS	10	0.00869	B		mg/L	0.005	0.025	12/05/22 20:17	kja
Beryllium, dissolved	M200.8 ICP-MS	5	<0.0004	U		mg/L	0.0004	0.00125	12/09/22 19:48	kja
Boron, dissolved	M200.7 ICP	5	0.770			mg/L	0.15	0.5	12/15/22 9:56	keh1
Cadmium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	12/05/22 20:17	kja
Calcium, dissolved	M200.7 ICP	5	118			mg/L	0.5	2.5	12/15/22 9:56	keh1
Chromium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	12/05/22 20:17	kja
Cobalt, dissolved	M200.8 ICP-MS	10	0.00299			mg/L	0.0005	0.0025	12/05/22 20:17	kja
Copper, dissolved	M200.8 ICP-MS	10	<0.008	U		mg/L	0.008	0.02	12/05/22 20:17	kja
Iron, dissolved	M200.7 ICP	5	<0.3	U		mg/L	0.3	0.75	12/15/22 9:56	keh1
Lead, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	12/05/22 20:17	kja
Lithium, dissolved	M200.7 ICP	5	1.06			mg/L	0.04	0.2	12/15/22 9:56	keh1
Magnesium, dissolved	M200.7 ICP	5	125			mg/L	1	5	12/15/22 9:56	keh1
Manganese, dissolved	M200.8 ICP-MS	10	0.0738			mg/L	0.004	0.02	12/05/22 20:17	kja
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	11/28/22 13:15	mlh
Molybdenum, dissolved	M200.8 ICP-MS	10	0.0587			mg/L	0.002	0.005	12/05/22 20:17	kja
Nickel, dissolved	M200.8 ICP-MS	10	0.00695	B		mg/L	0.004	0.01	12/05/22 20:17	kja
Potassium, dissolved	M200.7 ICP	5	8.52			mg/L	1	5	12/15/22 9:56	keh1
Selenium, dissolved	M200.8 ICP-MS	10	0.00473			mg/L	0.001	0.0025	12/05/22 20:17	kja
Silver, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	12/05/22 20:17	kja
Sodium, dissolved	M200.7 ICP	5	1750			mg/L	1	5	12/16/22 21:34	keh1
Thallium, dissolved	M200.8 ICP-MS	5	0.000451	B		mg/L	0.00025	0.00125	12/06/22 12:56	kja
Uranium, dissolved	M200.8 ICP-MS	10	0.0334			mg/L	0.001	0.005	12/05/22 20:17	kja
Vanadium, dissolved	M200.8 ICP-MS	10	<0.005	U	*	mg/L	0.005	0.02	12/05/22 20:17	kja
Zinc, dissolved	M200.8 ICP-MS	10	<0.06	U		mg/L	0.06	0.15	12/05/22 20:17	kja

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-1

ACZ Sample ID: ***L77370-01***
Date Sampled: *11/21/22 09:26*
Date Received: *11/22/22*
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	454			mg/L	2	20	11/30/22 0:00	emk
Carbonate as CaCO3		1	<2	U		mg/L	2	20	11/30/22 0:00	emk
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	11/30/22 0:00	emk
Total Alkalinity		1	454		*	mg/L	2	20	11/30/22 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-2.1			%			01/16/23 0:00	calc
Sum of Anions			97			meq/L			01/16/23 0:00	calc
Sum of Cations			93			meq/L			01/16/23 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	<40	U	*	mg/L	40	200	12/14/22 18:18	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	UH	*	mg/L	0.003	0.01	12/09/22 14:13	gkk
Fluoride	SM4500F-C	1	0.63			mg/L	0.15	0.35	12/13/22 16:28	emk
Nitrate as N	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	01/16/23 0:00	calc
Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.02	U		mg/L	0.02	0.1	11/22/22 23:34	pjb
Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	11/22/22 23:34	pjb
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	11/30/22 0:00	emk
pH measured at		1	20.6			C	0.1	0.1	11/30/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	10	6720		*	mg/L	200	400	11/23/22 13:57	emk
Sulfate	M300.0 - Ion Chromatography	100	4170		*	mg/L	40	200	12/14/22 18:18	mad
TDS (calculated)	Calculation		6450			mg/L			01/16/23 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.04						01/16/23 0:00	calc

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-2

ACZ Sample ID: ***L77370-02***
Date Sampled: *11/21/22 07:45*
Date Received: *11/22/22*
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	12/05/22 20:19	kja
Antimony, dissolved	M200.8 ICP-MS	5	<0.002	U		mg/L	0.002	0.01	12/02/22 21:00	kja
Arsenic, dissolved	M200.8 ICP-MS	10	<0.002	U		mg/L	0.002	0.01	12/05/22 20:19	kja
Barium, dissolved	M200.8 ICP-MS	10	3.28			mg/L	0.005	0.025	12/05/22 20:19	kja
Beryllium, dissolved	M200.8 ICP-MS	5	<0.0004	U		mg/L	0.0004	0.00125	12/09/22 19:50	kja
Boron, dissolved	M200.7 ICP	5	0.741			mg/L	0.15	0.5	12/15/22 9:59	keh1
Cadmium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	12/05/22 20:19	kja
Calcium, dissolved	M200.7 ICP	5	17.4			mg/L	0.5	2.5	12/15/22 9:59	keh1
Chromium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	12/05/22 20:19	kja
Cobalt, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	12/05/22 20:19	kja
Copper, dissolved	M200.8 ICP-MS	10	<0.008	U		mg/L	0.008	0.02	12/05/22 20:19	kja
Iron, dissolved	M200.7 ICP	5	0.373	B		mg/L	0.3	0.75	12/15/22 9:59	keh1
Lead, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	12/05/22 20:19	kja
Lithium, dissolved	M200.7 ICP	5	1.09			mg/L	0.04	0.2	12/15/22 9:59	keh1
Magnesium, dissolved	M200.7 ICP	5	6.99			mg/L	1	5	12/15/22 9:59	keh1
Manganese, dissolved	M200.8 ICP-MS	10	0.0742			mg/L	0.004	0.02	12/05/22 20:19	kja
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	11/28/22 13:16	mlh
Molybdenum, dissolved	M200.8 ICP-MS	10	0.00279	B		mg/L	0.002	0.005	12/05/22 20:19	kja
Nickel, dissolved	M200.8 ICP-MS	10	<0.004	U		mg/L	0.004	0.01	12/05/22 20:19	kja
Potassium, dissolved	M200.7 ICP	5	4.75	B		mg/L	1	5	12/15/22 9:59	keh1
Selenium, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.0025	12/05/22 20:19	kja
Silver, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	12/05/22 20:19	kja
Sodium, dissolved	M200.7 ICP	5	2360			mg/L	1	5	12/16/22 21:44	keh1
Thallium, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	12/06/22 12:57	kja
Uranium, dissolved	M200.8 ICP-MS	10	0.00302	B		mg/L	0.001	0.005	12/05/22 20:19	kja
Vanadium, dissolved	M200.8 ICP-MS	10	<0.005	U	*	mg/L	0.005	0.02	12/05/22 20:19	kja
Zinc, dissolved	M200.8 ICP-MS	10	<0.06	U		mg/L	0.06	0.15	12/05/22 20:19	kja

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-2

ACZ Sample ID: ***L77370-02***
Date Sampled: *11/21/22 07:45*
Date Received: *11/22/22*
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	1080	H		mg/L	2	20	01/11/23 0:00	anc
Carbonate as CaCO3		1	<2	UH		mg/L	2	20	01/11/23 0:00	anc
Hydroxide as CaCO3		1	<2	UH		mg/L	2	20	01/11/23 0:00	anc
Total Alkalinity		1	1080	H	*	mg/L	2	20	01/11/23 0:00	anc
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-5.4			%			01/16/23 0:00	calc
Sum of Anions			117			meq/L			01/16/23 0:00	calc
Sum of Cations			105			meq/L			01/16/23 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	3420		*	mg/L	40	200	12/14/22 18:36	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	UH	*	mg/L	0.003	0.01	12/09/22 14:15	gkk
Fluoride	SM4500F-C	1	1.34			mg/L	0.15	0.35	12/13/22 16:45	emk
Nitrate as N	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	01/16/23 0:00	calc
Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.02	U		mg/L	0.02	0.1	11/22/22 23:35	pjb
Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	11/22/22 23:35	pjb
pH (lab)	SM4500H+ B									
pH		1	8.4	H		units	0.1	0.1	11/30/22 0:00	emk
pH measured at		1	20.8			C	0.1	0.1	11/30/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	2	6370			mg/L	40	80	11/28/22 20:45	jck
Sulfate	M300.0 - Ion Chromatography	100	<40	U	*	mg/L	40	200	12/14/22 18:36	mad
TDS (calculated)	Calculation		6470			mg/L			01/16/23 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.98						01/16/23 0:00	calc

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-3

ACZ Sample ID: ***L77370-03***
Date Sampled: *11/21/22 10:37*
Date Received: *11/22/22*
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	12/05/22 20:21	kja
Antimony, dissolved	M200.8 ICP-MS	2	<0.0008	U		mg/L	0.0008	0.004	12/02/22 21:02	kja
Arsenic, dissolved	M200.8 ICP-MS	5	<0.001	U		mg/L	0.001	0.005	12/05/22 20:21	kja
Barium, dissolved	M200.8 ICP-MS	5	2.66			mg/L	0.0025	0.0125	12/05/22 20:21	kja
Beryllium, dissolved	M200.8 ICP-MS	2	<0.00016	U		mg/L	0.00016	0.0005	12/09/22 19:52	kja
Boron, dissolved	M200.7 ICP	2	0.770			mg/L	0.06	0.2	12/15/22 10:02	keh1
Cadmium, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	12/05/22 20:21	kja
Calcium, dissolved	M200.7 ICP	2	6.21			mg/L	0.2	1	12/15/22 10:02	keh1
Chromium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	12/05/22 20:21	kja
Cobalt, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	12/05/22 20:21	kja
Copper, dissolved	M200.8 ICP-MS	5	<0.004	U		mg/L	0.004	0.01	12/05/22 20:21	kja
Iron, dissolved	M200.7 ICP	2	<0.12	U		mg/L	0.12	0.3	12/15/22 10:02	keh1
Lead, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	12/05/22 20:21	kja
Lithium, dissolved	M200.7 ICP	2	0.666			mg/L	0.016	0.08	12/15/22 10:02	keh1
Magnesium, dissolved	M200.7 ICP	2	2.73			mg/L	0.4	2	12/15/22 10:02	keh1
Manganese, dissolved	M200.8 ICP-MS	5	0.0241			mg/L	0.002	0.01	12/05/22 20:21	kja
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	11/28/22 13:16	mlh
Molybdenum, dissolved	M200.8 ICP-MS	5	<0.001	U		mg/L	0.001	0.0025	12/05/22 20:21	kja
Nickel, dissolved	M200.8 ICP-MS	5	<0.002	U		mg/L	0.002	0.005	12/05/22 20:21	kja
Potassium, dissolved	M200.7 ICP	2	3.22			mg/L	0.4	2	12/15/22 10:02	keh1
Selenium, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.00125	12/05/22 20:21	kja
Silver, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	12/05/22 20:21	kja
Sodium, dissolved	M200.7 ICP	2	1490			mg/L	0.4	2	12/16/22 21:47	keh1
Thallium, dissolved	M200.8 ICP-MS	2	<0.0001	U		mg/L	0.0001	0.0005	12/06/22 12:59	kja
Uranium, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	12/05/22 20:21	kja
Vanadium, dissolved	M200.8 ICP-MS	5	<0.0025	U	*	mg/L	0.0025	0.01	12/05/22 20:21	kja
Zinc, dissolved	M200.8 ICP-MS	5	<0.03	U		mg/L	0.03	0.075	12/05/22 20:21	kja

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-3

ACZ Sample ID: ***L77370-03***
Date Sampled: *11/21/22 10:37*
Date Received: *11/22/22*
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	1200	H		mg/L	2	20	01/11/23 0:00	anc
Carbonate as CaCO3		1	71.2	H		mg/L	2	20	01/11/23 0:00	anc
Hydroxide as CaCO3		1	<2	UH		mg/L	2	20	01/11/23 0:00	anc
Total Alkalinity		1	1270	H	*	mg/L	2	20	01/11/23 0:00	anc
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-6.4			%			01/16/23 0:00	calc
Sum of Anions			75			meq/L			01/16/23 0:00	calc
Sum of Cations			66			meq/L			01/16/23 0:00	calc
Chloride	M300.0 - Ion Chromatography	50	1780		*	mg/L	20	100	12/14/22 18:54	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	UH	*	mg/L	0.003	0.01	12/09/22 14:17	gkk
Fluoride	SM4500F-C	1	2.27			mg/L	0.15	0.35	12/13/22 16:49	emk
Nitrate as N	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	01/16/23 0:00	calc
Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.02	U		mg/L	0.02	0.1	11/22/22 23:36	pjb
Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	11/22/22 23:36	pjb
pH (lab)	SM4500H+ B									
pH		1	8.5	H		units	0.1	0.1	11/30/22 0:00	emk
pH measured at		1	20.6			C	0.1	0.1	11/30/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	1	3990		*	mg/L	20	40	11/23/22 14:01	emk
Sulfate	M300.0 - Ion Chromatography	50	<20	U	*	mg/L	20	100	12/14/22 18:54	mad
TDS (calculated)	Calculation		4060			mg/L			01/16/23 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.98						01/16/23 0:00	calc

