western water
ASSOCIATES LTD
Consultants in Hydrogeology and Water Resources Management

March 12, 2022

21-124-01PG
Ministry File: GS22JHQ081

Ministry of Environment and Climate Change Strategy
PO Box 9362 Stn. Prov. Govt.
Victoria, B.C.
V8W 9M2

Attn: Carys Pinches, Water Policy Advisor

Re: Hullcar Monitoring and Well Sampling: November 2021, February 2022.

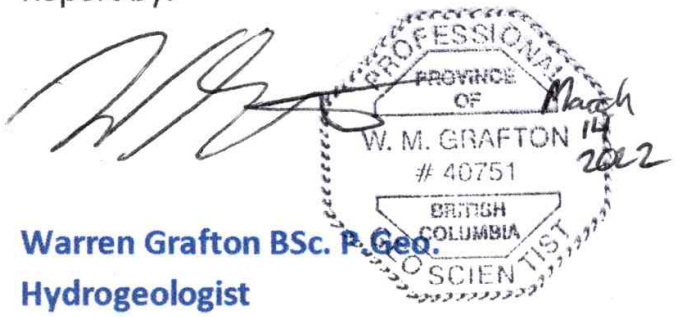
Western Water Associates Ltd. (WWAL) is pleased to provide this report documenting the results of a groundwater monitoring and sampling program conducted on behalf of the Ministry of Environment and Climate Change Strategy.

Six wells were monitored and sampled November 29, 2021 and February 24, 2022. All sampling was conducted following methodology recommended in the BC Environmental Laboratory Manual. All samples were submitted to CARO Labs in Kelowna B.C. following standard chain of custody procedures. Sampling was conducted by Environmental Scientist Natasha Neweduk B.Sc. under the supervision of hydrogeologist Warren Grafton P.Geo.. In addition, Junior Territorial Resource Steward Marshall Jones, B.Sc., of Splatsin accompanied WWAL technicians during the sampling program. Field measurements and analytical results compared to applicable standards are included for reference along with datalogger and files provided separately as an attachment.

We trust that the professional opinions and advice presented in this document are sufficient for your current requirements. Should you have any questions, or if we can be of further assistance in this matter, please contact the undersigned.

WESTERN WATER ASSOCIATES LTD.
(EGBC Permit to Practice number 1001419)

Report by:



Warren Grafton BSc. P.Geo.
Hydrogeologist

Senior Review by:

Douglas Geller, M.Sc., P.Geo.
Principal Hydrogeologist

Scope of Services

As part of the monitoring well sampling program, WWAL completed the following work program, which includes works requested in GS22JHQ081:

1. Reviewed monitoring well construction and developed a sampling plan including purge volumes and static water depths.

2. Complete a site-specific health and safety plan including safe work procedures surrounding COVID.

3. Collected depth to water measurements utilizing an electric well sounder and removed/download dataloggers from each well prior to purging. Measured depth of transducers to infer transducer drift.

4. Installed a temporary submersible pump and purge at least three well volumes from 5 wells. One well was monitored until parameters stabilized within 10% prior to sampling. Standard field water quality parameters including pH, temperature, and electrical conductivity was monitored throughout the purging process.

5. Samples were collected in laboratory supplied bottles and submitted to CARO Labs in Kelowna B.C. following standard chain of custody procedures. Analysis was requested for the analytes described in the ITQ plus HCO_3. One blind field duplicated (BFD) from each sampling event was submitted for QA/QC purposes.

6. Preparation of this brief memorandum summarizing the sampling program.

Field Methods

Monitoring Well Sampling Program

All monitoring wells were sampled and purged utilizing a submersible Waterra pump. Table 1 below summarizes purge methodology and field observations collected from each well prior to sampling.

Table 1: Summary of Field Observations.

Well ID	Date	Purge Methodology	Volume Purged (L)	Depth to Water (mbtoc)	Temperature (˚C)	pH	Conductivity (µs)
MW-19-1A-R	11/29/2021	Parameter Stabilization	155	9.35	7.8	6.5	1585
MW-19-1A-R	02/24/2022	3 Well Volumes	45	9.34	10.6	7.65	740
MW-19-2A	11/29/2021	Parameter Stabilization	38	9.91	7.8	6.5	1585

Well ID	Date	Purge Methodology	Volume Purged (L)	Depth to Water (mbtoc)	Temperature (°C)	pH	Conductivity (µs)
MW-19-2A	02/24/2022	3 Well Volumes	38	9.34	8.6	7.42	1080
MW-19-3A	11/29/2021	3 Well Volumes	54	3.21	7.9	7.55	1240
MW-19-3A	02/24/2022	3 Well Volumes	38	3.16	8.1	7.34	962
MW-20-1B	11/29/2021	Parameter Stabilization	175	9.17	8.1	6.8	1190
MW-20-1B	02/24/2022	Parameter Stabilization	238	9.17	8.0	7.26	898
MW-20-2B	11/30/2021	Parameter Stabilization	230	8.68	8.8	6.87	1070
MW-20-2B	02/24/2022	Parameter Stabilization	198	8.40	10.2	7.29	996
MW-20-4A	11/29/2021	Parameter Stabilization	93	17.54	8.7	6.63	1471
MW-20-4A	02/24/2022	Parameter Stabilization	136	17.73	8.6	6.80	1348

Analytical Results

Analytical summary tables were produced utilizing Wireless Water and compared to B.C. Contaminated Sites Regulation Numerical Standards in Water (Schedule 3.2) (ENV, 2021). Without making any determination on applicable standards, the summary tables compare results to aquatic life (AW), irrigation (IW), livestock watering (LW) and drinking water (DL) standards. Summary tables and laboratory certificates of analysis are included as an attachment for reference.

Quality Assurance / Quality Control (QA/QC)

Laboratory Qualifications

CARO is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. CARO is fully accredited to analyze and report on the analyses completed for this project.

To validate the reproducibility of the laboratory analyses and confirm that standard field sampling techniques utilized by WWAL personnel are capable of yielding reproducible results, blind field duplicates (BFD's) were submitted to the laboratory and analyzed for select parameters. One water sample duplicate was submitted for analysis of total metals. Field duplicates were compared to their corresponding

samples and the Relative Percent Difference (RPD) were calculated. RPD is defined as the difference of the absolute value of the duplicate results divided by the average of the duplicate results, expressed as a percentage. Analytical error increases near the method detection limit (MDL) and as such, the RPD calculation should not be performed unless the concentrations of both samples are greater than 5 times the MDL. Duplicate acceptance criteria for is +/- 20% (Province of British Columbia, 2013). Calculated RPDs for the duplicated samples were typically low (~<5%) with occasionally higher differences noted in analytes detected in relatively low concentrations. As such, the sample duplicate variation is considered acceptable. Duplicate RPD calculations are included for reference as an attachment.

As an internal quality control, samples submitted to CARO were subjected to one or more of six laboratory QA/QC procedures (method blanks, lab duplicates, matrix spike recoveries, surrogate recovery, reference material comparison and/or laboratory control samples), which were documented on the laboratory certificates provided. A summary of the lab QA/QC attached to each laboratory report is included as an attachment. The Laboratory QA/QC results were reviewed by WWAL staff and determined to be acceptable to industry standards. From the QA/QC assessment.

Transducer Drift Assessment

WWAL compared physical depth to water measurements to pressure transducer readings from February 3, 2022 and November 29, 2021 to infer if transducer drift is occurring to any significant degree. Table 2 below summarizes the difference in transducer readings, following barometric compensation, between two sampling events which were approximately 10 months apart. With the exception of MW19-3A all transducer readings appear accurate to within 2 cm. MW19-3A differed by approximately 7 cm. Note that physical measurements were not collected at the exact same time of the transducer data point as the transducers are programed to collect measurements hourly. However, we would not expect that water levels were fluctuating rapidly enough to make the time lag an issue.

Table 2: Transducer Drift Estimations.

Monitoring Well	Transducer Drift (m)	Error %
MW-19-1A-R	0.0066	4
MW-19-2A	0.0077	7
MW-19-3A	0.0792	50
MW-20-1B	-0.0145	2
MW-20-2B	-0.018	3
MW-20-4A	0.0153	6

According to Solinst technical bulletins for the Levelogger 5, error percentages of up to 0.05% can be expected (Solinst, 2022). Error percentages are defined as the difference between physical water level measurement and the compensated transducer measurement divided by the overlying water column. As in the case with MW19-3A, the transducer has been deployed in a relatively shallow well increasing the error percentage due to the shallow static water level. In addition, accuracy will decrease dependent on the transducer's calibration. We recommend an M5 calibration model be utilized for increased accuracy in MW19-3A if not used already.

List of Attachments

- Groundwater Analytical Summary Tables
- Duplicate Sample RPD Calculations
- Laboratory Certificates of Analysis
- Data logger files provided separately from report

Western Water Associates Ltd.
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REFERENCES

British Columbia Ministry of Environment. (ENV 2013). B.C. Field Sampling Manual. B.C. https://www2.gov.bc.ca/assets/gov/environment/research-monitoring-and-reporting/monitoring/emre/bc_field_sampling_manual_complete.pdf

ENV. (2021, January 26). *Contaminated Sites Regulation.* Retrieved from Environmental Managment Act: https://www.bclaws.gov.bc.ca/civix/document/id/lc/statreg/375_96_08

Province of British Columbia. (2013). BC Field Sampling Manual. Victoria, BC, Canada.

Province of British Columbia. (2016). Groundwater Protection Regulation. Victoria, B.C., Canada.

Solinst. (2022, March 8). Solinst Technical Bulletin: Understanding Pressure Sensor Accuracy, Precision, Resolution & Drift.

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	Guideline				Sampling Location	MW19-1AR	MW19-1AR
						Date Sampled	22-Dec-20	03-Feb-21	29-Nov-21
						Lab Sample ID	20L2625-01	21B0566-02	21L0144-05
						Sample Type			
		CSR AW	CSR IW	CSR LW	CSR DW				
Lab Results									
Anions and Cations in meq/L unit									
Aluminum (meq/L) (calculated)	meq/L	NG	NG	NG	NG		<0.00056	<0.00056	<0.00056
Barium (meq/L) (calculated)	meq/L	NG	NG	NG	NG		0.00173	0.00149	0.00147
Boron (meq/L) (calculated)	meq/L	NG	NG	NG	NG		<0.0139	<0.0139	<0.0139
Calcium (meq/L) (calculated)	meq/L	NG	NG	NG	NG		11.1	11.8	13.1
Calcium (total, meq/L) (calculated)	meq/L	NG	NG	NG	NG		12.5	11.7	12.9
Chloride (meq/L) (calculated)	meq/L	NG	NG	NG	NG		1.02	1.01	1.05
Chromium (meq/L) (calculated)	meq/L	NG	NG	NG	NG		0.000056	0.0000612	0.0000600
Copper (meq/L) (calculated)	meq/L	NG	NG	NG	NG		0.0000406	0.000847	0.0000664
Lead (meq/L) (calculated)	meq/L	NG	NG	NG	NG		<0.0000019	<0.0000019	<0.0000019
Lithium (meq/L) (calculated)	meq/L	NG	NG	NG	NG		0.00110	0.00110	0.00112
Magnesium (meq/L) (calculated)	meq/L	NG	NG	NG	NG		2.66	2.76	2.79
Magnesium (total, meq/L) (calculated)	meq/L	NG	NG	NG	NG		2.65	2.67	3.02
Potassium (meq/L) (calculated)	meq/L	NG	NG	NG	NG		0.169	0.191	0.188
Potassium (total, meq/L) (calculated)	meq/L	NG	NG	NG	NG		0.174	0.186	0.201
Sodium (meq/L) (calculated)	meq/L	NG	NG	NG	NG		0.631	0.679	0.713
Sodium (total, meq/L) (calculated)	meq/L	NG	NG	NG	NG		0.657	0.661	0.770
Strontium (meq/L) (calculated)	meq/L	NG	NG	NG	NG		0.0361	0.0310	0.0317
Sulfate (meq/L) (calculated)	meq/L	NG	NG	NG	NG		8.24	7.99	7.72
Zinc (meq/L) (calculated)	meq/L	NG	NG	NG	NG		<0.00012	0.000529	<0.00012
Dissolved Metals									
Aluminum (dissolved)	µg/L	NG	5000	5000	9500 [4.1]		<5.0	<5.0	<5.0
Antimony (dissolved)	µg/L	90	NG	NG	6		<0.20	0.29	<0.20
Arsenic (dissolved)	µg/L	50	100	25	10		0.61	0.71	0.54
Barium (dissolved)	µg/L	10000	NG	NG	1000		119	102	101
Beryllium (dissolved)	µg/L	1.5	100	100	8		<0.10	0.14	<0.10
Bismuth (dissolved)	µg/L	NG	NG	NG	NG		<0.10	<0.10	<0.10
Boron (dissolved)	µg/L	12000	500 [2.1]	5000	5000		<50.0	<50.0	<50.0
Cadmium (dissolved)	µg/L	Calc [1.1]	5	80	5		0.028	0.035	0.023

Hullcar Groundwater Monitoring

Water Quality Results

					Sampling Location	MW19-1AR	MW19-1AR	MW19-1AR
					Date Sampled	22-Dec-20	03-Feb-21	29-Nov-21
					Lab Sample ID	20L2625-01	21B0566-02	21L0144-05
					Sample Type			
Analyte	**Unit**	**Guideline**						
		CSR AW	CSR IW	CSR LW	**CSR DW**			
Calcium (dissolved)	mg/L	NG	NG	1000	NG	222	236	262
Chromium (dissolved)	µg/L	10 [1.2]	5 [2.2]	50 [3.1]	50 [4.2]	0.97	1.06	1.04
Cobalt (dissolved)	µg/L	40	50	1000	1	0.15	0.13	0.13
Copper (dissolved)	µg/L	Calc [1.3]	200	300	1500 [4.3]	1.29	26.9	2.11
Hardness, Total (dissolved as CaCO3)	mg/L	NG	NG	NG	NG	687	728	795
Iron (dissolved)	µg/L	NG	5000 [2.3]	NG	6500 [4.4]	<10	36	<10
Lead (dissolved)	µg/L	Calc [1.4]	200	100	10	<0.20	<0.20	<0.20
Lithium (dissolved)	µg/L	NG	2500 [2.4]	5000	8	7.63	7.62	7.78
Magnesium (dissolved)	mg/L	NG	NG	NG	NG	32.3	33.5	33.9
Manganese (dissolved)	µg/L	NG	200 [2.5]	NG	1500 [4.5]	0.36	1.12	<0.20
Mercury (dissolved)	µg/L	0.25	1	2	1	<0.010	<0.010	<0.010
Molybdenum (dissolved)	µg/L	10000	10 [2.6]	50	250	0.78	0.98	0.69
Nickel (dissolved)	µg/L	Calc [1.5]	200	1000	80	1.44	1.56	1.41
Phosphorus (dissolved, by ICPMS/ICPOES)	µg/L	NG	NG	NG	NG	<50	<50	<50
Phosphorus (dissolved, APHA 4500-P)	µg/L	NG	NG	NG	NG	18.7	9.7	23.1
Potassium (dissolved)	µg/L	NG	NG	NG	NG	6600	7480	7340
Selenium (dissolved)	µg/L	20	20 [2.7]	30	10	9.64	8.70	10.0
Silicon (dissolved, as Si)	µg/L	NG	NG	NG	NG	12700	14100	11500
Silver (dissolved)	µg/L	Calc [1.6]	NG	NG	20	<0.050	<0.050	<0.050
Sodium (dissolved)	mg/L	NG	NG	NG	200 [4.6]	14.5	15.6	16.4
Strontium (dissolved)	µg/L	NG	NG	NG	2500	1580	1360	1390
Sulphur (dissolved)	µg/L	NG	NG	NG	NG	138000	130000	131000
Tellurium (dissolved)	µg/L	NG	NG	NG	NG	<0.50	<0.50	<0.50
Thallium (dissolved)	µg/L	3	NG	NG	NG	<0.020	<0.020	<0.020
Thorium (dissolved)	µg/L	NG	NG	NG	NG	<0.10	<0.10	<0.10
Tin (dissolved)	µg/L	NG	NG	NG	2500	0.20	5.52	<0.20
Titanium (dissolved)	µg/L	1000	NG	NG	NG	<5.0	<5.0	<5.0
Tungsten (dissolved)	µg/L	NG	NG	NG	3	<1.0	<1.0	<1.0
Uranium (dissolved)	µg/L	85	10	200	20	5.59	5.38	5.68
Vanadium (dissolved)	µg/L	NG	100	100	20	<1.0	<1.0	<1.0
Zinc (dissolved)	µg/L	Calc [1.7]	1000 [2.8]	2000	3000 [4.7]	<4.0	17.3	<4.0

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	Guideline				Sampling Location	MW19-1AR	MW19-1AR
						Date Sampled	22-Dec-20	03-Feb-21	29-Nov-21
						Lab Sample ID	20L2625-01	21B0566-02	21L0144-05
						Sample Type			
		CSR AW	CSR IW	CSR LW	**CSR DW**				
Zirconium (dissolved)	µg/L	NG	NG	NG	NG		<0.10	0.11	<0.10
General and Inorganic Parameters									
Alkalinity (bicarbonate, as CaCO3)	mg/L	NG	NG	NG	NG		310	317	322
Alkalinity (carbonate, as CaCO3)	mg/L	NG	NG	NG	NG		<1.0	<1.0	<1.0
Alkalinity (hydroxide, as CaCO3)	mg/L	NG	NG	NG	NG		<1.0	<1.0	<1.0
Alkalinity (phenolphthalein, as CaCO3)	mg/L	NG	NG	NG	NG		<1.0	<1.0	<1.0
Alkalinity (total, as CaCO3)	mg/L	NG	NG	NG	NG		310	317	322
Ammonia (total, as N)	µg/L	Calc [1.8]	NG	NG	NG		<50	<50	<50
Un-ionized ammonia (as N)	µg/L	NG	NG	NG	NG			<1	
Chloride ion	mg/L	1500	100 [2.9]	600	250 [4.8]		36.2	35.9	37.1
Nitrate (as N)	mg/L	400 [1.9]	NG	100 [3.2]	10 [4.9]		**13.7**	**12.3**	**10.2**
Nitrate + Nitrite (as N) (calculated)	mg/L	400 [1.10]	NG	100 [3.3]	10 [4.10]		**13.7**	**12.3**	**10.2**
Nitrite (as N)	µg/L	Calc [1.11]	NG	10000	1000		<10	<10	<10
Dissolved kjeldahl nitrogen	µg/L	NG	NG	NG	NG		511	539	536
Sulphate	mg/L	Calc [1.12]	NG	1000	500 [4.11]		396	384	371
Total organic carbon	mg/L	NG	NG	NG	NG		3.73	4.83	4.09
Total suspended solids	mg/L	NG	NG	NG	NG		5.6	<2.0	<2.0
Radiological									
delta-2-H	per mil	NG	NG	NG	NG			-128.3	-128
delta-18-O	per mil	NG	NG	NG	NG			-16.24	-16.55
Total Metals									
Aluminum (total)	µg/L	NG	5000	5000	9500 [4.12]		19.2	6.9	9.9
Antimony (total)	µg/L	90	NG	NG	6		<0.20	0.36	<0.20
Arsenic (total)	µg/L	50	100	25	10		0.65	0.85	0.58
Barium (total)	µg/L	10000	NG	NG	1000		127	102	107
Beryllium (total)	µg/L	1.5	100	100	8		<0.10	0.16	<0.10
Bismuth (total)	µg/L	NG	NG	NG	NG		<0.10	<0.10	<0.10
Boron (total)	µg/L	12000	500 [2.10]	5000	5000		<50.0	<50.0	<50.0

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	Guideline				Sampling Location	MW19-1AR	MW19-1AR
						Date Sampled	22-Dec-20	03-Feb-21	29-Nov-21
						Lab Sample ID	20L2625-01	21B0566-02	21L0144-05
						Sample Type			
		CSR AW	CSR IW	CSR LW	**CSR DW**				
Cadmium (total)	µg/L	Calc [1.13]	5	80	5		0.032	0.030	0.017
Calcium (total)	mg/L	NG	NG	1000	NG		251	235	258
Chromium (total)	µg/L	10 [1.14]	5 [2.11]	50 [3.4]	50 [4.13]		1.01	1.07	1.14
Cobalt (total)	µg/L	40	50	1000	1		0.18	0.14	0.15
Copper (total)	µg/L	Calc [1.15]	200	300	1500 [4.14]		2.78	38.2	2.15
Hardness, Total (total as CaCO3)	mg/L	NG	NG	NG	NG				
Iron (total)	µg/L	NG	5000 [2.12]	NG	6500 [4.15]		67	35	25
Lead (total)	µg/L	Calc [1.16]	200	100	10		<0.20	<0.20	<0.20
Lithium (total)	µg/L	NG	2500 [2.13]	5000	8		**8.25**	7.48	7.30
Magnesium (total)	mg/L	NG	NG	NG	NG		32.2	32.4	36.7
Manganese (total)	µg/L	NG	200 [2.14]	NG	1500 [4.16]		1.72	1.15	0.48
Mercury (total)	µg/L	0.25	1	2	1		<0.010	<0.010	<0.010
Molybdenum (total)	µg/L	10000	10 [2.15]	50	250		0.81	0.94	0.76
Nickel (total)	µg/L	Calc [1.17]	200	1000	80		1.56	1.51	1.59
Phosphorus (total, by ICPMS/ICPOES)	µg/L	NG	NG	NG	NG		<50	<50	<50
Potassium (total)	µg/L	NG	NG	NG	NG		6790	7280	7860
Selenium (total)	µg/L	20	20 [2.16]	30	10		9.47	8.59	9.73
Silicon (total, as Si)	µg/L	NG	NG	NG	NG		13300	13800	12200
Silver (total)	µg/L	Calc [1.18]	NG	NG	20		<0.050	<0.050	<0.050
Sodium (total)	mg/L	NG	NG	NG	200 [4.17]		15.1	15.2	17.7
Strontium (total)	µg/L	NG	NG	NG	2500		1670	1340	1440
Sulphur (total)	µg/L	NG	NG	NG	NG		141000	127000	147000
Tellurium (total)	µg/L	NG	NG	NG	NG		<0.50	<0.50	<0.50
Thallium (total)	µg/L	3	NG	NG	NG		<0.020	<0.020	<0.020
Thorium (total)	µg/L	NG	NG	NG	NG		<0.10	<0.10	<0.10
Tin (total)	µg/L	NG	NG	NG	2500		0.21	5.95	<0.20
Titanium (total)	µg/L	1000	NG	NG	NG		17.7	<5.0	<5.0
Tungsten (total)	µg/L	NG	NG	NG	3		<1.0	<1.0	<1.0
Uranium (total)	µg/L	85	10	200	20		5.68	5.42	5.52
Vanadium (total)	µg/L	NG	100	100	20		<1.0	<1.0	<1.0
Zinc (total)	µg/L	Calc [1.19]	1000 [2.17]	2000	3000 [4.18]		<4.0	20.6	<4.0

Hullcar Groundwater Monitoring

Water Quality Results

					Sampling Location	MW19-1AR	MW19-1AR	MW19-1AR
					Date Sampled	22-Dec-20	03-Feb-21	29-Nov-21
					Lab Sample ID	20L2625-01	21B0566-02	21L0144-05
					Sample Type			
Analyte	**Unit**	**Guideline**						
		CSR AW	CSR IW	CSR LW	**CSR DW**			
Zirconium (total)	µg/L	NG	NG	NG	NG	<0.10	<0.10	<0.10

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	MW19-1AR 24-Feb-22 22B3252-02	MW19-2A 22-Dec-20 20L2625-02	MW19-2A 03-Feb-21 21B0566-06	MW19-2A 29-Nov-21 21L0144-04	MW19-2A 24-Feb-22 22B3252-06	MW19-3A 22-Dec-20 20L2625-03	MW19-3A 22-Dec-20 20L2625-07 Duplicate
Lab Results								
Anions and Cations in meq/L unit								
Aluminum (meq/L) (calculated)	meq/L	0.00187	<0.00056	<0.00056	<0.00056	0.00113	<0.00056	
Barium (meq/L) (calculated)	meq/L	0.00151	0.00175	0.00146	0.00122	0.00118	0.000977	
Boron (meq/L) (calculated)	meq/L	<0.0139	<0.0139	<0.0139	<0.0139	<0.0139	<0.0139	
Calcium (meq/L) (calculated)	meq/L	11.9	7.78	8.33	8.63	7.68	8.28	
Calcium (total, meq/L) (calculated)	meq/L	12.5	8.63	8.33	8.98	8.08	9.33	9.28
Chloride (meq/L) (calculated)	meq/L	1.06	0.990	1.04	1.95	1.45	0.615	
Chromium (meq/L) (calculated)	meq/L	0.0000750	0.000056	0.0000623	<0.000029	0.000038	<0.000029	
Copper (meq/L) (calculated)	meq/L	0.000212	0.0000359	0.0000384	0.0000409	0.0000900	0.0000765	
Lead (meq/L) (calculated)	meq/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	
Lithium (meq/L) (calculated)	meq/L	0.00107	0.00157	0.00154	0.00167	0.00147	0.000811	
Magnesium (meq/L) (calculated)	meq/L	2.81	3.51	3.69	3.69	3.23	1.5	
Magnesium (total, meq/L) (calculated)	meq/L	2.86	3.39	3.69	4.11	3.51	1.45	1.51
Potassium (meq/L) (calculated)	meq/L	0.192	0.333	0.373	0.281	0.276	0.168	
Potassium (total, meq/L) (calculated)	meq/L	0.172	0.333	0.376	0.302	0.263	0.168	0.173
Sodium (meq/L) (calculated)	meq/L	0.757	1.21	1.29	1.37	1.18	0.631	
Sodium (total, meq/L) (calculated)	meq/L	0.757	1.22	1.3	1.51	1.27	0.635	0.661
Strontium (meq/L) (calculated)	meq/L	0.0304	0.0406	0.0352	0.0320	0.0281	0.0363	
Sulfate (meq/L) (calculated)	meq/L	7.87	5.00	5.00	4.46	4.48	3.73	
Zinc (meq/L) (calculated)	meq/L	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	
Dissolved Metals								
Aluminum (dissolved)	µg/L	16.8	<5.0	<5.0	<5.0	10.2	<5.0	
Antimony (dissolved)	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	
Arsenic (dissolved)	µg/L	0.68	0.97	0.74	<0.50	0.61	0.57	
Barium (dissolved)	µg/L	104	120	100	83.7	81.2	67.1	
Beryllium (dissolved)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Bismuth (dissolved)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Boron (dissolved)	µg/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	
Cadmium (dissolved)	µg/L	0.025	0.029	0.014	0.062	0.022	0.056	