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-4

ACZ Sample ID: ***L77370-04***
Date Sampled: *11/21/22 11:36*
Date Received: *11/22/22*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	20	<0.1	U		mg/L	0.1	0.3	12/05/22 20:23	kja
Antimony, dissolved	M200.8 ICP-MS	10	<0.004	U		mg/L	0.004	0.02	12/02/22 21:04	kja
Arsenic, dissolved	M200.8 ICP-MS	20	<0.004	U		mg/L	0.004	0.02	12/05/22 20:23	kja
Barium, dissolved	M200.8 ICP-MS	20	9.18			mg/L	0.01	0.05	12/05/22 20:23	kja
Beryllium, dissolved	M200.8 ICP-MS	10	<0.0008	U		mg/L	0.0008	0.0025	12/09/22 19:54	kja
Boron, dissolved	M200.7 ICP	10	0.710	B		mg/L	0.3	1	12/15/22 10:06	keh1
Cadmium, dissolved	M200.8 ICP-MS	20	<0.001	U		mg/L	0.001	0.005	12/05/22 20:23	kja
Calcium, dissolved	M200.7 ICP	10	34.6			mg/L	1	5	12/15/22 10:06	keh1
Chromium, dissolved	M200.8 ICP-MS	20	<0.01	U		mg/L	0.01	0.04	12/05/22 20:23	kja
Cobalt, dissolved	M200.8 ICP-MS	20	<0.001	U		mg/L	0.001	0.005	12/05/22 20:23	kja
Copper, dissolved	M200.8 ICP-MS	20	<0.016	U		mg/L	0.016	0.04	12/05/22 20:23	kja
Iron, dissolved	M200.7 ICP	10	<0.6	U		mg/L	0.6	1.5	12/15/22 10:06	keh1
Lead, dissolved	M200.8 ICP-MS	20	<0.002	U		mg/L	0.002	0.01	12/05/22 20:23	kja
Lithium, dissolved	M200.7 ICP	10	1.67			mg/L	0.08	0.4	12/15/22 10:06	keh1
Magnesium, dissolved	M200.7 ICP	10	16.0			mg/L	2	10	12/15/22 10:06	keh1
Manganese, dissolved	M200.8 ICP-MS	20	<0.008	U		mg/L	0.008	0.04	12/05/22 20:23	kja
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	11/28/22 13:19	mlh
Molybdenum, dissolved	M200.8 ICP-MS	20	<0.004	U		mg/L	0.004	0.01	12/05/22 20:23	kja
Nickel, dissolved	M200.8 ICP-MS	20	<0.008	U		mg/L	0.008	0.02	12/05/22 20:23	kja
Potassium, dissolved	M200.7 ICP	10	6.55	B		mg/L	2	10	12/15/22 10:06	keh1
Selenium, dissolved	M200.8 ICP-MS	20	<0.002	U		mg/L	0.002	0.005	12/05/22 20:23	kja
Silver, dissolved	M200.8 ICP-MS	20	<0.002	U		mg/L	0.002	0.01	12/05/22 20:23	kja
Sodium, dissolved	M200.7 ICP	10	4050			mg/L	2	10	12/16/22 21:51	keh1
Thallium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	12/06/22 13:00	kja
Uranium, dissolved	M200.8 ICP-MS	20	<0.002	U		mg/L	0.002	0.01	12/05/22 20:23	kja
Vanadium, dissolved	M200.8 ICP-MS	20	<0.01	U	*	mg/L	0.01	0.04	12/05/22 20:23	kja
Zinc, dissolved	M200.8 ICP-MS	20	<0.12	U		mg/L	0.12	0.3	12/05/22 20:23	kja

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-4

ACZ Sample ID: ***L77370-04***
Date Sampled: *11/21/22 11:36*
Date Received: *11/22/22*
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	605			mg/L	2	20	11/30/22 0:00	emk
Carbonate as CaCO3		1	<2	U		mg/L	2	20	11/30/22 0:00	emk
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	11/30/22 0:00	emk
Total Alkalinity		1	605			mg/L	2	20	11/30/22 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-11.3			%			01/16/23 0:00	calc
Sum of Anions			227			meq/L			01/16/23 0:00	calc
Sum of Cations			181			meq/L			01/16/23 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	7670			mg/L	40	200	12/14/22 19:30	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	UH	*	mg/L	0.003	0.01	12/09/22 14:19	gkk
Fluoride	SM4500F-C	1	1.00			mg/L	0.15	0.35	12/13/22 16:53	emk
Nitrate as N	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	01/16/23 0:00	calc
Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.02	U	*	mg/L	0.02	0.1	11/22/22 23:37	pjb
Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	11/22/22 23:37	pjb
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	11/30/22 0:00	emk
pH measured at		1	20.4			C	0.1	0.1	11/30/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	5	11000			mg/L	100	200	11/28/22 20:48	jck
Sulfate	M300.0 - Ion Chromatography	100	<40	U	*	mg/L	40	200	12/14/22 19:30	mad
TDS (calculated)	Calculation		12100			mg/L			01/16/23 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.91						01/16/23 0:00	calc

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-5

ACZ Sample ID: ***L77370-05***
Date Sampled: *11/21/22 13:17*
Date Received: *11/22/22*
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	12/05/22 20:25	kja
Antimony, dissolved	M200.8 ICP-MS	2	<0.0008	U		mg/L	0.0008	0.004	12/02/22 21:05	kja
Arsenic, dissolved	M200.8 ICP-MS	5	<0.001	U		mg/L	0.001	0.005	12/05/22 20:25	kja
Barium, dissolved	M200.8 ICP-MS	5	0.0116	B		mg/L	0.0025	0.0125	12/05/22 20:25	kja
Beryllium, dissolved	M200.8 ICP-MS	2	<0.00016	U		mg/L	0.00016	0.0005	12/09/22 19:56	kja
Boron, dissolved	M200.7 ICP	2	0.347			mg/L	0.06	0.2	12/15/22 10:09	keh1
Cadmium, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	12/05/22 20:25	kja
Calcium, dissolved	M200.7 ICP	2	385			mg/L	0.2	1	12/15/22 10:09	keh1
Chromium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	12/05/22 20:25	kja
Cobalt, dissolved	M200.8 ICP-MS	5	0.00491			mg/L	0.00025	0.00125	12/05/22 20:25	kja
Copper, dissolved	M200.8 ICP-MS	5	<0.004	U		mg/L	0.004	0.01	12/05/22 20:25	kja
Iron, dissolved	M200.7 ICP	2	15.0			mg/L	0.12	0.3	12/15/22 10:09	keh1
Lead, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	12/05/22 20:25	kja
Lithium, dissolved	M200.7 ICP	2	0.363			mg/L	0.016	0.08	12/15/22 10:09	keh1
Magnesium, dissolved	M200.7 ICP	2	113			mg/L	0.4	2	12/15/22 10:09	keh1
Manganese, dissolved	M200.8 ICP-MS	5	0.0946			mg/L	0.002	0.01	12/05/22 20:25	kja
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	11/28/22 13:20	mlh
Molybdenum, dissolved	M200.8 ICP-MS	5	0.00913			mg/L	0.001	0.0025	12/05/22 20:25	kja
Nickel, dissolved	M200.8 ICP-MS	5	0.0214			mg/L	0.002	0.005	12/05/22 20:25	kja
Potassium, dissolved	M200.7 ICP	2	8.77			mg/L	0.4	2	12/15/22 10:09	keh1
Selenium, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.00125	12/05/22 20:25	kja
Silver, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	12/05/22 20:25	kja
Sodium, dissolved	M200.7 ICP	2	569			mg/L	0.4	2	12/16/22 21:54	keh1
Thallium, dissolved	M200.8 ICP-MS	2	<0.0001	U		mg/L	0.0001	0.0005	12/06/22 13:01	kja
Uranium, dissolved	M200.8 ICP-MS	5	0.0217			mg/L	0.0005	0.0025	12/05/22 20:25	kja
Vanadium, dissolved	M200.8 ICP-MS	5	<0.0025	U	*	mg/L	0.0025	0.01	12/05/22 20:25	kja
Zinc, dissolved	M200.8 ICP-MS	5	<0.03	U		mg/L	0.03	0.075	12/05/22 20:25	kja

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-5

ACZ Sample ID: ***L77370-05***
Date Sampled: *11/21/22 13:17*
Date Received: *11/22/22*
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	346			mg/L	2	20	11/30/22 0:00	emk
Carbonate as CaCO3		1	<2	U		mg/L	2	20	11/30/22 0:00	emk
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	11/30/22 0:00	emk
Total Alkalinity		1	346		*	mg/L	2	20	11/30/22 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-0.9			%			01/16/23 0:00	calc
Sum of Anions			56.0			meq/L			01/16/23 0:00	calc
Sum of Cations			55			meq/L			01/16/23 0:00	calc
Chloride	M300.0 - Ion Chromatography	50	25.6	B	*	mg/L	20	100	12/14/22 20:06	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	UH	*	mg/L	0.003	0.01	12/09/22 14:21	gkk
Fluoride	SM4500F-C	1	0.66			mg/L	0.15	0.35	12/13/22 16:58	emk
Nitrate as N	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	01/16/23 0:00	calc
Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.02	U	*	mg/L	0.02	0.1	11/22/22 23:40	pjb
Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	11/22/22 23:40	pjb
pH (lab)	SM4500H+ B									
pH		1	7.8	H	*	units	0.1	0.1	11/30/22 0:00	emk
pH measured at		1	20.4			C	0.1	0.1	11/30/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	1	3780		*	mg/L	20	40	11/23/22 14:05	emk
Sulfate	M300.0 - Ion Chromatography	50	2300		*	mg/L	20	100	12/14/22 20:06	mad
TDS (calculated)	Calculation		3630			mg/L			01/16/23 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.04						01/16/23 0:00	calc

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-6

ACZ Sample ID: ***L77370-06***
Date Sampled: *11/21/22 15:41*
Date Received: *11/22/22*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	20	<0.1	U		mg/L	0.1	0.3	12/05/22 20:30	kja
Antimony, dissolved	M200.8 ICP-MS	10	<0.004	U		mg/L	0.004	0.02	12/02/22 21:11	kja
Arsenic, dissolved	M200.8 ICP-MS	20	<0.004	U		mg/L	0.004	0.02	12/05/22 20:30	kja
Barium, dissolved	M200.8 ICP-MS	20	6.27			mg/L	0.01	0.05	12/05/22 20:30	kja
Beryllium, dissolved	M200.8 ICP-MS	10	<0.0008	U		mg/L	0.0008	0.0025	12/09/22 20:05	kja
Boron, dissolved	M200.7 ICP	10	0.659	B		mg/L	0.3	1	12/15/22 10:12	keh1
Cadmium, dissolved	M200.8 ICP-MS	20	<0.001	U		mg/L	0.001	0.005	12/05/22 20:30	kja
Calcium, dissolved	M200.7 ICP	10	40.8			mg/L	1	5	12/15/22 10:12	keh1
Chromium, dissolved	M200.8 ICP-MS	20	<0.01	U		mg/L	0.01	0.04	12/05/22 20:30	kja
Cobalt, dissolved	M200.8 ICP-MS	20	<0.001	U		mg/L	0.001	0.005	12/05/22 20:30	kja
Copper, dissolved	M200.8 ICP-MS	20	<0.016	U		mg/L	0.016	0.04	12/05/22 20:30	kja
Iron, dissolved	M200.7 ICP	10	2.57			mg/L	0.6	1.5	12/15/22 10:12	keh1
Lead, dissolved	M200.8 ICP-MS	20	<0.002	U		mg/L	0.002	0.01	12/05/22 20:30	kja
Lithium, dissolved	M200.7 ICP	10	1.60			mg/L	0.08	0.4	12/15/22 10:12	keh1
Magnesium, dissolved	M200.7 ICP	10	15.4			mg/L	2	10	12/15/22 10:12	keh1
Manganese, dissolved	M200.8 ICP-MS	20	0.0513			mg/L	0.008	0.04	12/05/22 20:30	kja
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	11/28/22 13:21	mlh
Molybdenum, dissolved	M200.8 ICP-MS	20	0.0369			mg/L	0.004	0.01	12/05/22 20:30	kja
Nickel, dissolved	M200.8 ICP-MS	20	0.0195	B		mg/L	0.008	0.02	12/05/22 20:30	kja
Potassium, dissolved	M200.7 ICP	10	7.11	B		mg/L	2	10	12/15/22 10:12	keh1
Selenium, dissolved	M200.8 ICP-MS	20	<0.002	U		mg/L	0.002	0.005	12/05/22 20:30	kja
Silver, dissolved	M200.8 ICP-MS	20	<0.002	U		mg/L	0.002	0.01	12/05/22 20:30	kja
Sodium, dissolved	M200.7 ICP	10	3910			mg/L	2	10	12/16/22 21:58	keh1
Thallium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	12/06/22 13:03	kja
Uranium, dissolved	M200.8 ICP-MS	20	0.00398	B		mg/L	0.002	0.01	12/05/22 20:30	kja
Vanadium, dissolved	M200.8 ICP-MS	20	<0.01	U	*	mg/L	0.01	0.04	12/05/22 20:30	kja
Zinc, dissolved	M200.8 ICP-MS	20	<0.12	U		mg/L	0.12	0.3	12/05/22 20:30	kja

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-6

ACZ Sample ID: ***L77370-06***
Date Sampled: *11/21/22 15:41*
Date Received: *11/22/22*
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	691			mg/L	2	20	11/30/22 0:00	emk
Carbonate as CaCO3		1	<2	U		mg/L	2	20	11/30/22 0:00	emk
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	11/30/22 0:00	emk
Total Alkalinity		1	691			mg/L	2	20	11/30/22 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-2.8			%			01/16/23 0:00	calc
Sum of Anions			186			meq/L			01/16/23 0:00	calc
Sum of Cations			176			meq/L			01/16/23 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	6130			mg/L	40	200	12/14/22 21:17	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	UH	*	mg/L	0.003	0.01	12/09/22 14:23	gkk
Fluoride	SM4500F-C	1	1.00			mg/L	0.15	0.35	12/13/22 17:02	emk
Nitrate as N	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	01/16/23 0:00	calc
Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.02	U	*	mg/L	0.02	0.1	11/22/22 23:43	pjb
Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	11/22/22 23:43	pjb
pH (lab)	SM4500H+ B									
pH		1	8.3	H		units	0.1	0.1	11/30/22 0:00	emk
pH measured at		1	20.4			C	0.1	0.1	11/30/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	5	10600			mg/L	100	200	11/28/22 20:51	jck
Sulfate	M300.0 - Ion Chromatography	100	<40	U	*	mg/L	40	200	12/14/22 21:17	mad
TDS (calculated)	Calculation		10500			mg/L			01/16/23 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.01						01/16/23 0:00	calc