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	MW19-1AR 24-Feb-22 22B3252-02	MW19-2A 22-Dec-20 20L2625-02	MW19-2A 03-Feb-21 21B0566-06	MW19-2A 29-Nov-21 21L0144-04	MW19-2A 24-Feb-22 22B3252-06	MW19-3A 22-Dec-20 20L2625-03	MW19-3A 22-Dec-20 20L2625-07 Duplicate
Calcium (dissolved)	mg/L	239	156	167	173	154	166	
Chromium (dissolved)	µg/L	1.30	0.97	1.08	<0.50	0.66	<0.50	
Cobalt (dissolved)	µg/L	0.14	0.10	<0.10	0.16	0.11	0.10	
Copper (dissolved)	µg/L	6.74	1.14	1.22	1.30	2.86	2.43	
Hardness, Total (dissolved as CaCO3)	mg/L	738	567	603	618	546	491	
Iron (dissolved)	µg/L	<10	<10	<10	<10	<10	<10	
Lead (dissolved)	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	
Lithium (dissolved)	µg/L	7.42	**10.9**	**10.7**	**11.6**	**10.2**	5.63	
Magnesium (dissolved)	mg/L	34.1	42.7	44.9	44.8	39.2	18.2	
Manganese (dissolved)	µg/L	0.30	3.84	4.33	23.2	6.56	1.30	
Mercury (dissolved)	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Molybdenum (dissolved)	µg/L	0.91	1.14	1.14	1.57	1.17	1.49	
Nickel (dissolved)	µg/L	1.44	1.29	1.37	2.64	1.72	1.76	
Phosphorus (dissolved, by ICPMS/ICPOES)	µg/L	<50	<50	<50	<50	<50	<50	
Phosphorus (dissolved, APHA 4500-P)	µg/L	12.9	20.1	18.6	21.0	11.9	12.1	
Potassium (dissolved)	µg/L	7520	13000	14600	11000	10800	6570	
Selenium (dissolved)	µg/L	5.87	6.59	4.75	6.94	3.34	3.34	
Silicon (dissolved, as Si)	µg/L	14400	12600	13400	10400	12800	9700	
Silver (dissolved)	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Sodium (dissolved)	mg/L	17.4	27.8	29.7	31.4	27.2	14.5	
Strontium (dissolved)	µg/L	1330	1780	1540	1400	1230	1590	
Sulphur (dissolved)	µg/L	146000	91000	82600	77500	77700	66100	
Tellurium (dissolved)	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Thallium (dissolved)	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Thorium (dissolved)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Tin (dissolved)	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	
Titanium (dissolved)	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
Tungsten (dissolved)	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Uranium (dissolved)	µg/L	5.46	11.3	10.6	10.9	8.66	**29.0**	
Vanadium (dissolved)	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Zinc (dissolved)	µg/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	MW19-1AR 24-Feb-22 22B3252-02	MW19-2A 22-Dec-20 20L2625-02	MW19-2A 03-Feb-21 21B0566-06	MW19-2A 29-Nov-21 21L0144-04	MW19-2A 24-Feb-22 22B3252-06	MW19-3A 22-Dec-20 20L2625-03	MW19-3A 22-Dec-20 20L2625-07 Duplicate
Zirconium (dissolved)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
General and Inorganic Parameters								
Alkalinity (bicarbonate, as CaCO3)	mg/L	334	376	359	335	331	366	
Alkalinity (carbonate, as CaCO3)	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity (hydroxide, as CaCO3)	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity (phenolphthalein, as CaCO3)	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity (total, as CaCO3)	mg/L	334	376	359	335	331	366	
Ammonia (total, as N)	µg/L	<50	<50	<50	<50	<50	<50	
Un-ionized ammonia (as N)	µg/L			<1				
Chloride ion	mg/L	37.6	35.1	36.9	69.2	51.5	21.8	
Nitrate (as N)	mg/L	**11.2**	**11.7**	**12.7**	4.38	9.99	9.93	
Nitrate + Nitrite (as N) (calculated)	mg/L	**11.2**	**11.7**	**12.7**	4.38	9.99	9.93	
Nitrite (as N)	µg/L	<10	<10	<10	<10	<10	<10	
Dissolved kjeldahl nitrogen	µg/L	598	323	263	225	173	273	
Sulphate	mg/L	378	240	240	214	215	179	
Total organic carbon	mg/L	4.62	2.34	2.56	1.86	2.23	2.38	
Total suspended solids	mg/L	<2.0	<2.0	4.4	5.2	34.8	<2.0	
Radiological								
delta-2-H	per mil			-131.2	-133			
delta-18-O	per mil			-16.66	-17.12			
Total Metals								
Aluminum (total)	µg/L	<5.0	8.3	43.7	121	126	13.2	7.4
Antimony (total)	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.26
Arsenic (total)	µg/L	<0.50	0.92	0.87	0.72	0.59	0.60	0.63
Barium (total)	µg/L	101	124	102	92.0	88.5	69.9	71.9
Beryllium (total)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bismuth (total)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Boron (total)	µg/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	MW19-1AR 24-Feb-22 22B3252-02	MW19-2A 22-Dec-20 20L2625-02	MW19-2A 03-Feb-21 21B0566-06	MW19-2A 29-Nov-21 21L0144-04	MW19-2A 24-Feb-22 22B3252-06	MW19-3A 22-Dec-20 20L2625-03	MW19-3A 22-Dec-20 20L2625-07 Duplicate
Cadmium (total)	µg/L	<0.010	0.025	0.019	0.055	0.029	0.038	0.054
Calcium (total)	mg/L	250	173	167	180	162	187	186
Chromium (total)	µg/L	1.29	0.98	1.55	0.83	0.92	0.50	<0.50
Cobalt (total)	µg/L	0.13	0.12	0.22	0.46	0.46	0.14	0.12
Copper (total)	µg/L	3.78	1.19	1.81	2.02	3.81	2.40	3.43
Hardness, Total (total as CaCO3)	mg/L							540
Iron (total)	µg/L	15	20	166	358	426	24	13
Lead (total)	µg/L	<0.20	<0.20	<0.20	<0.20	0.25	<0.20	<0.20
Lithium (total)	µg/L	7.50	**11.4**	**10.6**	**11.4**	**11.0**	5.85	5.91
Magnesium (total)	mg/L	34.8	41.2	44.8	50.0	42.6	17.6	18.4
Manganese (total)	µg/L	0.41	4.72	16.7	53.7	42.6	2.11	2.06
Mercury (total)	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Molybdenum (total)	µg/L	0.89	1.16	1.08	1.78	1.26	1.51	1.71
Nickel (total)	µg/L	1.54	1.23	1.72	3.74	2.52	1.48	1.53
Phosphorus (total, by ICPMS/ICPOES)	µg/L	<50	<50	<50	<50	<50	<50	324
Potassium (total)	µg/L	6710	13000	14700	11800	10300	6570	6750
Selenium (total)	µg/L	5.06	5.91	4.18	6.54	2.89	3.69	3.64
Silicon (total, as Si)	µg/L	13300	12400	13500	11400	13100	9800	10400
Silver (total)	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Sodium (total)	mg/L	17.4	28.0	30.0	34.6	29.1	14.6	15.2
Strontium (total)	µg/L	1400	1830	1560	1530	1330	1630	1610
Sulphur (total)	µg/L	129000	89300	84900	87700	72400	64600	65900
Tellurium (total)	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Thallium (total)	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Thorium (total)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tin (total)	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Titanium (total)	µg/L	<5.0	15.2	<5.0	6.8	8.0	13.2	5.3
Tungsten (total)	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Uranium (total)	µg/L	5.63	11.2	10.8	11.0	8.92	**29.8**	**29.8**
Vanadium (total)	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Zinc (total)	µg/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0

Analyte	Unit	MW19-1AR 24-Feb-22 22B3252-02	MW19-2A 22-Dec-20 20L2625-02	MW19-2A 03-Feb-21 21B0566-06	MW19-2A 29-Nov-21 21L0144-04	MW19-2A 24-Feb-22 22B3252-06	MW19-3A 22-Dec-20 20L2625-03	MW19-3A 22-Dec-20 20L2625-07 Duplicate
Zirconium (total)	µg/L	<0.10	0.11	0.19	0.27	0.26	<0.10	<0.10

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	MW19-3A 03-Feb-21 21B0566-04	MW19-3A 03-Feb-21 21B0566-07 Duplicate	MW19-3A 29-Nov-21 21L0144-02	MW19-3A 24-Feb-22 22B3252-04	MW19-3A 24-Feb-22 22B3252-07 Duplicate	MW20-1B 22-Dec-20 20L2625-04	MW20-1B 03-Feb-21 21B0566-01
Lab Results								
Anions and Cations in meq/L unit								
Aluminum (meq/L) (calculated)	meq/L	<0.00056		<0.00056	0.00267	0.00137	<0.00056	<0.00056
Barium (meq/L) (calculated)	meq/L	0.000814		0.000828	0.000821	0.000791	0.000782	0.000661
Boron (meq/L) (calculated)	meq/L	<0.0139		<0.0139	<0.0139	<0.0139	<0.0139	<0.0139
Calcium (meq/L) (calculated)	meq/L	8.88		9.18	8.73	8.93	3.9	4.06
Calcium (total, meq/L) (calculated)	meq/L	8.83	9.03	10.2	9.18	9.03	4.29	4.12
Chloride (meq/L) (calculated)	meq/L	0.621		0.638	0.629	0.646	0.111	0.0474
Chromium (meq/L) (calculated)	meq/L	<0.000029		<0.000029	<0.000029	<0.000029	<0.000029	<0.000029
Copper (meq/L) (calculated)	meq/L	0.0000957		0.0000664	0.0000743	0.0000711	0.000024	<0.000013
Lead (meq/L) (calculated)	meq/L	<0.0000019		<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Lithium (meq/L) (calculated)	meq/L	0.000761		0.000767	0.000718	0.000715	0.000885	0.000916
Magnesium (meq/L) (calculated)	meq/L	1.59		1.52	1.58	1.6	1.77	1.97
Magnesium (total, meq/L) (calculated)	meq/L	1.61	1.56	1.64	1.49	1.46	1.78	1.97
Potassium (meq/L) (calculated)	meq/L	0.188		0.186	0.171	0.173	0.119	0.137
Potassium (total, meq/L) (calculated)	meq/L	0.192	0.189	0.199	0.159	0.155	0.122	0.138
Sodium (meq/L) (calculated)	meq/L	0.648		0.574	0.518	0.526	0.831	0.848
Sodium (total, meq/L) (calculated)	meq/L	0.670	0.653	0.618	0.539	0.522	0.874	0.857
Strontium (meq/L) (calculated)	meq/L	0.0310		0.0306	0.0288	0.0288	0.0210	0.0192
Sulfate (meq/L) (calculated)	meq/L	3.6		3.75	3.69	3.66	2.6	2.44
Zinc (meq/L) (calculated)	meq/L	<0.00012		<0.00012	<0.00012	<0.00012	<0.00012	<0.00012
Dissolved Metals								
Aluminum (dissolved)	µg/L	<5.0		<5.0	24.0	12.3	<5.0	<5.0
Antimony (dissolved)	µg/L	<0.20		<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic (dissolved)	µg/L	<0.50		0.50	0.50	0.56	1.50	1.67
Barium (dissolved)	µg/L	55.9		56.9	56.4	54.3	53.7	45.4
Beryllium (dissolved)	µg/L	<0.10		<0.10	<0.10	<0.10	<0.10	<0.10
Bismuth (dissolved)	µg/L	<0.10		<0.10	<0.10	<0.10	<0.10	<0.10
Boron (dissolved)	µg/L	<50.0		<50.0	<50.0	<50.0	<50.0	<50.0
Cadmium (dissolved)	µg/L	0.044		0.044	0.034	0.043	0.014	0.011

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	MW19-3A 03-Feb-21 21B0566-04	MW19-3A 03-Feb-21 21B0566-07 Duplicate	MW19-3A 29-Nov-21 21L0144-02	MW19-3A 24-Feb-22 22B3252-04	MW19-3A 24-Feb-22 22B3252-07 Duplicate	MW20-1B 22-Dec-20 20L2625-04	MW20-1B 03-Feb-21 21B0566-01
Calcium (dissolved)	mg/L	178		184	175	179	78.2	81.4
Chromium (dissolved)	µg/L	<0.50		<0.50	<0.50	<0.50	<0.50	<0.50
Cobalt (dissolved)	µg/L	<0.10		0.10	0.10	0.10	0.16	0.23
Copper (dissolved)	µg/L	3.04		2.11	2.36	2.26	0.76	<0.40
Hardness, Total (dissolved as CaCO3)	mg/L	523		537	518	526	284	302
Iron (dissolved)	µg/L	<10		<10	<10	<10	<10	23
Lead (dissolved)	µg/L	<0.20		<0.20	<0.20	<0.20	<0.20	<0.20
Lithium (dissolved)	µg/L	5.28		5.32	4.98	4.96	6.14	6.36
Magnesium (dissolved)	mg/L	19.3		18.5	19.2	19.4	21.5	23.9
Manganese (dissolved)	µg/L	0.96		1.36	1.61	1.76	71.8	115
Mercury (dissolved)	µg/L	<0.010		<0.010	<0.010	<0.010	<0.010	<0.010
Molybdenum (dissolved)	µg/L	1.38		1.49	1.53	1.50	6.51	5.92
Nickel (dissolved)	µg/L	1.66		1.88	1.54	1.52	1.11	1.14
Phosphorus (dissolved, by ICPMS/ICPOES)	µg/L	<50		<50	<50	<50	<50	<50
Phosphorus (dissolved, APHA 4500-P)	µg/L	8.9		23.6	10.8	10.9	27.1	23.8
Potassium (dissolved)	µg/L	7340		7280	6700	6760	4650	5360
Selenium (dissolved)	µg/L	3.49		3.35	3.05	3.09	0.72	<0.50
Silicon (dissolved, as Si)	µg/L	10500		8600	9500	10000	9600	11200
Silver (dissolved)	µg/L	<0.050		<0.050	<0.050	<0.050	<0.050	<0.050
Sodium (dissolved)	mg/L	14.9		13.2	11.9	12.1	19.1	19.5
Strontium (dissolved)	µg/L	1360		1340	1260	1260	920	840
Sulphur (dissolved)	µg/L	61500		62300	65300	67100	47500	40700
Tellurium (dissolved)	µg/L	<0.50		<0.50	<0.50	<0.50	<0.50	<0.50
Thallium (dissolved)	µg/L	<0.020		<0.020	<0.020	<0.020	<0.020	<0.020
Thorium (dissolved)	µg/L	<0.10		<0.10	<0.10	<0.10	<0.10	<0.10
Tin (dissolved)	µg/L	0.22		<0.20	<0.20	<0.20	0.24	<0.20
Titanium (dissolved)	µg/L	<5.0		<5.0	<5.0	<5.0	<5.0	<5.0
Tungsten (dissolved)	µg/L	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0
Uranium (dissolved)	µg/L	**28.2**		**35.4**	**33.6**	**34.0**	3.04	2.81
Vanadium (dissolved)	µg/L	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0
Zinc (dissolved)	µg/L	<4.0		<4.0	<4.0	<4.0	<4.0	<4.0

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	MW19-3A 03-Feb-21 21B0566-04	MW19-3A 03-Feb-21 21B0566-07 Duplicate	MW19-3A 29-Nov-21 21L0144-02	MW19-3A 24-Feb-22 22B3252-04	MW19-3A 24-Feb-22 22B3252-07 Duplicate	MW20-1B 22-Dec-20 20L2625-04	MW20-1B 03-Feb-21 21B0566-01
Zirconium (dissolved)	µg/L	<0.10		<0.10	<0.10	<0.10	<0.10	<0.10
General and Inorganic Parameters								
Alkalinity (bicarbonate, as CaCO3)	mg/L	351		363	336	348	243	241
Alkalinity (carbonate, as CaCO3)	mg/L	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity (hydroxide, as CaCO3)	mg/L	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity (phenolphthalein, as CaCO3)	mg/L	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity (total, as CaCO3)	mg/L	351		363	336	348	243	241
Ammonia (total, as N)	µg/L	<50		<50	<50	<50	97	112
Un-ionized ammonia (as N)	µg/L	<1						3
Chloride ion	mg/L	22.0		22.6	22.3	22.9	3.94	1.68
Nitrate (as N)	mg/L	9.60		7.21	8.83	9.12	0.473	0.050
Nitrate + Nitrite (as N) (calculated)	mg/L	9.60		7.21	8.83	9.12	0.473	0.050
Nitrite (as N)	µg/L	<10		<10	<10	<10	<10	<10
Dissolved kjeldahl nitrogen	µg/L	300		298	284	177	162	148
Sulphate	mg/L	173		180	177	176	125	117
Total organic carbon	mg/L	2.54		2.39	2.70	2.67	1.00	0.72
Total suspended solids	mg/L	<2.0		<2.0	2.4	<2.0	3.2	21.4
Radiological								
delta-2-H	per mil	-130.3		-131				-136.9
delta-18-O	per mil	-16.7		-17.04				-17.81
Total Metals								
Aluminum (total)	µg/L	5.7	5.4	6.5	14.9	5.3	56.0	172
Antimony (total)	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic (total)	µg/L	0.51	0.51	0.54	<0.50	<0.50	1.64	1.70
Barium (total)	µg/L	56.5	55.4	61.3	54.9	53.4	56.7	48.0
Beryllium (total)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bismuth (total)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Boron (total)	µg/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	MW19-3A 03-Feb-21 21B0566-04	MW19-3A 03-Feb-21 21B0566-07 Duplicate	MW19-3A 29-Nov-21 21L0144-02	MW19-3A 24-Feb-22 22B3252-04	MW19-3A 24-Feb-22 22B3252-07 Duplicate	MW20-1B 22-Dec-20 20L2625-04	MW20-1B 03-Feb-21 21B0566-01
Cadmium (total)	µg/L	0.041	0.045	0.052	0.033	0.033	0.020	0.014
Calcium (total)	mg/L	177	181	204	184	181	85.9	82.6
Chromium (total)	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.54
Cobalt (total)	µg/L	<0.10	<0.10	0.11	0.16	<0.10	0.22	0.36
Copper (total)	µg/L	5.57	5.42	2.49	2.78	2.26	0.54	<0.80
Hardness, Total (total as CaCO3)	mg/L		530					
Iron (total)	µg/L	15	16	13	38	13	98	349
Lead (total)	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.27
Lithium (total)	µg/L	5.31	5.42	5.58	5.13	5.06	6.39	6.49
Magnesium (total)	mg/L	19.6	19.0	19.9	18.1	17.7	21.6	23.9
Manganese (total)	µg/L	1.62	1.53	2.54	3.48	1.68	81.5	126
Mercury (total)	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Molybdenum (total)	µg/L	1.44	1.39	1.52	1.61	1.51	6.46	5.42
Nickel (total)	µg/L	1.96	1.64	1.84	1.82	1.41	1.37	1.49
Phosphorus (total, by ICPMS/ICPOES)	µg/L	<50	<50	<50	<50	<50	<50	57
Potassium (total)	µg/L	7500	7370	7780	6200	6050	4780	5410
Selenium (total)	µg/L	3.46	3.43	3.51	3.05	2.61	0.74	<0.50
Silicon (total, as Si)	µg/L	10800	10300	9100	9500	9100	10000	11400
Silver (total)	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Sodium (total)	mg/L	15.4	15.0	14.2	12.4	12.0	20.1	19.7
Strontium (total)	µg/L	1370	1350	1420	1330	1300	941	816
Sulphur (total)	µg/L	60400	58900	67300	61800	59400	47900	40700
Tellurium (total)	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Thallium (total)	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Thorium (total)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tin (total)	µg/L	0.23	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Titanium (total)	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	14.8	10.1
Tungsten (total)	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Uranium (total)	µg/L	**27.5**	**27.6**	**37.9**	**34.0**	**33.7**	3.03	2.84
Vanadium (total)	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Zinc (total)	µg/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0

Analyte	Unit	MW19-3A 03-Feb-21 21B0566-04	MW19-3A 03-Feb-21 21B0566-07 Duplicate	MW19-3A 29-Nov-21 21L0144-02	MW19-3A 24-Feb-22 22B3252-04	MW19-3A 24-Feb-22 22B3252-07 Duplicate	MW20-1B 22-Dec-20 20L2625-04	MW20-1B 03-Feb-21 21B0566-01
Zirconium (total)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.11	<0.10

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	MW20-1B 29-Nov-21 21L0144-03	MW20-1B 24-Feb-22 22B3252-01	MW20-2B 22-Dec-20 20L2625-05	MW20-2B 03-Feb-21 21B0566-03	MW20-2B 29-Nov-21 21L0144-06	MW20-2B 24-Feb-22 22B3252-03	MW20-4A 23-Dec-20 20L2625-06
Lab Results								
Anions and Cations in meq/L unit								
Aluminum (meq/L) (calculated)	meq/L	<0.00056	0.00098	<0.00056	<0.00056	<0.00056	0.00159	<0.00056
Barium (meq/L) (calculated)	meq/L	0.000638	0.000606	0.000961	0.000828	0.000811	0.000839	0.00167
Boron (meq/L) (calculated)	meq/L	<0.0139	<0.0139	<0.0139	<0.0139	<0.0139	<0.0139	<0.0139
Calcium (meq/L) (calculated)	meq/L	5.49	4.78	6.29	6.94	7.14	7.53	6.24
Calcium (total, meq/L) (calculated)	meq/L	6.04	5.14	6.94	6.84	8.23	7.44	6.69
Chloride (meq/L) (calculated)	meq/L	0.274	0.235	0.691	0.739	0.784	0.770	1.89
Chromium (meq/L) (calculated)	meq/L	<0.000029	<0.000029	<0.000029	<0.000029	<0.000029	<0.000029	0.0000894
Copper (meq/L) (calculated)	meq/L	<0.000013	0.000015	<0.000013	<0.000013	<0.000013	<0.000013	0.000031
Lead (meq/L) (calculated)	meq/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Lithium (meq/L) (calculated)	meq/L	0.000899	0.000807	0.00174	0.00170	0.00169	0.00179	0.00329
Magnesium (meq/L) (calculated)	meq/L	1.95	1.84	1.84	1.95	1.97	2.01	4.22
Magnesium (total, meq/L) (calculated)	meq/L	2.19	1.86	1.84	1.98	2.32	1.94	4.25
Potassium (meq/L) (calculated)	meq/L	0.141	0.131	0.185	0.214	0.200	0.212	0.169
Potassium (total, meq/L) (calculated)	meq/L	0.163	0.121	0.187	0.217	0.241	0.183	0.173
Sodium (meq/L) (calculated)	meq/L	0.822	0.866	0.957	1.03	1.04	1.05	1.36
Sodium (total, meq/L) (calculated)	meq/L	0.922	0.909	0.996	1.04	1.21	1.01	1.44
Strontium (meq/L) (calculated)	meq/L	0.0203	0.0189	0.0331	0.0299	0.0299	0.0290	0.0546
Sulfate (meq/L) (calculated)	meq/L	3.56	3.44	4.64	4.58	4.75	4.58	2.87
Zinc (meq/L) (calculated)	meq/L	<0.00012	<0.00012	0.00014	<0.00012	<0.00012	<0.00012	0.000636
Dissolved Metals								
Aluminum (dissolved)	µg/L	<5.0	8.8	<5.0	<5.0	<5.0	14.3	<5.0
Antimony (dissolved)	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic (dissolved)	µg/L	1.33	1.46	2.12	1.88	1.23	1.40	<0.50
Barium (dissolved)	µg/L	43.8	41.6	66.0	56.9	55.7	57.6	115
Beryllium (dissolved)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bismuth (dissolved)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Boron (dissolved)	µg/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Cadmium (dissolved)	µg/L	<0.010	0.014	<0.010	<0.010	<0.010	<0.010	0.112

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	MW20-1B 29-Nov-21 21L0144-03	MW20-1B 24-Feb-22 22B3252-01	MW20-2B 22-Dec-20 20L2625-05	MW20-2B 03-Feb-21 21B0566-03	MW20-2B 29-Nov-21 21L0144-06	MW20-2B 24-Feb-22 22B3252-03	MW20-4A 23-Dec-20 20L2625-06
Calcium (dissolved)	mg/L	110	95.8	126	139	143	151	125
Chromium (dissolved)	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.55
Cobalt (dissolved)	µg/L	0.11	<0.10	0.69	0.62	0.39	0.34	<0.10
Copper (dissolved)	µg/L	<0.40	0.48	<0.40	<0.40	<0.40	<0.40	0.99
Hardness, Total (dissolved as CaCO3)	mg/L	373	332	408	446	457	478	523
Iron (dissolved)	µg/L	<10	<10	668	881	1170	1300	<10
Lead (dissolved)	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Lithium (dissolved)	µg/L	6.24	5.60	**12.1**	**11.8**	**11.7**	**12.4**	**22.8**
Magnesium (dissolved)	mg/L	23.7	22.4	22.3	23.7	23.9	24.4	51.3
Manganese (dissolved)	µg/L	65.1	44.5	86.0	83.8	85.1	83.6	5.02
Mercury (dissolved)	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Molybdenum (dissolved)	µg/L	4.89	5.79	4.55	4.12	3.75	4.15	1.06
Nickel (dissolved)	µg/L	1.01	0.78	1.58	1.48	0.82	0.75	1.12
Phosphorus (dissolved, by ICPMS/ICPOES)	µg/L	<50	<50	<50	<50	<50	<50	<50
Phosphorus (dissolved, APHA 4500-P)	µg/L	37.3	31.6	10.3	10.2	20.6	11.2	6.7
Potassium (dissolved)	µg/L	5520	5110	7230	8350	7820	8300	6590
Selenium (dissolved)	µg/L	1.38	1.40	<0.50	<0.50	<0.50	<0.50	5.30
Silicon (dissolved, as Si)	µg/L	9200	11200	10900	12100	9600	12700	11100
Silver (dissolved)	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Sodium (dissolved)	mg/L	18.9	19.9	22.0	23.7	23.8	24.1	31.3
Strontium (dissolved)	µg/L	888	828	1450	1310	1310	1270	2390
Sulphur (dissolved)	µg/L	53000	56000	79200	74700	78300	87100	52000
Tellurium (dissolved)	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Thallium (dissolved)	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Thorium (dissolved)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tin (dissolved)	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Titanium (dissolved)	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Tungsten (dissolved)	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Uranium (dissolved)	µg/L	2.67	2.20	3.17	3.07	2.83	3.01	13.6
Vanadium (dissolved)	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Zinc (dissolved)	µg/L	<4.0	<4.0	4.6	<4.0	<4.0	<4.0	20.8

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	MW20-1B 29-Nov-21 21L0144-03	MW20-1B 24-Feb-22 22B3252-01	MW20-2B 22-Dec-20 20L2625-05	MW20-2B 03-Feb-21 21B0566-03	MW20-2B 29-Nov-21 21L0144-06	MW20-2B 24-Feb-22 22B3252-03	MW20-4A 23-Dec-20 20L2625-06
Zirconium (dissolved)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
General and Inorganic Parameters								
Alkalinity (bicarbonate, as CaCO3)	mg/L	261	233	262	246	254	271	431
Alkalinity (carbonate, as CaCO3)	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity (hydroxide, as CaCO3)	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity (phenolphthalein, as CaCO3)	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity (total, as CaCO3)	mg/L	261	233	262	246	254	271	431
Ammonia (total, as N)	µg/L	69	<50	63	<50	51	<50	<50
Un-ionized ammonia (as N)	µg/L				<1			
Chloride ion	mg/L	9.72	8.34	24.5	26.2	27.8	27.3	67.1
Nitrate (as N)	mg/L	1.77	1.70	0.025	<0.010	<0.010	<0.010	6.57
Nitrate + Nitrite (as N) (calculated)	mg/L	1.77	1.70	0.025	<0.014	<0.014	<0.014	6.57
Nitrite (as N)	µg/L	<10	<10	<10	<10	<10	<10	<10
Dissolved kjeldahl nitrogen	µg/L	141	224	128	110	123	59	211
Sulphate	mg/L	171	165	223	220	228	220	138
Total organic carbon	mg/L	1.49	1.93	0.93	1.10	1.19	1.44	2.28
Total suspended solids	mg/L	13.0	3.0	<2.0	2.8	2.8	4.6	15.4
Radiological								
delta-2-H	per mil	-136.6			-135	-135		
delta-18-O	per mil	-17.94			-17.17	-17.5		
Total Metals								
Aluminum (total)	µg/L	214	68.3	5.9	<5.0	11.5	10.2	217
Antimony (total)	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic (total)	µg/L	1.51	1.35	2.27	2.05	1.84	1.15	<0.50
Barium (total)	µg/L	50.7	43.0	70.7	57.1	63.6	54.5	123
Beryllium (total)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bismuth (total)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Boron (total)	µg/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	MW20-1B 29-Nov-21 21L0144-03	MW20-1B 24-Feb-22 22B3252-01	MW20-2B 22-Dec-20 20L2625-05	MW20-2B 03-Feb-21 21B0566-03	MW20-2B 29-Nov-21 21L0144-06	MW20-2B 24-Feb-22 22B3252-03	MW20-4A 23-Dec-20 20L2625-06
Cadmium (total)	µg/L	0.012	<0.010	0.011	<0.010	<0.010	<0.010	0.105
Calcium (total)	mg/L	121	103	139	137	165	149	134
Chromium (total)	µg/L	0.85	<0.50	1.11	<0.50	<0.50	<0.50	2.04
Cobalt (total)	µg/L	0.28	0.13	0.73	0.62	0.51	0.32	0.50
Copper (total)	µg/L	0.88	0.75	<0.40	<0.40	<0.40	<0.40	2.45
Hardness, Total (total as CaCO3)	mg/L							
Iron (total)	µg/L	350	147	699	890	1780	1370	362
Lead (total)	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.73
Lithium (total)	µg/L	6.16	5.58	**12.4**	**11.8**	**12.7**	**11.8**	**23.1**
Magnesium (total)	mg/L	26.6	22.6	22.3	24.1	28.2	23.6	51.7
Manganese (total)	µg/L	82.8	58.1	87.9	83.0	101	82.7	16.3
Mercury (total)	µg/L	<0.010	<0.010	<0.010	<0.010	<0.040	<0.010	<0.010
Molybdenum (total)	µg/L	5.36	5.66	4.89	4.11	4.43	3.98	0.95
Nickel (total)	µg/L	1.45	0.92	1.87	1.80	0.83	0.79	1.67
Phosphorus (total, by ICPMS/ICPOES)	µg/L	<50	<50	<50	<50	<50	<50	56
Potassium (total)	µg/L	6390	4730	7310	8470	9430	7150	6780
Selenium (total)	µg/L	1.98	1.22	<0.50	<0.50	<0.50	<0.50	5.00
Silicon (total, as Si)	µg/L	10900	10600	11300	12400	11600	11400	11600
Silver (total)	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Sodium (total)	mg/L	21.2	20.9	22.9	23.9	27.9	23.3	33.1
Strontium (total)	µg/L	998	893	1490	1300	1470	1270	2430
Sulphur (total)	µg/L	64500	52700	82000	75400	89900	73200	51800
Tellurium (total)	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Thallium (total)	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Thorium (total)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tin (total)	µg/L	<0.20	<0.20	0.31	<0.20	<0.20	<0.20	<0.20
Titanium (total)	µg/L	13.8	<5.0	7.9	<5.0	<5.0	<5.0	18.8
Tungsten (total)	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Uranium (total)	µg/L	2.75	2.23	3.19	3.03	3.15	2.82	13.4
Vanadium (total)	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Zinc (total)	µg/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	36.1