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-7

ACZ Sample ID: ***L77370-07***
Date Sampled: *11/21/22 14:52*
Date Received: *11/22/22*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	20	<0.1	U		mg/L	0.1	0.3	12/05/22 20:32	kja
Antimony, dissolved	M200.8 ICP-MS	10	<0.004	U		mg/L	0.004	0.02	12/02/22 21:13	kja
Arsenic, dissolved	M200.8 ICP-MS	20	<0.004	U		mg/L	0.004	0.02	12/05/22 20:32	kja
Barium, dissolved	M200.8 ICP-MS	20	2.52			mg/L	0.01	0.05	12/05/22 20:32	kja
Beryllium, dissolved	M200.8 ICP-MS	10	<0.0008	U		mg/L	0.0008	0.0025	12/09/22 20:07	kja
Boron, dissolved	M200.7 ICP	10	0.550	B		mg/L	0.3	1	12/15/22 10:22	keh1
Cadmium, dissolved	M200.8 ICP-MS	20	<0.001	U		mg/L	0.001	0.005	12/05/22 20:32	kja
Calcium, dissolved	M200.7 ICP	10	52.1			mg/L	1	5	12/15/22 10:22	keh1
Chromium, dissolved	M200.8 ICP-MS	20	<0.01	U		mg/L	0.01	0.04	12/05/22 20:32	kja
Cobalt, dissolved	M200.8 ICP-MS	20	<0.001	U		mg/L	0.001	0.005	12/05/22 20:32	kja
Copper, dissolved	M200.8 ICP-MS	20	<0.016	U		mg/L	0.016	0.04	12/05/22 20:32	kja
Iron, dissolved	M200.7 ICP	10	0.622	B		mg/L	0.6	1.5	12/15/22 10:22	keh1
Lead, dissolved	M200.8 ICP-MS	20	<0.002	U		mg/L	0.002	0.01	12/05/22 20:32	kja
Lithium, dissolved	M200.7 ICP	10	1.66			mg/L	0.08	0.4	12/15/22 10:22	keh1
Magnesium, dissolved	M200.7 ICP	10	17.7			mg/L	2	10	12/15/22 10:22	keh1
Manganese, dissolved	M200.8 ICP-MS	20	0.119			mg/L	0.008	0.04	12/05/22 20:32	kja
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	11/28/22 13:22	mlh
Molybdenum, dissolved	M200.8 ICP-MS	20	0.00734	B		mg/L	0.004	0.01	12/05/22 20:32	kja
Nickel, dissolved	M200.8 ICP-MS	20	<0.008	U		mg/L	0.008	0.02	12/05/22 20:32	kja
Potassium, dissolved	M200.7 ICP	10	7.47	B		mg/L	2	10	12/15/22 10:22	keh1
Selenium, dissolved	M200.8 ICP-MS	20	<0.002	U		mg/L	0.002	0.005	12/05/22 20:32	kja
Silver, dissolved	M200.8 ICP-MS	20	<0.002	U		mg/L	0.002	0.01	12/05/22 20:32	kja
Sodium, dissolved	M200.7 ICP	10	4030			mg/L	2	10	12/16/22 22:07	keh1
Thallium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	12/06/22 13:04	kja
Uranium, dissolved	M200.8 ICP-MS	20	0.00344	B		mg/L	0.002	0.01	12/05/22 20:32	kja
Vanadium, dissolved	M200.8 ICP-MS	20	<0.01	U	*	mg/L	0.01	0.04	12/05/22 20:32	kja
Zinc, dissolved	M200.8 ICP-MS	20	<0.12	U		mg/L	0.12	0.3	12/05/22 20:32	kja

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-7

ACZ Sample ID: ***L77370-07***
Date Sampled: *11/21/22 14:52*
Date Received: *11/22/22*
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	765			mg/L	2	20	11/30/22 0:00	emk
Carbonate as CaCO3		1	<2	U		mg/L	2	20	11/30/22 0:00	emk
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	11/30/22 0:00	emk
Total Alkalinity		1	765		*	mg/L	2	20	11/30/22 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-4.0			%			01/16/23 0:00	calc
Sum of Anions			197			meq/L			01/16/23 0:00	calc
Sum of Cations			182			meq/L			01/16/23 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	6480			mg/L	40	200	12/14/22 21:35	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	UH	*	mg/L	0.003	0.01	12/09/22 14:25	gkk
Fluoride	SM4500F-C	1	0.90			mg/L	0.15	0.35	12/13/22 17:06	emk
Nitrate as N	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	01/16/23 0:00	calc
Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.02	U	*	mg/L	0.02	0.1	11/22/22 23:48	pjb
Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	11/22/22 23:48	pjb
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	11/30/22 0:00	emk
pH measured at		1	20.6			C	0.1	0.1	11/30/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	5	11100			mg/L	100	200	11/28/22 20:54	jck
Sulfate	M300.0 - Ion Chromatography	100	<40	U	*	mg/L	40	200	12/14/22 21:35	mad
TDS (calculated)	Calculation		11100			mg/L			01/16/23 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.00						01/16/23 0:00	calc

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-8

ACZ Sample ID: ***L77370-08***
Date Sampled: *11/21/22 13:52*
Date Received: *11/22/22*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	20	<0.1	U		mg/L	0.1	0.3	12/05/22 20:34	kja
Antimony, dissolved	M200.8 ICP-MS	10	<0.004	U		mg/L	0.004	0.02	12/02/22 21:15	kja
Arsenic, dissolved	M200.8 ICP-MS	20	<0.004	U		mg/L	0.004	0.02	12/05/22 20:34	kja
Barium, dissolved	M200.8 ICP-MS	20	0.885			mg/L	0.01	0.05	12/05/22 20:34	kja
Beryllium, dissolved	M200.8 ICP-MS	10	<0.0008	U		mg/L	0.0008	0.0025	12/09/22 20:09	kja
Boron, dissolved	M200.7 ICP	10	0.763	B		mg/L	0.3	1	12/15/22 10:25	keh1
Cadmium, dissolved	M200.8 ICP-MS	20	<0.001	U		mg/L	0.001	0.005	12/05/22 20:34	kja
Calcium, dissolved	M200.7 ICP	10	91.0			mg/L	1	5	12/15/22 10:25	keh1
Chromium, dissolved	M200.8 ICP-MS	20	<0.01	U		mg/L	0.01	0.04	12/05/22 20:34	kja
Cobalt, dissolved	M200.8 ICP-MS	20	0.00113	B		mg/L	0.001	0.005	12/05/22 20:34	kja
Copper, dissolved	M200.8 ICP-MS	20	<0.016	U		mg/L	0.016	0.04	12/05/22 20:34	kja
Iron, dissolved	M200.7 ICP	10	<0.6	U		mg/L	0.6	1.5	12/15/22 10:25	keh1
Lead, dissolved	M200.8 ICP-MS	20	<0.002	U		mg/L	0.002	0.01	12/05/22 20:34	kja
Lithium, dissolved	M200.7 ICP	10	1.71			mg/L	0.08	0.4	12/15/22 10:25	keh1
Magnesium, dissolved	M200.7 ICP	10	20.1			mg/L	2	10	12/15/22 10:25	keh1
Manganese, dissolved	M200.8 ICP-MS	20	0.0174	B		mg/L	0.008	0.04	12/05/22 20:34	kja
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	11/28/22 13:23	mlh
Molybdenum, dissolved	M200.8 ICP-MS	20	<0.004	U		mg/L	0.004	0.01	12/05/22 20:34	kja
Nickel, dissolved	M200.8 ICP-MS	20	<0.008	U		mg/L	0.008	0.02	12/05/22 20:34	kja
Potassium, dissolved	M200.7 ICP	10	8.03	B		mg/L	2	10	12/15/22 10:25	keh1
Selenium, dissolved	M200.8 ICP-MS	20	<0.002	U		mg/L	0.002	0.005	12/05/22 20:34	kja
Silver, dissolved	M200.8 ICP-MS	20	<0.002	U		mg/L	0.002	0.01	12/05/22 20:34	kja
Sodium, dissolved	M200.7 ICP	10	4410			mg/L	2	10	12/16/22 22:10	keh1
Thallium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	12/06/22 13:09	kja
Uranium, dissolved	M200.8 ICP-MS	20	0.00460	B		mg/L	0.002	0.01	12/05/22 20:34	kja
Vanadium, dissolved	M200.8 ICP-MS	20	<0.01	U	*	mg/L	0.01	0.04	12/05/22 20:34	kja
Zinc, dissolved	M200.8 ICP-MS	20	<0.12	U		mg/L	0.12	0.3	12/05/22 20:34	kja

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-8

ACZ Sample ID: ***L77370-08***
Date Sampled: *11/21/22 13:52*
Date Received: *11/22/22*
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	615			mg/L	2	20	11/30/22 0:00	emk
Carbonate as CaCO3		1	<2	U		mg/L	2	20	11/30/22 0:00	emk
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	11/30/22 0:00	emk
Total Alkalinity		1	615			mg/L	2	20	11/30/22 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-2.9			%			01/16/23 0:00	calc
Sum of Anions			212			meq/L			01/16/23 0:00	calc
Sum of Cations			200			meq/L			01/16/23 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	7130			mg/L	40	200	12/14/22 21:53	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	UH	*	mg/L	0.003	0.01	12/09/22 14:27	gkk
Fluoride	SM4500F-C	1	1.15			mg/L	0.15	0.35	12/13/22 17:24	emk
Nitrate as N	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	01/16/23 0:00	calc
Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.02	U	*	mg/L	0.02	0.1	11/22/22 23:50	pjb
Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	11/22/22 23:50	pjb
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	11/30/22 0:00	emk
pH measured at		1	20.7			C	0.1	0.1	11/30/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	5	12000			mg/L	100	200	11/28/22 20:57	jck
Sulfate	M300.0 - Ion Chromatography	100	<40	U	*	mg/L	40	200	12/14/22 21:53	mad
TDS (calculated)	Calculation		12000			mg/L			01/16/23 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.00						01/16/23 0:00	calc

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-15

ACZ Sample ID: ***L77370-09***
Date Sampled: *11/21/22 00:00*
Date Received: *11/22/22*
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	12/05/22 20:35	kja
Antimony, dissolved	M200.8 ICP-MS	1	<0.0004	U		mg/L	0.0004	0.002	12/02/22 21:16	kja
Arsenic, dissolved	M200.8 ICP-MS	2	<0.0004	U		mg/L	0.0004	0.002	12/05/22 20:35	kja
Barium, dissolved	M200.8 ICP-MS	2	<0.001	U		mg/L	0.001	0.005	12/05/22 20:35	kja
Beryllium, dissolved	M200.8 ICP-MS	1	0.000135	B		mg/L	0.00008	0.00025	12/09/22 20:10	kja
Boron, dissolved	M200.7 ICP	10	<0.3	U	*	mg/L	0.3	1	12/15/22 10:28	keh1
Cadmium, dissolved	M200.8 ICP-MS	2	<0.0001	U		mg/L	0.0001	0.0005	12/05/22 20:35	kja
Calcium, dissolved	M200.7 ICP	10	<1	U	*	mg/L	1	5	12/15/22 10:28	keh1
Chromium, dissolved	M200.8 ICP-MS	2	<0.001	U		mg/L	0.001	0.004	12/05/22 20:35	kja
Cobalt, dissolved	M200.8 ICP-MS	2	0.000121	B		mg/L	0.0001	0.0005	12/05/22 20:35	kja
Copper, dissolved	M200.8 ICP-MS	2	<0.0016	U		mg/L	0.0016	0.004	12/05/22 20:35	kja
Iron, dissolved	M200.7 ICP	10	<0.6	U	*	mg/L	0.6	1.5	12/15/22 10:28	keh1
Lead, dissolved	M200.8 ICP-MS	2	<0.0002	U		mg/L	0.0002	0.001	12/05/22 20:35	kja
Lithium, dissolved	M200.7 ICP	10	<0.08	U	*	mg/L	0.08	0.4	12/15/22 10:28	keh1
Magnesium, dissolved	M200.7 ICP	10	<2	U	*	mg/L	2	10	12/15/22 10:28	keh1
Manganese, dissolved	M200.8 ICP-MS	2	<0.0008	U		mg/L	0.0008	0.004	12/05/22 20:35	kja
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	11/28/22 13:24	mlh
Molybdenum, dissolved	M200.8 ICP-MS	2	<0.0004	U		mg/L	0.0004	0.001	12/05/22 20:35	kja
Nickel, dissolved	M200.8 ICP-MS	2	<0.0008	U		mg/L	0.0008	0.002	12/05/22 20:35	kja
Potassium, dissolved	M200.7 ICP	10	<2	U	*	mg/L	2	10	12/15/22 10:28	keh1
Selenium, dissolved	M200.8 ICP-MS	2	<0.0002	U		mg/L	0.0002	0.0005	12/05/22 20:35	kja
Silver, dissolved	M200.8 ICP-MS	2	<0.0002	U		mg/L	0.0002	0.001	12/05/22 20:35	kja
Sodium, dissolved	M200.7 ICP	1	<0.2	U		mg/L	0.2	1	12/16/22 22:14	keh1
Thallium, dissolved	M200.8 ICP-MS	1	<0.00005	U		mg/L	0.00005	0.00025	12/06/22 13:10	kja
Uranium, dissolved	M200.8 ICP-MS	2	<0.0002	U		mg/L	0.0002	0.001	12/05/22 20:35	kja
Vanadium, dissolved	M200.8 ICP-MS	2	<0.001	U	*	mg/L	0.001	0.004	12/05/22 20:35	kja
Zinc, dissolved	M200.8 ICP-MS	2	<0.012	U		mg/L	0.012	0.03	12/05/22 20:35	kja

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-15

ACZ Sample ID: ***L77370-09***
Date Sampled: *11/21/22 00:00*
Date Received: *11/22/22*
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	U		mg/L	2	20	11/30/22 0:00	emk
Carbonate as CaCO3		1	6.9	B		mg/L	2	20	11/30/22 0:00	emk
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	11/30/22 0:00	emk
Total Alkalinity		1	7.7	B		mg/L	2	20	11/30/22 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			n/a			%			01/16/23 0:00	calc
Sum of Anions			0.138	B		meq/L			01/16/23 0:00	calc
Sum of Cations			<	U		meq/L			01/16/23 0:00	calc
Chloride	M300.0 - Ion Chromatography	1	<0.4	U		mg/L	0.4	2	12/14/22 22:11	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	UH	*	mg/L	0.003	0.01	12/09/22 14:29	gkk
Fluoride	SM4500F-C	1	<0.15	U		mg/L	0.15	0.35	12/13/22 17:32	emk
Nitrate as N	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	01/16/23 0:00	calc
Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.02	U	*	mg/L	0.02	0.1	11/22/22 23:51	pjb
Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	11/22/22 23:51	pjb
pH (lab)	SM4500H+ B									
pH		1	9.3	H		units	0.1	0.1	11/30/22 0:00	emk
pH measured at		1	21.1			C	0.1	0.1	11/30/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	1	<20	U	*	mg/L	20	40	11/23/22 14:12	emk
Sulfate	M300.0 - Ion Chromatography	1	<0.4	U	*	mg/L	0.4	2	12/14/22 22:11	mad
TDS (calculated)	Calculation		4.14			mg/L			01/16/23 0:00	calc
TDS (ratio - measured/calculated)	Calculation		n/a						01/16/23 0:00	calc

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-20

ACZ Sample ID: ***L77370-10***
Date Sampled: *11/21/22 00:00*
Date Received: *11/22/22*
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	12/05/22 20:41	kja
Antimony, dissolved	M200.8 ICP-MS	2	<0.0008	U		mg/L	0.0008	0.004	12/02/22 21:22	kja
Arsenic, dissolved	M200.8 ICP-MS	5	<0.001	U		mg/L	0.001	0.005	12/05/22 20:41	kja
Barium, dissolved	M200.8 ICP-MS	5	2.62			mg/L	0.0025	0.0125	12/05/22 20:41	kja
Beryllium, dissolved	M200.8 ICP-MS	2	<0.00016	U		mg/L	0.00016	0.0005	12/19/22 11:01	kja
Boron, dissolved	M200.7 ICP	2	0.759			mg/L	0.06	0.2	12/15/22 10:32	keh1
Cadmium, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	12/05/22 20:41	kja
Calcium, dissolved	M200.7 ICP	2	6.04			mg/L	0.2	1	12/15/22 10:32	keh1
Chromium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	12/05/22 20:41	kja
Cobalt, dissolved	M200.8 ICP-MS	5	0.000456	B		mg/L	0.00025	0.00125	12/05/22 20:41	kja
Copper, dissolved	M200.8 ICP-MS	5	<0.004	U		mg/L	0.004	0.01	12/05/22 20:41	kja
Iron, dissolved	M200.7 ICP	2	<0.12	U		mg/L	0.12	0.3	12/15/22 10:32	keh1
Lead, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	12/05/22 20:41	kja
Lithium, dissolved	M200.7 ICP	2	0.645			mg/L	0.016	0.08	12/15/22 10:32	keh1
Magnesium, dissolved	M200.7 ICP	2	2.60			mg/L	0.4	2	12/15/22 10:32	keh1
Manganese, dissolved	M200.8 ICP-MS	5	0.0216			mg/L	0.002	0.01	12/05/22 20:41	kja
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	11/28/22 13:25	mlh
Molybdenum, dissolved	M200.8 ICP-MS	5	<0.001	U		mg/L	0.001	0.0025	12/05/22 20:41	kja
Nickel, dissolved	M200.8 ICP-MS	5	<0.002	U		mg/L	0.002	0.005	12/05/22 20:41	kja
Potassium, dissolved	M200.7 ICP	2	3.07			mg/L	0.4	2	12/15/22 10:32	keh1
Selenium, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.00125	12/05/22 20:41	kja
Silver, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	12/05/22 20:41	kja
Sodium, dissolved	M200.7 ICP	2	1500			mg/L	0.4	2	12/16/22 22:17	keh1
Thallium, dissolved	M200.8 ICP-MS	2	0.000137	B		mg/L	0.0001	0.0005	12/06/22 13:15	kja
Uranium, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	12/05/22 20:41	kja
Vanadium, dissolved	M200.8 ICP-MS	5	<0.0025	U	*	mg/L	0.0025	0.01	12/05/22 20:41	kja
Zinc, dissolved	M200.8 ICP-MS	5	<0.03	U		mg/L	0.03	0.075	12/05/22 20:41	kja

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-20

ACZ Sample ID: ***L77370-10***
Date Sampled: *11/21/22 00:00*
Date Received: *11/22/22*
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	1190	H		mg/L	2	20	01/11/23 0:00	anc
Carbonate as CaCO3		1	76.2	H		mg/L	2	20	01/11/23 0:00	anc
Hydroxide as CaCO3		1	<2	UH		mg/L	2	20	01/11/23 0:00	anc
Total Alkalinity		1	1260	H	*	mg/L	2	20	01/11/23 0:00	anc
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-2.9			%			01/16/23 0:00	calc
Sum of Anions			71			meq/L			01/16/23 0:00	calc
Sum of Cations			67			meq/L			01/16/23 0:00	calc
Chloride	M300.0 - Ion Chromatography	50	1620			mg/L	20	100	12/14/22 22:29	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	UH	*	mg/L	0.003	0.01	12/09/22 14:37	gkk
Fluoride	SM4500F-C	1	2.28			mg/L	0.15	0.35	12/13/22 17:36	emk
Nitrate as N	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	01/16/23 0:00	calc
Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.02	U	*	mg/L	0.02	0.1	11/22/22 23:52	pjb
Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	11/22/22 23:52	pjb
pH (lab)	SM4500H+ B									
pH		1	8.6	H		units	0.1	0.1	11/30/22 0:00	emk
pH measured at		1	20.8			C	0.1	0.1	11/30/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	1	3980			mg/L	20	40	11/23/22 12:59	emk
Sulfate	M300.0 - Ion Chromatography	50	<20	U	*	mg/L	20	100	12/14/22 22:29	mad
TDS (calculated)	Calculation		3910			mg/L			01/16/23 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.02						01/16/23 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 Associates

ACZ Project ID: ***L77370***

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
WG555611													
WG555611PBW1	PBW	11/29/22 15:58				32	mg/L		-20	20			B4 B7
WG555611LCSW3	LCSW	11/29/22 16:19	WC221121-1	820.0001		780.3	mg/L	95	90	110			
WG555611LCSW6	LCSW	11/29/22 18:23	WC221121-1	820.0001		804.3	mg/L	98	90	110			
WG555611PBW2	PBW	11/29/22 18:32				5.7	mg/L		-20	20			
WG555611LCSW9	LCSW	11/29/22 22:35	WC221121-1	820.0001		804.3	mg/L	98	90	110			
WG555611PBW3	PBW	11/29/22 22:44				6.6	mg/L		-20	20			
WG555611LCSW12	LCSW	11/30/22 2:56	WC221121-1	820.0001		809.6	mg/L	99	90	110			
WG555611PBW4	PBW	11/30/22 3:06				6.5	mg/L		-20	20			
L77370-02DUP	DUP	11/30/22 5:54			1080	1075.9	mg/L				0	20	
WG555611LCSW15	LCSW	11/30/22 6:15	WC221121-1	820.0001		805.3	mg/L	98	90	110			
WG555611PBW5	PBW	11/30/22 6:23				7.7	mg/L		-20	20			
L77374-02DUP	DUP	11/30/22 8:38			45.2	42.5	mg/L				6	20	
WG555611LCSW18	LCSW	11/30/22 9:00	WC221121-1	820.0001		826.8	mg/L	101	90	110			
WG558134													
WG558134PBW1	PBW	01/10/23 16:26				U	mg/L		-20	20			
WG558134LCSW1	LCSW	01/10/23 16:42	WC230103-1	820.0001		807.5	mg/L	98	90	110			
WG558134LCSW2	LCSW	01/10/23 19:23	WC230103-1	820.0001		814.7	mg/L	99	90	110			
WG558134PBW2	PBW	01/10/23 19:31				8.2	mg/L		-20	20			
WG558134LCSW3	LCSW	01/10/23 22:15	WC230103-1	820.0001		813.1	mg/L	99	90	110			
WG558134PBW3	PBW	01/10/23 22:24				7.5	mg/L		-20	20			
WG558134LCSW4	LCSW	01/11/23 1:04	WC230103-1	820.0001		822.1	mg/L	100	90	110			
WG558134PBW4	PBW	01/11/23 1:13				8	mg/L		-20	20			
WG558134LCSW5	LCSW	01/11/23 4:12	WC230103-1	820.0001		828.1	mg/L	101	90	110			
WG558134PBW5	PBW	01/11/23 4:20				8.2	mg/L		-20	20			
L77370-10DUP	DUP	01/11/23 6:27			1260	1265	mg/L				0	20	
WG558134LCSW6	LCSW	01/11/23 6:42	WC230103-1	820.0001		847.5	mg/L	103	90	110			

Aluminum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556080													
WG556080ICV	ICV	12/05/22 19:47	MS220930-3	.1		.1035	mg/L	104	90	110			
WG556080ICB	ICB	12/05/22 19:48				U	mg/L		-0.011	0.011			
WG556080LFB	LFB	12/05/22 19:50	MS221123-2	.050065		.0454	mg/L	91	85	115			
L77370-09AS	AS	12/05/22 20:37	MS221123-2	.10013	U	.1009	mg/L	101	70	130			
L77370-09ASD	ASD	12/05/22 20:39	MS221123-2	.10013	U	.0967	mg/L	97	70	130	4	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG555938													
WG555938ICV	ICV	12/02/22 20:27	MS220930-3	.0201		.01895	mg/L	94	90	110			
WG555938ICB	ICB	12/02/22 20:29				U	mg/L		-0.00088	0.00088			
WG555938LFB	LFB	12/02/22 20:31	MS221123-2	.01		.00915	mg/L	92	85	115			
L77370-09AS	AS	12/02/22 21:18	MS221123-2	.01	U	.00963	mg/L	96	70	130			
L77370-09ASD	ASD	12/02/22 21:20	MS221123-2	.01	U	.00986	mg/L	99	70	130	2	20	

Golder Associates

ACZ Project ID: ***L77370***

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
WG556080													
WG556080ICV	ICV	12/05/22 19:47	MS220930-3	.05		.0518	mg/L	104	90	110			
WG556080ICB	ICB	12/05/22 19:48				U	mg/L		-0.00044	0.00044			
WG556080LFB	LFB	12/05/22 19:50	MS221123-2	.05005		.04831	mg/L	97	85	115			
L77370-09AS	AS	12/05/22 20:37	MS221123-2	.1001	U	.09779	mg/L	98	70	130			
L77370-09ASD	ASD	12/05/22 20:39	MS221123-2	.1001	U	.09804	mg/L	98	70	130	0	20	

Barium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556080													
WG556080ICV	ICV	12/05/22 19:47	MS220930-3	.05		.05086	mg/L	102	90	110			
WG556080ICB	ICB	12/05/22 19:48				U	mg/L		-0.0011	0.0011			
WG556080LFB	LFB	12/05/22 19:50	MS221123-2	.05005		.04876	mg/L	97	85	115			
L77370-09AS	AS	12/05/22 20:37	MS221123-2	.1001	U	.09906	mg/L	99	70	130			
L77370-09ASD	ASD	12/05/22 20:39	MS221123-2	.1001	U	.09743	mg/L	97	70	130	2	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556441													
WG556441ICV	ICV	12/09/22 19:17	MS220930-3	.05		.050469	mg/L	101	90	110			
WG556441ICB	ICB	12/09/22 19:19				.000129	mg/L		-0.000176	0.000176			
WG556441LFB	LFB	12/09/22 19:21	MS221207-2	.05005		.051156	mg/L	102	85	115			
L77370-05AS	AS	12/09/22 20:01	MS221207-2	.1001	U	.096391	mg/L	96	70	130			
L77370-05ASD	ASD	12/09/22 20:03	MS221207-2	.1001	U	.10159	mg/L	101	70	130	5	20	
WG556954													
WG556954ICV	ICV	12/19/22 10:50	MS220930-3	.05		.050637	mg/L	101	90	110			
WG556954ICB	ICB	12/19/22 10:52				.000165	mg/L		-0.000176	0.000176			
WG556954LFB	LFB	12/19/22 10:54	MS221207-2	.05005		.050974	mg/L	102	85	115			
L77682-02AS	AS	12/19/22 11:17	MS221207-2	.05005	U	.047357	mg/L	95	70	130			
L77682-02ASD	ASD	12/19/22 11:19	MS221207-2	.05005	U	.047568	mg/L	95	70	130	0	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556631													
WG556631ICV	ICV	12/15/22 9:24	II221212-1	2		2.027	mg/L	101	95	105			
WG556631ICB	ICB	12/15/22 9:30				U	mg/L		-0.09	0.09			
WG556631LFB	LFB	12/15/22 9:43	II221202-2	.5005		.529	mg/L	106	85	115			
L49989-199AS	AS	12/15/22 9:49	II221202-2	.5005	U	.525	mg/L	105	85	115			
L49989-199ASD	ASD	12/15/22 9:53	II221202-2	.5005	U	.536	mg/L	107	85	115	2	20	
L77375-01AS	AS	12/15/22 10:38	II221202-2	.5005	U	.569	mg/L	114	85	115			
L77375-01ASD	ASD	12/15/22 10:41	II221202-2	.5005	U	.569	mg/L	114	85	115	0	20	