Analyte	Unit	MW20-1B 29-Nov-21 21L0144-03	MW20-1B 24-Feb-22 22B3252-01	MW20-2B 22-Dec-20 20L2625-05	MW20-2B 03-Feb-21 21B0566-03	MW20-2B 29-Nov-21 21L0144-06	MW20-2B 24-Feb-22 22B3252-03	MW20-4A 23-Dec-20 20L2625-06
Zirconium (total)	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.19

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	MW20-4A 03-Feb-21 21B0566-05	MW20-4A 29-Nov-21 21L0144-01	MW20-4A 24-Feb-22 22B3252-05
Lab Results				
Anions and Cations in meq/L unit				
Aluminum (meq/L) (calculated)	meq/L	<0.00056	<0.00056	0.00139
Barium (meq/L) (calculated)	meq/L	0.00151	0.00170	0.00178
Boron (meq/L) (calculated)	meq/L	<0.0139	<0.0139	<0.0139
Calcium (meq/L) (calculated)	meq/L	7.04	7.58	7.34
Calcium (total, meq/L) (calculated)	meq/L	7.14	7.73	7.48
Chloride (meq/L) (calculated)	meq/L	2.18	2.91	2.65
Chromium (meq/L) (calculated)	meq/L	0.0000669	<0.000029	<0.000029
Copper (meq/L) (calculated)	meq/L	0.000030	0.000030	0.0000343
Lead (meq/L) (calculated)	meq/L	<0.0000019	<0.0000019	<0.0000019
Lithium (meq/L) (calculated)	meq/L	0.00323	0.00333	0.00357
Magnesium (meq/L) (calculated)	meq/L	4.64	4.95	4.66
Magnesium (total, meq/L) (calculated)	meq/L	4.81	5.28	4.75
Potassium (meq/L) (calculated)	meq/L	0.196	0.185	0.199
Potassium (total, meq/L) (calculated)	meq/L	0.201	0.203	0.182
Sodium (meq/L) (calculated)	meq/L	1.47	1.56	1.53
Sodium (total, meq/L) (calculated)	meq/L	1.54	1.65	1.55
Strontium (meq/L) (calculated)	meq/L	0.0509	0.0507	0.0484
Sulfate (meq/L) (calculated)	meq/L	2.71	2.5	2.58
Zinc (meq/L) (calculated)	meq/L	<0.00012	<0.00012	<0.00012
Dissolved Metals				
Aluminum (dissolved)	µg/L	<5.0	<5.0	12.5
Antimony (dissolved)	µg/L	<0.20	<0.20	<0.20
Arsenic (dissolved)	µg/L	<0.50	<0.50	<0.50
Barium (dissolved)	µg/L	104	117	122
Beryllium (dissolved)	µg/L	<0.10	<0.10	<0.10
Bismuth (dissolved)	µg/L	<0.10	<0.10	<0.10
Boron (dissolved)	µg/L	<50.0	<50.0	<50.0
Cadmium (dissolved)	µg/L	0.012	<0.010	0.013

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	MW20-4A 03-Feb-21 21B0566-05	MW20-4A 29-Nov-21 21L0144-01	MW20-4A 24-Feb-22 22B3252-05
Calcium (dissolved)	mg/L	141	152	147
Chromium (dissolved)	µg/L	1.16	<0.50	<0.50
Cobalt (dissolved)	µg/L	<0.10	<0.10	<0.10
Copper (dissolved)	µg/L	0.95	0.96	1.09
Hardness, Total (dissolved as CaCO3)	mg/L	585	627	601
Iron (dissolved)	µg/L	<10	<10	<10
Lead (dissolved)	µg/L	<0.20	<0.20	<0.20
Lithium (dissolved)	µg/L	**22.4**	**23.1**	**24.8**
Magnesium (dissolved)	mg/L	56.4	60.1	56.6
Manganese (dissolved)	µg/L	<0.20	1.05	6.88
Mercury (dissolved)	µg/L	<0.010	<0.010	<0.010
Molybdenum (dissolved)	µg/L	0.94	0.97	1.05
Nickel (dissolved)	µg/L	1.00	0.96	1.30
Phosphorus (dissolved, by ICPMS/ICPOES)	µg/L	<50	<50	<50
Phosphorus (dissolved, APHA 4500-P)	µg/L	<5.0	20.8	<5.0
Potassium (dissolved)	µg/L	7660	7250	7790
Selenium (dissolved)	µg/L	5.27	**10.8**	5.74
Silicon (dissolved, as Si)	µg/L	11900	9000	11500
Silver (dissolved)	µg/L	<0.050	<0.050	<0.050
Sodium (dissolved)	mg/L	33.9	35.8	35.1
Strontium (dissolved)	µg/L	2230	2220	2120
Sulphur (dissolved)	µg/L	45700	41800	48400
Tellurium (dissolved)	µg/L	<0.50	<0.50	<0.50
Thallium (dissolved)	µg/L	<0.020	<0.020	<0.020
Thorium (dissolved)	µg/L	<0.10	<0.10	<0.10
Tin (dissolved)	µg/L	<0.20	0.70	<0.20
Titanium (dissolved)	µg/L	<5.0	<5.0	<5.0
Tungsten (dissolved)	µg/L	<1.0	<1.0	<1.0
Uranium (dissolved)	µg/L	13.4	14.6	15.7
Vanadium (dissolved)	µg/L	<1.0	<1.0	<1.0
Zinc (dissolved)	µg/L	<4.0	<4.0	<4.0

Analyte	Unit	MW20-4A 03-Feb-21 21B0566-05	MW20-4A 29-Nov-21 21L0144-01	MW20-4A 24-Feb-22 22B3252-05
Zirconium (dissolved)	µg/L	<0.10	<0.10	<0.10
General and Inorganic Parameters				
Alkalinity (bicarbonate, as CaCO3)	mg/L	415	465	439
Alkalinity (carbonate, as CaCO3)	mg/L	<1.0	<1.0	<1.0
Alkalinity (hydroxide, as CaCO3)	mg/L	<1.0	<1.0	<1.0
Alkalinity (phenolphthalein, as CaCO3)	mg/L	<1.0	<1.0	<1.0
Alkalinity (total, as CaCO3)	mg/L	415	465	439
Ammonia (total, as N)	µg/L	<50	<50	<50
Un-ionized ammonia (as N)	µg/L	<1		
Chloride ion	mg/L	77.4	103	94.1
Nitrate (as N)	mg/L	5.21	2.40	1.21
Nitrate + Nitrite (as N) (calculated)	mg/L	5.21	2.40	1.21
Nitrite (as N)	µg/L	<10	<10	<10
Dissolved kjeldahl nitrogen	µg/L	571	146	120
Sulphate	mg/L	130	120	124
Total organic carbon	mg/L	1.85	1.93	2.32
Total suspended solids	mg/L	<2.0	<2.0	<2.0
Radiological				
delta-2-H	per mil	-137.5	-137.7	
delta-18-O	per mil	-17.73	-17.98	
Total Metals				
Aluminum (total)	µg/L	<5.0	16.7	21.0
Antimony (total)	µg/L	<0.20	<0.20	<0.20
Arsenic (total)	µg/L	<0.50	<0.50	<0.50
Barium (total)	µg/L	105	122	121
Beryllium (total)	µg/L	<0.10	<0.10	<0.10
Bismuth (total)	µg/L	<0.10	<0.10	<0.10
Boron (total)	µg/L	<50.0	<50.0	<50.0

Hullcar Groundwater Monitoring

Water Quality Results

Analyte	Unit	MW20-4A 03-Feb-21 21B0566-05	MW20-4A 29-Nov-21 21L0144-01	MW20-4A 24-Feb-22 22B3252-05
Cadmium (total)	µg/L	0.013	0.017	0.011
Calcium (total)	mg/L	143	155	150
Chromium (total)	µg/L	1.19	0.89	<0.50
Cobalt (total)	µg/L	<0.10	<0.10	<0.10
Copper (total)	µg/L	<1.00	1.25	1.26
Hardness, Total (total as CaCO3)	mg/L			
Iron (total)	µg/L	<10	42	14
Lead (total)	µg/L	<0.20	<0.20	<0.20
Lithium (total)	µg/L	**22.7**	**23.0**	**24.3**
Magnesium (total)	mg/L	58.4	64.2	57.7
Manganese (total)	µg/L	<0.20	1.20	5.74
Mercury (total)	µg/L	<0.010	<0.010	<0.010
Molybdenum (total)	µg/L	0.92	1.11	1.15
Nickel (total)	µg/L	1.02	1.28	1.43
Phosphorus (total, by ICPMS/ICPOES)	µg/L	<50	<50	<50
Potassium (total)	µg/L	7840	7930	7110
Selenium (total)	µg/L	6.08	**10.8**	4.77
Silicon (total, as Si)	µg/L	12200	10100	10800
Silver (total)	µg/L	<0.050	<0.050	<0.050
Sodium (total)	mg/L	35.5	38.0	35.7
Strontium (total)	µg/L	2230	2320	2240
Sulphur (total)	µg/L	48500	41600	42700
Tellurium (total)	µg/L	<0.50	<0.50	<0.50
Thallium (total)	µg/L	<0.020	<0.020	<0.020
Thorium (total)	µg/L	<0.10	<0.10	<0.10
Tin (total)	µg/L	<0.20	1.39	<0.20
Titanium (total)	µg/L	<5.0	<5.0	<5.0
Tungsten (total)	µg/L	<1.0	<1.0	<1.0
Uranium (total)	µg/L	13.5	15.1	15.4
Vanadium (total)	µg/L	<1.0	<1.0	<1.0
Zinc (total)	µg/L	<4.0	<4.0	8.8

Analyte	Unit	MW20-4A 03-Feb-21 21B0566-05	MW20-4A 29-Nov-21 21L0144-01	MW20-4A 24-Feb-22 22B3252-05
Zirconium (total)	µg/L	<0.10	<0.10	<0.10

Sampling Location	Guideline	Exceedances
MW19-1AR	CSR DW	Lithium (total), Nitrate (as N), Nitrate + Nitrite (as N) (calculated)
MW19-2A	CSR IW	Uranium (dissolved)
	CSR DW	Lithium (dissolved), Lithium (total), Nitrate (as N), Nitrate + Nitrite (as N) (calculated)
MW19-3A	CSR IW	Uranium (dissolved)
	CSR DW	Uranium (dissolved), Uranium (total)
MW20-2B	CSR DW	Lithium (dissolved), Lithium (total)
MW20-4A	CSR IW	Chloride ion, Uranium (dissolved)
	CSR DW	Lithium (dissolved), Lithium (total), Selenium (dissolved), Selenium (total)

Hullcar Groundwater Monitoring

Water Quality Results

	MW19-1AR	MW19-2A	MW19-3A	MW20-2B	MW20-4A
Lab Results					
Dissolved Metals					
Lithium (dissolved)		X		X	X
Selenium (dissolved)					X
Uranium (dissolved)		X	X		X
General and Inorganic Parameters					
Chloride ion					X
Nitrate (as N)	X	X			
Nitrate + Nitrite (as N) (calculated)	X	X			
Total Metals					
Lithium (total)	X	X		X	X
Selenium (total)					X
Uranium (total)			X		

Guideline Notes for Reports for 21-124-01PG (20-135-01PG) Hullcar Groundwater Monitoring Water Quality Results

1. Notes for BC CSR Generic Numerical Water Standards for Freshwater Aquatic Life (CSR AW)
General Notes:
BC Contaminated Sites Regulation, Generic Numerical Water Standards, Schedule 3.2; includes amendments up to B.C. Reg. 13/2019, January 24, 2019.
Aquatic life standards assume minimum 1:10 dilution available.
Standards for all organic substances are for total substance concentrations. Any water sample to be analyzed for organic substances should not be filtered.
Standards for surface water samples to be analyzed for heavy metals, metalloids and inorganic ions are total substance concentrations. In addition, it is recommended that surface water samples being analyzed for heavy metals, metalloids and inorganic ions should also be analyzed for dissolved substance concentrations.
Standards for groundwater samples for heavy metals, metalloids and inorganic ions are for dissolved substance concentrations. In addition, it is recommended that groundwater samples being analyzed for heavy metals, metalloids and inorganic ions should also be analyzed for total substance concentrations. / The standard to protect freshwater aquatic life was used when separate aquatic life standards are provided for freshwater aquatic life and marine aquatic life.

Note 1.1 for Cadmium (dissolved):
The standard for cadmium is as follows:
0.5 µg/L @ H < 30
1.5 µg/L @ H 30 - < 90
2.5 µg/L @ H 90 - < 150
3.5 µg/L @ H 150 - < 210
4 µg/L @ H ≥ 210
Where H means water hardness in mg/L as $CaCO_3$.

Note 1.2 for Chromium (dissolved):
Analytical results for chromium (all species) in water may be used to demonstrate compliance with the standards. Where the standards cannot be met based on analytical results for chromium (all species), chromium speciation may be necessary. Standard is 10 µg/L for chromium, hexavalent. Standard is 90 µg/L for chromium, trivalent. The standard of 10 µg/L was used to identify exceedances for dissolved chromium in order to demonstrate compliance with the standards.

Note 1.3 for Copper (dissolved):
The standard for copper is as follows:
20 µg/L @ H < 50
30 µg/L @ H 50 - < 75
40 µg/L @ H 75 - < 100
50 µg/L @ H 100 - < 125
60 µg/L @ H 125 - < 150
70 µg/L @ H 150 - < 175
80 µg/L @ H 175 - < 200
90 µg/L @ H ≥ 200
Where H means water hardness in mg/L as $CaCO_3$.

Note 1.4 for Lead (dissolved):

The standard for lead is as follows:
40 µg/L @ H < 50
50 µg/L @ H 50 - < 100
60 µg/L @ H 100 - < 200
110 µg/L @ H 200 - < 300
160 µg/L @ ≥ 300
Where H means water hardness in mg/L as CaCO3

Note 1.5 for Nickel (dissolved):
The standard for nickel is as follows:
250 µg/L @ H < 60
650 µg/L @ H 60 - < 120
1,100 µg/L @ H 120 - < 180
1,500 µg/L @ H ≥ 180
Where H means water hardness in mg/L as CaCO3.

Note 1.6 for Silver (dissolved):
The standard for silver is:
0.5 µg/L @ H ≤ 100
15 µg/L @ H > 100
Where H means water hardness in mg/L as CaCO3.

Note 1.7 for Zinc (dissolved):
The standard for zinc is as follows:
75 µg/L @ H < 90
150 µg/L @ H = 90 - < 100
900 µg/L @ H = 100 - < 200
1,650 µg/L @ H = 200 - < 300
2,400 µg/L @ H = 300 - < 400
3,150 µg/L @ H = 400 - < 500
If H ≥ 500 then use following formula:
Standard (µg/L) = 10 x [7.5 +{(0.75)(H – 90)}]
Where H means water hardness in mg/L as CaCO3.
There are special ministry approval and data reporting requirements for water hardness values ≥ 500 mg/L as CaCO3.
Reference is Schedule 3.2 and Protocol 10

Note 1.8 for Ammonia (total, as N):
Standard varies with pH and temperature. 10 degrees C is assumed. Consult a director for further advice.
The standard for ammonia, total (as N) is:
1,310 µg/L @ pH ≥ to 8.5
3,700 µg/L @ pH 8.0 - < 8.5
11,300 µg/L @ pH 7.5 - < 8.0
18,500 µg/L @ pH 7.0 - < 7.5
18,400 µg/L @ pH < 7.0

Note 1.9 for Nitrate (as N):
Standard may not protect all amphibians. Consult director for further advice.

Note 1.10 for Nitrate + Nitrite (as N) (calculated):
Standard may not protect all amphibians. Consult director for further advice.

Note 1.11 for Nitrite (as N):

Standard varies with chloride concentration. Consult a director for further advice.
The standard for nitrite (as N) is:
200 µg/L (Cl < 2 mg/L)
400 µg/L (Cl 2 - < 4 mg/L)
600 µg/L (Cl 4 - < 6 mg/L)
800 µg/L (Cl 6 - < 8 mg/L)
1,000 µg/L (Cl 8 - < 10 mg/L)
2,000 µg/L (Cl ≥ 10 mg/L)

Note 1.12 for Sulphate:
The standard for sulfate is:
1280 mg/L @ H ≤ 30
2180 mg/L @ H 31 - 75
3090 mg/L @ H 76 - 180
4290 mg/L @ H > 180
Where H means water hardness in mg/L as CaCO3.

Note 1.13 for Cadmium (total):
The standard for cadmium is as follows:
0.5 µg/L @ H < 30
1.5 µg/L @ H 30 - < 90
2.5 µg/L @ H 90 - < 150
3.5 µg/L @ H 150 - < 210
4 µg/L @ H ≥ 210
Where H means water hardness in mg/L as CaCO3.

Note 1.14 for Chromium (total):
Analytical results for chromium (all species) in water may be used to demonstrate compliance with the standards. Where the standards cannot be met based on analytical results for chromium (all species), chromium speciation may be necessary. Standard is 10 µg/L for chromium, hexavalent. Standard is 90 µg/L for chromium, trivalent. The standard of 10 µg/L was used to identify exceedances for total chromium in order to demonstrate compliance with the standards.

Note 1.15 for Copper (total):
The standard for copper is as follows:
20 µg/L @ H < 50
30 µg/L @ H 50 - < 75
40 µg/L @ H 75 - < 100
50 µg/L @ H 100 - < 125
60 µg/L @ H 125 - < 150
70 µg/L @ H 150 - < 175
80 µg/L @ H 175 - < 200
90 µg/L @ H ≥ 200
Where H means water hardness in mg/L as CaCO3.

Note 1.16 for Lead (total):
The standard for lead is as follows:
40 µg/L @ H < 50
50 µg/L @ H 50 - < 100
60 µg/L @ H 100 - < 200
110 µg/L @ H 200 - < 300
160 µg/L @ ≥ 300
Where H means water hardness in mg/L as CaCO3.

Note 1.17 for Nickel (total):

The standard for nickel is as follows:
250 µg/L @ H < 60
650 µg/L @ H 60 - < 120
1,100 µg/L @ H 120 - < 180
1,500 µg/L @ H ≥ 180
Where H means water hardness in mg/L as CaCO3.

Note 1.18 for Silver (total):

The standard for silver is:
0.5 µg/L @ H ≤ 100
15 µg/L @ H > 100
Where H means water hardness in mg/L as CaCO3.

Note 1.19 for Zinc (total):

The standard for zinc is as follows:
75 µg/L @ H < 90
150 µg/L @ H = 90 - < 100
900 µg/L @ H = 100 - < 200
1,650 µg/L @ H = 200 - < 300
2,400 µg/L @ H = 300 - < 400
3,150 µg/L @ H = 400 - < 500
If H ≥ 500 then use following formula:
Standard (µg/L) = 10 x [7.5 +{(0.75)(H – 90)}]
Where H means water hardness in mg/L as CaCO3.
There are special ministry approval and data reporting requirements for water hardness values ≥ 500 mg/L as CaCO3.
Reference is Schedule 3.2 and Protocol 10.

2. Notes for BC CSR Generic Numerical Water Standards for Irrigation (CSR IW)

General Notes:

BC Contaminated Sites Regulation, Generic Numerical Water Standards, Schedule 3.2; includes amendments up to B.C. Reg. 13/2019, January 24, 2019.
Standards for all organic substances are for total substance concentrations. Any water sample to be analyzed for organic substances should not be filtered.
Standards for surface water samples to be analyzed for heavy metals, metalloids and inorganic ions are total substance concentrations. In addition, it is recommended that surface water samples being analyzed for heavy metals, metalloids and inorganic ions should also be analyzed for dissolved substance concentrations.
Standards for groundwater samples for heavy metals, metalloids and inorganic ions are for dissolved substance concentrations. In addition, it is recommended that groundwater samples being analyzed for heavy metals, metalloids and inorganic ions should also be analyzed for total substance concentrations.
Standards apply to irrigation of all soil types, unless otherwise indicated. / There are several different standards for site-specific factors for some analytes. The most stringent standards were used for this criteria set.

Note 2.1 for Boron (dissolved):

Standard varies depending on crop. This standard is for blackberry crop.

Note 2.2 for Chromium (dissolved):

Analytical results for chromium (all species) in water may be used to demonstrate compliance with the standards. Where the standards cannot be met based on analytical results for chromium (all species), chromium speciation may be necessary. Standard is 8 µg/L for chromium, hexavalent. Standard is 5 µg/L for chromium, trivalent. The standard of 5 µg/L was used to identify exceedances for dissolved chromium in order to demonstrate compliance with the standards.

Note 2.3 for Iron (dissolved):

Standard applies to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as
(a) item A6, A7, A8 or A11
(b) item C1, C2, C3, C4 or C6,
(c) item D2, D3, D5, or D6
(d) item E4, or
(e) item H14.
Standard applies to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as item H11 or H20, but only if the site was used for the purpose or activity in conjunction with or as a result of the site also being used for at least one of the purposes or activities set out above

Note 2.4 for Lithium (dissolved):
Standard to protect all types of crops.

Note 2.5 for Manganese (dissolved):
Standard applies to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as
(a) item B1
(b) item C1, C3 or C4
(c) item D2, D3, D5, or D6
(d) item E4, or
(e) item H3 or H14.
Standard applies to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as item H11 or H20, but only if the site was used for the purpose or activity in conjunction with or as a result of the site also being used for at least one of the purposes or activities set out above

Note 2.6 for Molybdenum (dissolved):
Standard varies with crop, soil drainage and Mo:Cu ratio. Standard is 10 – 30 µg/L. Consult a director for further advice.
The most stringent standard of 10 µg/L has been used.

Note 2.7 for Selenium (dissolved):
Standard varies with type of application; continuous or intermittent. This standard is for continuous applications on crops.

Note 2.8 for Zinc (dissolved):
The standard varies (from 1000 to 5000 µg/L) with soil pH. This standard (which is the most stringent) is for soil pH less than 6.0

Note 2.9 for Chloride ion:
Standard to protect all types of crops.

Note 2.10 for Boron (total):
Standard varies depending on crop. This standard is for blackberry crop.

Note 2.11 for Chromium (total):
Analytical results for chromium (all species) in water may be used to demonstrate compliance with the standards. Where the standards cannot be met based on analytical results for chromium (all species), chromium speciation may be necessary. Standard is 8 µg/L for chromium, hexavalent. Standard is 5 µg/L for chromium, trivalent. The standard of 5 µg/L was used to identify exceedances for total chromium in order to demonstrate compliance with the standards.

Note 2.12 for Iron (total):

Standard applies to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as
(a) item A6, A7, A8 or A11
(b) item C1, C2, C3, C4 or C6,
(c) item D2, D3, D5, or D6
(d) item E4, or
(e) item H14.
Standard applies to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as item H11 or H20, but only if the site was used for the purpose or activity in conjunction with or as a result of the site also being used for at least one of the purposes or activities set out above.

Note 2.13 for Lithium (total):
Standard to protect all types of crops.

Note 2.14 for Manganese (total):
Standard applies to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as
(a) item B1
(b) item C1, C3 or C4
(c) item D2, D3, D5, or D6
(d) item E4, or
(e) item H3 or H14.
Standard applies to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as item H11 or H20, but only if the site was used for the purpose or activity in conjunction with or as a result of the site also being used for at least one of the purposes or activities set out above.

Note 2.15 for Molybdenum (total):
Standard varies with crop, soil drainage and Mo:Cu ratio. Standard is 10 – 30 µg/L. Consult a director for further advice.
The most stringent standard of 10 µg/L has been used.

Note 2.16 for Selenium (total):
Standard varies with type of application; continuous or intermittent. This standard is for continuous applications on crops.

Note 2.17 for Zinc (total):
The standard varies (from 1000 to 5000 µg/L) with soil pH. This standard (which is the most stringent) is for soil pH less than 6.0

3. Notes for BC CSR Generic Numerical Water Standards for Livestock (CSR LW)

General Notes:
BC Contaminated Sites Regulation, Generic Numerical Water Standards, Schedule 3.2; includes amendments up to B.C. Reg. 13/2019, January 24, 2019.
Standards for all organic substances are for total substance concentrations. Any water sample to be analyzed for organic substances should not be filtered.
Standards for surface water samples to be analyzed for heavy metals, metalloids and inorganic ions are total substance concentrations. In addition, it is recommended that surface water samples being analyzed for heavy metals, metalloids and inorganic ions should also be analyzed for dissolved substance concentrations.
Standards for groundwater samples for heavy metals, metalloids and inorganic ions are for dissolved substance concentrations. In addition, it is recommended that groundwater samples being analyzed for heavy metals, metalloids and inorganic ions should also be analyzed for total substance concentrations.

Note 3.1 for Chromium (dissolved):
Analytical results for chromium (all species) in water may be used to demonstrate compliance with the standards. Where the standards cannot be met based on analytical results for chromium (all species), chromium speciation may be necessary. Standard is 50 µg/L for chromium, hexavalent. Standard is 50 µg/L for chromium, trivalent. The standard of 50 µg/L was used to identify exceedances for dissolved chromium in order to demonstrate compliance with the standards.

Note 3.2 for Nitrate (as N):

Where nitrate and nitrite are present, total nitrate plus nitrite-nitrogen should not exceed this value.

Note 3.3 for Nitrate + Nitrite (as N) (calculated):

Where nitrate and nitrite are present, total nitrate plus nitrite-nitrogen should not exceed this value.

Note 3.4 for Chromium (total):

Analytical results for chromium (all species) in water may be used to demonstrate compliance with the standards. Where the standards cannot be met based on analytical results for chromium (all species), chromium speciation may be necessary. Standard is 50 µg/L for chromium, hexavalent. Standard is 50 µg/L for chromium, trivalent. The standard of 50 µg/L was used to identify exceedances for total chromium in order to demonstrate compliance with the standards.

4. Notes for BC CSR Generic Numerical Water Standards for Drinking Water (CSR DW)

General Notes:

BC Contaminated Sites Regulation, Generic Numerical Water Standards, Schedule 3.2; includes amendments up to B.C. Reg. 13/2019, January 24, 2019.

Drinking water standards are for unfiltered samples obtained at the point of consumption. Heavy metals, metalloids and inorganic ions are expressed as total substance concentrations unless otherwise indicated.

Note 4.1 for Aluminum (dissolved):

Standard is specific to protection of human health. Standard is derived with TRV protective of adults. Standard may not adequately protect other age groups.

Standard may not address aesthetic (organoleptic) concerns related to drinking water quality. Water treatment may be required.

Note 4.2 for Chromium (dissolved):

Analytical results for chromium (all species) in water may be used to demonstrate compliance with the standards. Where the standards cannot be met based on analytical results for chromium (all species), chromium speciation may be necessary. Standard is 50 µg/L for chromium, hexavalent. Standard is 6000 µg/L for chromium, trivalent. The standard of 50 µg/L was used to identify exceedances for dissolved chromium in order to demonstrate compliance with the standards.

Note 4.3 for Copper (dissolved):

Standard is specific to protection of human health. Standard is derived with TRV protective of adults. Standard may not adequately protect other age groups.

Standard may not address aesthetic (organoleptic) concerns related to drinking water quality. Water treatment may be required.

Note 4.4 for Iron (dissolved):

Standard applies to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as
(a) item A6, A7, A8 or A11
(b) item C1, C2, C3, C4 or C6,
(c) item D2, D3, D5, or D6
(d) item E4, or
(e) item H14.

Standard applies to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as item H11 or H20, but only if the site was used for the purpose or activity in conjunction with or as a result of the site also being used for at least one of the purposes or activities set out above.

Standard is specific to protection of human health. Standard is derived with TRV protective of adults. Standard may not adequately protect other age groups. Standard may not address aesthetic (organoleptic) concerns related to drinking water quality. Water treatment may be required.

Note 4.5 for Manganese (dissolved):

Standard applies to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as
(a) item B1
(b) item C1, C3 or C4
(c) item D2, D3, D5, or D6
(d) item E4, or
(e) item H3 or H14.
Standard applies to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as item H11 or H20, but only if the site was used for the purpose or activity in conjunction with or as a result of the site also being used for at least one of the purposes or activities set out above.
Standard is specific to protection of human health. Standard is derived with TRV protective of adults. Standard may not adequately protect other age groups.
Standard may not address aesthetic (organoleptic) concerns related to drinking water quality. Water treatment may be required.