Golder Associates

ACZ Project ID: ***L77370***

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
WG556080													
WG556080ICV	ICV	12/05/22 19:47	MS220930-3	.05		.050755	mg/L	102	90	110			
WG556080ICB	ICB	12/05/22 19:48				U	mg/L		-0.00011	0.00011			
WG556080LFB	LFB	12/05/22 19:50	MS221123-2	.05005		.048685	mg/L	97	85	115			
L77370-09AS	AS	12/05/22 20:37	MS221123-2	.1001	U	.099044	mg/L	99	70	130			
L77370-09ASD	ASD	12/05/22 20:39	MS221123-2	.1001	U	.098926	mg/L	99	70	130	0	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556631													
WG556631ICV	ICV	12/15/22 9:24	II221212-1	100		99.03	mg/L	99	95	105			
WG556631ICB	ICB	12/15/22 9:30				U	mg/L		-0.3	0.3			
WG556631LFB	LFB	12/15/22 9:43	II221202-2	67.99353		70.16	mg/L	103	85	115			
L49989-199AS	AS	12/15/22 9:49	II221202-2	67.99353	U	67.61	mg/L	99	85	115			
L49989-199ASD	ASD	12/15/22 9:53	II221202-2	67.99353	U	68.12	mg/L	100	85	115	1	20	
L77375-01AS	AS	12/15/22 10:38	II221202-2	67.99353	4.34	70.09	mg/L	97	85	115			
L77375-01ASD	ASD	12/15/22 10:41	II221202-2	67.99353	4.34	73.14	mg/L	101	85	115	4	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG553013													
WG553013ICV	ICV	10/17/22 21:59	WI221017-12	19.98		19.95	mg/L	100	90	110			
WG553013ICB	ICB	10/17/22 22:17				U	mg/L		-0.4	0.4			
WG556645													
WG556645LFB1	LFB	12/14/22 10:32	WI221205-1	30		29.86	mg/L	100	90	110			
L77332-01DUP	DUP	12/14/22 15:19			U	U	mg/L				0	20	RA
L77332-02AS	AS	12/14/22 15:55	WI221205-1	300	U	302.94	mg/L	101	90	110			
WG556645LFB2	LFB	12/14/22 19:12	WI221205-1	30		31.52	mg/L	105	90	110			
L77370-04DUP	DUP	12/14/22 19:48			7670	7649.35	mg/L				0	20	
L77370-05AS	AS	12/14/22 20:59	WI221205-1	1500	25.6	1517.23	mg/L	99	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556080													
WG556080ICV	ICV	12/05/22 19:47	MS220930-3	.05		.05271	mg/L	105	90	110			
WG556080ICB	ICB	12/05/22 19:48				U	mg/L		-0.0011	0.0011			
WG556080LFB	LFB	12/05/22 19:50	MS221123-2	.0501		.04793	mg/L	96	85	115			
L77370-09AS	AS	12/05/22 20:37	MS221123-2	.1002	U	.09536	mg/L	95	70	130			
L77370-09ASD	ASD	12/05/22 20:39	MS221123-2	.1002	U	.09587	mg/L	96	70	130	1	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556080													
WG556080ICV	ICV	12/05/22 19:47	MS220930-3	.05		.051233	mg/L	102	90	110			
WG556080ICB	ICB	12/05/22 19:48				.000061	mg/L		-0.00011	0.00011			
WG556080LFB	LFB	12/05/22 19:50	MS221123-2	.05005		.049747	mg/L	99	85	115			
L77370-09AS	AS	12/05/22 20:37	MS221123-2	.1001	.000121	.103649	mg/L	103	70	130			
L77370-09ASD	ASD	12/05/22 20:39	MS221123-2	.1001	.000121	.103015	mg/L	103	70	130	1	20	

Golder Associates

ACZ Project ID: ***L77370***

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.

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556080													
WG556080ICV	ICV	12/05/22 19:47	MS220930-3	.05		.05516	mg/L	110	90	110			
WG556080ICB	ICB	12/05/22 19:48				U	mg/L		-0.00176	0.00176			
WG556080LFB	LFB	12/05/22 19:50	MS221123-2	.05		.04821	mg/L	96	85	115			
L77370-09AS	AS	12/05/22 20:37	MS221123-2	.1	U	.09583	mg/L	96	70	130			
L77370-09ASD	ASD	12/05/22 20:39	MS221123-2	.1	U	.09638	mg/L	96	70	130	1	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556408													
WG556408ICV	ICV	12/09/22 14:05	WI221129-8	.3003		.2827	mg/L	94	90	110			
WG556408ICB	ICB	12/09/22 14:07				U	mg/L		-0.003	0.003			
WG556408LFB	LFB	12/09/22 14:11	WI221129-7	.1001		.0992	mg/L	99	90	110			
L77580-01AS	AS	12/09/22 14:41	WI221129-7	.1001	U	.0873	mg/L	87	90	110			M2
L77580-01ASD	ASD	12/09/22 14:43	WI221129-7	.1001	U	.0983	mg/L	98	90	110	12	20	
L77580-02AS	AS	12/09/22 14:47	WI221129-7	.1001	U	.0962	mg/L	96	90	110			
L77580-02ASD	ASD	12/09/22 14:49	WI221129-7	.1001	U	.0944	mg/L	94	90	110	2	20	

Fluoride SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556582													
WG556582ICV	ICV	12/13/22 10:47	WC221209-1	2.008		1.88	mg/L	94	90	110			
WG556582ICB	ICB	12/13/22 10:55				U	mg/L		-0.3	0.3			
WG556635													
WG556635ICV	ICV	12/13/22 16:05	WC221209-1	2.008		1.9	mg/L	95	90	110			
WG556635ICB	ICB	12/13/22 16:13				U	mg/L		-0.3	0.3			
WG556635LFB1	LFB	12/13/22 16:24	WC221011-2	5.02		5.17	mg/L	103	90	110			
L77370-01AS	AS	12/13/22 16:36	WC221011-2	5.02	.63	5.53	mg/L	98	90	110			
L77370-01ASD	ASD	12/13/22 16:39	WC221011-2	5.02	.63	5.46	mg/L	96	90	110	1	20	
WG556635LFB2	LFB	12/13/22 19:00	WC221011-2	5.02		5.22	mg/L	104	90	110			

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556631													
WG556631ICV	ICV	12/15/22 9:24	II221212-1	2		1.957	mg/L	98	95	105			
WG556631ICB	ICB	12/15/22 9:30				U	mg/L		-0.18	0.18			
WG556631LFB	LFB	12/15/22 9:43	II221202-2	1.0013		1.002	mg/L	100	85	115			
L49989-199AS	AS	12/15/22 9:49	II221202-2	1.0013	U	.97	mg/L	97	85	115			
L49989-199ASD	ASD	12/15/22 9:53	II221202-2	1.0013	U	.969	mg/L	97	85	115	0	20	
L77375-01AS	AS	12/15/22 10:38	II221202-2	1.0013	U	1.003	mg/L	100	85	115			
L77375-01ASD	ASD	12/15/22 10:41	II221202-2	1.0013	U	.995	mg/L	99	85	115	1	20	

Golder Associates

ACZ Project ID: ***L77370***

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.

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556080													
WG556080ICV	ICV	12/05/22 19:47	MS220930-3	.05		.05186	mg/L	104	90	110			
WG556080ICB	ICB	12/05/22 19:48				U	mg/L		-0.00022	0.00022			
WG556080LFB	LFB	12/05/22 19:50	MS221123-2	.0501		.04882	mg/L	97	85	115			
L77370-09AS	AS	12/05/22 20:37	MS221123-2	.1002	U	.10014	mg/L	100	70	130			
L77370-09ASD	ASD	12/05/22 20:39	MS221123-2	.1002	U	.09945	mg/L	99	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
WG556631													
WG556631ICV	ICV	12/15/22 9:24	II221212-1	2		1.9255	mg/L	96	95	105			
WG556631ICB	ICB	12/15/22 9:30				U	mg/L		-0.024	0.024			
WG556631LFB	LFB	12/15/22 9:43	II221202-2	.998		.9611	mg/L	96	85	115			
L49989-199AS	AS	12/15/22 9:49	II221202-2	.998	U	.9429	mg/L	94	85	115			
L49989-199ASD	ASD	12/15/22 9:53	II221202-2	.998	U	.959	mg/L	96	85	115	2	20	
L77375-01AS	AS	12/15/22 10:38	II221202-2	.998	U	.9551	mg/L	96	85	115			
L77375-01ASD	ASD	12/15/22 10:41	II221202-2	.998	U	.9413	mg/L	94	85	115	1	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556631													
WG556631ICV	ICV	12/15/22 9:24	II221212-1	100		96.76	mg/L	97	95	105			
WG556631ICB	ICB	12/15/22 9:30				U	mg/L		-0.6	0.6			
WG556631LFB	LFB	12/15/22 9:43	II221202-2	49.99676		50.66	mg/L	101	85	115			
L49989-199AS	AS	12/15/22 9:49	II221202-2	49.99676	U	49.1	mg/L	98	85	115			
L49989-199ASD	ASD	12/15/22 9:53	II221202-2	49.99676	U	49.56	mg/L	99	85	115	1	20	
L77375-01AS	AS	12/15/22 10:38	II221202-2	49.99676	1.19	49.46	mg/L	97	85	115			
L77375-01ASD	ASD	12/15/22 10:41	II221202-2	49.99676	1.19	51.6	mg/L	101	85	115	4	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556080													
WG556080ICV	ICV	12/05/22 19:47	MS220930-3	.05		.05067	mg/L	101	90	110			
WG556080ICB	ICB	12/05/22 19:48				U	mg/L		-0.00088	0.00088			
WG556080LFB	LFB	12/05/22 19:50	MS221123-2	.0498		.04942	mg/L	99	85	115			
L77370-09AS	AS	12/05/22 20:37	MS221123-2	.0996	U	.10185	mg/L	102	70	130			
L77370-09ASD	ASD	12/05/22 20:39	MS221123-2	.0996	U	.10104	mg/L	101	70	130	1	20	

Golder Associates

ACZ Project ID: ***L77370***

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.

Mercury, dissolved M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG555555													
WG555555ICV1	ICV	11/28/22 12:13	HG221128-3	.005005		.00512	mg/L	102	95	105			
WG555555ICB	ICB	11/28/22 12:14				U	mg/L		-0.0002	0.0002			
WG555556													
WG555556LRB	LRB	11/28/22 12:58				U	mg/L		-0.00044	0.00044			
WG555556LFB	LFB	11/28/22 12:59	HG221128-6	.002002		.00196	mg/L	98	85	115			
L76617-06LFM	LFM	11/28/22 13:04	HG221128-6	.002002	U	.00202	mg/L	101	85	115			
L76617-06LFMD	LFMD	11/28/22 13:05	HG221128-6	.002002	U	.00194	mg/L	97	85	115	4	20	
L76622-06LFM	LFM	11/28/22 13:13	HG221128-6	.002002	U	.00192	mg/L	96	85	115			
L76622-06LFMD	LFMD	11/28/22 13:14	HG221128-6	.002002	U	.00196	mg/L	98	85	115	2	20	

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556080													
WG556080ICV	ICV	12/05/22 19:47	MS220930-3	.02		.02042	mg/L	102	90	110			
WG556080ICB	ICB	12/05/22 19:48				U	mg/L		-0.00044	0.00044			
WG556080LFB	LFB	12/05/22 19:50	MS221123-2	.05005		.04896	mg/L	98	85	115			
L77370-09AS	AS	12/05/22 20:37	MS221123-2	.1001	U	.10266	mg/L	103	70	130			
L77370-09ASD	ASD	12/05/22 20:39	MS221123-2	.1001	U	.09974	mg/L	100	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
WG556080													
WG556080ICV	ICV	12/05/22 19:47	MS220930-3	.05		.05289	mg/L	106	90	110			
WG556080ICB	ICB	12/05/22 19:48				U	mg/L		-0.00088	0.00088			
WG556080LFB	LFB	12/05/22 19:50	MS221123-2	.05005		.04844	mg/L	97	85	115			
L77370-09AS	AS	12/05/22 20:37	MS221123-2	.1001	U	.10556	mg/L	105	70	130			
L77370-09ASD	ASD	12/05/22 20:39	MS221123-2	.1001	U	.09643	mg/L	96	70	130	9	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG555489													
WG555489ICV	ICV	11/22/22 23:12	WI220903-1	2.416		2.367	mg/L	98	90	110			
WG555489ICB	ICB	11/22/22 23:13				U	mg/L		-0.02	0.02			
WG555489LFB	LFB	11/22/22 23:17	WI220826-7	2		2.169	mg/L	108	90	110			
L77369-01AS	AS	11/22/22 23:19	WI220826-7	2	1.53	3.575	mg/L	102	90	110			
L77369-02DUP	DUP	11/22/22 23:22			1.54	1.543	mg/L				0	20	
L77370-04AS	AS	11/22/22 23:39	WI220826-7	2	U	2.156	mg/L	108	90	110			
L77370-05DUP	DUP	11/22/22 23:41			U	U	mg/L				0	20	RA

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ACZ Project ID: ***L77370***

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 M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG555489													
WG555489ICV	ICV	11/22/22 23:12	WI220903-1	.608		.59	mg/L	97	90	110			
WG555489ICB	ICB	11/22/22 23:13				U	mg/L		-0.01	0.01			
WG555489LFB	LFB	11/22/22 23:17	WI220826-7	1		1.098	mg/L	110	90	110			
L77369-01AS	AS	11/22/22 23:19	WI220826-7	1	U	1.08	mg/L	108	90	110			
L77369-02DUP	DUP	11/22/22 23:22			U	U	mg/L				0	20	RA
L77370-04AS	AS	11/22/22 23:39	WI220826-7	1	U	1.072	mg/L	107	90	110			
L77370-05DUP	DUP	11/22/22 23:41			U	U	mg/L				0	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG555611													
WG555611LCSW1	LCSW	11/29/22 16:03	PCN65296	6		6	units	100	5.9	6.1			
WG555611LCSW4	LCSW	11/29/22 18:06	PCN65296	6		6.1	units	102	5.9	6.1			
WG555611LCSW7	LCSW	11/29/22 22:18	PCN65296	6		6	units	100	5.9	6.1			
WG555611LCSW10	LCSW	11/30/22 2:39	PCN65296	6		6	units	100	5.9	6.1			
L77370-02DUP	DUP	11/30/22 5:54			8.4	8.5	units				1	20	
WG555611LCSW13	LCSW	11/30/22 5:59	PCN65296	6		6	units	100	5.9	6.1			
L77374-02DUP	DUP	11/30/22 8:38			7.3	6.8	units				7	20	
WG555611LCSW16	LCSW	11/30/22 8:43	PCN65296	6		6	units	100	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
WG556631													
WG556631ICV	ICV	12/15/22 9:24	II221212-1	20		19.57	mg/L	98	95	105			
WG556631ICB	ICB	12/15/22 9:30				U	mg/L		-0.6	0.6			
WG556631LFB	LFB	12/15/22 9:43	II221202-2	99.95798		100.8	mg/L	101	85	115			
L49989-199AS	AS	12/15/22 9:49	II221202-2	99.95798	U	97.25	mg/L	97	85	115			
L49989-199ASD	ASD	12/15/22 9:53	II221202-2	99.95798	U	98.63	mg/L	99	85	115	1	20	
L77375-01AS	AS	12/15/22 10:38	II221202-2	99.95798	.41	95.71	mg/L	95	85	115			
L77375-01ASD	ASD	12/15/22 10:41	II221202-2	99.95798	.41	100.1	mg/L	100	85	115	4	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG555525													
WG555525PBW	PBW	11/23/22 12:30				U	mg/L		-20	20			
WG555525LCSW	LCSW	11/23/22 12:31	PCN623305	1000		990	mg/L	99	80	120			
L77382-01DUP	DUP	11/23/22 13:14			232	232	mg/L				0	10	
WG555523													
WG555523PBW	PBW	11/23/22 13:30				U	mg/L		-20	20			
WG555523LCSW	LCSW	11/23/22 13:31	PCN623305	1000		996	mg/L	100	80	120			
L77370-09DUP	DUP	11/23/22 14:14			U	U	mg/L				0	10	RA
WG555645													
WG555645PBW	PBW	11/28/22 20:40				U	mg/L		-20	20			
WG555645LCSW	LCSW	11/28/22 20:42	PCN623494	1000		996	mg/L	100	80	120			
L77370-08DUP	DUP	11/28/22 20:59			12000	12080	mg/L				1	10	

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ACZ Project ID: ***L77370***

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.