Note 4.6 for Sodium (dissolved):
Standard is specific to protection of human health. Standard is derived with TRV protective of adults. Standard may not adequately protect other age groups.
Note 4.7 for Zinc (dissolved):
Standard is specific to protection of human health. Standard is derived with TRV protective of adults. Standard may not adequately protect other age groups.
Note 4.8 for Chloride ion:
Standard to protect against taste and odour concerns.
Note 4.9 for Nitrate (as N):
Where nitrate and nitrite are present, total nitrate plus nitrite-nitrogen should not exceed this value.
Note 4.10 for Nitrate + Nitrite (as N) (calculated):
Where nitrate and nitrite are present, total nitrate plus nitrite-nitrogen should not exceed this value.
Note 4.11 for Sulphate:
Standard to protect against taste and odour concerns.
Note 4.12 for Aluminum (total):
Standard is specific to protection of human health. Standard is derived with TRV protective of adults. Standard may not adequately protect other age groups.
Standard may not address aesthetic (organoleptic) concerns related to drinking water quality. Water treatment may be required.

Note 4.13 for Chromium (total):
Analytical results for chromium (all species) in water may be used to demonstrate compliance with the standards. Where the standards cannot be met based on analytical results for chromium (all species), chromium speciation may be necessary. Standard is 50 µg/L for chromium, hexavalent. Standard is 6000 µg/L for chromium, trivalent. The standard of 50 µg/L was used to identify exceedances for total chromium in order to demonstrate compliance with the standards.

Note 4.14 for Copper (total):
Standard is specific to protection of human health. Standard is derived with TRV protective of adults. Standard may not adequately protect other age groups.
Standard may not address aesthetic (organoleptic) concerns related to drinking water quality. Water treatment may be required.

Note 4.15 for Iron (total):

Standard applies to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as
(a) item A6, A7, A8 or A11
(b) item C1, C2, C3, C4 or C6,
(c) item D2, D3, D5, or D6
(d) item E4, or
(e) item H14.
Standard applies to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as item H11 or H20, but only if the site was used for the purpose or activity in conjunction with or as a result of the site also being used for at least one of the purposes or activities set out above.
Standard is specific to protection of human health. Standard is derived with TRV protective of adults. Standard may not adequately protect other age groups.
Standard may not address aesthetic (organoleptic) concerns related to drinking water quality. Water treatment may be required.

Note 4.16 for Manganese (total):
Standard applies to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as
(a) item B1
(b) item C1, C3 or C4
(c) item D2, D3, D5, or D6
(d) item E4, or
(e) item H3 or H14.
Standard applies to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as item H11 or H20, but only if the site was used for the purpose or activity in conjunction with or as a result of the site also being used for at least one of the purposes or activities set out above.
Standard is specific to protection of human health. Standard is derived with TRV protective of adults. Standard may not adequately protect other age groups.
Standard may not address aesthetic (organoleptic) concerns related to drinking water quality. Water treatment may be required.

Note 4.17 for Sodium (total):
Standard is specific to protection of human health. Standard is derived with TRV protective of adults. Standard may not adequately protect other age groups.
Note 4.18 for Zinc (total):
Standard is specific to protection of human health. Standard is derived with TRV protective of adults. Standard may not adequately protect other age groups.

Legend for Reports for 21-124-01PG (20-135-01PG) Hullcar Groundwater Monitoring Water Quality Results

<	Less than reported detection limit
>	Greater than reported upper detection limit
>=	Greater than or equal to
A	Absent
Calc	Calculated guideline or standard. The guideline or standard is dependent on the value of one or more other analytes, and is calculated from a formula or table.
CSR AW	BC CSR Generic Numerical Water Standards for Freshwater Aquatic Life
CSR DW	BC CSR Generic Numerical Water Standards for Drinking Water
CSR IW	BC CSR Generic Numerical Water Standards for Irrigation
CSR LW	BC CSR Generic Numerical Water Standards for Livestock
L	Laboratory reading type (Lab result)
m asl	metres above sea level
N	Narrative type of guideline or standard, or Result Note.
ND	Non-detect. Result is less than lower detection limit.
NG	No Guideline
NR	No Result
NS	No Standard
NT	Not Tested
OG	Overgrown
P	Present
PR	Presumptive
TK	Test kit reading type (Field result)
TNTC	Too numerous to count
	Highlighted value has a lower detection limit that is greater than the guideline/standard maximum and/or the guideline/standard minimum, or has an upper detection limit that is less than the guideline/standard maximum and/or the guideline/standard minimum.
	The maximum guideline/standard value cannot be determined because a result for a dependent analyte is not available for the sample.
CSR AW	Highlighted value exceeds CSR AW
CSR DW	Highlighted value exceeds CSR DW
CSR IW	Highlighted value exceeds CSR IW
CSR LW	Highlighted value exceeds CSR LW
SL Criteria Override	Highlighted value exceeds sampling location criteria override

Hullcar Groundwater Monitoring

Duplicate Water Samples Report

	Sampling Location	MW19-3A	MW19-3A	
	Date Sampled	24-Feb-22	24-Feb-22	
	Lab Sample ID	22B3252-04	22B3252-07	
	Sample Type	Normal	Duplicate	
Analyte	**Unit**			**RPD**
Lab Results				
Anions and Cations in meq/L unit				
Aluminum (meq/L) (calculated)	meq/L	0.00267	0.00137	64.4%
Barium (meq/L) (calculated)	meq/L	0.000821	0.000791	3.7%
Boron (meq/L) (calculated)	meq/L	<0.0139	<0.0139	
Calcium (meq/L) (calculated)	meq/L	8.73	8.93	2.3%
Calcium (total, meq/L) (calculated)	meq/L	9.18	9.03	1.6%
Chloride (meq/L) (calculated)	meq/L	0.629	0.646	2.7%
Chromium (meq/L) (calculated)	meq/L	<0.000029	<0.000029	
Copper (meq/L) (calculated)	meq/L	0.0000743	0.0000711	4.4%
Lead (meq/L) (calculated)	meq/L	<0.0000019	<0.0000019	
Lithium (meq/L) (calculated)	meq/L	0.000718	0.000715	0.4%
Magnesium (meq/L) (calculated)	meq/L	1.58	1.6	1.3%
Magnesium (total, meq/L) (calculated)	meq/L	1.49	1.46	2.0%
Potassium (meq/L) (calculated)	meq/L	0.171	0.173	1.2%
Potassium (total, meq/L) (calculated)	meq/L	0.159	0.155	2.5%
Sodium (meq/L) (calculated)	meq/L	0.518	0.526	1.5%
Sodium (total, meq/L) (calculated)	meq/L	0.539	0.522	3.2%
Strontium (meq/L) (calculated)	meq/L	0.0288	0.0288	0.0%
Sulfate (meq/L) (calculated)	meq/L	3.69	3.66	0.8%
Zinc (meq/L) (calculated)	meq/L	<0.00012	<0.00012	
Dissolved Metals				
Aluminum (dissolved)	µg/L	24.0	12.3	64.5%
Antimony (dissolved)	µg/L	<0.20	<0.20	
Arsenic (dissolved)	µg/L	0.50	0.56	11.3%
Barium (dissolved)	µg/L	56.4	54.3	3.8%
Beryllium (dissolved)	µg/L	<0.10	<0.10	
Bismuth (dissolved)	µg/L	<0.10	<0.10	
Boron (dissolved)	µg/L	<50.0	<50.0	
Cadmium (dissolved)	µg/L	0.034	0.043	23.4%
Calcium (dissolved)	mg/L	175	179	2.3%
Chromium (dissolved)	µg/L	<0.50	<0.50	

Hullcar Groundwater Monitoring

Duplicate Water Samples Report

	Sampling Location	MW19-3A	MW19-3A	
	Date Sampled	24-Feb-22	24-Feb-22	
	Lab Sample ID	22B3252-04	22B3252-07	
	Sample Type	Normal	Duplicate	
Analyte	**Unit**			**RPD**
Cobalt (dissolved)	µg/L	0.10	0.10	0.0%
Copper (dissolved)	µg/L	2.36	2.26	4.3%
Hardness, Total (dissolved as CaCO3)	mg/L	518	526	1.5%
Iron (dissolved)	µg/L	<10	<10	
Lead (dissolved)	µg/L	<0.20	<0.20	
Lithium (dissolved)	µg/L	4.98	4.96	0.4%
Magnesium (dissolved)	mg/L	19.2	19.4	1.0%
Manganese (dissolved)	µg/L	1.61	1.76	8.9%
Mercury (dissolved)	µg/L	<0.010	<0.010	
Molybdenum (dissolved)	µg/L	1.53	1.50	2.0%
Nickel (dissolved)	µg/L	1.54	1.52	1.3%
Phosphorus (dissolved, by ICPMS/ICPOES)	µg/L	<50	<50	
Phosphorus (dissolved, APHA 4500-P)	µg/L	10.8	10.9	0.9%
Potassium (dissolved)	µg/L	6700	6760	0.9%
Selenium (dissolved)	µg/L	3.05	3.09	1.3%
Silicon (dissolved, as Si)	µg/L	9500	10000	5.1%
Silver (dissolved)	µg/L	<0.050	<0.050	
Sodium (dissolved)	mg/L	11.9	12.1	1.7%
Strontium (dissolved)	µg/L	1260	1260	0.0%
Sulphur (dissolved)	µg/L	65300	67100	2.7%
Tellurium (dissolved)	µg/L	<0.50	<0.50	
Thallium (dissolved)	µg/L	<0.020	<0.020	
Thorium (dissolved)	µg/L	<0.10	<0.10	
Tin (dissolved)	µg/L	<0.20	<0.20	
Titanium (dissolved)	µg/L	<5.0	<5.0	
Tungsten (dissolved)	µg/L	<1.0	<1.0	
Uranium (dissolved)	µg/L	33.6	34.0	1.2%
Vanadium (dissolved)	µg/L	<1.0	<1.0	
Zinc (dissolved)	µg/L	<4.0	<4.0	
Zirconium (dissolved)	µg/L	<0.10	<0.10	
General and Inorganic Parameters				
Alkalinity (bicarbonate, as CaCO3)	mg/L	336	348	3.5%

Hullcar Groundwater Monitoring

Duplicate Water Samples Report

	Sampling Location	MW19-3A	MW19-3A	
	Date Sampled	24-Feb-22	24-Feb-22	
	Lab Sample ID	22B3252-04	22B3252-07	
	Sample Type	Normal	Duplicate	
Analyte	**Unit**			**RPD**
Alkalinity (carbonate, as CaCO3)	mg/L	<1.0	<1.0	
Alkalinity (hydroxide, as CaCO3)	mg/L	<1.0	<1.0	
Alkalinity (phenolphthalein, as CaCO3)	mg/L	<1.0	<1.0	
Alkalinity (total, as CaCO3)	mg/L	336	348	3.5%
Ammonia (total, as N)	µg/L	<50	<50	
Un-ionized ammonia (as N)	µg/L			
Chloride ion	mg/L	22.3	22.9	2.7%
Nitrate (as N)	mg/L	8.83	9.12	3.2%
Nitrate + Nitrite (as N) (calculated)	mg/L	8.83	9.12	3.2%
Nitrite (as N)	µg/L	<10	<10	
Dissolved kjeldahl nitrogen	µg/L	284	177	46.4%
Sulphate	mg/L	177	176	0.6%
Total organic carbon	mg/L	2.70	2.67	1.1%
Total suspended solids	mg/L	2.4	<2.0	
Total Metals				
Aluminum (total)	µg/L	14.9	5.3	95.0%
Antimony (total)	µg/L	<0.20	<0.20	
Arsenic (total)	µg/L	<0.50	<0.50	
Barium (total)	µg/L	54.9	53.4	2.8%
Beryllium (total)	µg/L	<0.10	<0.10	
Bismuth (total)	µg/L	<0.10	<0.10	
Boron (total)	µg/L	<50.0	<50.0	
Cadmium (total)	µg/L	0.033	0.033	0.0%
Calcium (total)	mg/L	184	181	1.6%
Chromium (total)	µg/L	<0.50	<0.50	
Cobalt (total)	µg/L	0.16	<0.10	
Copper (total)	µg/L	2.78	2.26	20.6%
Hardness, Total (total as CaCO3)	mg/L			
Iron (total)	µg/L	38	13	98.0%
Lead (total)	µg/L	<0.20	<0.20	
Lithium (total)	µg/L	5.13	5.06	1.4%
Magnesium (total)	mg/L	18.1	17.7	2.2%
Manganese (total)	µg/L	3.48	1.68	69.8%

Hullcar Groundwater Monitoring

Duplicate Water Samples Report

	Sampling Location	MW19-3A	MW19-3A	
	Date Sampled	24-Feb-22	24-Feb-22	
	Lab Sample ID	22B3252-04	22B3252-07	
	Sample Type	Normal	Duplicate	
Analyte	**Unit**			**RPD**
Mercury (total)	µg/L	<0.010	<0.010	
Molybdenum (total)	µg/L	1.61	1.51	6.4%
Nickel (total)	µg/L	1.82	1.41	25.4%
Phosphorus (total, by ICPMS/ICPOES)	µg/L	<50	<50	
Potassium (total)	µg/L	6200	6050	2.4%
Selenium (total)	µg/L	3.05	2.61	15.5%
Silicon (total, as Si)	µg/L	9500	9100	4.3%
Silver (total)	µg/L	<0.050	<0.050	
Sodium (total)	mg/L	12.4	12.0	3.3%
Strontium (total)	µg/L	1330	1300	2.3%
Sulphur (total)	µg/L	61800	59400	4.0%
Tellurium (total)	µg/L	<0.50	<0.50	
Thallium (total)	µg/L	<0.020	<0.020	
Thorium (total)	µg/L	<0.10	<0.10	
Tin (total)	µg/L	<0.20	<0.20	
Titanium (total)	µg/L	<5.0	<5.0	
Tungsten (total)	µg/L	<1.0	<1.0	
Uranium (total)	µg/L	34.0	33.7	0.9%
Vanadium (total)	µg/L	<1.0	<1.0	
Zinc (total)	µg/L	<4.0	<4.0	
Zirconium (total)	µg/L	<0.10	<0.10	

CERTIFICATE OF ANALYSIS

REPORTED TO	Western Water Associates Ltd 106 - 5145 26th Street Vernon, BC V1T 8G4		
ATTENTION	Warren Grafton	**WORK ORDER**	21L0144
PO NUMBER		**RECEIVED / TEMP**	2021-11-30 14:53 / 7.2°C
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47
PROJECT INFO		**COC NUMBER**	B110248

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO/IEC 17025:2017 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at bwhitehead@caro.ca

Authorized By:

Brent Whitehead
Client Service Team Lead

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW20-4A (21L0144-01) | Matrix: Water | Sampled: 2021-11-29 08:30						
Anions						
Chloride	**103**	AO ≤ 250	0.10	mg/L	2021-12-02	
Nitrate (as N)	**2.40**	MAC = 10	0.010	mg/L	2021-12-02	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2021-12-02	
Sulfate	**120**	AO ≤ 500	1.0	mg/L	2021-12-02	
Calculated Parameters						
Hardness, Total (as CaCO3)	**627**	None Required	0.500	mg/L	N/A	
Dissolved Metals						
Aluminum, dissolved	< 0.0050	5	0.0050	mg/L	2021-12-08	
Antimony, dissolved	< 0.00020	0.09	0.00020	mg/L	2021-12-08	
Arsenic, dissolved	< 0.00050	0.05	0.00050	mg/L	2021-12-08	
Barium, dissolved	**0.117**	5	0.0050	mg/L	2021-12-08	
Beryllium, dissolved	< 0.00010	0.0015	0.00010	mg/L	2021-12-08	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
Boron, dissolved	< 0.0500	0.5	0.0500	mg/L	2021-12-08	
Cadmium, dissolved	< 0.000010	0.0005	0.000010	mg/L	2021-12-08	
Calcium, dissolved	**152**	N/A	0.20	mg/L	2021-12-08	
Chromium, dissolved	< 0.00050	N/A	0.00050	mg/L	2021-12-08	
Cobalt, dissolved	< 0.00010	0.04	0.00010	mg/L	2021-12-08	
Copper, dissolved	**0.00096**	0.02	0.00040	mg/L	2021-12-08	
Iron, dissolved	< 0.010	5	0.010	mg/L	2021-12-08	
Lead, dissolved	< 0.00020	0.02	0.00020	mg/L	2021-12-08	
Lithium, dissolved	**0.0231**	2.5	0.00010	mg/L	2021-12-08	
Magnesium, dissolved	**60.1**	N/A	0.010	mg/L	2021-12-08	
Manganese, dissolved	**0.00105**	0.2	0.00020	mg/L	2021-12-08	
Mercury, dissolved	< 0.000010	0.00025	0.000010	mg/L	2021-12-08	
Molybdenum, dissolved	**0.00097**	0.01	0.00010	mg/L	2021-12-08	
Nickel, dissolved	**0.00096**	0.2	0.00040	mg/L	2021-12-08	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2021-12-08	
Potassium, dissolved	**7.25**	N/A	0.10	mg/L	2021-12-08	
Selenium, dissolved	**0.0108**	0.02	0.00050	mg/L	2021-12-08	
Silicon, dissolved	**9.0**	N/A	1.0	mg/L	2021-12-08	
Silver, dissolved	< 0.000050	0.0005	0.000050	mg/L	2021-12-08	
Sodium, dissolved	**35.8**	N/A	0.10	mg/L	2021-12-08	
Strontium, dissolved	**2.22**	N/A	0.0010	mg/L	2021-12-08	
Sulfur, dissolved	**41.8**	N/A	3.0	mg/L	2021-12-08	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2021-12-08	
Thallium, dissolved	< 0.000020	0.003	0.000020	mg/L	2021-12-08	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
Tin, dissolved	**0.00070**	N/A	0.00020	mg/L	2021-12-08	
Titanium, dissolved	< 0.0050	1	0.0050	mg/L	2021-12-08	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2021-12-08	
Uranium, dissolved	**0.0146**	0.01	0.000020	mg/L	2021-12-08	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW20-4A (21L0144-01) | Matrix: Water | Sampled: 2021-11-29 08:30, Continued						
Dissolved Metals, Continued						
Vanadium, dissolved	< 0.0010	0.1	0.0010	mg/L	2021-12-08	
Zinc, dissolved	< 0.0040	0.075	0.0040	mg/L	2021-12-08	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
General Parameters						
Alkalinity, Total (as CaCO3)	**465**	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Bicarbonate (as CaCO3)	**465**	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2021-12-03	
Carbon, Total Organic	**1.93**	MAC = 4	0.50	mg/L	2021-12-02	
Nitrogen, Dissolved Kjeldahl	**0.146**	N/A	0.050	mg/L	2021-12-07	
Phosphorus, Total Dissolved	**0.0208**	N/A	0.0050	mg/L	2021-12-07	
Solids, Total Suspended	< 2.0	N/A	2.0	mg/L	2021-12-02	
Miscellaneous Subcontracted Parameters						
delta-18-O	**-17.98**	N/A		per mil	2022-01-19	
delta-2-H	**-137.7**	N/A		per mil	2022-01-19	
Total Metals						
Aluminum, total	**0.0167**	OG < 9.5	0.0050	mg/L	2021-12-09	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2021-12-09	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050	mg/L	2021-12-09	
Barium, total	**0.122**	MAC = 2	0.0050	mg/L	2021-12-09	
Beryllium, total	< 0.00010	0.0015	0.00010	mg/L	2021-12-09	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2021-12-09	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2021-12-09	
Cadmium, total	**0.000017**	MAC = 0.005	0.000010	mg/L	2021-12-09	
Calcium, total	**155**	None Required	0.20	mg/L	2021-12-09	
Chromium, total	**0.00089**	MAC = 0.05	0.00050	mg/L	2021-12-09	
Cobalt, total	< 0.00010	0.001	0.00010	mg/L	2021-12-09	
Copper, total	**0.00125**	AO ≤ 1	0.00040	mg/L	2021-12-09	
Iron, total	**0.042**	AO ≤ 0.3	0.010	mg/L	2021-12-09	
Lead, total	< 0.00020	MAC = 0.01	0.00020	mg/L	2021-12-09	
Lithium, total	**0.0230**	0.008	0.00010	mg/L	2021-12-09	
Magnesium, total	**64.2**	None Required	0.010	mg/L	2021-12-09	
Manganese, total	**0.00120**	AO ≤ 0.05	0.00020	mg/L	2021-12-09	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2021-12-08	
Molybdenum, total	**0.00111**	MAC = 0.25	0.00010	mg/L	2021-12-09	
Nickel, total	**0.00128**	0.08	0.00040	mg/L	2021-12-09	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2021-12-09	
Potassium, total	**7.93**	N/A	0.10	mg/L	2021-12-09	
Selenium, total	**0.0108**	MAC = 0.01	0.00050	mg/L	2021-12-09	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW20-4A (21L0144-01) | Matrix: Water | Sampled: 2021-11-29 08:30, Continued						
Total Metals, Continued						
Silicon, total	**10.1**	N/A	1.0	mg/L	2021-12-09	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2021-12-09	
Sodium, total	**38.0**	AO ≤ 200	0.10	mg/L	2021-12-09	
Strontium, total	**2.32**	MAC = 7	0.0010	mg/L	2021-12-09	
Sulfur, total	**41.6**	N/A	3.0	mg/L	2021-12-09	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2021-12-09	
Thallium, total	< 0.000020	0.003	0.000020	mg/L	2021-12-09	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2021-12-09	
Tin, total	**0.00139**	2.5	0.00020	mg/L	2021-12-09	
Titanium, total	< 0.0050	1	0.0050	mg/L	2021-12-09	
Tungsten, total	< 0.0010	0.003	0.0010	mg/L	2021-12-09	
Uranium, total	**0.0151**	MAC = 0.02	0.000020	mg/L	2021-12-09	
Vanadium, total	< 0.0010	0.02	0.0010	mg/L	2021-12-09	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2021-12-09	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2021-12-09	
MW19-3 (21L0144-02) | Matrix: Water | Sampled: 2021-11-29 10:00						
Anions						
Chloride	**22.6**	AO ≤ 250	0.10	mg/L	2021-12-02	
Nitrate (as N)	**7.21**	MAC = 10	0.010	mg/L	2021-12-02	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2021-12-02	
Sulfate	**180**	AO ≤ 500	1.0	mg/L	2021-12-02	
Calculated Parameters						
Hardness, Total (as CaCO3)	**537**	None Required	0.500	mg/L	N/A	
Dissolved Metals						
Aluminum, dissolved	< 0.0050	5	0.0050	mg/L	2021-12-08	
Antimony, dissolved	< 0.00020	0.09	0.00020	mg/L	2021-12-08	
Arsenic, dissolved	**0.00050**	0.05	0.00050	mg/L	2021-12-08	
Barium, dissolved	**0.0569**	5	0.0050	mg/L	2021-12-08	
Beryllium, dissolved	< 0.00010	0.0015	0.00010	mg/L	2021-12-08	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
Boron, dissolved	< 0.0500	0.5	0.0500	mg/L	2021-12-08	
Cadmium, dissolved	**0.000044**	0.0005	0.000010	mg/L	2021-12-08	
Calcium, dissolved	**184**	N/A	0.20	mg/L	2021-12-08	
Chromium, dissolved	< 0.00050	N/A	0.00050	mg/L	2021-12-08	
Cobalt, dissolved	**0.00010**	0.04	0.00010	mg/L	2021-12-08	
Copper, dissolved	**0.00211**	0.02	0.00040	mg/L	2021-12-08	
Iron, dissolved	< 0.010	5	0.010	mg/L	2021-12-08	
Lead, dissolved	< 0.00020	0.02	0.00020	mg/L	2021-12-08	
Lithium, dissolved	**0.00532**	2.5	0.00010	mg/L	2021-12-08	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW19-3 (21L0144-02) | Matrix: Water | Sampled: 2021-11-29 10:00, Continued						
Dissolved Metals, Continued						
Magnesium, dissolved	**18.5**	N/A	0.010	mg/L	2021-12-08	
Manganese, dissolved	**0.00136**	0.2	0.00020	mg/L	2021-12-08	
Mercury, dissolved	< 0.000010	0.00025	0.000010	mg/L	2021-12-08	
Molybdenum, dissolved	**0.00149**	0.01	0.00010	mg/L	2021-12-08	
Nickel, dissolved	**0.00188**	0.2	0.00040	mg/L	2021-12-08	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2021-12-08	
Potassium, dissolved	**7.28**	N/A	0.10	mg/L	2021-12-08	
Selenium, dissolved	**0.00335**	0.02	0.00050	mg/L	2021-12-08	
Silicon, dissolved	**8.6**	N/A	1.0	mg/L	2021-12-08	
Silver, dissolved	< 0.000050	0.0005	0.000050	mg/L	2021-12-08	
Sodium, dissolved	**13.2**	N/A	0.10	mg/L	2021-12-08	
Strontium, dissolved	**1.34**	N/A	0.0010	mg/L	2021-12-08	
Sulfur, dissolved	**62.3**	N/A	3.0	mg/L	2021-12-08	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2021-12-08	
Thallium, dissolved	< 0.000020	0.003	0.000020	mg/L	2021-12-08	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2021-12-08	
Titanium, dissolved	< 0.0050	1	0.0050	mg/L	2021-12-08	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2021-12-08	
Uranium, dissolved	**0.0354**	0.01	0.000020	mg/L	2021-12-08	
Vanadium, dissolved	< 0.0010	0.1	0.0010	mg/L	2021-12-08	
Zinc, dissolved	< 0.0040	0.075	0.0040	mg/L	2021-12-08	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
General Parameters						
Alkalinity, Total (as CaCO3)	**363**	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Bicarbonate (as CaCO3)	**363**	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2021-12-03	
Carbon, Total Organic	**2.39**	MAC = 4	0.50	mg/L	2021-12-02	
Nitrogen, Dissolved Kjeldahl	**0.298**	N/A	0.050	mg/L	2021-12-07	
Phosphorus, Total Dissolved	**0.0236**	N/A	0.0050	mg/L	2021-12-07	
Solids, Total Suspended	< 2.0	N/A	2.0	mg/L	2021-12-02	
Miscellaneous Subcontracted Parameters						
delta-18-O	**-17.04**	N/A		per mil	2022-01-19	
delta-2-H	**-131**	N/A		per mil	2022-01-19	
Total Metals						
Aluminum, total	**0.0065**	OG < 9.5	0.0050	mg/L	2021-12-09	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2021-12-09	
Arsenic, total	**0.00054**	MAC = 0.01	0.00050	mg/L	2021-12-09	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW19-3 (21L0144-02) | Matrix: Water | Sampled: 2021-11-29 10:00, Continued						
Total Metals, Continued						
Barium, total	**0.0613**	MAC = 2	0.0050	mg/L	2021-12-09	
Beryllium, total	< 0.00010	0.0015	0.00010	mg/L	2021-12-09	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2021-12-09	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2021-12-09	
Cadmium, total	**0.000052**	MAC = 0.005	0.000010	mg/L	2021-12-09	
Calcium, total	**204**	None Required	0.20	mg/L	2021-12-09	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2021-12-09	
Cobalt, total	**0.00011**	0.001	0.00010	mg/L	2021-12-09	
Copper, total	**0.00249**	AO ≤ 1	0.00040	mg/L	2021-12-09	
Iron, total	**0.013**	AO ≤ 0.3	0.010	mg/L	2021-12-09	
Lead, total	< 0.00020	MAC = 0.01	0.00020	mg/L	2021-12-09	
Lithium, total	**0.00558**	0.008	0.00010	mg/L	2021-12-09	
Magnesium, total	**19.9**	None Required	0.010	mg/L	2021-12-09	
Manganese, total	**0.00254**	AO ≤ 0.05	0.00020	mg/L	2021-12-09	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2021-12-08	
Molybdenum, total	**0.00152**	MAC = 0.25	0.00010	mg/L	2021-12-09	
Nickel, total	**0.00184**	0.08	0.00040	mg/L	2021-12-09	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2021-12-09	
Potassium, total	**7.78**	N/A	0.10	mg/L	2021-12-09	
Selenium, total	**0.00351**	MAC = 0.01	0.00050	mg/L	2021-12-09	
Silicon, total	**9.1**	N/A	1.0	mg/L	2021-12-09	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2021-12-09	
Sodium, total	**14.2**	AO ≤ 200	0.10	mg/L	2021-12-09	
Strontium, total	**1.42**	MAC = 7	0.0010	mg/L	2021-12-09	
Sulfur, total	**67.3**	N/A	3.0	mg/L	2021-12-09	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2021-12-09	
Thallium, total	< 0.000020	0.003	0.000020	mg/L	2021-12-09	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2021-12-09	
Tin, total	< 0.00020	2.5	0.00020	mg/L	2021-12-09	
Titanium, total	< 0.0050	1	0.0050	mg/L	2021-12-09	
Tungsten, total	< 0.0010	0.003	0.0010	mg/L	2021-12-09	
Uranium, total	**0.0379**	MAC = 0.02	0.000020	mg/L	2021-12-09	
Vanadium, total	< 0.0010	0.02	0.0010	mg/L	2021-12-09	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2021-12-09	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2021-12-09	
MW20-1B (21L0144-03) | Matrix: Water | Sampled: 2021-11-29 14:00						
Anions						
Chloride	**9.72**	AO ≤ 250	0.10	mg/L	2021-12-02	
Nitrate (as N)	**1.77**	MAC = 10	0.010	mg/L	2021-12-02	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2021-12-02	
Sulfate	**171**	AO ≤ 500	1.0	mg/L	2021-12-02	

TEST RESULTS

REPORTED TO Western Water Associates Ltd
PROJECT 21-124-01PG

WORK ORDER 21L0144
REPORTED 2022-01-19 11:47

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW20-1B (21L0144-03) | Matrix: Water | Sampled: 2021-11-29 14:00, Continued						
Calculated Parameters						
Hardness, Total (as CaCO3)	**373**	None Required	0.500	mg/L	N/A	
Dissolved Metals						
Aluminum, dissolved	< 0.0050	5	0.0050	mg/L	2021-12-08	
Antimony, dissolved	< 0.00020	0.09	0.00020	mg/L	2021-12-08	
Arsenic, dissolved	**0.00133**	0.05	0.00050	mg/L	2021-12-08	
Barium, dissolved	**0.0438**	5	0.0050	mg/L	2021-12-08	
Beryllium, dissolved	< 0.00010	0.0015	0.00010	mg/L	2021-12-08	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
Boron, dissolved	< 0.0500	0.5	0.0500	mg/L	2021-12-08	
Cadmium, dissolved	< 0.000010	0.0005	0.000010	mg/L	2021-12-08	
Calcium, dissolved	**110**	N/A	0.20	mg/L	2021-12-08	
Chromium, dissolved	< 0.00050	N/A	0.00050	mg/L	2021-12-08	
Cobalt, dissolved	**0.00011**	0.04	0.00010	mg/L	2021-12-08	
Copper, dissolved	< 0.00040	0.02	0.00040	mg/L	2021-12-08	
Iron, dissolved	< 0.010	5	0.010	mg/L	2021-12-08	
Lead, dissolved	< 0.00020	0.02	0.00020	mg/L	2021-12-08	
Lithium, dissolved	**0.00624**	2.5	0.00010	mg/L	2021-12-08	
Magnesium, dissolved	**23.7**	N/A	0.010	mg/L	2021-12-08	
Manganese, dissolved	**0.0651**	0.2	0.00020	mg/L	2021-12-08	
Mercury, dissolved	< 0.000010	0.00025	0.000010	mg/L	2021-12-08	
Molybdenum, dissolved	**0.00489**	0.01	0.00010	mg/L	2021-12-08	
Nickel, dissolved	**0.00101**	0.2	0.00040	mg/L	2021-12-08	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2021-12-08	
Potassium, dissolved	**5.52**	N/A	0.10	mg/L	2021-12-08	
Selenium, dissolved	**0.00138**	0.02	0.00050	mg/L	2021-12-08	
Silicon, dissolved	**9.2**	N/A	1.0	mg/L	2021-12-08	
Silver, dissolved	< 0.000050	0.0005	0.000050	mg/L	2021-12-08	
Sodium, dissolved	**18.9**	N/A	0.10	mg/L	2021-12-08	
Strontium, dissolved	**0.888**	N/A	0.0010	mg/L	2021-12-08	
Sulfur, dissolved	**53.0**	N/A	3.0	mg/L	2021-12-08	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2021-12-08	
Thallium, dissolved	< 0.000020	0.003	0.000020	mg/L	2021-12-08	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2021-12-08	
Titanium, dissolved	< 0.0050	1	0.0050	mg/L	2021-12-08	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2021-12-08	
Uranium, dissolved	**0.00267**	0.01	0.000020	mg/L	2021-12-08	
Vanadium, dissolved	< 0.0010	0.1	0.0010	mg/L	2021-12-08	
Zinc, dissolved	< 0.0040	0.075	0.0040	mg/L	2021-12-08	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
General Parameters						
Alkalinity, Total (as CaCO3)	**261**	N/A	1.0	mg/L	2021-12-01	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO Western Water Associates Ltd
PROJECT 21-124-01PG

WORK ORDER 21L0144
REPORTED 2022-01-19 11:47

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW20-1B (21L0144-03) | Matrix: Water | Sampled: 2021-11-29 14:00, Continued						
General Parameters, Continued						
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Bicarbonate (as CaCO3)	**261**	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	
Ammonia, Total (as N)	**0.069**	None Required	0.050	mg/L	2021-12-03	
Carbon, Total Organic	**1.49**	MAC = 4	0.50	mg/L	2021-12-02	
Nitrogen, Dissolved Kjeldahl	**0.141**	N/A	0.050	mg/L	2021-12-07	
Phosphorus, Total Dissolved	**0.0373**	N/A	0.0050	mg/L	2021-12-07	
Solids, Total Suspended	**13.0**	N/A	2.0	mg/L	2021-12-03	
Miscellaneous Subcontracted Parameters						
delta-18-O	**-17.94**	N/A		per mil	2022-01-19	
delta-2-H	**-136.6**	N/A		per mil	2022-01-19	
Total Metals						
Aluminum, total	**0.214**	OG < 9.5	0.0050	mg/L	2021-12-09	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2021-12-09	
Arsenic, total	**0.00151**	MAC = 0.01	0.00050	mg/L	2021-12-09	
Barium, total	**0.0507**	MAC = 2	0.0050	mg/L	2021-12-09	
Beryllium, total	< 0.00010	0.0015	0.00010	mg/L	2021-12-09	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2021-12-09	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2021-12-09	
Cadmium, total	**0.000012**	MAC = 0.005	0.000010	mg/L	2021-12-09	
Calcium, total	**121**	None Required	0.20	mg/L	2021-12-09	
Chromium, total	**0.00085**	MAC = 0.05	0.00050	mg/L	2021-12-09	
Cobalt, total	**0.00028**	0.001	0.00010	mg/L	2021-12-09	
Copper, total	**0.00088**	AO ≤ 1	0.00040	mg/L	2021-12-09	
Iron, total	**0.350**	AO ≤ 0.3	0.010	mg/L	2021-12-09	
Lead, total	< 0.00020	MAC = 0.01	0.00020	mg/L	2021-12-09	
Lithium, total	**0.00616**	0.008	0.00010	mg/L	2021-12-09	
Magnesium, total	**26.6**	None Required	0.010	mg/L	2021-12-09	
Manganese, total	**0.0828**	AO ≤ 0.05	0.00020	mg/L	2021-12-09	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2021-12-08	
Molybdenum, total	**0.00536**	MAC = 0.25	0.00010	mg/L	2021-12-09	
Nickel, total	**0.00145**	0.08	0.00040	mg/L	2021-12-09	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2021-12-09	
Potassium, total	**6.39**	N/A	0.10	mg/L	2021-12-09	
Selenium, total	**0.00198**	MAC = 0.01	0.00050	mg/L	2021-12-09	
Silicon, total	**10.9**	N/A	1.0	mg/L	2021-12-09	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2021-12-09	
Sodium, total	**21.2**	AO ≤ 200	0.10	mg/L	2021-12-09	
Strontium, total	**0.998**	MAC = 7	0.0010	mg/L	2021-12-09	
Sulfur, total	**64.5**	N/A	3.0	mg/L	2021-12-09	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2021-12-09	

TEST RESULTS

REPORTED TO Western Water Associates Ltd
PROJECT 21-124-01PG

WORK ORDER 21L0144
REPORTED 2022-01-19 11:47

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW20-1B (21L0144-03) | Matrix: Water | Sampled: 2021-11-29 14:00, Continued						
Total Metals, Continued						
Thallium, total	< 0.000020	0.003	0.000020	mg/L	2021-12-09	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2021-12-09	
Tin, total	< 0.00020	2.5	0.00020	mg/L	2021-12-09	
Titanium, total	**0.0138**	1	0.0050	mg/L	2021-12-09	
Tungsten, total	< 0.0010	0.003	0.0010	mg/L	2021-12-09	
Uranium, total	**0.00275**	MAC = 0.02	0.000020	mg/L	2021-12-09	
Vanadium, total	< 0.0010	0.02	0.0010	mg/L	2021-12-09	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2021-12-09	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2021-12-09	
MW19-2 (21L0144-04) | Matrix: Water | Sampled: 2021-11-29 11:00						
Anions						
Chloride	**69.2**	AO ≤ 250	0.10	mg/L	2021-12-02	
Nitrate (as N)	**4.38**	MAC = 10	0.010	mg/L	2021-12-02	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2021-12-02	
Sulfate	**214**	AO ≤ 500	1.0	mg/L	2021-12-02	
Calculated Parameters						
Hardness, Total (as CaCO3)	**618**	None Required	0.500	mg/L	N/A	
Dissolved Metals						
Aluminum, dissolved	< 0.0050	5	0.0050	mg/L	2021-12-08	
Antimony, dissolved	< 0.00020	0.09	0.00020	mg/L	2021-12-08	
Arsenic, dissolved	< 0.00050	0.05	0.00050	mg/L	2021-12-08	
Barium, dissolved	**0.0837**	5	0.0050	mg/L	2021-12-08	
Beryllium, dissolved	< 0.00010	0.0015	0.00010	mg/L	2021-12-08	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
Boron, dissolved	< 0.0500	0.5	0.0500	mg/L	2021-12-08	
Cadmium, dissolved	**0.000062**	0.0005	0.000010	mg/L	2021-12-08	
Calcium, dissolved	**173**	N/A	0.20	mg/L	2021-12-08	
Chromium, dissolved	< 0.00050	N/A	0.00050	mg/L	2021-12-08	
Cobalt, dissolved	**0.00016**	0.04	0.00010	mg/L	2021-12-08	
Copper, dissolved	**0.00130**	0.02	0.00040	mg/L	2021-12-08	
Iron, dissolved	< 0.010	5	0.010	mg/L	2021-12-08	
Lead, dissolved	< 0.00020	0.02	0.00020	mg/L	2021-12-08	
Lithium, dissolved	**0.0116**	2.5	0.00010	mg/L	2021-12-08	
Magnesium, dissolved	**44.8**	N/A	0.010	mg/L	2021-12-08	
Manganese, dissolved	**0.0232**	0.2	0.00020	mg/L	2021-12-08	
Mercury, dissolved	< 0.000010	0.00025	0.000010	mg/L	2021-12-08	
Molybdenum, dissolved	**0.00157**	0.01	0.00010	mg/L	2021-12-08	
Nickel, dissolved	**0.00264**	0.2	0.00040	mg/L	2021-12-08	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2021-12-08	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW19-2 (21L0144-04) | Matrix: Water | Sampled: 2021-11-29 11:00, Continued						
Dissolved Metals, Continued						
Potassium, dissolved	**11.0**	N/A	0.10	mg/L	2021-12-08	
Selenium, dissolved	**0.00694**	0.02	0.00050	mg/L	2021-12-08	
Silicon, dissolved	**10.4**	N/A	1.0	mg/L	2021-12-08	
Silver, dissolved	< 0.000050	0.0005	0.000050	mg/L	2021-12-08	
Sodium, dissolved	**31.4**	N/A	0.10	mg/L	2021-12-08	
Strontium, dissolved	**1.40**	N/A	0.0010	mg/L	2021-12-08	
Sulfur, dissolved	**77.5**	N/A	3.0	mg/L	2021-12-08	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2021-12-08	
Thallium, dissolved	< 0.000020	0.003	0.000020	mg/L	2021-12-08	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2021-12-08	
Titanium, dissolved	< 0.0050	1	0.0050	mg/L	2021-12-08	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2021-12-08	
Uranium, dissolved	**0.0109**	0.01	0.000020	mg/L	2021-12-08	
Vanadium, dissolved	< 0.0010	0.1	0.0010	mg/L	2021-12-08	
Zinc, dissolved	< 0.0040	0.075	0.0040	mg/L	2021-12-08	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
General Parameters						
Alkalinity, Total (as CaCO3)	**335**	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Bicarbonate (as CaCO3)	**335**	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2021-12-03	
Carbon, Total Organic	**1.86**	MAC = 4	0.50	mg/L	2021-12-02	
Nitrogen, Dissolved Kjeldahl	**0.225**	N/A	0.050	mg/L	2021-12-07	
Phosphorus, Total Dissolved	**0.0210**	N/A	0.0050	mg/L	2021-12-07	
Solids, Total Suspended	**5.2**	N/A	2.0	mg/L	2021-12-02	
Miscellaneous Subcontracted Parameters						
delta-18-O	**-17.12**	N/A		per mil	2022-01-19	
delta-2-H	**-133**	N/A		per mil	2022-01-19	
Total Metals						
Aluminum, total	**0.121**	OG < 9.5	0.0050	mg/L	2021-12-09	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2021-12-09	
Arsenic, total	**0.00072**	MAC = 0.01	0.00050	mg/L	2021-12-09	
Barium, total	**0.0920**	MAC = 2	0.0050	mg/L	2021-12-09	
Beryllium, total	< 0.00010	0.0015	0.00010	mg/L	2021-12-09	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2021-12-09	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2021-12-09	
Cadmium, total	**0.000055**	MAC = 0.005	0.000010	mg/L	2021-12-09	
Calcium, total	**180**	None Required	0.20	mg/L	2021-12-09	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW19-2 (21L0144-04) | Matrix: Water | Sampled: 2021-11-29 11:00, Continued						
Total Metals, Continued						
Chromium, total	**0.00083**	MAC = 0.05	0.00050	mg/L	2021-12-09	
Cobalt, total	**0.00046**	0.001	0.00010	mg/L	2021-12-09	
Copper, total	**0.00202**	AO ≤ 1	0.00040	mg/L	2021-12-09	
Iron, total	**0.358**	AO ≤ 0.3	0.010	mg/L	2021-12-09	
Lead, total	< 0.00020	MAC = 0.01	0.00020	mg/L	2021-12-09	
Lithium, total	**0.0114**	0.008	0.00010	mg/L	2021-12-09	
Magnesium, total	**50.0**	None Required	0.010	mg/L	2021-12-09	
Manganese, total	**0.0537**	AO ≤ 0.05	0.00020	mg/L	2021-12-09	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2021-12-08	
Molybdenum, total	**0.00178**	MAC = 0.25	0.00010	mg/L	2021-12-09	
Nickel, total	**0.00374**	0.08	0.00040	mg/L	2021-12-09	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2021-12-09	
Potassium, total	**11.8**	N/A	0.10	mg/L	2021-12-09	
Selenium, total	**0.00654**	MAC = 0.01	0.00050	mg/L	2021-12-09	
Silicon, total	**11.4**	N/A	1.0	mg/L	2021-12-09	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2021-12-09	
Sodium, total	**34.6**	AO ≤ 200	0.10	mg/L	2021-12-09	
Strontium, total	**1.53**	MAC = 7	0.0010	mg/L	2021-12-09	
Sulfur, total	**87.7**	N/A	3.0	mg/L	2021-12-09	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2021-12-09	
Thallium, total	< 0.000020	0.003	0.000020	mg/L	2021-12-09	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2021-12-09	
Tin, total	< 0.00020	2.5	0.00020	mg/L	2021-12-09	
Titanium, total	**0.0068**	1	0.0050	mg/L	2021-12-09	
Tungsten, total	< 0.0010	0.003	0.0010	mg/L	2021-12-09	
Uranium, total	**0.0110**	MAC = 0.02	0.000020	mg/L	2021-12-09	
Vanadium, total	< 0.0010	0.02	0.0010	mg/L	2021-12-09	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2021-12-09	
Zirconium, total	**0.00027**	N/A	0.00010	mg/L	2021-12-09	
MW19-1AR (21L0144-05) | Matrix: Water | Sampled: 2021-11-29 12:00						
Anions						
Chloride	**37.1**	AO ≤ 250	0.10	mg/L	2021-12-02	
Nitrate (as N)	**10.2**	MAC = 10	0.010	mg/L	2021-12-02	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2021-12-02	
Sulfate	**371**	AO ≤ 500	1.0	mg/L	2021-12-02	
Calculated Parameters						
Hardness, Total (as CaCO3)	**795**	None Required	0.500	mg/L	N/A	
Dissolved Metals						
Aluminum, dissolved	< 0.0050	5	0.0050	mg/L	2021-12-08	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW19-1AR (21L0144-05) | Matrix: Water | Sampled: 2021-11-29 12:00, Continued						
Dissolved Metals, Continued						
Antimony, dissolved	< 0.00020	0.09	0.00020	mg/L	2021-12-08	
Arsenic, dissolved	**0.00054**	0.05	0.00050	mg/L	2021-12-08	
Barium, dissolved	**0.101**	5	0.0050	mg/L	2021-12-08	
Beryllium, dissolved	< 0.00010	0.0015	0.00010	mg/L	2021-12-08	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
Boron, dissolved	< 0.0500	0.5	0.0500	mg/L	2021-12-08	
Cadmium, dissolved	**0.000023**	0.0005	0.000010	mg/L	2021-12-08	
Calcium, dissolved	**262**	N/A	0.20	mg/L	2021-12-08	
Chromium, dissolved	**0.00104**	N/A	0.00050	mg/L	2021-12-08	
Cobalt, dissolved	**0.00013**	0.04	0.00010	mg/L	2021-12-08	
Copper, dissolved	**0.00211**	0.02	0.00040	mg/L	2021-12-08	
Iron, dissolved	< 0.010	5	0.010	mg/L	2021-12-08	
Lead, dissolved	< 0.00020	0.02	0.00020	mg/L	2021-12-08	
Lithium, dissolved	**0.00778**	2.5	0.00010	mg/L	2021-12-08	
Magnesium, dissolved	**33.9**	N/A	0.010	mg/L	2021-12-08	
Manganese, dissolved	< 0.00020	0.2	0.00020	mg/L	2021-12-08	
Mercury, dissolved	< 0.000010	0.00025	0.000010	mg/L	2021-12-08	
Molybdenum, dissolved	**0.00069**	0.01	0.00010	mg/L	2021-12-08	
Nickel, dissolved	**0.00141**	0.2	0.00040	mg/L	2021-12-08	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2021-12-08	
Potassium, dissolved	**7.34**	N/A	0.10	mg/L	2021-12-08	
Selenium, dissolved	**0.0100**	0.02	0.00050	mg/L	2021-12-08	
Silicon, dissolved	**11.5**	N/A	1.0	mg/L	2021-12-08	
Silver, dissolved	< 0.000050	0.0005	0.000050	mg/L	2021-12-08	
Sodium, dissolved	**16.4**	N/A	0.10	mg/L	2021-12-08	
Strontium, dissolved	**1.39**	N/A	0.0010	mg/L	2021-12-08	
Sulfur, dissolved	**131**	N/A	3.0	mg/L	2021-12-08	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2021-12-08	
Thallium, dissolved	< 0.000020	0.003	0.000020	mg/L	2021-12-08	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2021-12-08	
Titanium, dissolved	< 0.0050	1	0.0050	mg/L	2021-12-08	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2021-12-08	
Uranium, dissolved	**0.00568**	0.01	0.000020	mg/L	2021-12-08	
Vanadium, dissolved	< 0.0010	0.1	0.0010	mg/L	2021-12-08	
Zinc, dissolved	< 0.0040	0.075	0.0040	mg/L	2021-12-08	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
General Parameters						
Alkalinity, Total (as CaCO3)	**322**	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Bicarbonate (as CaCO3)	**322**	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW19-1AR (21L0144-05) | Matrix: Water | Sampled: 2021-11-29 12:00, Continued						
General Parameters, Continued						
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2021-12-03	
Carbon, Total Organic	**4.09**	MAC = 4	0.50	mg/L	2021-12-02	
Nitrogen, Dissolved Kjeldahl	**0.536**	N/A	0.050	mg/L	2021-12-07	
Phosphorus, Total Dissolved	**0.0231**	N/A	0.0050	mg/L	2021-12-07	
Solids, Total Suspended	< 2.0	N/A	2.0	mg/L	2021-12-03	
Miscellaneous Subcontracted Parameters						
delta-18-O	**-16.55**	N/A		per mil	2022-01-19	
delta-2-H	**-128**	N/A		per mil	2022-01-19	
Total Metals						
Aluminum, total	**0.0099**	OG < 9.5	0.0050	mg/L	2021-12-09	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2021-12-09	
Arsenic, total	**0.00058**	MAC = 0.01	0.00050	mg/L	2021-12-09	
Barium, total	**0.107**	MAC = 2	0.0050	mg/L	2021-12-09	
Beryllium, total	< 0.00010	0.0015	0.00010	mg/L	2021-12-09	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2021-12-09	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2021-12-09	
Cadmium, total	**0.000017**	MAC = 0.005	0.000010	mg/L	2021-12-09	
Calcium, total	**258**	None Required	0.20	mg/L	2021-12-09	
Chromium, total	**0.00114**	MAC = 0.05	0.00050	mg/L	2021-12-09	
Cobalt, total	**0.00015**	0.001	0.00010	mg/L	2021-12-09	
Copper, total	**0.00215**	AO ≤ 1	0.00040	mg/L	2021-12-09	
Iron, total	**0.025**	AO ≤ 0.3	0.010	mg/L	2021-12-09	
Lead, total	< 0.00020	MAC = 0.01	0.00020	mg/L	2021-12-09	
Lithium, total	**0.00730**	0.008	0.00010	mg/L	2021-12-09	
Magnesium, total	**36.7**	None Required	0.010	mg/L	2021-12-09	
Manganese, total	**0.00048**	AO ≤ 0.05	0.00020	mg/L	2021-12-09	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2021-12-08	
Molybdenum, total	**0.00076**	MAC = 0.25	0.00010	mg/L	2021-12-09	
Nickel, total	**0.00159**	0.08	0.00040	mg/L	2021-12-09	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2021-12-09	
Potassium, total	**7.86**	N/A	0.10	mg/L	2021-12-09	
Selenium, total	**0.00973**	MAC = 0.01	0.00050	mg/L	2021-12-09	
Silicon, total	**12.2**	N/A	1.0	mg/L	2021-12-09	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2021-12-09	
Sodium, total	**17.7**	AO ≤ 200	0.10	mg/L	2021-12-09	
Strontium, total	**1.44**	MAC = 7	0.0010	mg/L	2021-12-09	
Sulfur, total	**147**	N/A	3.0	mg/L	2021-12-09	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2021-12-09	
Thallium, total	< 0.000020	0.003	0.000020	mg/L	2021-12-09	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2021-12-09	
Tin, total	< 0.00020	2.5	0.00020	mg/L	2021-12-09	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW19-1AR (21L0144-05) | Matrix: Water | Sampled: 2021-11-29 12:00, Continued						
Total Metals, Continued						
Titanium, total	< 0.0050	1	0.0050	mg/L	2021-12-09	
Tungsten, total	< 0.0010	0.003	0.0010	mg/L	2021-12-09	
Uranium, total	**0.00552**	MAC = 0.02	0.000020	mg/L	2021-12-09	
Vanadium, total	< 0.0010	0.02	0.0010	mg/L	2021-12-09	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2021-12-09	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2021-12-09	
MW20-2B (21L0144-06) | Matrix: Water | Sampled: 2021-11-29 09:15						
Anions						
Chloride	**27.8**	AO ≤ 250	0.10	mg/L	2021-12-02	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2021-12-02	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2021-12-02	
Sulfate	**228**	AO ≤ 500	1.0	mg/L	2021-12-02	
Calculated Parameters						
Hardness, Total (as CaCO3)	**457**	None Required	0.500	mg/L	N/A	
Dissolved Metals						
Aluminum, dissolved	< 0.0050	5	0.0050	mg/L	2021-12-08	
Antimony, dissolved	< 0.00020	0.09	0.00020	mg/L	2021-12-08	
Arsenic, dissolved	**0.00123**	0.05	0.00050	mg/L	2021-12-08	
Barium, dissolved	**0.0557**	5	0.0050	mg/L	2021-12-08	
Beryllium, dissolved	< 0.00010	0.0015	0.00010	mg/L	2021-12-08	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
Boron, dissolved	< 0.0500	0.5	0.0500	mg/L	2021-12-08	
Cadmium, dissolved	< 0.000010	0.0005	0.000010	mg/L	2021-12-08	
Calcium, dissolved	**143**	N/A	0.20	mg/L	2021-12-08	
Chromium, dissolved	< 0.00050	N/A	0.00050	mg/L	2021-12-08	
Cobalt, dissolved	**0.00039**	0.04	0.00010	mg/L	2021-12-08	
Copper, dissolved	< 0.00040	0.02	0.00040	mg/L	2021-12-08	
Iron, dissolved	**1.17**	5	0.010	mg/L	2021-12-08	
Lead, dissolved	< 0.00020	0.02	0.00020	mg/L	2021-12-08	
Lithium, dissolved	**0.0117**	2.5	0.00010	mg/L	2021-12-08	
Magnesium, dissolved	**23.9**	N/A	0.010	mg/L	2021-12-08	
Manganese, dissolved	**0.0851**	0.2	0.00020	mg/L	2021-12-08	
Mercury, dissolved	< 0.000010	0.00025	0.000010	mg/L	2021-12-08	
Molybdenum, dissolved	**0.00375**	0.01	0.00010	mg/L	2021-12-08	
Nickel, dissolved	**0.00082**	0.2	0.00040	mg/L	2021-12-08	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2021-12-08	
Potassium, dissolved	**7.82**	N/A	0.10	mg/L	2021-12-08	
Selenium, dissolved	< 0.00050	0.02	0.00050	mg/L	2021-12-08	
Silicon, dissolved	**9.6**	N/A	1.0	mg/L	2021-12-08	

TEST RESULTS

REPORTED TO Western Water Associates Ltd
PROJECT 21-124-01PG

WORK ORDER 21L0144
REPORTED 2022-01-19 11:47

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW20-2B (21L0144-06) | Matrix: Water | Sampled: 2021-11-29 09:15, Continued						
Dissolved Metals, Continued						
Silver, dissolved	< 0.000050	0.0005	0.000050	mg/L	2021-12-08	
Sodium, dissolved	**23.8**	N/A	0.10	mg/L	2021-12-08	
Strontium, dissolved	**1.31**	N/A	0.0010	mg/L	2021-12-08	
Sulfur, dissolved	**78.3**	N/A	3.0	mg/L	2021-12-08	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2021-12-08	
Thallium, dissolved	< 0.000020	0.003	0.000020	mg/L	2021-12-08	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2021-12-08	
Titanium, dissolved	< 0.0050	1	0.0050	mg/L	2021-12-08	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2021-12-08	
Uranium, dissolved	**0.00283**	0.01	0.000020	mg/L	2021-12-08	
Vanadium, dissolved	< 0.0010	0.1	0.0010	mg/L	2021-12-08	
Zinc, dissolved	< 0.0040	0.075	0.0040	mg/L	2021-12-08	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2021-12-08	
General Parameters						
Alkalinity, Total (as CaCO3)	**254**	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Bicarbonate (as CaCO3)	**254**	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2021-12-01	
Ammonia, Total (as N)	**0.051**	None Required	0.050	mg/L	2021-12-03	
Carbon, Total Organic	**1.19**	MAC = 4	0.50	mg/L	2021-12-02	
Nitrogen, Dissolved Kjeldahl	**0.123**	N/A	0.050	mg/L	2021-12-07	
Phosphorus, Total Dissolved	**0.0206**	N/A	0.0050	mg/L	2021-12-07	
Solids, Total Suspended	**2.8**	N/A	2.0	mg/L	2021-12-02	
Miscellaneous Subcontracted Parameters						
delta-18-O	**-17.5**	N/A		per mil	2022-01-19	
delta-2-H	**-135**	N/A		per mil	2022-01-19	
Total Metals						
Aluminum, total	**0.0115**	OG < 9.5	0.0050	mg/L	2021-12-09	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2021-12-09	
Arsenic, total	**0.00184**	MAC = 0.01	0.00050	mg/L	2021-12-09	
Barium, total	**0.0636**	MAC = 2	0.0050	mg/L	2021-12-09	
Beryllium, total	< 0.00010	0.0015	0.00010	mg/L	2021-12-09	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2021-12-09	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2021-12-09	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010	mg/L	2021-12-09	
Calcium, total	**165**	None Required	0.20	mg/L	2021-12-09	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2021-12-09	
Cobalt, total	**0.00051**	0.001	0.00010	mg/L	2021-12-09	
Copper, total	< 0.00040	AO ≤ 1	0.00040	mg/L	2021-12-09	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW20-2B (21L0144-06) | Matrix: Water | Sampled: 2021-11-29 09:15, Continued						
Total Metals, Continued						
Iron, total	**1.78**	AO ≤ 0.3	0.010	mg/L	2021-12-09	
Lead, total	< 0.00020	MAC = 0.01	0.00020	mg/L	2021-12-09	
Lithium, total	**0.0127**	0.008	0.00010	mg/L	2021-12-09	
Magnesium, total	**28.2**	None Required	0.010	mg/L	2021-12-09	
Manganese, total	**0.101**	AO ≤ 0.05	0.00020	mg/L	2021-12-09	
Mercury, total	< 0.000040	MAC = 0.001	0.000040	mg/L	2021-12-09	
Molybdenum, total	**0.00443**	MAC = 0.25	0.00010	mg/L	2021-12-09	
Nickel, total	**0.00083**	0.08	0.00040	mg/L	2021-12-09	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2021-12-09	
Potassium, total	**9.43**	N/A	0.10	mg/L	2021-12-09	
Selenium, total	< 0.00050	MAC = 0.01	0.00050	mg/L	2021-12-09	
Silicon, total	**11.6**	N/A	1.0	mg/L	2021-12-09	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2021-12-09	
Sodium, total	**27.9**	AO ≤ 200	0.10	mg/L	2021-12-09	
Strontium, total	**1.47**	MAC = 7	0.0010	mg/L	2021-12-09	
Sulfur, total	**89.9**	N/A	3.0	mg/L	2021-12-09	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2021-12-09	
Thallium, total	< 0.000020	0.003	0.000020	mg/L	2021-12-09	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2021-12-09	
Tin, total	< 0.00020	2.5	0.00020	mg/L	2021-12-09	
Titanium, total	< 0.0050	1	0.0050	mg/L	2021-12-09	
Tungsten, total	< 0.0010	0.003	0.0010	mg/L	2021-12-09	
Uranium, total	**0.00315**	MAC = 0.02	0.000020	mg/L	2021-12-09	
Vanadium, total	< 0.0010	0.02	0.0010	mg/L	2021-12-09	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2021-12-09	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2021-12-09	

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analysis Description	Method Ref.	Technique	Accredited	Location
2H and 18O Isotope Ratios in Water	Stable Isotopes	CRDS		Sublet
Alkalinity in Water	SM 2320 B* (2017)	Titration with H2SO4	✓	Kelowna
Ammonia, Total in Water	SM 4500-NH3 G* (2017)	Automated Colorimetry (Phenate)	✓	Kelowna
Anions in Water	SM 4110 B (2017)	Ion Chromatography	✓	Kelowna
Carbon, Total Organic in Water	SM 5310 B (2017)	Combustion, Infrared CO2 Detection	✓	Kelowna
Dissolved Metals in Water	EPA 200.8 / EPA 6020B	0.45 µm Filtration / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Hardness in Water	SM 2340 B (2017)	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	✓	N/A
Mercury, dissolved in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	✓	Richmond
Mercury, total in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	✓	Richmond
Nitrogen, Dissolved Kjeldahl in Water	SM 4500-Norg D* (2017)	Block Digestion and Flow Injection Analysis	✓	Kelowna
Phosphorus, Total Dissolved in Water	SM 4500-P B.5* (2011) / SM 4500-P F (2017)	Persulfate Digestion / Automated Colorimetry (Ascorbic Acid)	✓	Kelowna
Solids, Total Suspended in Water	SM 2540 D* (2017)	Gravimetry (Dried at 103-105C)	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
OG	Operational Guideline (treated water)
per mil	Parts per thousand
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

Guidelines Referenced in this Report:

BC CSR Schedule 3.2 Aquatic Life
BC CSR Schedule 3.2 Drinking Water
BC CSR Schedule 3.2 Irrigation
BC Source Drinking Water Quality Guidelines (2017)
Guidelines for Canadian Drinking Water Quality (Health Canada, June 2019)

Note: In some cases, the values displayed on the report represent the lowest guideline and are to be verified by the end user

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued or once samples expire, whichever comes first. Longer hold is possible if agreed to in writing.