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556080													
WG556080ICV	ICV	12/05/22 19:47	MS220930-3	.05		.05177	mg/L	104	90	110			
WG556080ICB	ICB	12/05/22 19:48				.00015	mg/L		-0.00022	0.00022			
WG556080LFB	LFB	12/05/22 19:50	MS221123-2	.05005		.04835	mg/L	97	85	115			
L77370-09AS	AS	12/05/22 20:37	MS221123-2	.1001	U	.09868	mg/L	99	70	130			
L77370-09ASD	ASD	12/05/22 20:39	MS221123-2	.1001	U	.09704	mg/L	97	70	130	2	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556080													
WG556080ICV	ICV	12/05/22 19:47	MS220930-3	.02		.019	mg/L	95	90	110			
WG556080ICB	ICB	12/05/22 19:48				U	mg/L		-0.00022	0.00022			
WG556080LFB	LFB	12/05/22 19:50	MS221123-2	.01		.00921	mg/L	92	85	115			
L77370-09AS	AS	12/05/22 20:37	MS221123-2	.02	U	.02166	mg/L	108	70	130			
L77370-09ASD	ASD	12/05/22 20:39	MS221123-2	.02	U	.01889	mg/L	94	70	130	14	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556826													
WG556826ICV	ICV	12/16/22 21:09	II221212-1	100		97.53	mg/L	98	95	105			
WG556826ICB	ICB	12/16/22 21:15				U	mg/L		-0.6	0.6			
WG556826LFB	LFB	12/16/22 21:28	II221202-2	100.0023		96.6	mg/L	97	85	115			
L77370-01AS	AS	12/16/22 21:38	II221202-2	500.0115	1750	2266	mg/L	103	85	115			
L77370-01ASD	ASD	12/16/22 21:41	II221202-2	500.0115	1750	2253	mg/L	101	85	115	1	20	
L77375-01AS	AS	12/16/22 22:33	II221202-2	100.0023	2.91	105	mg/L	102	85	115			
L77375-01ASD	ASD	12/16/22 22:36	II221202-2	100.0023	2.91	98.54	mg/L	96	85	115	6	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG553013													
WG553013ICV	ICV	10/17/22 21:59	WI221017-12	49.75		49.02	mg/L	99	90	110			
WG553013ICB	ICB	10/17/22 22:17				U	mg/L		-0.4	0.4			
WG556645													
WG556645LFB1	LFB	12/14/22 10:32	WI221205-1	30		30	mg/L	100	90	110			
L77332-01DUP	DUP	12/14/22 15:19			U	U	mg/L				0	20	RA
L77332-02AS	AS	12/14/22 15:55	WI221205-1	300	410	703.18	mg/L	98	90	110			
WG556645LFB2	LFB	12/14/22 19:12	WI221205-1	30		31.03	mg/L	103	90	110			
L77370-04DUP	DUP	12/14/22 19:48			U	U	mg/L				0	20	RA
L77370-05AS	AS	12/14/22 20:59	WI221205-1	1500	2300	3764.63	mg/L	98	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556134													
WG556134ICV	ICV	12/06/22 12:51	MS220930-3	.05		.050188	mg/L	100	90	110			
WG556134ICB	ICB	12/06/22 12:53				.000076	mg/L		-0.00011	0.00011			
WG556134LFB	LFB	12/06/22 12:54	MS221123-2	.05		.048836	mg/L	98	85	115			
L77370-09AS	AS	12/06/22 13:12	MS221123-2	.05	U	.051118	mg/L	102	70	130			
L77370-09ASD	ASD	12/06/22 13:13	MS221123-2	.05	U	.050768	mg/L	102	70	130	1	20	

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ACZ Project ID: ***L77370***

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
WG556080													
WG556080ICV	ICV	12/05/22 19:47	MS220930-3	.05		.05105	mg/L	102	90	110			
WG556080ICB	ICB	12/05/22 19:48				U	mg/L		-0.00022	0.00022			
WG556080LFB	LFB	12/05/22 19:50	MS221123-2	.05		.04819	mg/L	96	85	115			
L77370-09AS	AS	12/05/22 20:37	MS221123-2	.1	U	.09768	mg/L	98	70	130			
L77370-09ASD	ASD	12/05/22 20:39	MS221123-2	.1	U	.09691	mg/L	97	70	130	1	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556080													
WG556080ICV	ICV	12/05/22 19:47	MS220930-3	.05		.052	mg/L	104	90	110			
WG556080ICB	ICB	12/05/22 19:48				U	mg/L		-0.0011	0.0011			
WG556080LFB	LFB	12/05/22 19:50	MS221123-2	.05005		.04462	mg/L	89	85	115			
L77370-09AS	AS	12/05/22 20:37	MS221123-2	.1001		.08807	mg/L	88	70	130			
L77370-09ASD	ASD	12/05/22 20:39	MS221123-2	.1001		.08821	mg/L	88	70	130	0	20	

Zinc, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG556080													
WG556080ICV	ICV	12/05/22 19:47	MS220930-3	.05		.0495	mg/L	99	90	110			
WG556080ICB	ICB	12/05/22 19:48				U	mg/L		-0.0132	0.0132			
WG556080LFB	LFB	12/05/22 19:50	MS221123-2	.050075		.0475	mg/L	95	85	115			
L77370-09AS	AS	12/05/22 20:37	MS221123-2	.10015	U	.098	mg/L	98	70	130			
L77370-09ASD	ASD	12/05/22 20:39	MS221123-2	.10015	U	.0996	mg/L	99	70	130	2	20	

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ACZ Project ID: ***L77370***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L77370-01	WG556645	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			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).
	WG556408	Cyanide, Free	D6888-09/OIA-1677-09	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
			D6888-09/OIA-1677-09	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			D6888-09/OIA-1677-09	N1	See Case Narrative.
	WG555489	Nitrite as N	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).
	WG555611	pH	SM4500H+ B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG555523	Residue, Filterable (TDS) @180C	SM2540C	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).
	WG556645	Sulfate	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).
	WG555611	Total Alkalinity	SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG556080	Vanadium, dissolved	M200.8 ICP-MS	DB	Sample required dilution due to low bias result.
			M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
L77370-02	WG556645	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).
	WG556408	Cyanide, Free	D6888-09/OIA-1677-09	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
			D6888-09/OIA-1677-09	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			D6888-09/OIA-1677-09	N1	See Case Narrative.
	WG555489	Nitrite as N	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).
	WG556645	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			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).
	WG558134	Total Alkalinity	SM2320B - Titration	C4	Confirmatory analysis was past holding time.
	WG556080	Vanadium, dissolved	M200.8 ICP-MS	DB	Sample required dilution due to low bias result.
			M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.

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ACZ Project ID: ***L77370***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L77370-03	WG556645	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).
	WG556408	Cyanide, Free	D6888-09/OIA-1677-09	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
			D6888-09/OIA-1677-09	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			D6888-09/OIA-1677-09	N1	See Case Narrative.
	WG555489	Nitrite as N	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).
	WG555523	Residue, Filterable (TDS) @180C	SM2540C	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).
	WG556645	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			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).
	WG558134	Total Alkalinity	SM2320B - Titration	C4	Confirmatory analysis was past holding time.
	WG556080	Vanadium, dissolved	M200.8 ICP-MS	DB	Sample required dilution due to low bias result.
			M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
L77370-04	WG556408	Cyanide, Free	D6888-09/OIA-1677-09	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
			D6888-09/OIA-1677-09	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			D6888-09/OIA-1677-09	N1	See Case Narrative.
	WG555489	Nitrate/Nitrite as N	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	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).
	WG556645	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			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).
	WG556080	Vanadium, dissolved	M200.8 ICP-MS	DB	Sample required dilution due to low bias result.
			M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.

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ACZ Project ID: ***L77370***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L77370-05	WG556645	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
	WG556408	Cyanide, Free	D6888-09/OIA-1677-09	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
			D6888-09/OIA-1677-09	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			D6888-09/OIA-1677-09	N1	See Case Narrative.
	WG555489	Nitrate/Nitrite as N	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	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).
	WG555611	pH	SM4500H+ B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG555523	Residue, Filterable (TDS) @180C	SM2540C	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).
	WG556645	Sulfate	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).
	WG555611	Total Alkalinity	SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG556080	Vanadium, dissolved	M200.8 ICP-MS	DB	Sample required dilution due to low bias result.
			M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
L77370-06	WG556408	Cyanide, Free	D6888-09/OIA-1677-09	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
			D6888-09/OIA-1677-09	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			D6888-09/OIA-1677-09	N1	See Case Narrative.
	WG555489	Nitrate/Nitrite as N	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	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).
	WG556645	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			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).
	WG556080	Vanadium, dissolved	M200.8 ICP-MS	DB	Sample required dilution due to low bias result.
			M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.

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ACZ Project ID: ***L77370***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L77370-07	WG556408	Cyanide, Free	D6888-09/OIA-1677-09	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
			D6888-09/OIA-1677-09	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			D6888-09/OIA-1677-09	N1	See Case Narrative.
	WG555489	Nitrate/Nitrite as N	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	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).
	WG555611	pH	SM4500H+ B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG556645	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			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).
	WG555611	Total Alkalinity	SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
	WG556080	Vanadium, dissolved	M200.8 ICP-MS	DB	Sample required dilution due to low bias result.
			M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
L77370-08	WG556408	Cyanide, Free	D6888-09/OIA-1677-09	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
			D6888-09/OIA-1677-09	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			D6888-09/OIA-1677-09	N1	See Case Narrative.
	WG555489	Nitrate/Nitrite as N	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	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).
	WG556645	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			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).
	WG556080	Vanadium, dissolved	M200.8 ICP-MS	DB	Sample required dilution due to low bias result.
			M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.

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ACZ Project ID: ***L77370***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L77370-09	WG556631	Boron, dissolved	M200.7 ICP	DJ	Sample dilution required due to insufficient sample.
		Calcium, dissolved	M200.7 ICP	DJ	Sample dilution required due to insufficient sample.
	WG556408	Cyanide, Free	D6888-09/OIA-1677-09	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
			D6888-09/OIA-1677-09	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			D6888-09/OIA-1677-09	N1	See Case Narrative.
	WG556631	Iron, dissolved	M200.7 ICP	DJ	Sample dilution required due to insufficient sample.
		Lithium, dissolved	M200.7 ICP	DJ	Sample dilution required due to insufficient sample.
		Magnesium, dissolved	M200.7 ICP	DJ	Sample dilution required due to insufficient sample.
	WG555489	Nitrate/Nitrite as N	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	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).
	WG556631	Potassium, dissolved	M200.7 ICP	DJ	Sample dilution required due to insufficient sample.
	WG555523	Residue, Filterable (TDS) @180C	SM2540C	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).
			SM2540C	Z3	Sample volume yielded a residue less than 2.5 mg
	WG556645	Sulfate	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).
	WG556080	Vanadium, dissolved	M200.8 ICP-MS	DB	Sample required dilution due to low bias result.
			M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
L77370-10	WG556408	Cyanide, Free	D6888-09/OIA-1677-09	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
			D6888-09/OIA-1677-09	N1	See Case Narrative.
	WG555489	Nitrate/Nitrite as N	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	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).
	WG556645	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			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).
	WG558134	Total Alkalinity	SM2320B - Titration	C4	Confirmatory analysis was past holding time.
	WG556080	Vanadium, dissolved	M200.8 ICP-MS	DB	Sample required dilution due to low bias result.
			M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.