Results in **Bold** indicate values that are above CARO's method reporting limits. Any results that are above regulatory limits are highlighted **red**. Please note that results will only be highlighted red if the regulatory limits are included on the CARO report. Any Bold and/or highlighted results do not take into account method uncertainty. If you would like method uncertainty or regulatory limits to be included on your report, please contact your Account Manager:bwhitehead@caro.ca

Please note any regulatory guidelines applied to this report are added as a convenience to the client, at their request, to help provide some initial context to analytical results obtained. Although CARO makes every effort to ensure accuracy of the associated regulatory guideline(s) applied, the guidelines applied cannot be assumed to be correct due to a variety of factors and as such CARO Analytical Services assumes no liability or responsibility for the use of those guidelines to make any decisions. The original source of the regulation should be verified and a review of the guideline (s) should be validated as correct in order to make any decisions arising from the comparison of the analytical data obtained to the relevant regulatory guideline for one's particular circumstances. Further, CARO Analytical Services assumes no liability or responsibility for any loss attributed from the use of these guidelines in any way.

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B1L0188										
Blank (B1L0188-BLK1)				Prepared: 2021-12-02, Analyzed: 2021-12-02						
Chloride	< 0.10	0.10	mg/L							
Nitrate (as N)	< 0.010	0.010	mg/L							
Nitrite (as N)	< 0.010	0.010	mg/L							
Sulfate	< 1.0	1.0	mg/L							
Blank (B1L0188-BLK2)				Prepared: 2021-12-02, Analyzed: 2021-12-02						
Chloride	< 0.10	0.10	mg/L							
Nitrate (as N)	< 0.010	0.010	mg/L							
Nitrite (as N)	< 0.010	0.010	mg/L							
Sulfate	< 1.0	1.0	mg/L							
LCS (B1L0188-BS1)				Prepared: 2021-12-02, Analyzed: 2021-12-02						
Chloride	16.1	0.10	mg/L	16.0		100	90-110			
Nitrate (as N)	4.03	0.010	mg/L	4.00		101	90-110			
Nitrite (as N)	2.09	0.010	mg/L	2.00		105	85-115			
Sulfate	16.1	1.0	mg/L	16.0		100	90-110			
LCS (B1L0188-BS2)				Prepared: 2021-12-02, Analyzed: 2021-12-02						
Chloride	16.1	0.10	mg/L	16.0		101	90-110			
Nitrate (as N)	4.00	0.010	mg/L	4.00		100	90-110			
Nitrite (as N)	2.07	0.010	mg/L	2.00		103	85-115			
Sulfate	16.0	1.0	mg/L	16.0		100	90-110			
Dissolved Metals, Batch B1L0886										
Blank (B1L0886-BLK1)				Prepared: 2021-12-08, Analyzed: 2021-12-08						
Mercury, dissolved	< 0.000010	0.000010	mg/L							
Blank (B1L0886-BLK2)				Prepared: 2021-12-08, Analyzed: 2021-12-08						
Mercury, dissolved	< 0.000010	0.000010	mg/L							
Duplicate (B1L0886-DUP1)			**Source: 21L0144-04**	Prepared: 2021-12-08, Analyzed: 2021-12-08						
Mercury, dissolved	< 0.000010	0.000010	mg/L		< 0.000010				20	
Matrix Spike (B1L0886-MS1)			**Source: 21L0144-05**	Prepared: 2021-12-08, Analyzed: 2021-12-08						
Mercury, dissolved	0.000217	0.000010	mg/L	0.000250	< 0.000010	87	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B1L0886, Continued										
Reference (B1L0886-SRM1)				Prepared: 2021-12-08, Analyzed: 2021-12-08						
Mercury, dissolved	0.000514	0.000010	mg/L	0.000500		103	0-200			
Reference (B1L0886-SRM2)				Prepared: 2021-12-08, Analyzed: 2021-12-08						
Mercury, dissolved	0.000497	0.000010	mg/L	0.000500		99	0-200			
Dissolved Metals, Batch B1L0919										
Blank (B1L0919-BLK1)				Prepared: 2021-12-08, Analyzed: 2021-12-08						
Aluminum, dissolved	< 0.0050	0.0050	mg/L							
Antimony, dissolved	< 0.00020	0.00020	mg/L							
Arsenic, dissolved	< 0.00050	0.00050	mg/L							
Barium, dissolved	< 0.0050	0.0050	mg/L							
Beryllium, dissolved	< 0.00010	0.00010	mg/L							
Bismuth, dissolved	< 0.00010	0.00010	mg/L							
Boron, dissolved	< 0.0500	0.0500	mg/L							
Cadmium, dissolved	< 0.000010	0.000010	mg/L							
Calcium, dissolved, dissolved	< 0.20	0.20	mg/L							
Chromium, dissolved	< 0.00050	0.00050	mg/L							
Cobalt, dissolved	< 0.00010	0.00010	mg/L							
Copper, dissolved	< 0.00040	0.00040	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							
Lead, dissolved	< 0.00020	0.00020	mg/L							
Lithium, dissolved	< 0.00010	0.00010	mg/L							
Magnesium, dissolved, dissolved	< 0.010	0.010	mg/L							
Manganese, dissolved	< 0.00020	0.00020	mg/L							
Molybdenum, dissolved	< 0.00010	0.00010	mg/L							
Nickel, dissolved	< 0.00040	0.00040	mg/L							
Phosphorus, dissolved	< 0.050	0.050	mg/L							
Potassium, dissolved	< 0.10	0.10	mg/L							
Selenium, dissolved	< 0.00050	0.00050	mg/L							
Silicon, dissolved	< 1.0	1.0	mg/L							
Silver, dissolved	< 0.000050	0.000050	mg/L							
Sodium, dissolved	< 0.10	0.10	mg/L							
Strontium, dissolved	< 0.0010	0.0010	mg/L							
Sulfur, dissolved	< 3.0	3.0	mg/L							
Tellurium, dissolved	< 0.00050	0.00050	mg/L							
Thallium, dissolved	< 0.000020	0.000020	mg/L							
Thorium, dissolved	< 0.00010	0.00010	mg/L							
Tin, dissolved	< 0.00020	0.00020	mg/L							
Titanium, dissolved	< 0.0050	0.0050	mg/L							
Tungsten, dissolved	< 0.0010	0.0010	mg/L							
Uranium, dissolved	< 0.000020	0.000020	mg/L							
Vanadium, dissolved	< 0.0010	0.0010	mg/L							
Zinc, dissolved	< 0.0040	0.0040	mg/L							
Zirconium, dissolved	< 0.00010	0.00010	mg/L							
LCS (B1L0919-BS1)				Prepared: 2021-12-08, Analyzed: 2021-12-08						
Aluminum, dissolved	0.0191	0.0050	mg/L	0.0200		96	80-120			
Antimony, dissolved	0.0177	0.00020	mg/L	0.0200		88	80-120			
Arsenic, dissolved	0.0168	0.00050	mg/L	0.0200		84	80-120			
Barium, dissolved	0.0166	0.0050	mg/L	0.0200		83	80-120			
Beryllium, dissolved	0.0163	0.00010	mg/L	0.0200		82	80-120			
Bismuth, dissolved	0.0171	0.00010	mg/L	0.0200		85	80-120			
Boron, dissolved	< 0.0500	0.0500	mg/L	0.0200		93	80-120			
Cadmium, dissolved	0.0176	0.000010	mg/L	0.0200		88	80-120			
Calcium, dissolved, dissolved	1.84	0.20	mg/L	2.00		92	80-120			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B1L0919, Continued										
LCS (B1L0919-BS1), Continued				Prepared: 2021-12-08, Analyzed: 2021-12-08						
Chromium, dissolved	0.0172	0.00050	mg/L	0.0200		86	80-120			
Cobalt, dissolved	0.0175	0.00010	mg/L	0.0200		88	80-120			
Copper, dissolved	0.0168	0.00040	mg/L	0.0200		84	80-120			
Iron, dissolved	1.67	0.010	mg/L	2.00		84	80-120			
Lead, dissolved	0.0165	0.00020	mg/L	0.0200		83	80-120			
Lithium, dissolved	0.0166	0.00010	mg/L	0.0200		83	80-120			
Magnesium, dissolved, dissolved	1.70	0.010	mg/L	2.00		85	80-120			
Manganese, dissolved	0.0163	0.00020	mg/L	0.0200		82	80-120			
Molybdenum, dissolved	0.0179	0.00010	mg/L	0.0200		90	80-120			
Nickel, dissolved	0.0174	0.00040	mg/L	0.0200		87	80-120			
Phosphorus, dissolved	1.83	0.050	mg/L	2.00		92	80-120			
Potassium, dissolved	1.85	0.10	mg/L	2.00		93	80-120			
Selenium, dissolved	0.0167	0.00050	mg/L	0.0200		83	80-120			
Silicon, dissolved	1.9	1.0	mg/L	2.00		94	80-120			
Silver, dissolved	0.0173	0.000050	mg/L	0.0200		86	80-120			
Sodium, dissolved	1.64	0.10	mg/L	2.00		82	80-120			
Strontium, dissolved	0.0165	0.0010	mg/L	0.0200		83	80-120			
Sulfur, dissolved	5.5	3.0	mg/L	5.00		111	80-120			
Tellurium, dissolved	0.0203	0.00050	mg/L	0.0200		101	80-120			
Thallium, dissolved	0.0171	0.000020	mg/L	0.0200		86	80-120			
Thorium, dissolved	0.0199	0.00010	mg/L	0.0200		100	80-120			
Tin, dissolved	0.0190	0.00020	mg/L	0.0200		95	80-120			
Titanium, dissolved	0.0171	0.0050	mg/L	0.0200		86	80-120			
Tungsten, dissolved	0.0180	0.0010	mg/L	0.0200		90	80-120			
Uranium, dissolved	0.0200	0.000020	mg/L	0.0200		100	80-120			
Vanadium, dissolved	0.0184	0.0010	mg/L	0.0200		92	80-120			
Zinc, dissolved	0.0188	0.0040	mg/L	0.0200		94	80-120			
Zirconium, dissolved	0.0187	0.00010	mg/L	0.0200		94	80-120			
Duplicate (B1L0919-DUP1)		**Source: 21L0144-05**		Prepared: 2021-12-08, Analyzed: 2021-12-08						
Aluminum, dissolved	< 0.0050	0.0050	mg/L		< 0.0050				20	
Antimony, dissolved	< 0.00020	0.00020	mg/L		< 0.00020				20	
Arsenic, dissolved	0.00051	0.00050	mg/L		0.00054				20	
Barium, dissolved	0.0952	0.0050	mg/L		0.101			6	20	
Beryllium, dissolved	< 0.00010	0.00010	mg/L		< 0.00010				20	
Bismuth, dissolved	< 0.00010	0.00010	mg/L		< 0.00010				20	
Boron, dissolved	< 0.0500	0.0500	mg/L		< 0.0500				20	
Cadmium, dissolved	0.000018	0.000010	mg/L		0.000023				20	
Calcium, dissolved, dissolved	246	0.20	mg/L		262			7	20	
Chromium, dissolved	0.00101	0.00050	mg/L		0.00104				20	
Cobalt, dissolved	0.00012	0.00010	mg/L		0.00013				20	
Copper, dissolved	0.00193	0.00040	mg/L		0.00211			9	20	
Iron, dissolved	< 0.010	0.010	mg/L		< 0.010				20	
Lead, dissolved	< 0.00020	0.00020	mg/L		< 0.00020				20	
Lithium, dissolved	0.00736	0.00010	mg/L		0.00778			6	20	
Magnesium, dissolved, dissolved	32.5	0.010	mg/L		33.9			4	20	
Manganese, dissolved	< 0.00020	0.00020	mg/L		< 0.00020				20	
Molybdenum, dissolved	0.00064	0.00010	mg/L		0.00069			7	20	
Nickel, dissolved	0.00142	0.00040	mg/L		0.00141				20	
Phosphorus, dissolved	< 0.050	0.050	mg/L		< 0.050				20	
Potassium, dissolved	6.94	0.10	mg/L		7.34			6	20	
Selenium, dissolved	0.00923	0.00050	mg/L		0.0100			8	20	
Silicon, dissolved	11.1	1.0	mg/L		11.5			4	20	
Silver, dissolved	< 0.000050	0.000050	mg/L		< 0.000050				20	
Sodium, dissolved	15.6	0.10	mg/L		16.4			5	20	
Strontium, dissolved	1.29	0.0010	mg/L		1.39			7	20	

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B1L0919, Continued										
Duplicate (B1L0919-DUP1), Continued		**Source: 21L0144-05**		Prepared: 2021-12-08, Analyzed: 2021-12-08						
Sulfur, dissolved	126	3.0	mg/L		131			3	20	
Tellurium, dissolved	< 0.00050	0.00050	mg/L		< 0.00050				20	
Thallium, dissolved	< 0.000020	0.000020	mg/L		< 0.000020				20	
Thorium, dissolved	< 0.00010	0.00010	mg/L		< 0.00010				20	
Tin, dissolved	< 0.00020	0.00020	mg/L		< 0.00020				20	
Titanium, dissolved	< 0.0050	0.0050	mg/L		< 0.0050				20	
Tungsten, dissolved	< 0.0010	0.0010	mg/L		< 0.0010				20	
Uranium, dissolved	0.00530	0.000020	mg/L		0.00568			7	20	
Vanadium, dissolved	< 0.0010	0.0010	mg/L		< 0.0010				20	
Zinc, dissolved	< 0.0040	0.0040	mg/L		< 0.0040				20	
Zirconium, dissolved	< 0.00010	0.00010	mg/L		< 0.00010				20	
Reference (B1L0919-SRM1)				Prepared: 2021-12-08, Analyzed: 2021-12-08						
Aluminum, dissolved	0.233	0.0050	mg/L	0.235		99	70-130			
Antimony, dissolved	0.0442	0.00020	mg/L	0.0431		102	70-130			
Arsenic, dissolved	0.451	0.00050	mg/L	0.423		107	70-130			
Barium, dissolved	3.30	0.0050	mg/L	3.30		100	70-130			
Beryllium, dissolved	0.210	0.00010	mg/L	0.209		100	70-130			
Boron, dissolved	1.60	0.0500	mg/L	1.65		97	70-130			
Cadmium, dissolved	0.233	0.000010	mg/L	0.221		105	70-130			
Calcium, dissolved, dissolved	8.28	0.20	mg/L	7.72		107	70-130			
Chromium, dissolved	0.454	0.00050	mg/L	0.434		105	70-130			
Cobalt, dissolved	0.135	0.00010	mg/L	0.124		109	70-130			
Copper, dissolved	0.839	0.00040	mg/L	0.815		103	70-130			
Iron, dissolved	1.30	0.010	mg/L	1.27		102	70-130			
Lead, dissolved	0.114	0.00020	mg/L	0.110		104	70-130			
Lithium, dissolved	0.102	0.00010	mg/L	0.100		102	70-130			
Magnesium, dissolved, dissolved	6.95	0.010	mg/L	6.59		105	70-130			
Manganese, dissolved	0.345	0.00020	mg/L	0.342		101	70-130			
Molybdenum, dissolved	0.402	0.00010	mg/L	0.404		100	70-130			
Nickel, dissolved	0.893	0.00040	mg/L	0.835		107	70-130			
Phosphorus, dissolved	0.468	0.050	mg/L	0.499		94	70-130			
Potassium, dissolved	3.23	0.10	mg/L	2.88		112	70-130			
Selenium, dissolved	0.0343	0.00050	mg/L	0.0324		106	70-130			
Sodium, dissolved	19.0	0.10	mg/L	18.0		105	70-130			
Strontium, dissolved	0.934	0.0010	mg/L	0.935		100	70-130			
Thallium, dissolved	0.0414	0.000020	mg/L	0.0385		108	70-130			
Uranium, dissolved	0.260	0.000020	mg/L	0.258		101	70-130			
Vanadium, dissolved	0.894	0.0010	mg/L	0.873		102	70-130			
Zinc, dissolved	0.958	0.0040	mg/L	0.848		113	70-130			
General Parameters, Batch B1K3216										
Blank (B1K3216-BLK1)				Prepared: 2021-12-01, Analyzed: 2021-12-01						
Carbon, Total Organic	< 0.50	0.50	mg/L							
Blank (B1K3216-BLK2)				Prepared: 2021-12-01, Analyzed: 2021-12-01						
Carbon, Total Organic	< 0.50	0.50	mg/L							
Blank (B1K3216-BLK3)				Prepared: 2021-12-01, Analyzed: 2021-12-01						
Carbon, Total Organic	< 0.50	0.50	mg/L							
Blank (B1K3216-BLK4)				Prepared: 2021-12-01, Analyzed: 2021-12-01						
Carbon, Total Organic	< 0.50	0.50	mg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B1K3216, Continued										
LCS (B1K3216-BS1)				Prepared: 2021-12-01, Analyzed: 2021-12-01						
Carbon, Total Organic	9.54	0.50	mg/L	10.0		95	78-116			
LCS (B1K3216-BS2)				Prepared: 2021-12-01, Analyzed: 2021-12-01						
Carbon, Total Organic	9.63	0.50	mg/L	10.0		96	78-116			
LCS (B1K3216-BS3)				Prepared: 2021-12-01, Analyzed: 2021-12-01						
Carbon, Total Organic	9.82	0.50	mg/L	10.0		98	78-116			
LCS (B1K3216-BS4)				Prepared: 2021-12-01, Analyzed: 2021-12-01						
Carbon, Total Organic	9.67	0.50	mg/L	10.0		97	78-116			
General Parameters, Batch B1L0169										
Blank (B1L0169-BLK1)				Prepared: 2021-12-01, Analyzed: 2021-12-01						
Alkalinity, Total (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L							
LCS (B1L0169-BS1)				Prepared: 2021-12-01, Analyzed: 2021-12-01						
Alkalinity, Total (as CaCO3)	110	1.0	mg/L	100		110	80-120			
General Parameters, Batch B1L0210										
Blank (B1L0210-BLK1)				Prepared: 2021-12-02, Analyzed: 2021-12-02						
Solids, Total Suspended	< 2.0	2.0	mg/L							
Blank (B1L0210-BLK2)				Prepared: 2021-12-02, Analyzed: 2021-12-02						
Solids, Total Suspended	< 2.0	2.0	mg/L							
LCS (B1L0210-BS1)				Prepared: 2021-12-02, Analyzed: 2021-12-02						
Solids, Total Suspended	99.0	10.0	mg/L	100		99	85-115			
LCS (B1L0210-BS2)				Prepared: 2021-12-02, Analyzed: 2021-12-02						
Solids, Total Suspended	102	10.0	mg/L	100		102	85-115			
General Parameters, Batch B1L0360										
Blank (B1L0360-BLK1)				Prepared: 2021-12-03, Analyzed: 2021-12-03						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							
Blank (B1L0360-BLK2)				Prepared: 2021-12-03, Analyzed: 2021-12-03						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							
Blank (B1L0360-BLK3)				Prepared: 2021-12-03, Analyzed: 2021-12-03						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							
LCS (B1L0360-BS1)				Prepared: 2021-12-03, Analyzed: 2021-12-03						
Ammonia, Total (as N)	0.958	0.050	mg/L	1.00		96	90-115			
LCS (B1L0360-BS2)				Prepared: 2021-12-03, Analyzed: 2021-12-03						
Ammonia, Total (as N)	0.945	0.050	mg/L	1.00		94	90-115			
LCS (B1L0360-BS3)				Prepared: 2021-12-03, Analyzed: 2021-12-03						
Ammonia, Total (as N)	0.926	0.050	mg/L	1.00		93	90-115			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B1L0360, Continued										
Duplicate (B1L0360-DUP2)		**Source: 21L0144-06**		Prepared: 2021-12-03, Analyzed: 2021-12-03						
Ammonia, Total (as N)	< 0.050	0.050	mg/L		0.051				15	
Matrix Spike (B1L0360-MS2)		**Source: 21L0144-06**		Prepared: 2021-12-03, Analyzed: 2021-12-03						
Ammonia, Total (as N)	0.284	0.050	mg/L	0.250	0.051	93	75-125			
General Parameters, Batch B1L0377										
Blank (B1L0377-BLK1)				Prepared: 2021-12-03, Analyzed: 2021-12-03						
Solids, Total Suspended	< 2.0	2.0	mg/L							
Blank (B1L0377-BLK2)				Prepared: 2021-12-03, Analyzed: 2021-12-03						
Solids, Total Suspended	< 2.0	2.0	mg/L							
LCS (B1L0377-BS1)				Prepared: 2021-12-03, Analyzed: 2021-12-03						
Solids, Total Suspended	89.0	10.0	mg/L	100		89	85-115			
LCS (B1L0377-BS2)				Prepared: 2021-12-03, Analyzed: 2021-12-03						
Solids, Total Suspended	88.0	10.0	mg/L	100		88	85-115			
General Parameters, Batch B1L0689										
Blank (B1L0689-BLK2)				Prepared: 2021-12-07, Analyzed: 2021-12-07						
Phosphorus, Total Dissolved	< 0.0050	0.0050	mg/L							
LCS (B1L0689-BS2)				Prepared: 2021-12-07, Analyzed: 2021-12-07						
Phosphorus, Total Dissolved	0.107	0.0050	mg/L	0.100		107	85-115			
Total Metals, Batch B1L0887										
Blank (B1L0887-BLK1)				Prepared: 2021-12-08, Analyzed: 2021-12-08						
Mercury, total	< 0.000010	0.000010	mg/L							
Blank (B1L0887-BLK2)				Prepared: 2021-12-08, Analyzed: 2021-12-08						
Mercury, total	< 0.000010	0.000010	mg/L							
Duplicate (B1L0887-DUP1)		**Source: 21L0144-01**		Prepared: 2021-12-08, Analyzed: 2021-12-08						
Mercury, total	< 0.000010	0.000010	mg/L		< 0.000010				20	
Matrix Spike (B1L0887-MS1)		**Source: 21L0144-02**		Prepared: 2021-12-08, Analyzed: 2021-12-08						
Mercury, total	0.000216	0.000010	mg/L	0.000250	< 0.000010	86	70-130			
Reference (B1L0887-SRM1)				Prepared: 2021-12-08, Analyzed: 2021-12-08						
Mercury, total	0.000496	0.000010	mg/L	0.000500		99	0-200			
Reference (B1L0887-SRM2)				Prepared: 2021-12-08, Analyzed: 2021-12-08						
Mercury, total	0.000495	0.000010	mg/L	0.000500		99	0-200			
Total Metals, Batch B1L0923										
Blank (B1L0923-BLK1)				Prepared: 2021-12-08, Analyzed: 2021-12-08						
Aluminum, total	< 0.0050	0.0050	mg/L							
Antimony, total	< 0.00020	0.00020	mg/L							
Arsenic, total	< 0.00050	0.00050	mg/L							
Barium, total	< 0.0050	0.0050	mg/L							
Beryllium, total	< 0.00010	0.00010	mg/L							
Bismuth, total	< 0.00010	0.00010	mg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B1L0923, Continued										
Blank (B1L0923-BLK1), Continued				Prepared: 2021-12-08, Analyzed: 2021-12-08						
Boron, total	< 0.0500	0.0500	mg/L							
Cadmium, total	< 0.000010	0.000010	mg/L							
Calcium, total	< 0.20	0.20	mg/L							
Chromium, total	< 0.00050	0.00050	mg/L							
Cobalt, total	< 0.00010	0.00010	mg/L							
Copper, total	< 0.00040	0.00040	mg/L							
Iron, total	< 0.010	0.010	mg/L							
Lead, total	< 0.00020	0.00020	mg/L							
Lithium, total	< 0.00010	0.00010	mg/L							
Magnesium, total	< 0.010	0.010	mg/L							
Manganese, total	< 0.00020	0.00020	mg/L							
Mercury, total	< 0.000040	0.000040	mg/L							
Molybdenum, total	< 0.00010	0.00010	mg/L							
Nickel, total	< 0.00040	0.00040	mg/L							
Phosphorus, total	< 0.050	0.050	mg/L							
Potassium, total	< 0.10	0.10	mg/L							
Selenium, total	< 0.00050	0.00050	mg/L							
Silicon, total	< 1.0	1.0	mg/L							
Silver, total	< 0.000050	0.000050	mg/L							
Sodium, total	< 0.10	0.10	mg/L							
Strontium, total	< 0.0010	0.0010	mg/L							
Sulfur, total	< 3.0	3.0	mg/L							
Tellurium, total	< 0.00050	0.00050	mg/L							
Thallium, total	< 0.000020	0.000020	mg/L							
Thorium, total	< 0.00010	0.00010	mg/L							
Tin, total	< 0.00020	0.00020	mg/L							
Titanium, total	< 0.0050	0.0050	mg/L							
Tungsten, total	< 0.0010	0.0010	mg/L							
Uranium, total	< 0.000020	0.000020	mg/L							
Vanadium, total	< 0.0010	0.0010	mg/L							
Zinc, total	< 0.0040	0.0040	mg/L							
Zirconium, total	< 0.00010	0.00010	mg/L							
LCS (B1L0923-BS1)				Prepared: 2021-12-08, Analyzed: 2021-12-08						
Aluminum, total	0.0231	0.0050	mg/L	0.0200		115	80-120			
Antimony, total	0.0208	0.00020	mg/L	0.0200		104	80-120			
Arsenic, total	0.0200	0.00050	mg/L	0.0200		100	80-120			
Barium, total	0.0199	0.0050	mg/L	0.0200		100	80-120			
Beryllium, total	0.0198	0.00010	mg/L	0.0200		99	80-120			
Bismuth, total	0.0198	0.00010	mg/L	0.0200		99	80-120			
Boron, total	< 0.0500	0.0500	mg/L	0.0200		96	80-120			
Cadmium, total	0.0212	0.000010	mg/L	0.0200		106	80-120			
Calcium, total	2.15	0.20	mg/L	2.00		108	80-120			
Chromium, total	0.0196	0.00050	mg/L	0.0200		98	80-120			
Cobalt, total	0.0215	0.00010	mg/L	0.0200		108	80-120			
Copper, total	0.0205	0.00040	mg/L	0.0200		103	80-120			
Iron, total	2.09	0.010	mg/L	2.00		104	80-120			
Lead, total	0.0192	0.00020	mg/L	0.0200		96	80-120			
Lithium, total	0.0197	0.00010	mg/L	0.0200		99	80-120			
Magnesium, total	2.11	0.010	mg/L	2.00		106	80-120			
Manganese, total	0.0204	0.00020	mg/L	0.0200		102	80-120			
Mercury, total	0.00102	0.000040	mg/L	0.00101		101	80-120			
Molybdenum, total	0.0198	0.00010	mg/L	0.0200		99	80-120			
Nickel, total	0.0213	0.00040	mg/L	0.0200		107	80-120			
Phosphorus, total	1.88	0.050	mg/L	2.00		94	80-120			
Potassium, total	2.06	0.10	mg/L	2.00		103	80-120			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	21L0144
PROJECT	21-124-01PG	**REPORTED**	2022-01-19 11:47

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B1L0923, Continued										
LCS (B1L0923-BS1), Continued				Prepared: 2021-12-08, Analyzed: 2021-12-08						
Selenium, total	0.0192	0.00050	mg/L	0.0200		96	80-120			
Silicon, total	1.9	1.0	mg/L	2.00		97	80-120			
Silver, total	0.0213	0.000050	mg/L	0.0200		107	80-120			
Sodium, total	2.05	0.10	mg/L	2.00		103	80-120			
Strontium, total	0.0194	0.0010	mg/L	0.0200		97	80-120			
Sulfur, total	5.2	3.0	mg/L	5.00		103	80-120			
Tellurium, total	0.0211	0.00050	mg/L	0.0200		105	80-120			
Thallium, total	0.0201	0.000020	mg/L	0.0200		100	80-120			
Thorium, total	0.0203	0.00010	mg/L	0.0200		101	80-120			
Tin, total	0.0207	0.00020	mg/L	0.0200		104	80-120			
Titanium, total	0.0212	0.0050	mg/L	0.0200		106	80-120			
Tungsten, total	0.0200	0.0010	mg/L	0.0200		100	80-120			
Uranium, total	0.0205	0.000020	mg/L	0.0200		102	80-120			
Vanadium, total	0.0206	0.0010	mg/L	0.0200		103	80-120			
Zinc, total	0.0215	0.0040	mg/L	0.0200		108	80-120			
Zirconium, total	0.0210	0.00010	mg/L	0.0200		105	80-120			
Reference (B1L0923-SRM1)				Prepared: 2021-12-08, Analyzed: 2021-12-08						
Aluminum, total	0.208	0.0050	mg/L	0.198		105	70-130			
Antimony, total	0.0255	0.00020	mg/L	0.0230		111	70-130			
Arsenic, total	0.0220	0.00050	mg/L	0.0200		110	70-130			
Barium, total	0.0163	0.0050	mg/L	0.0161		101	70-130			
Beryllium, total	0.00424	0.00010	mg/L	0.00384		110	70-130			
Boron, total	0.198	0.0500	mg/L	0.191		104	70-130			
Cadmium, total	0.00430	0.000010	mg/L	0.00404		106	70-130			
Calcium, total	0.94	0.20	mg/L	0.938		100	70-130			
Chromium, total	0.0274	0.00050	mg/L	0.0256		107	70-130			
Cobalt, total	0.0243	0.00010	mg/L	0.0214		114	70-130			
Copper, total	0.0343	0.00040	mg/L	0.0322		107	70-130			
Iron, total	0.066	0.010	mg/L	0.0580		114	70-130			
Lead, total	0.00805	0.00020	mg/L	0.00796		101	70-130			
Lithium, total	0.0103	0.00010	mg/L	0.0102		101	70-130			
Magnesium, total	0.119	0.010	mg/L	0.112		107	70-130			
Manganese, total	0.0125	0.00020	mg/L	0.0120		104	70-130			
Molybdenum, total	0.0465	0.00010	mg/L	0.0438		106	70-130			
Nickel, total	0.0524	0.00040	mg/L	0.0394		133	70-130			SRM
Potassium, total	0.92	0.10	mg/L	0.820		112	70-130			
Selenium, total	0.124	0.00050	mg/L	0.117		106	70-130			
Sodium, total	0.52	0.10	mg/L	0.490		107	70-130			
Strontium, total	0.285	0.0010	mg/L	0.276		103	70-130			
Thallium, total	0.0128	0.000020	mg/L	0.0118		108	70-130			
Uranium, total	0.0103	0.000020	mg/L	0.00970		107	70-130			
Vanadium, total	0.0313	0.0010	mg/L	0.0274		114	70-130			
Zinc, total	0.0982	0.0040	mg/L	0.0884		111	70-130			

QC Qualifiers:

SRM Recovery of one or more analytes on Standard Reference Material (SRM) analysis are outside of control limits.

CERTIFICATE OF ANALYSIS

REPORTED TO	Western Water Associates Ltd 106 - 5145 26th Street Vernon, BC V1T 8G4		
ATTENTION	Warren Grafton	**WORK ORDER**	22B3252
PO NUMBER		**RECEIVED / TEMP**	2022-02-24 16:03 / 4.7°C
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35
PROJECT INFO		**COC NUMBER**	No Number

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO/IEC 17025:2017 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

In this Draft Report, please see the Analyses In Progress section after the appendices.

If you have any questions or concerns, please contact me at bwhitehead@caro.ca

Authorized By:

DRAFT REPORT
DATA SUBJECT TO CHANGE

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW20-1B Hullcar MW (E319191) (22B3252-01) | Matrix: Water | Sampled: 2022-02-24 13:30						
Anions						
Chloride	**8.34**	AO ≤ 250	0.10	mg/L	2022-02-28	
Nitrate (as N)	**1.70**	MAC = 10	0.010	mg/L	2022-02-28	HT1
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2022-02-28	HT1
Sulfate	**165**	AO ≤ 500	1.0	mg/L	2022-02-28	
Calculated Parameters						
Hardness, Total (as CaCO3)	**332**	None Required	0.500	mg/L	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.0088**	5	0.0050	mg/L	2022-03-02	
Antimony, dissolved	< 0.00020	0.09	0.00020	mg/L	2022-03-02	
Arsenic, dissolved	**0.00146**	0.05	0.00050	mg/L	2022-03-02	
Barium, dissolved	**0.0416**	5	0.0050	mg/L	2022-03-02	
Beryllium, dissolved	< 0.00010	0.0015	0.00010	mg/L	2022-03-02	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
Boron, dissolved	< 0.0500	0.5	0.0500	mg/L	2022-03-02	
Cadmium, dissolved	**0.000014**	0.0005	0.000010	mg/L	2022-03-02	
Calcium, dissolved	**95.8**	N/A	0.20	mg/L	2022-03-02	
Chromium, dissolved	< 0.00050	N/A	0.00050	mg/L	2022-03-02	
Cobalt, dissolved	< 0.00010	0.04	0.00010	mg/L	2022-03-02	
Copper, dissolved	**0.00048**	0.02	0.00040	mg/L	2022-03-02	
Iron, dissolved	< 0.010	5	0.010	mg/L	2022-03-02	
Lead, dissolved	< 0.00020	0.02	0.00020	mg/L	2022-03-02	
Lithium, dissolved	**0.00560**	2.5	0.00010	mg/L	2022-03-02	
Magnesium, dissolved	**22.4**	N/A	0.010	mg/L	2022-03-02	
Manganese, dissolved	**0.0445**	0.2	0.00020	mg/L	2022-03-02	
Mercury, dissolved	< 0.000010	0.00025	0.000010	mg/L	2022-03-02	
Molybdenum, dissolved	**0.00579**	0.01	0.00010	mg/L	2022-03-02	
Nickel, dissolved	**0.00078**	0.2	0.00040	mg/L	2022-03-02	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2022-03-02	
Potassium, dissolved	**5.11**	N/A	0.10	mg/L	2022-03-02	
Selenium, dissolved	**0.00140**	0.02	0.00050	mg/L	2022-03-02	
Silicon, dissolved	**11.2**	N/A	1.0	mg/L	2022-03-02	
Silver, dissolved	< 0.000050	0.0005	0.000050	mg/L	2022-03-02	
Sodium, dissolved	**19.9**	N/A	0.10	mg/L	2022-03-02	
Strontium, dissolved	**0.828**	N/A	0.0010	mg/L	2022-03-02	
Sulfur, dissolved	**56.0**	N/A	3.0	mg/L	2022-03-02	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2022-03-02	
Thallium, dissolved	< 0.000020	0.003	0.000020	mg/L	2022-03-02	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2022-03-02	
Titanium, dissolved	< 0.0050	1	0.0050	mg/L	2022-03-02	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2022-03-02	
Uranium, dissolved	**0.00220**	0.01	0.000020	mg/L	2022-03-02	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW20-1B Hullcar MW (E319191) (22B3252-01) | Matrix: Water | Sampled: 2022-02-24 13:30, Continued						
Dissolved Metals, Continued						
Vanadium, dissolved	< 0.0010	0.1	0.0010	mg/L	2022-03-02	
Zinc, dissolved	< 0.0040	0.075	0.0040	mg/L	2022-03-02	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
General Parameters						
Alkalinity, Total (as CaCO3)	**233**	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Bicarbonate (as CaCO3)	**233**	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2022-03-02	
Carbon, Total Organic	**1.93**	MAC = 4	0.50	mg/L	2022-02-28	
Nitrogen, Dissolved Kjeldahl	**0.224**	N/A	0.050	mg/L	2022-03-02	
Phosphorus, Total Dissolved	**0.0316**	N/A	0.0050	mg/L	2022-03-03	
Solids, Total Suspended	**3.0**	N/A	2.0	mg/L	2022-03-02	
Total Metals						
Aluminum, total	**0.0683**	OG < 9.5	0.0050	mg/L	2022-03-03	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2022-03-03	
Arsenic, total	**0.00135**	MAC = 0.01	0.00050	mg/L	2022-03-03	
Barium, total	**0.0430**	MAC = 2	0.0050	mg/L	2022-03-03	
Beryllium, total	< 0.00010	0.0015	0.00010	mg/L	2022-03-03	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2022-03-03	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010	mg/L	2022-03-03	
Calcium, total	**103**	None Required	0.20	mg/L	2022-03-03	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2022-03-03	
Cobalt, total	**0.00013**	0.001	0.00010	mg/L	2022-03-03	
Copper, total	**0.00075**	AO ≤ 1	0.00040	mg/L	2022-03-03	
Iron, total	**0.147**	AO ≤ 0.3	0.010	mg/L	2022-03-03	
Lead, total	< 0.00020	MAC = 0.01	0.00020	mg/L	2022-03-03	
Lithium, total	**0.00558**	0.008	0.00010	mg/L	2022-03-03	
Magnesium, total	**22.6**	None Required	0.010	mg/L	2022-03-03	
Manganese, total	**0.0581**	AO ≤ 0.05	0.00020	mg/L	2022-03-03	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2022-03-03	
Molybdenum, total	**0.00566**	MAC = 0.25	0.00010	mg/L	2022-03-03	
Nickel, total	**0.00092**	0.08	0.00040	mg/L	2022-03-03	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2022-03-03	
Potassium, total	**4.73**	N/A	0.10	mg/L	2022-03-03	
Selenium, total	**0.00122**	MAC = 0.01	0.00050	mg/L	2022-03-03	
Silicon, total	**10.6**	N/A	1.0	mg/L	2022-03-03	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2022-03-03	
Sodium, total	**20.9**	AO ≤ 200	0.10	mg/L	2022-03-03	
Strontium, total	**0.893**	MAC = 7	0.0010	mg/L	2022-03-03	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW20-1B Hullcar MW (E319191) (22B3252-01) | Matrix: Water | Sampled: 2022-02-24 13:30, Continued						
Total Metals, Continued						
Sulfur, total	**52.7**	N/A	3.0	mg/L	2022-03-03	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2022-03-03	
Thallium, total	< 0.000020	0.003	0.000020	mg/L	2022-03-03	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
Tin, total	< 0.00020	2.5	0.00020	mg/L	2022-03-03	
Titanium, total	< 0.0050	1	0.0050	mg/L	2022-03-03	
Tungsten, total	< 0.0010	0.003	0.0010	mg/L	2022-03-03	
Uranium, total	**0.00223**	MAC = 0.02	0.000020	mg/L	2022-03-03	
Vanadium, total	< 0.0010	0.02	0.0010	mg/L	2022-03-03	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2022-03-03	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
MW19-1AR Piezometer (E317950) (22B3252-02) | Matrix: Water | Sampled: 2022-02-24 14:25						
Anions						
Chloride	**37.6**	AO ≤ 250	0.10	mg/L	2022-02-28	
Nitrate (as N)	**11.2**	MAC = 10	0.010	mg/L	2022-02-28	HT1
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2022-02-28	HT1
Sulfate	**378**	AO ≤ 500	1.0	mg/L	2022-02-28	
Calculated Parameters						
Hardness, Total (as CaCO3)	**738**	None Required	0.500	mg/L	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.0168**	5	0.0050	mg/L	2022-03-02	
Antimony, dissolved	< 0.00020	0.09	0.00020	mg/L	2022-03-02	
Arsenic, dissolved	**0.00068**	0.05	0.00050	mg/L	2022-03-02	
Barium, dissolved	**0.104**	5	0.0050	mg/L	2022-03-02	
Beryllium, dissolved	< 0.00010	0.0015	0.00010	mg/L	2022-03-02	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
Boron, dissolved	< 0.0500	0.5	0.0500	mg/L	2022-03-02	
Cadmium, dissolved	**0.000025**	0.0005	0.000010	mg/L	2022-03-02	
Calcium, dissolved	**239**	N/A	0.20	mg/L	2022-03-02	
Chromium, dissolved	**0.00130**	N/A	0.00050	mg/L	2022-03-02	
Cobalt, dissolved	**0.00014**	0.04	0.00010	mg/L	2022-03-02	
Copper, dissolved	**0.00674**	0.02	0.00040	mg/L	2022-03-02	
Iron, dissolved	< 0.010	5	0.010	mg/L	2022-03-02	
Lead, dissolved	< 0.00020	0.02	0.00020	mg/L	2022-03-02	
Lithium, dissolved	**0.00742**	2.5	0.00010	mg/L	2022-03-02	
Magnesium, dissolved	**34.1**	N/A	0.010	mg/L	2022-03-02	
Manganese, dissolved	**0.00030**	0.2	0.00020	mg/L	2022-03-02	
Mercury, dissolved	< 0.000010	0.00025	0.000010	mg/L	2022-03-02	
Molybdenum, dissolved	**0.00091**	0.01	0.00010	mg/L	2022-03-02	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW19-1AR Piezometer (E317950) (22B3252-02) | Matrix: Water | Sampled: 2022-02-24 14:25, Continued						
Dissolved Metals, Continued						
Nickel, dissolved	**0.00144**	0.2	0.00040	mg/L	2022-03-02	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2022-03-02	
Potassium, dissolved	**7.52**	N/A	0.10	mg/L	2022-03-02	
Selenium, dissolved	**0.00587**	0.02	0.00050	mg/L	2022-03-02	
Silicon, dissolved	**14.4**	N/A	1.0	mg/L	2022-03-02	
Silver, dissolved	< 0.000050	0.0005	0.000050	mg/L	2022-03-02	
Sodium, dissolved	**17.4**	N/A	0.10	mg/L	2022-03-02	
Strontium, dissolved	**1.33**	N/A	0.0010	mg/L	2022-03-02	
Sulfur, dissolved	**146**	N/A	3.0	mg/L	2022-03-02	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2022-03-02	
Thallium, dissolved	< 0.000020	0.003	0.000020	mg/L	2022-03-02	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2022-03-02	
Titanium, dissolved	< 0.0050	1	0.0050	mg/L	2022-03-02	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2022-03-02	
Uranium, dissolved	**0.00546**	0.01	0.000020	mg/L	2022-03-02	
Vanadium, dissolved	< 0.0010	0.1	0.0010	mg/L	2022-03-02	
Zinc, dissolved	< 0.0040	0.075	0.0040	mg/L	2022-03-02	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
General Parameters						
Alkalinity, Total (as CaCO3)	**334**	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Bicarbonate (as CaCO3)	**334**	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2022-03-02	
Carbon, Total Organic	**4.62**	MAC = 4	0.50	mg/L	2022-02-28	
Nitrogen, Dissolved Kjeldahl	**0.598**	N/A	0.050	mg/L	2022-03-02	
Phosphorus, Total Dissolved	**0.0129**	N/A	0.0050	mg/L	2022-03-03	
Solids, Total Suspended	< 2.0	N/A	2.0	mg/L	2022-03-02	
Total Metals						
Aluminum, total	< 0.0050	OG < 9.5	0.0050	mg/L	2022-03-03	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2022-03-03	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050	mg/L	2022-03-03	
Barium, total	**0.101**	MAC = 2	0.0050	mg/L	2022-03-03	
Beryllium, total	< 0.00010	0.0015	0.00010	mg/L	2022-03-03	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2022-03-03	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010	mg/L	2022-03-03	
Calcium, total	**250**	None Required	0.20	mg/L	2022-03-03	
Chromium, total	**0.00129**	MAC = 0.05	0.00050	mg/L	2022-03-03	
Cobalt, total	**0.00013**	0.001	0.00010	mg/L	2022-03-03	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW19-1AR Piezometer (E317950) (22B3252-02) | Matrix: Water | Sampled: 2022-02-24 14:25, Continued						
Total Metals, Continued						
Copper, total	**0.00378**	AO ≤ 1	0.00040	mg/L	2022-03-03	
Iron, total	**0.015**	AO ≤ 0.3	0.010	mg/L	2022-03-03	
Lead, total	< 0.00020	MAC = 0.01	0.00020	mg/L	2022-03-03	
Lithium, total	**0.00750**	0.008	0.00010	mg/L	2022-03-03	
Magnesium, total	**34.8**	None Required	0.010	mg/L	2022-03-03	
Manganese, total	**0.00041**	AO ≤ 0.05	0.00020	mg/L	2022-03-03	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2022-03-03	
Molybdenum, total	**0.00089**	MAC = 0.25	0.00010	mg/L	2022-03-03	
Nickel, total	**0.00154**	0.08	0.00040	mg/L	2022-03-03	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2022-03-03	
Potassium, total	**6.71**	N/A	0.10	mg/L	2022-03-03	
Selenium, total	**0.00506**	MAC = 0.01	0.00050	mg/L	2022-03-03	
Silicon, total	**13.3**	N/A	1.0	mg/L	2022-03-03	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2022-03-03	
Sodium, total	**17.4**	AO ≤ 200	0.10	mg/L	2022-03-03	
Strontium, total	**1.40**	MAC = 7	0.0010	mg/L	2022-03-03	
Sulfur, total	**129**	N/A	3.0	mg/L	2022-03-03	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2022-03-03	
Thallium, total	< 0.000020	0.003	0.000020	mg/L	2022-03-03	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
Tin, total	< 0.00020	2.5	0.00020	mg/L	2022-03-03	
Titanium, total	< 0.0050	1	0.0050	mg/L	2022-03-03	
Tungsten, total	< 0.0010	0.003	0.0010	mg/L	2022-03-03	
Uranium, total	**0.00563**	MAC = 0.02	0.000020	mg/L	2022-03-03	
Vanadium, total	< 0.0010	0.02	0.0010	mg/L	2022-03-03	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2022-03-03	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
MW20-2B Hullcar MW (E319192) (22B3252-03) | Matrix: Water | Sampled: 2022-02-24 11:20						
Anions						
Chloride	**27.3**	AO ≤ 250	0.10	mg/L	2022-02-28	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2022-02-28	HT1
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2022-02-28	HT1
Sulfate	**220**	AO ≤ 500	1.0	mg/L	2022-02-28	
Calculated Parameters						
Hardness, Total (as CaCO3)	**478**	None Required	0.500	mg/L	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.0143**	5	0.0050	mg/L	2022-03-02	
Antimony, dissolved	< 0.00020	0.09	0.00020	mg/L	2022-03-02	
Arsenic, dissolved	**0.00140**	0.05	0.00050	mg/L	2022-03-02	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW20-2B Hullcar MW (E319192) (22B3252-03) | Matrix: Water | Sampled: 2022-02-24 11:20, Continued						
Dissolved Metals, Continued						
Barium, dissolved	**0.0576**	5	0.0050	mg/L	2022-03-02	
Beryllium, dissolved	< 0.00010	0.0015	0.00010	mg/L	2022-03-02	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
Boron, dissolved	< 0.0500	0.5	0.0500	mg/L	2022-03-02	
Cadmium, dissolved	< 0.000010	0.0005	0.000010	mg/L	2022-03-02	
Calcium, dissolved	**151**	N/A	0.20	mg/L	2022-03-02	
Chromium, dissolved	< 0.00050	N/A	0.00050	mg/L	2022-03-02	
Cobalt, dissolved	**0.00034**	0.04	0.00010	mg/L	2022-03-02	
Copper, dissolved	< 0.00040	0.02	0.00040	mg/L	2022-03-02	
Iron, dissolved	**1.30**	5	0.010	mg/L	2022-03-02	
Lead, dissolved	< 0.00020	0.02	0.00020	mg/L	2022-03-02	
Lithium, dissolved	**0.0124**	2.5	0.00010	mg/L	2022-03-02	
Magnesium, dissolved	**24.4**	N/A	0.010	mg/L	2022-03-02	
Manganese, dissolved	**0.0836**	0.2	0.00020	mg/L	2022-03-02	
Mercury, dissolved	< 0.000010	0.00025	0.000010	mg/L	2022-03-02	
Molybdenum, dissolved	**0.00415**	0.01	0.00010	mg/L	2022-03-02	
Nickel, dissolved	**0.00075**	0.2	0.00040	mg/L	2022-03-02	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2022-03-02	
Potassium, dissolved	**8.30**	N/A	0.10	mg/L	2022-03-02	
Selenium, dissolved	< 0.00050	0.02	0.00050	mg/L	2022-03-02	
Silicon, dissolved	**12.7**	N/A	1.0	mg/L	2022-03-02	
Silver, dissolved	< 0.000050	0.0005	0.000050	mg/L	2022-03-02	
Sodium, dissolved	**24.1**	N/A	0.10	mg/L	2022-03-02	
Strontium, dissolved	**1.27**	N/A	0.0010	mg/L	2022-03-02	
Sulfur, dissolved	**87.1**	N/A	3.0	mg/L	2022-03-02	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2022-03-02	
Thallium, dissolved	< 0.000020	0.003	0.000020	mg/L	2022-03-02	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2022-03-02	
Titanium, dissolved	< 0.0050	1	0.0050	mg/L	2022-03-02	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2022-03-02	
Uranium, dissolved	**0.00301**	0.01	0.000020	mg/L	2022-03-02	
Vanadium, dissolved	< 0.0010	0.1	0.0010	mg/L	2022-03-02	
Zinc, dissolved	< 0.0040	0.075	0.0040	mg/L	2022-03-02	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
General Parameters						
Alkalinity, Total (as CaCO3)	**271**	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Bicarbonate (as CaCO3)	**271**	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2022-03-02	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW20-2B Hullcar MW (E319192) (22B3252-03) | Matrix: Water | Sampled: 2022-02-24 11:20, Continued						
General Parameters, Continued						
Carbon, Total Organic	**1.44**	MAC = 4	0.50	mg/L	2022-02-28	
Nitrogen, Dissolved Kjeldahl	**0.059**	N/A	0.050	mg/L	2022-03-02	
Phosphorus, Total Dissolved	**0.0112**	N/A	0.0050	mg/L	2022-03-03	
Solids, Total Suspended	**4.6**	N/A	2.0	mg/L	2022-03-02	
Total Metals						
Aluminum, total	**0.0102**	OG < 9.5	0.0050	mg/L	2022-03-03	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2022-03-03	
Arsenic, total	**0.00115**	MAC = 0.01	0.00050	mg/L	2022-03-03	
Barium, total	**0.0545**	MAC = 2	0.0050	mg/L	2022-03-03	
Beryllium, total	< 0.00010	0.0015	0.00010	mg/L	2022-03-03	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2022-03-03	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010	mg/L	2022-03-03	
Calcium, total	**149**	None Required	0.20	mg/L	2022-03-03	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2022-03-03	
Cobalt, total	**0.00032**	0.001	0.00010	mg/L	2022-03-03	
Copper, total	< 0.00040	AO ≤ 1	0.00040	mg/L	2022-03-03	
Iron, total	**1.37**	AO ≤ 0.3	0.010	mg/L	2022-03-03	
Lead, total	< 0.00020	MAC = 0.01	0.00020	mg/L	2022-03-03	
Lithium, total	**0.0118**	0.008	0.00010	mg/L	2022-03-03	
Magnesium, total	**23.6**	None Required	0.010	mg/L	2022-03-03	
Manganese, total	**0.0827**	AO ≤ 0.05	0.00020	mg/L	2022-03-03	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2022-03-03	
Molybdenum, total	**0.00398**	MAC = 0.25	0.00010	mg/L	2022-03-03	
Nickel, total	**0.00079**	0.08	0.00040	mg/L	2022-03-03	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2022-03-03	
Potassium, total	**7.15**	N/A	0.10	mg/L	2022-03-03	
Selenium, total	< 0.00050	MAC = 0.01	0.00050	mg/L	2022-03-03	
Silicon, total	**11.4**	N/A	1.0	mg/L	2022-03-03	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2022-03-03	
Sodium, total	**23.3**	AO ≤ 200	0.10	mg/L	2022-03-03	
Strontium, total	**1.27**	MAC = 7	0.0010	mg/L	2022-03-03	
Sulfur, total	**73.2**	N/A	3.0	mg/L	2022-03-03	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2022-03-03	
Thallium, total	< 0.000020	0.003	0.000020	mg/L	2022-03-03	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
Tin, total	< 0.00020	2.5	0.00020	mg/L	2022-03-03	
Titanium, total	< 0.0050	1	0.0050	mg/L	2022-03-03	
Tungsten, total	< 0.0010	0.003	0.0010	mg/L	2022-03-03	
Uranium, total	**0.00282**	MAC = 0.02	0.000020	mg/L	2022-03-03	
Vanadium, total	< 0.0010	0.02	0.0010	mg/L	2022-03-03	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2022-03-03	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW20-2B Hullcar MW (E319192) (22B3252-03) | Matrix: Water | Sampled: 2022-02-24 11:20, Continued						
Total Metals, Continued						
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
MW19-3A Piezometer (E317974) (22B3252-04) | Matrix: Water | Sampled: 2022-02-24 10:30						
Anions						
Chloride	**22.3**	AO ≤ 250	0.10	mg/L	2022-02-28	
Nitrate (as N)	**8.83**	MAC = 10	0.010	mg/L	2022-02-28	HT1
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2022-02-28	HT1
Sulfate	**177**	AO ≤ 500	1.0	mg/L	2022-02-28	
Calculated Parameters						
Hardness, Total (as CaCO3)	**518**	None Required	0.500	mg/L	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.0240**	5	0.0050	mg/L	2022-03-02	
Antimony, dissolved	< 0.00020	0.09	0.00020	mg/L	2022-03-02	
Arsenic, dissolved	**0.00050**	0.05	0.00050	mg/L	2022-03-02	
Barium, dissolved	**0.0564**	5	0.0050	mg/L	2022-03-02	
Beryllium, dissolved	< 0.00010	0.0015	0.00010	mg/L	2022-03-02	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
Boron, dissolved	< 0.0500	0.5	0.0500	mg/L	2022-03-02	
Cadmium, dissolved	**0.000034**	0.0005	0.000010	mg/L	2022-03-02	
Calcium, dissolved	**175**	N/A	0.20	mg/L	2022-03-02	
Chromium, dissolved	< 0.00050	N/A	0.00050	mg/L	2022-03-02	
Cobalt, dissolved	**0.00010**	0.04	0.00010	mg/L	2022-03-02	
Copper, dissolved	**0.00236**	0.02	0.00040	mg/L	2022-03-02	
Iron, dissolved	< 0.010	5	0.010	mg/L	2022-03-02	
Lead, dissolved	< 0.00020	0.02	0.00020	mg/L	2022-03-02	
Lithium, dissolved	**0.00498**	2.5	0.00010	mg/L	2022-03-02	
Magnesium, dissolved	**19.2**	N/A	0.010	mg/L	2022-03-02	
Manganese, dissolved	**0.00161**	0.2	0.00020	mg/L	2022-03-02	
Mercury, dissolved	< 0.000010	0.00025	0.000010	mg/L	2022-03-02	
Molybdenum, dissolved	**0.00153**	0.01	0.00010	mg/L	2022-03-02	
Nickel, dissolved	**0.00154**	0.2	0.00040	mg/L	2022-03-02	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2022-03-02	
Potassium, dissolved	**6.70**	N/A	0.10	mg/L	2022-03-02	
Selenium, dissolved	**0.00305**	0.02	0.00050	mg/L	2022-03-02	
Silicon, dissolved	**9.5**	N/A	1.0	mg/L	2022-03-02	
Silver, dissolved	< 0.000050	0.0005	0.000050	mg/L	2022-03-02	
Sodium, dissolved	**11.9**	N/A	0.10	mg/L	2022-03-02	
Strontium, dissolved	**1.26**	N/A	0.0010	mg/L	2022-03-02	
Sulfur, dissolved	**65.3**	N/A	3.0	mg/L	2022-03-02	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2022-03-02	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW19-3A Piezometer (E317974) (22B3252-04) | Matrix: Water | Sampled: 2022-02-24 10:30, Continued						
Dissolved Metals, Continued						
Thallium, dissolved	< 0.000020	0.003	0.000020	mg/L	2022-03-02	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2022-03-02	
Titanium, dissolved	< 0.0050	1	0.0050	mg/L	2022-03-02	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2022-03-02	
Uranium, dissolved	**0.0336**	0.01	0.000020	mg/L	2022-03-02	
Vanadium, dissolved	< 0.0010	0.1	0.0010	mg/L	2022-03-02	
Zinc, dissolved	< 0.0040	0.075	0.0040	mg/L	2022-03-02	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
General Parameters						
Alkalinity, Total (as CaCO3)	**336**	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Bicarbonate (as CaCO3)	**336**	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2022-03-02	
Carbon, Total Organic	**2.70**	MAC = 4	0.50	mg/L	2022-02-28	
Nitrogen, Dissolved Kjeldahl	**0.284**	N/A	0.050	mg/L	2022-03-02	
Phosphorus, Total Dissolved	**0.0108**	N/A	0.0050	mg/L	2022-03-03	
Solids, Total Suspended	**2.4**	N/A	2.0	mg/L	2022-03-02	
Total Metals						
Aluminum, total	**0.0149**	OG < 9.5	0.0050	mg/L	2022-03-03	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2022-03-03	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050	mg/L	2022-03-03	
Barium, total	**0.0549**	MAC = 2	0.0050	mg/L	2022-03-03	
Beryllium, total	< 0.00010	0.0015	0.00010	mg/L	2022-03-03	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2022-03-03	
Cadmium, total	**0.000033**	MAC = 0.005	0.000010	mg/L	2022-03-03	
Calcium, total	**184**	None Required	0.20	mg/L	2022-03-03	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2022-03-03	
Cobalt, total	**0.00016**	0.001	0.00010	mg/L	2022-03-03	
Copper, total	**0.00278**	AO ≤ 1	0.00040	mg/L	2022-03-03	
Iron, total	**0.038**	AO ≤ 0.3	0.010	mg/L	2022-03-03	
Lead, total	< 0.00020	MAC = 0.01	0.00020	mg/L	2022-03-03	
Lithium, total	**0.00513**	0.008	0.00010	mg/L	2022-03-03	
Magnesium, total	**18.1**	None Required	0.010	mg/L	2022-03-03	
Manganese, total	**0.00348**	AO ≤ 0.05	0.00020	mg/L	2022-03-03	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2022-03-03	
Molybdenum, total	**0.00161**	MAC = 0.25	0.00010	mg/L	2022-03-03	
Nickel, total	**0.00182**	0.08	0.00040	mg/L	2022-03-03	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2022-03-03	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW19-3A Piezometer (E317974) (22B3252-04) | Matrix: Water | Sampled: 2022-02-24 10:30, Continued						
Total Metals, Continued						
Potassium, total	**6.20**	N/A	0.10	mg/L	2022-03-03	
Selenium, total	**0.00305**	MAC = 0.01	0.00050	mg/L	2022-03-03	
Silicon, total	**9.5**	N/A	1.0	mg/L	2022-03-03	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2022-03-03	
Sodium, total	**12.4**	AO ≤ 200	0.10	mg/L	2022-03-03	
Strontium, total	**1.33**	MAC = 7	0.0010	mg/L	2022-03-03	
Sulfur, total	**61.8**	N/A	3.0	mg/L	2022-03-03	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2022-03-03	
Thallium, total	< 0.000020	0.003	0.000020	mg/L	2022-03-03	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
Tin, total	< 0.00020	2.5	0.00020	mg/L	2022-03-03	
Titanium, total	< 0.0050	1	0.0050	mg/L	2022-03-03	
Tungsten, total	< 0.0010	0.003	0.0010	mg/L	2022-03-03	
Uranium, total	**0.0340**	MAC = 0.02	0.000020	mg/L	2022-03-03	
Vanadium, total	< 0.0010	0.02	0.0010	mg/L	2022-03-03	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2022-03-03	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
MW20-4A Hullcar MW (E319193) (22B3252-05) | Matrix: Water | Sampled: 2022-02-24 08:33						
Anions						
Chloride	**94.1**	AO ≤ 250	0.10	mg/L	2022-02-28	
Nitrate (as N)	**1.21**	MAC = 10	0.010	mg/L	2022-02-28	HT1
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2022-02-28	HT1
Sulfate	**124**	AO ≤ 500	1.0	mg/L	2022-02-28	
Calculated Parameters						
Hardness, Total (as CaCO3)	**601**	None Required	0.500	mg/L	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.0125**	5	0.0050	mg/L	2022-03-02	
Antimony, dissolved	< 0.00020	0.09	0.00020	mg/L	2022-03-02	
Arsenic, dissolved	< 0.00050	0.05	0.00050	mg/L	2022-03-02	
Barium, dissolved	**0.122**	5	0.0050	mg/L	2022-03-02	
Beryllium, dissolved	< 0.00010	0.0015	0.00010	mg/L	2022-03-02	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
Boron, dissolved	< 0.0500	0.5	0.0500	mg/L	2022-03-02	
Cadmium, dissolved	**0.000013**	0.0005	0.000010	mg/L	2022-03-02	
Calcium, dissolved	**147**	N/A	0.20	mg/L	2022-03-02	
Chromium, dissolved	< 0.00050	N/A	0.00050	mg/L	2022-03-02	
Cobalt, dissolved	< 0.00010	0.04	0.00010	mg/L	2022-03-02	
Copper, dissolved	**0.00109**	0.02	0.00040	mg/L	2022-03-02	
Iron, dissolved	< 0.010	5	0.010	mg/L	2022-03-02	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW20-4A Hullcar MW (E319193) (22B3252-05) | Matrix: Water | Sampled: 2022-02-24 08:33, Continued						
Dissolved Metals, Continued						
Lead, dissolved	< 0.00020	0.02	0.00020	mg/L	2022-03-02	
Lithium, dissolved	**0.0248**	2.5	0.00010	mg/L	2022-03-02	
Magnesium, dissolved	**56.6**	N/A	0.010	mg/L	2022-03-02	
Manganese, dissolved	**0.00688**	0.2	0.00020	mg/L	2022-03-02	
Mercury, dissolved	< 0.000010	0.00025	0.000010	mg/L	2022-03-02	
Molybdenum, dissolved	**0.00105**	0.01	0.00010	mg/L	2022-03-02	
Nickel, dissolved	**0.00130**	0.2	0.00040	mg/L	2022-03-02	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2022-03-02	
Potassium, dissolved	**7.79**	N/A	0.10	mg/L	2022-03-02	
Selenium, dissolved	**0.00574**	0.02	0.00050	mg/L	2022-03-02	
Silicon, dissolved	**11.5**	N/A	1.0	mg/L	2022-03-02	
Silver, dissolved	< 0.000050	0.0005	0.000050	mg/L	2022-03-02	
Sodium, dissolved	**35.1**	N/A	0.10	mg/L	2022-03-02	
Strontium, dissolved	**2.12**	N/A	0.0010	mg/L	2022-03-02	
Sulfur, dissolved	**48.4**	N/A	3.0	mg/L	2022-03-02	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2022-03-02	
Thallium, dissolved	< 0.000020	0.003	0.000020	mg/L	2022-03-02	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2022-03-02	
Titanium, dissolved	< 0.0050	1	0.0050	mg/L	2022-03-02	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2022-03-02	
Uranium, dissolved	**0.0157**	0.01	0.000020	mg/L	2022-03-02	
Vanadium, dissolved	< 0.0010	0.1	0.0010	mg/L	2022-03-02	
Zinc, dissolved	< 0.0040	0.075	0.0040	mg/L	2022-03-02	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
General Parameters						
Alkalinity, Total (as CaCO3)	**439**	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Bicarbonate (as CaCO3)	**439**	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2022-03-02	
Carbon, Total Organic	**2.32**	MAC = 4	0.50	mg/L	2022-02-28	
Nitrogen, Dissolved Kjeldahl	**0.120**	N/A	0.050	mg/L	2022-03-02	
Phosphorus, Total Dissolved	< 0.0050	N/A	0.0050	mg/L	2022-03-03	
Solids, Total Suspended	< 2.0	N/A	2.0	mg/L	2022-03-02	
Total Metals						
Aluminum, total	**0.0210**	OG < 9.5	0.0050	mg/L	2022-03-03	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2022-03-03	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050	mg/L	2022-03-03	
Barium, total	**0.121**	MAC = 2	0.0050	mg/L	2022-03-03	
Beryllium, total	< 0.00010	0.0015	0.00010	mg/L	2022-03-03	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW20-4A Hullcar MW (E319193) (22B3252-05) | Matrix: Water | Sampled: 2022-02-24 08:33, Continued						
Total Metals, Continued						
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2022-03-03	
Cadmium, total	**0.000011**	MAC = 0.005	0.000010	mg/L	2022-03-03	
Calcium, total	**150**	None Required	0.20	mg/L	2022-03-03	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2022-03-03	
Cobalt, total	< 0.00010	0.001	0.00010	mg/L	2022-03-03	
Copper, total	**0.00126**	AO ≤ 1	0.00040	mg/L	2022-03-03	
Iron, total	**0.014**	AO ≤ 0.3	0.010	mg/L	2022-03-03	
Lead, total	< 0.00020	MAC = 0.01	0.00020	mg/L	2022-03-03	
Lithium, total	**0.0243**	0.008	0.00010	mg/L	2022-03-03	
Magnesium, total	**57.7**	None Required	0.010	mg/L	2022-03-03	
Manganese, total	**0.00574**	AO ≤ 0.05	0.00020	mg/L	2022-03-03	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2022-03-03	
Molybdenum, total	**0.00115**	MAC = 0.25	0.00010	mg/L	2022-03-03	
Nickel, total	**0.00143**	0.08	0.00040	mg/L	2022-03-03	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2022-03-03	
Potassium, total	**7.11**	N/A	0.10	mg/L	2022-03-03	
Selenium, total	**0.00477**	MAC = 0.01	0.00050	mg/L	2022-03-03	
Silicon, total	**10.8**	N/A	1.0	mg/L	2022-03-03	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2022-03-03	
Sodium, total	**35.7**	AO ≤ 200	0.10	mg/L	2022-03-03	
Strontium, total	**2.24**	MAC = 7	0.0010	mg/L	2022-03-03	
Sulfur, total	**42.7**	N/A	3.0	mg/L	2022-03-03	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2022-03-03	
Thallium, total	< 0.000020	0.003	0.000020	mg/L	2022-03-03	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
Tin, total	< 0.00020	2.5	0.00020	mg/L	2022-03-03	
Titanium, total	< 0.0050	1	0.0050	mg/L	2022-03-03	
Tungsten, total	< 0.0010	0.003	0.0010	mg/L	2022-03-03	
Uranium, total	**0.0154**	MAC = 0.02	0.000020	mg/L	2022-03-03	
Vanadium, total	< 0.0010	0.02	0.0010	mg/L	2022-03-03	
Zinc, total	**0.0088**	AO ≤ 5	0.0040	mg/L	2022-03-03	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
MW19-2A Piezometer (E317972) (22B3252-06) | Matrix: Water | Sampled: 2022-02-24 12:15						
Anions						
Chloride	**51.5**	AO ≤ 250	0.10	mg/L	2022-02-28	
Nitrate (as N)	**9.99**	MAC = 10	0.010	mg/L	2022-02-28	HT1
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2022-02-28	HT1
Sulfate	**215**	AO ≤ 500	1.0	mg/L	2022-02-28	
Calculated Parameters						