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RadioChemistry Analytical Results

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-1
Locator:

ACZ Sample ID: ***L77370-01***
Date Sampled: *11/21/22 9:26*
Date Received: *11/22/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/16/22 0:30		18	25	210	pCi/L	*	ajp
Gross Beta	12/16/22 0:30		16	26	170	pCi/L	*	ajp

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-2
Locator:

ACZ Sample ID: ***L77370-02***
Date Sampled: *11/21/22 7:45*
Date Received: *11/22/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/16/22 0:33		1.6	27	160	pCi/L	*	ajp
Gross Beta	12/16/22 0:33		16	29	87	pCi/L	*	ajp

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RadioChemistry Analytical Results

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-3
Locator:

ACZ Sample ID: ***L77370-03***
Date Sampled: *11/21/22 10:37*
Date Received: *11/22/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/16/22 0:36		13	21	65	pCi/L	*	ajp
Gross Beta	12/16/22 0:36		18	22	71	pCi/L	*	ajp

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-4
Locator:

ACZ Sample ID: ***L77370-04***
Date Sampled: *11/21/22 11:36*
Date Received: *11/22/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/19/22 0:27		15	54	570	pCi/L	*	tmb
Gross Beta	12/19/22 0:27		17	58	470	pCi/L	*	tmb

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-5
Locator:

ACZ Sample ID: ***L77370-05***
Date Sampled: *11/21/22 13:17*
Date Received: *11/22/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/19/22 0:30		13	17	56	pCi/L	*	tmb
Gross Beta	12/19/22 0:30		3.1	13	30	pCi/L	*	tmb

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RadioChemistry Analytical Results

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-6
Locator:

ACZ Sample ID: ***L77370-06***
Date Sampled: *11/21/22 15:41*
Date Received: *11/22/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/19/22 0:33		32	66	340	pCi/L	*	tmb
Gross Beta	12/19/22 0:33		6	60	280	pCi/L	*	tmb

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-7
Locator:

ACZ Sample ID: ***L77370-07***
Date Sampled: *11/21/22 14:52*
Date Received: *11/22/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/19/22 0:36		150	85	230	pCi/L	*	tmb
Gross Beta	12/19/22 0:36		-2.3	56	170	pCi/L	*	tmb

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RadioChemistry Analytical Results

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-8
Locator:

ACZ Sample ID: ***L77370-08***
Date Sampled: *11/21/22 13:52*
Date Received: *11/22/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/19/22 0:30		6.1	54	230	pCi/L	*	ajp
Gross Beta	12/19/22 0:30		35	57	130	pCi/L	*	ajp

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RadioChemistry Analytical Results

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-15
Locator:

ACZ Sample ID: ***L77370-09***
Date Sampled: *11/21/22 0:00*
Date Received: *11/22/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/19/22 0:33		-1.2	0.9	7.8	pCi/L	*	ajp
Gross Beta	12/19/22 0:33		-2.8	2.4	13	pCi/L	*	ajp

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RadioChemistry Analytical Results

Golder Associates
Project ID: GL21467005.000
Sample ID: MW-20
Locator:

ACZ Sample ID: ***L77370-10***
Date Sampled: *11/21/22 0:00*
Date Received: *11/22/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	12/19/22 0:36		15	22	82	pCi/L	*	ajp
Gross Beta	12/19/22 0:36		18	19	53	pCi/L	*	ajp

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

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ACZ Project ID: ***L77370***

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
WG556564																
WG556564PBW	PBW	12/16/22						-.51	0.85	4.1			8.2			
WG556564LCSWA	LCSW	12/16/22	PCN65744	100				98	8.6	7.8	98	67	144			
L77257-09DUP	DUP-RPD	12/16/22			19	12	37	19	13	34				0	20	
L77370-01MSA	MS	12/16/22	PCN65744	769.23	18	25	210	770	110	230	98	67	144			
L77370-03DUP	DUP-RPD	12/16/22			13	21	65	-2.4	15	120				291	20	RG
L77370-03DUP	DUP-RER	12/16/22			13	21	65	-2.4	15	120				0.6	2	
WG556592																
WG556592PBW	PBW	12/19/22						1.9	1.7	12			24			
WG556592LCSWA	LCSW	12/19/22	PCN65744	100				92	8.3	12	92	67	144			
L77370-04DUP	DUP-RER	12/19/22			15	54	570	7.2	58	290				0.1	2	
L77370-04DUP	DUP-RPD	12/19/22			15	54	570	7.2	58	290				70	20	RG
L77370-05MSA	MS	12/19/22	PCN65744	454.55	13	17	56	170	34	35	35	67	144			M2
L77370-06DUP	DUP-RER	12/19/22			32	66	340	95	74	170				0.64	2	
L77370-06DUP	DUP-RPD	12/19/22			32	66	340	95	74	170				99	20	RG
WG556724																
WG556724PBW	PBW	12/19/22						3	2	12			24			
WG556724LCSWA	LCSW	12/19/22	PCN65744	100				100	8.9	12	100	67	144			
L77265-01DUP	DUP-RER	12/19/22			0.32	1.2	12	-.98	0.87	6.3				0.88	2	
L77265-01DUP	DUP-RPD	12/19/22			0.32	1.2	12	-.98	0.87	6.3				394	20	RG
L77370-08MSA	MS	12/19/22	PCN65744	2000	6.1	54	230	1300	190	150	65	67	144			M2
L77370-10DUP	DUP-RER	12/19/22			15	22	82	0	18	70				0.53	2	
L77370-10DUP	DUP-RPD	12/19/22			15	22	82	0	18	70				200	20	RG

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ACZ Project ID: ***L77370***

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.

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
WG556564																
WG556564PBW	PBW	12/16/22						-1.5	2.9	10			20			
WG556564LCSWB	LCSW	12/16/22	RC221206-10	100				180	8.7	10	180	82	122			N1
L77257-09DUP	DUP-RER	12/16/22			0.35	8.2	23	9.8	9.8	29				0.74	2	
L77257-09DUP	DUP-RPD	12/16/22			0.35	8.2	23	9.8	9.8	29				186	20	RG
L77370-02MSB	MS	12/16/22	RC221206-10	1000	16	29	87	1100	75	66	108	82	122			
L77370-03DUP	DUP-RPD	12/16/22			18	22	71	-1.3	19	90				231	20	RG
L77370-03DUP	DUP-RER	12/16/22			18	22	71	-1.3	19	90				0.66	2	
WG556592																
WG556592PBW	PBW	12/19/22						2	3	20			40			
WG556592LCSWB	LCSW	12/19/22	RC221206-10	100				92	6.4	7.6	92	82	122			
L77370-04DUP	DUP-RER	12/19/22			17	58	470	51	58	170				0.41	2	
L77370-04DUP	DUP-RPD	12/19/22			17	58	470	51	58	170				100	20	RG
L77370-06DUP	DUP-RER	12/19/22			6	60	280	60	60	220				0.64	2	
L77370-06DUP	DUP-RPD	12/19/22			6	60	280	60	60	220				164	20	RG
L77370-07MSB	MS	12/19/22	RC221206-10	2000	-2.3	56	170	1900	140	200	95	82	122			
WG556724																
WG556724PBW	PBW	12/19/22						4.5	3.2	20			40			
WG556724LCSWB	LCSW	12/19/22	RC221206-10	100				93	6.5	7.6	93	82	122			
L77265-01DUP	DUP-RER	12/19/22			0.65	2.6	21	-1.1	2.3	7.6				0.5	2	
L77265-01DUP	DUP-RPD	12/19/22			0.65	2.6	21	-1.1	2.3	7.6				778	20	RG
L77370-09MSB	MS	12/19/22	RC221206-10	100	-2.8	2.4	13	93	6.5	10	96	82	122			
L77370-10DUP	DUP-RPD	12/19/22			18	19	53	8.6	20	64				71	20	RG
L77370-10DUP	DUP-RER	12/19/22			18	19	53	8.6	20	64				0.34	2	

Golder Associates

ACZ Project ID: ***L77370***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L77370-01	WG556564	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	N1	See Case Narrative.
			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.
L77370-02	WG556564	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	N1	See Case Narrative.
			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.
L77370-03	WG556564	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	N1	See Case Narrative.
			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.
L77370-04	WG556592	Gross Alpha	M900.0	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			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.
L77370-05	WG556592	Gross Alpha	M900.0	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			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.
L77370-06	WG556592	Gross Alpha	M900.0	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			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.
L77370-07	WG556592	Gross Alpha	M900.0	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			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: ***L77370***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L77370-08	WG556724	Gross Alpha	M900.0	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			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.
L77370-09	WG556724	Gross Alpha	M900.0	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			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.
L77370-10	WG556724	Gross Alpha	M900.0	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			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.

Certification Qualifiers

Golder Associates

ACZ Project ID: ***L77370***

No certification qualifiers associated with this analysis

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

Sample Receipt

Golder Associates
GL21467005.000

ACZ Project ID: L77370
Date Received: 11/22/2022 10:20
Received By:
Date Printed: 11/22/2022

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	

Quotes from the quote bags received were used.

Quotes from the quote bags received were used.

Quotes from the quote bags received were used.

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Quotes from the quote bags received were used.

Quotes from the quote bags received were used.

Quotes from the quote bags received were used.

7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

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		
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		

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

Sample Receipt

Golder Associates
GL21467005.000

ACZ Project ID: L77370
Date Received: 11/22/2022 10:20
Received By:
Date Printed: 11/22/2022

NA indicates Not Applicable

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
6862	1.5	<=6.0	15	Yes
6058	0.9	<=6.0	15	Yes

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 | Accredited Environmental Testing | 2773 Downhill Drive, Steamboat Springs, CO 80487, (970) 879-6590 | L 77370

CHAIN of CUSTODY

Report to:

Name: Sara Harkins	Address: 7245 W Alaska Dr, Lakewood CO
Company: WSP Golder	
E-mail: Sara.Harkins@wsp.com	Telephone:

Copy of Report to:

Name: Jennifer Thompson	E-mail: Jennifer.Thompson2@wsp.com
Company: WSP Golder	Telephone: 832-571-5982

Invoice to:

Name: Sara Harkins	Address: 7245 W Alaska Dr, STE 200, Lakewood, CO
Company: WSP Golder	
E-mail: Sara.Harkins@wsp.com	Telephone:

Copy of Invoice to:

Name:	Address:
Company:	
E-mail:	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 ☐ 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 ☑

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

Sampler's Name: Jennifer Sampler's Site Information State CO Zip code 80535 Time Zone MTN

*Sampler's Signature: [signature]

*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 #: Boettcher Quarry (Bottle order B050531)

PO#: GL21467005.000

Reporting state for compliance testing: Colorado

Check box if samples include NRC licensed material? ☐

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Quoted analyses
MW-1	11/21/22 9:26	GW	5	
MW-2	11/21/22 7:45	GW	5	
MW-3	11/21/22 10:37	GW	5	
MW-4	11/21/22 11:36AM	GW	5	
MW-5	11/21/22 1:17	GW	5	
MW-6	11/21/22 3:41 PM	water	5	
MW-7	11/21/22 2:52 PM	GW	5	
MW-8	11/21/22 1:52 PM	GW	5	
MW-15	11/21/22	GW	5	
MW-20	11/21/22	GW	5	✓

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

REMARKS

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
		[signature]	11/22/22 10:10

L77370 Chain of Custody

ATTACHMENT 2

Field Sheets

WSP GOLDER

INSTRUMENT CALIBRATION FORM

Project Name: Boettcher Quarry **Project Number:**

Calibration By: Jennifer Thompson

Instrument Details

Instrument Name: YSI Pro 1030

Serial No.:

Model No.: 1030

Calibration Details

Calibration Standard: Conductivity + Ph

Calibration Standard(s) Expiration Date: Ph solutions 7.0 (sept 24), 4 (Sep 2024), 10 (July 2024)
Conductivity 1413 mS/cm (Sep 2023)

Calibration:

Date	Time	Calibration Standard	Temp (°C)	Instrument Reading	Notes
11/14/2022	10:00	Ph 7	8.1	~~7.08~~ 7.09	
11/14/2022	11:31	Ph 10 53	[illegible]	~~10.20~~ 10.19	
11/14/2022	11:55	Ph 4	4.0	4.01	
11/14/2022	12:00	Conductivity	7.0	1416	Could not calibrate
11/15/22	10:30	PH 7	3.9	7.11	
	10:31	pH 10	3.4	10.29	
	10:33	pH 4	3.5	4.00	

WSP GOLDER

RECORD OF WATER LEVEL READINGS

Sampling event water levels

Project Name: Holcim Boettcher 2022 2nd semi-annual sampling **Location:** Laporte, CO **Project No. GL21467005.000**

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	11/21/22	8:40 AM	WLM - 300'	TPVC	44.69	--	--	--	JT	
MW-2	11/21/22	7:45 AM	WLM - 300'	TPVC	107.51	--	--	--	JT	
MW-3	11/21/22	10:08 AM	WLM - 300'	TPVC	76.5	--	--	--	JT	
MW-4	11/21/22	11:36 AM	WLM - 300'	TPVC	141.9	--	--	--	JT	
MW-5	11/21/22	12:50 PM	WLM - 300'	TPVC	51.19	--	--	--	JT	
MW-6	11/21/22	3:41 PM	WLM - 300'	TPVC	216.5	--	--	--	JT	
MW-7	11/21/22	2:52 PM	WLM - 300'	TPVC	256.08	--	--	--	JT	
MW-8	11/21/22	1:52 PM	WLM - 300'	TPVC	215.32	--	--	--	JT	

WSP GOLDER

RECORD OF WATER LEVEL READINGS

Project Name: Holcim Boettcher 2022 2nd semi-annual sampling **Location:** Laporte, CO **Project No.** GL21467005.000

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	11/14/22	11:38 AM	WLM - 300'	TPVC	44.7	--	--	--	JL	
MW-2	11/14/22	10 am	WLM - 300'	TPVC	79.4	--	--	--	JL	
MW-3	11/14/22	12:17PM	WLM - 300'	TPVC	39.2	--	--	--	JL	
MW-4	11/14/22	2:00PM	WLM - 300'	TPVC	74	--	--	--	JT	
MW-5	11/15/22	7:30AM	WLM - 300'	TPVC	51.21	--	--	--	JT	
MW-6	11/15/22	3:00 PM	WLM - 300'	TPVC	214.1	--	--	--	JT	
MW-7	11/15/22	8:18 AM	WLM - 300'	TPVC	254.5±1'	--	--	--	JT	
MW-8	11/15/22	12:30	WLM - 300'	TPVC	177	--	--	--	JT	

Sheet ___ of ___

WSP GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2022Boettcher Quarry GW/CO **Project No.: GL21467005.000**

Location

MW-2

Monitored By: JL + JT Date 11/14/22 Time 10:00 AM

Well Piezometer Data

(*circle one*)

Depth of Well (from top of PVC or ground)	~~[illegible]~~14	feet
Depth of Water (from top of PVC or ground)	79.4	feet
Radius of Casing	2 inch	inches
		feet
Casing Volume		cubic feet
		gallons

Development / Purging Discharge Data

Purging Method: disposable, dedicated bailer

Start Purging Date 11/14/22 Time 10:00 AM

Stop Purging Date 11/14/22 Time 11:21 AM

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
~~11/14/22~~	~~10:00 AM~~							
11/14/22	10:12 AM	5	13.3	7.24	10692			Sulfur smell slightly yellow
11/14	11:08 AM	10	12.8	6.59	10958			
11/14	11:21 AM	11.75	12.9	7.57	11083			

WSP GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2022Boettcher Quarry GW/CO **Project No.: GL21467005.000**

Location

MW-3

Monitored By: JL + JT Date 11/14/22 Time 12:20 PM

Well Piezometer Data

(circle one)

Depth of Well (from top of PVC or ground)		feet
Depth of Water (from top of PVC or ground)	39.2	feet
Radius of Casing		inches
		feet
Casing Volume		cubic feet
		gallons

Development / Purging Discharge Data

Purging Method: disposable, dedicated bailer

Start Purging Date 11/14/22 Time 12:20 PM

Stop Purging Date 11/14/22 Time 1:32 PM

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
11/14/22	1:06PM	5	14.3	7.83	6770			Opaque, smells like sulfu
11/14/22	1:17PM	~~10~~ 10	14.6	7.87	6639			
11/14/22	1:32PM	14.5	~~14.1~~ 13.9	7.87	6750			

WSP GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2022Boettcher Quarry GW/CO **Project No.: GL21467005.000**

Location MW-4

Monitored By: JT + JL Date 11/14/22 Time Fri 02:00 PM

Well Piezometer Data

(circle one)

Depth of Well (from top of PVC or ground)		feet
Depth of Water (from top of PVC or ground)	74	feet
Radius of Casing		inches
		feet
Casing Volume		cubic feet
		gallons

Development / Purging Discharge Data

Purging Method: disposable, dedicated bailer

Start Purging Date 11/14/22 Time 02:11 PM

Stop Purging Date 11/14/22 Time 04:37 PM

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (uS/cm)	Turbidity (NTU)		Appearance of Water and Comments
11/14/22	2:30	5	11.5	7.61	18814			
11/14/22	2:49	10	11.6	7.74	19000			
11/14/22	3:12	15	11.9	7.5	18896			
11/14/22	3:30	20	11.9	7.5	18986			
11/14/22	3:67	25	12.0	7.67	18792			Water is grey, still smells of sulfur
11/14/22	4:25	30	11.5	7.78	18987			
11/14/22	4:37	30.5	10.9	7.84	19025			
		Bailer continued to come up half full, assumed recharge.						

GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2022Boettcher Quarry GW/CO **Project No.: GL21467005.000**

Location

MW-6

Monitored By: JT1 JL Date 11/15/22 Time 3:00

Well Piezometer Data

(circle one)

Depth of Well (from top of PVC or ground)		feet
Depth of Water (from top of PVC or ground)	214.1	feet 6/16/22 - 194'
Radius of Casing		inches
		feet
Casing Volume		cubic feet
		gallons

Development / Purging Discharge Data

Purging Method		disposable, dedicated bailer		
Start Purging	Date	11/15/22	Time	3:25 PM
Stop Purging	Date	11/15/22	Time	4:29 PM

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°_)	pH	Spec.Cond. (_S/cm)	Turbidity (NTU)		Appearance of Water and Comments
11/15/22	3:30	5	12.7	7.57	17583			
	3:47	810	12.8	7.56	17613			↓ Darker grey &
	4:00	15	12.5	7.62	17883			↓ almost black
	4:12	20	12.2	7.73	17895			
	4:29	25	11.9	7.55	18273			
		Last	3	bailers	were	partially	full,	assumed
		recharge						

1

WSP GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2022Boettcher Quarry GW/CO **Project No.: GL21467005.000**

Location

MW-7

Monitored By: JT + JL Date 11/15/22 Time 8:18 AM

Well Piezometer Data

(circle one)

Depth of Well (from top of PVC or ground)		feet
Depth of Water (from top of PVC or ground)	254.5 ± 1'	feet
Radius of Casing		inches
		feet
Casing Volume		cubic feet
		gallons

Development / Purging Discharge Data

Purging Method: disposable, dedicated bailer

Start Purging Date 11/15/22 Time 9:50 AM

Stop Purging Date Time

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°__)	pH	Spec.Cond. (__S/cm)	Turbidity (NTU)		Appearance of Water and Comments
11/14/22	10:36	5	11.4	6.97	15918			
11/14/22	16:47	10	12.7	7.03	15874			Gray; smelly
11/14/22	11:04	15	12.6	7.13	17238			
11/15/22	11:17	20	12.6	7.41	17977			
11/15/22	11:34	25	12.5	7.33	19036			

WSP GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2022Boettcher Quarry GW/CO **Project No.: GL21467005.000**

Location

MW-8

Monitored By: JT + JL Date 11/15/22 Time 12:30 PM

Well Piezometer Data

(circle one)

Depth of Well (from top of PVC or ground)		feet
Depth of Water (from top of PVC or ground)	137	feet 6/16/22 - 138.61'
Radius of Casing		inches
		feet
Casing Volume		cubic feet
		gallons

Development / Purging Discharge Data

Purging Method: disposable, dedicated bailer

Start Purging Date 11/15/22 Time 12:37 PM

Stop Purging Date 11/15/22 Time 2:20 PM

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
11/15/22	01:16PM	5	12.3	7.5	20619			Bubbly
11/15/22	01:28PM	10	13.0	7.57	20397			
11/15/22	01:40PM	15	12.9	7.52	20452			
11/15/22	01:50PM	20	13.4	7.41	20453			
11/15/22	02:07PM	25	13.0	7.52	20529			Grey
11/15/22	02:20PM	29	12.8	7.43	20466			
					Pump Stopped at 29'			
					Water level did not change after 5			
					bailers near well bottom. Presumed recharge			

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2022 Groundwater Monitoring**	Sampler Name(s): Jennifer Thompson + Jack Lindower
Project Number: **21505963**	Date: 11/21/22
Monitoring Well I.D.: **MW-1**	Weather Conditions: ~ °F
Wellhead Inspection (note conditions):	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	44.69	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	65.59 ft btoc	9. Dedicated? (Yes or No)	
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	3.4	11. Time to Purge Well (min)	36 min
5. 3 x Casing Volume (gallons)	10.2	12. Immiscible Layer Observed (yes or no)	No
6. Actual Volume of Water Purged	~10 gal	13. Thickness if Immiscible layer (if present)	—
7. Water Level Measuring Equip.	300' electronic	3.4 gal. x3 = 10.2 gal	

[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
11/21/22	8:55	2	13.0	7.62	6352	Low	—
11/21/22	9:01	2	13.3	7.51	6194	Low	—
11/21/22	9:06	2	13.4	7.54	6117	Low	
11/21/22	9:11	2	13.6	7.49	5599	med Low	Slightly Cloudy
11/21/22	9:19	2	13.2	7.61	6345	High	grey water
11/21/22	9:26	2	13.4	7.61	6378	High	grey water

Well Evacuated to Dryness? (Yes or No) No Time to recharge? NA

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
11/21/22	9:26	2	13.4	7.61	6378	High	AM

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	~~clear~~ yellow/brown cloudy				**Instrument Calibrations**	pH, conductivity
4. Odor	smelly					
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	None

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2022 Groundwater Monitoring**	Sampler Name(s): Jennifer Thompson + Jack Lindaver
Project Number: **21505963**	Date: 11/21/22
Monitoring Well I.D.: **MW-2**	Weather Conditions: ~ °F
Wellhead Inspection (note conditions):	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	107.51	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	112 ft btoc	9. Dedicated? (Yes or No)	
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	07.3	11. Time to Purge Well (min)	—
5. 3 x Casing Volume (gallons)	2.19	12. Immiscible Layer Observed (yes or no)	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:

Well was purged on 11/14/22

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (__S/cm)	Relative Turbidity	Other

Well Evacuated to Dryness? (Yes or No) _____ Time to recharge? _____

Groundwater Sample Information: Blank sample (MW-15) collected here

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (__S/cm)	Relative Turbidity	Other
11/21/22	7:45	1.25	11.0	7.53	8675	—	—

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	color less				**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 2022 Groundwater Monitoring**	Sampler Name(s): Jennifer Thompson + Jack Lindauer
Project Number: **21505963**	Date: 11/21/22
Monitoring Well I.D.: **MW-3**	Weather Conditions: ~ °F
Wellhead Inspection (note conditions):	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	76.5	8. Purge Equipment Used	HDPE tubing with hydrolift
2. Bottom of Casing[1] (±0.01ft.)	107.2 ft btoc	9. Dedicated? (Yes or No)	
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	5.01	11. Time to Purge Well (min)	—
5. 3 x Casing Volume (gallons)	15.03	12. Immiscible Layer Observed (yes or no)	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:

Well Purged on 11/14/2022

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (__S/cm)	Relative Turbidity	Other

Well Evacuated to Dryness? (Yes or No) _____ Time to recharge? _____

Groundwater Sample Information: MW-20 - Duplicate Taken here.

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
11/21/22	10:37	—	12.8	8.22	8585	Low	—

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 ☐			
Color	slightly yellow				**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 2022 Groundwater Monitoring**	Sampler Name(s): Jennifer Thompson & Jack Lindaver
Project Number: **21505963**	Date: 11/21/22
Monitoring Well I.D.: **MW-4**	Weather Conditions: ~ °F
Wellhead Inspection (note conditions):	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	141.9	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	182 ft btoc	9. Dedicated? (Yes or No)	
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	6.54	11. Time to Purge Well (min)	—
5. 3 x Casing Volume (gallons)	19.62	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: Purged on 11/14/22

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (__S/cm)	Relative Turbidity	Other
11/21/22							

Well Evacuated to Dryness? (Yes or No) — Time to recharge? —

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
11/21/22	11:36	1	11.4	7.78	14998	—	—

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	yellow				**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 2022 Groundwater Monitoring**	Sampler Name(s): Jennifer Thompson* Jack Lindauer
Project Number: **21505963**	Date: 11/21/22
Monitoring Well I.D.: **MW-5**	Weather Conditions: ~ °F
Wellhead Inspection (note conditions): Good	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	51.19	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	60.3 ft btoc	9. Dedicated? (Yes or No)	
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	1.5	11. Time to Purge Well (min)	17 min
5. 3 x Casing Volume (gallons)	4.5	12. Immiscible Layer Observed (yes or no)	
6. Actual Volume of Water Purged	5.5	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
11/21/11	12:58	1.5	12.2	7.22	3327	Low	slightly gray
11/21/11	1:08	1.5	12.5	7.12	3303		slightly yellow
11/21/11	1:12	1.5	12.6	7.08	3307	Low	"
11/21/11	1:15	1.0	12.4	7.08	3350	Low	

Well Evacuated to Dryness? (Yes or No) No

Time to recharge? ?

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (__S/cm)	Relative Turbidity	Other
11/21/11	[redacted] 1:17	6.5 gal	12.4	7.08	3350	Low	yellow

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	yellow				**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 2022 Groundwater Monitoring**	Sampler Name(s): Jennifer Thompson + Jack Lindauer
Project Number: **21505963**	Date: 11/21/22
Monitoring Well I.D.: **MW-6**	Weather Conditions: ~ °F
Wellhead Inspection (note conditions):	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	~~208.75~~ 216.5	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	229.7 ft btoc	9. Dedicated? (Yes or No)	
3. Casing Diameter (in.)	4	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	8.62	11. Time to Purge Well (min)	—
5. 3 x Casing Volume (gallons)	25.86	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: Well Purged on 11/15/22 (purged dry)

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (__S/cm)	Relative Turbidity	Other

Well Evacuated to Dryness? (Yes or No) — Time to recharge? _____

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
11/21/22	3:41 PM	1	12.0	7.76	13868	high	—

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 grey				**Instrument Calibrations**	pH, conductivity
4. Odor	very sulfur rich					
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	Surface Sheen

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2022 Groundwater Monitoring**	Sampler Name(s): Jennifer Thompson + Jack Lindauer
Project Number: **21505963**	Date: 11/21/22
Monitoring Well I.D.: **MW-7**	Weather Conditions: ~ °F
Wellhead Inspection (note conditions):	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	256.08	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	259.2 ft btoc	9. Dedicated? (Yes or No)	
3. Casing Diameter (in.)	4	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	2.04	11. Time to Purge Well (min)	—
5. 3 x Casing Volume (gallons)	6.12	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: Purged 11/15/22

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

Well Evacuated to Dryness? (Yes or No) _____ Time to recharge? _____

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
11/21/22	2:52	1.5	13.2	7.33	14884	—	—

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	colorless				**Instrument Calibrations**	pH, conductivity
4. Odor	Sulfur					
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	

Logger placed at ~280 ± 5 ft.

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2022 Groundwater Monitoring**	Sampler Name(s): Jen Thompson + Jack Lindauer
Project Number: **21505963**	Date: 11/21/22
Monitoring Well I.D.: **MW-8**	Weather Conditions: ~ °F
Wellhead Inspection (note conditions):	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	215.32.	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	~229 ft btoc	9. Dedicated? (Yes or No)	
3. Casing Diameter (in.)	4	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	8.93	11. Time to Purge Well (min)	—
5. 3 x Casing Volume (gallons)	26.79	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:

Well purged on 11/18/22

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (__S/cm)	Relative Turbidity	Other

Well Evacuated to Dryness? (Yes or No) —

Time to recharge? —

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
11/21/22	01:52PM	1.5	12.7	7.32	17322	—	—

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	colorless				**Instrument Calibrations**	pH, conductivity
4. Odor	sulfur					
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	

Logger rope length: 235'