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW19-2A Piezometer (E317972) (22B3252-06) | Matrix: Water | Sampled: 2022-02-24 12:15, Continued						
Calculated Parameters, Continued						
Hardness, Total (as CaCO3)	**546**	None Required	0.500	mg/L	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.0102**	5	0.0050	mg/L	2022-03-02	
Antimony, dissolved	< 0.00020	0.09	0.00020	mg/L	2022-03-02	
Arsenic, dissolved	**0.00061**	0.05	0.00050	mg/L	2022-03-02	
Barium, dissolved	**0.0812**	5	0.0050	mg/L	2022-03-02	
Beryllium, dissolved	< 0.00010	0.0015	0.00010	mg/L	2022-03-02	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
Boron, dissolved	< 0.0500	0.5	0.0500	mg/L	2022-03-02	
Cadmium, dissolved	**0.000022**	0.0005	0.000010	mg/L	2022-03-02	
Calcium, dissolved	**154**	N/A	0.20	mg/L	2022-03-02	
Chromium, dissolved	**0.00066**	N/A	0.00050	mg/L	2022-03-02	
Cobalt, dissolved	**0.00011**	0.04	0.00010	mg/L	2022-03-02	
Copper, dissolved	**0.00286**	0.02	0.00040	mg/L	2022-03-02	
Iron, dissolved	< 0.010	5	0.010	mg/L	2022-03-02	
Lead, dissolved	< 0.00020	0.02	0.00020	mg/L	2022-03-02	
Lithium, dissolved	**0.0102**	2.5	0.00010	mg/L	2022-03-02	
Magnesium, dissolved	**39.2**	N/A	0.010	mg/L	2022-03-02	
Manganese, dissolved	**0.00656**	0.2	0.00020	mg/L	2022-03-02	
Mercury, dissolved	< 0.000010	0.00025	0.000010	mg/L	2022-03-02	
Molybdenum, dissolved	**0.00117**	0.01	0.00010	mg/L	2022-03-02	
Nickel, dissolved	**0.00172**	0.2	0.00040	mg/L	2022-03-02	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2022-03-02	
Potassium, dissolved	**10.8**	N/A	0.10	mg/L	2022-03-02	
Selenium, dissolved	**0.00334**	0.02	0.00050	mg/L	2022-03-02	
Silicon, dissolved	**12.8**	N/A	1.0	mg/L	2022-03-02	
Silver, dissolved	< 0.000050	0.0005	0.000050	mg/L	2022-03-02	
Sodium, dissolved	**27.2**	N/A	0.10	mg/L	2022-03-02	
Strontium, dissolved	**1.23**	N/A	0.0010	mg/L	2022-03-02	
Sulfur, dissolved	**77.7**	N/A	3.0	mg/L	2022-03-02	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2022-03-02	
Thallium, dissolved	< 0.000020	0.003	0.000020	mg/L	2022-03-02	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2022-03-02	
Titanium, dissolved	< 0.0050	1	0.0050	mg/L	2022-03-02	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2022-03-02	
Uranium, dissolved	**0.00866**	0.01	0.000020	mg/L	2022-03-02	
Vanadium, dissolved	< 0.0010	0.1	0.0010	mg/L	2022-03-02	
Zinc, dissolved	< 0.0040	0.075	0.0040	mg/L	2022-03-02	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
General Parameters						
Alkalinity, Total (as CaCO3)	**331**	N/A	1.0	mg/L	2022-03-02	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW19-2A Piezometer (E317972) (22B3252-06) | Matrix: Water | Sampled: 2022-02-24 12:15, Continued						
General Parameters, Continued						
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Bicarbonate (as CaCO3)	**331**	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2022-03-02	
Carbon, Total Organic	**2.23**	MAC = 4	0.50	mg/L	2022-02-28	
Nitrogen, Dissolved Kjeldahl	**0.173**	N/A	0.050	mg/L	2022-03-02	
Phosphorus, Total Dissolved	**0.0119**	N/A	0.0050	mg/L	2022-03-03	
Solids, Total Suspended	**34.8**	N/A	2.0	mg/L	2022-03-02	
Total Metals						
Aluminum, total	**0.126**	OG < 9.5	0.0050	mg/L	2022-03-03	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2022-03-03	
Arsenic, total	**0.00059**	MAC = 0.01	0.00050	mg/L	2022-03-03	
Barium, total	**0.0885**	MAC = 2	0.0050	mg/L	2022-03-03	
Beryllium, total	< 0.00010	0.0015	0.00010	mg/L	2022-03-03	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2022-03-03	
Cadmium, total	**0.000029**	MAC = 0.005	0.000010	mg/L	2022-03-03	
Calcium, total	**162**	None Required	0.20	mg/L	2022-03-03	
Chromium, total	**0.00092**	MAC = 0.05	0.00050	mg/L	2022-03-03	
Cobalt, total	**0.00046**	0.001	0.00010	mg/L	2022-03-03	
Copper, total	**0.00381**	AO ≤ 1	0.00040	mg/L	2022-03-03	
Iron, total	**0.426**	AO ≤ 0.3	0.010	mg/L	2022-03-03	
Lead, total	**0.00025**	MAC = 0.01	0.00020	mg/L	2022-03-03	
Lithium, total	**0.0110**	0.008	0.00010	mg/L	2022-03-03	
Magnesium, total	**42.6**	None Required	0.010	mg/L	2022-03-03	
Manganese, total	**0.0426**	AO ≤ 0.05	0.00020	mg/L	2022-03-03	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2022-03-03	
Molybdenum, total	**0.00126**	MAC = 0.25	0.00010	mg/L	2022-03-03	
Nickel, total	**0.00252**	0.08	0.00040	mg/L	2022-03-03	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2022-03-03	
Potassium, total	**10.3**	N/A	0.10	mg/L	2022-03-03	
Selenium, total	**0.00289**	MAC = 0.01	0.00050	mg/L	2022-03-03	
Silicon, total	**13.1**	N/A	1.0	mg/L	2022-03-03	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2022-03-03	
Sodium, total	**29.1**	AO ≤ 200	0.10	mg/L	2022-03-03	
Strontium, total	**1.33**	MAC = 7	0.0010	mg/L	2022-03-03	
Sulfur, total	**72.4**	N/A	3.0	mg/L	2022-03-03	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2022-03-03	
Thallium, total	< 0.000020	0.003	0.000020	mg/L	2022-03-03	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
Tin, total	< 0.00020	2.5	0.00020	mg/L	2022-03-03	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
MW19-2A Piezometer (E317972) (22B3252-06) | Matrix: Water | Sampled: 2022-02-24 12:15, Continued						
Total Metals, Continued						
Titanium, total	**0.0080**	1	0.0050	mg/L	2022-03-03	
Tungsten, total	< 0.0010	0.003	0.0010	mg/L	2022-03-03	
Uranium, total	**0.00892**	MAC = 0.02	0.000020	mg/L	2022-03-03	
Vanadium, total	< 0.0010	0.02	0.0010	mg/L	2022-03-03	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2022-03-03	
Zirconium, total	**0.00026**	N/A	0.00010	mg/L	2022-03-03	
Dup21A (22B3252-07) | Matrix: Water | Sampled: 2022-02-24 10:30						
Anions						
Chloride	**22.9**	AO ≤ 250	0.10	mg/L	2022-02-28	
Nitrate (as N)	**9.12**	MAC = 10	0.010	mg/L	2022-02-28	HT1
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2022-02-28	HT1
Sulfate	**176**	AO ≤ 500	1.0	mg/L	2022-02-28	
Calculated Parameters						
Hardness, Total (as CaCO3)	**526**	None Required	0.500	mg/L	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.0123**	5	0.0050	mg/L	2022-03-02	
Antimony, dissolved	< 0.00020	0.09	0.00020	mg/L	2022-03-02	
Arsenic, dissolved	**0.00056**	0.05	0.00050	mg/L	2022-03-02	
Barium, dissolved	**0.0543**	5	0.0050	mg/L	2022-03-02	
Beryllium, dissolved	< 0.00010	0.0015	0.00010	mg/L	2022-03-02	
Bismuth, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
Boron, dissolved	< 0.0500	0.5	0.0500	mg/L	2022-03-02	
Cadmium, dissolved	**0.000043**	0.0005	0.000010	mg/L	2022-03-02	
Calcium, dissolved	**179**	N/A	0.20	mg/L	2022-03-02	
Chromium, dissolved	< 0.00050	N/A	0.00050	mg/L	2022-03-02	
Cobalt, dissolved	**0.00010**	0.04	0.00010	mg/L	2022-03-02	
Copper, dissolved	**0.00226**	0.02	0.00040	mg/L	2022-03-02	
Iron, dissolved	< 0.010	5	0.010	mg/L	2022-03-02	
Lead, dissolved	< 0.00020	0.02	0.00020	mg/L	2022-03-02	
Lithium, dissolved	**0.00496**	2.5	0.00010	mg/L	2022-03-02	
Magnesium, dissolved	**19.4**	N/A	0.010	mg/L	2022-03-02	
Manganese, dissolved	**0.00176**	0.2	0.00020	mg/L	2022-03-02	
Mercury, dissolved	< 0.000010	0.00025	0.000010	mg/L	2022-03-02	
Molybdenum, dissolved	**0.00150**	0.01	0.00010	mg/L	2022-03-02	
Nickel, dissolved	**0.00152**	0.2	0.00040	mg/L	2022-03-02	
Phosphorus, dissolved	< 0.050	N/A	0.050	mg/L	2022-03-02	
Potassium, dissolved	**6.76**	N/A	0.10	mg/L	2022-03-02	
Selenium, dissolved	**0.00309**	0.02	0.00050	mg/L	2022-03-02	
Silicon, dissolved	**10.0**	N/A	1.0	mg/L	2022-03-02	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
Dup21A (22B3252-07) | Matrix: Water | Sampled: 2022-02-24 10:30, Continued						
Dissolved Metals, Continued						
Silver, dissolved	< 0.000050	0.0005	0.000050	mg/L	2022-03-02	
Sodium, dissolved	**12.1**	N/A	0.10	mg/L	2022-03-02	
Strontium, dissolved	**1.26**	N/A	0.0010	mg/L	2022-03-02	
Sulfur, dissolved	**67.1**	N/A	3.0	mg/L	2022-03-02	
Tellurium, dissolved	< 0.00050	N/A	0.00050	mg/L	2022-03-02	
Thallium, dissolved	< 0.000020	0.003	0.000020	mg/L	2022-03-02	
Thorium, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
Tin, dissolved	< 0.00020	N/A	0.00020	mg/L	2022-03-02	
Titanium, dissolved	< 0.0050	1	0.0050	mg/L	2022-03-02	
Tungsten, dissolved	< 0.0010	N/A	0.0010	mg/L	2022-03-02	
Uranium, dissolved	**0.0340**	0.01	0.000020	mg/L	2022-03-02	
Vanadium, dissolved	< 0.0010	0.1	0.0010	mg/L	2022-03-02	
Zinc, dissolved	< 0.0040	0.075	0.0040	mg/L	2022-03-02	
Zirconium, dissolved	< 0.00010	N/A	0.00010	mg/L	2022-03-02	
General Parameters						
Alkalinity, Total (as CaCO3)	**348**	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Bicarbonate (as CaCO3)	**348**	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2022-03-02	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2022-03-02	
Carbon, Total Organic	**2.67**	MAC = 4	0.50	mg/L	2022-02-28	
Nitrogen, Dissolved Kjeldahl	**0.177**	N/A	0.050	mg/L	2022-03-07	
Phosphorus, Total Dissolved	**0.0109**	N/A	0.0050	mg/L	2022-03-03	
Solids, Total Suspended	< 2.0	N/A	2.0	mg/L	2022-03-02	
Total Metals						
Aluminum, total	**0.0053**	OG < 9.5	0.0050	mg/L	2022-03-03	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2022-03-03	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050	mg/L	2022-03-03	
Barium, total	**0.0534**	MAC = 2	0.0050	mg/L	2022-03-03	
Beryllium, total	< 0.00010	0.0015	0.00010	mg/L	2022-03-03	
Bismuth, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2022-03-03	
Cadmium, total	**0.000033**	MAC = 0.005	0.000010	mg/L	2022-03-03	
Calcium, total	**181**	None Required	0.20	mg/L	2022-03-03	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2022-03-03	
Cobalt, total	< 0.00010	0.001	0.00010	mg/L	2022-03-03	
Copper, total	**0.00226**	AO ≤ 1	0.00040	mg/L	2022-03-03	
Iron, total	**0.013**	AO ≤ 0.3	0.010	mg/L	2022-03-03	
Lead, total	< 0.00020	MAC = 0.01	0.00020	mg/L	2022-03-03	
Lithium, total	**0.00506**	0.008	0.00010	mg/L	2022-03-03	
Magnesium, total	**17.7**	None Required	0.010	mg/L	2022-03-03	

TEST RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
Dup21A (22B3252-07) | Matrix: Water | Sampled: 2022-02-24 10:30, Continued						
Total Metals, Continued						
Manganese, total	**0.00168**	AO ≤ 0.05	0.00020	mg/L	2022-03-03	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2022-03-03	
Molybdenum, total	**0.00151**	MAC = 0.25	0.00010	mg/L	2022-03-03	
Nickel, total	**0.00141**	0.08	0.00040	mg/L	2022-03-03	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2022-03-03	
Potassium, total	**6.05**	N/A	0.10	mg/L	2022-03-03	
Selenium, total	**0.00261**	MAC = 0.01	0.00050	mg/L	2022-03-03	
Silicon, total	**9.1**	N/A	1.0	mg/L	2022-03-03	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2022-03-03	
Sodium, total	**12.0**	AO ≤ 200	0.10	mg/L	2022-03-03	
Strontium, total	**1.30**	MAC = 7	0.0010	mg/L	2022-03-03	
Sulfur, total	**59.4**	N/A	3.0	mg/L	2022-03-03	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2022-03-03	
Thallium, total	< 0.000020	0.003	0.000020	mg/L	2022-03-03	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	
Tin, total	< 0.00020	2.5	0.00020	mg/L	2022-03-03	
Titanium, total	< 0.0050	1	0.0050	mg/L	2022-03-03	
Tungsten, total	< 0.0010	0.003	0.0010	mg/L	2022-03-03	
Uranium, total	**0.0337**	MAC = 0.02	0.000020	mg/L	2022-03-03	
Vanadium, total	< 0.0010	0.02	0.0010	mg/L	2022-03-03	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2022-03-03	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2022-03-03	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analysis Description	Method Ref.	Technique	Accredited	Location
Alkalinity in Water	SM 2320 B* (2017)	Titration with H2SO4	✓	Kelowna
Ammonia, Total in Water	SM 4500-NH3 G* (2017)	Automated Colorimetry (Phenate)	✓	Kelowna
Anions in Water	SM 4110 B (2017)	Ion Chromatography	✓	Kelowna
Carbon, Total Organic in Water	SM 5310 B (2017)	Combustion, Infrared CO2 Detection	✓	Kelowna
Dissolved Metals in Water	EPA 200.8 / EPA 6020B	0.45 µm Filtration / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Hardness in Water	SM 2340 B (2017)	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	✓	N/A
Mercury, dissolved in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	✓	Richmond
Mercury, total in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	✓	Richmond
Nitrogen, Dissolved Kjeldahl in Water	SM 4500-Norg D* (2017)	Block Digestion and Flow Injection Analysis	✓	Kelowna
Phosphorus, Total Dissolved in Water	SM 4500-P B.5* (2011) / SM 4500-P F (2017)	Persulfate Digestion / Automated Colorimetry (Ascorbic Acid)	✓	Kelowna
Solids, Total Suspended in Water	SM 2540 D* (2017)	Gravimetry (Dried at 103-105C)	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
OG	Operational Guideline (treated water)
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

Guidelines Referenced in this Report:

BC CSR Schedule 3.2 Aquatic Life
BC CSR Schedule 3.2 Drinking Water
BC CSR Schedule 3.2 Irrigation
BC Source Drinking Water Quality Guidelines (2017)
Guidelines for Canadian Drinking Water Quality (Health Canada, June 2019)

Note: In some cases, the values displayed on the report represent the lowest guideline and are to be verified by the end user

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued or once samples expire, whichever comes first. Longer hold is possible if agreed to in writing.

Results in **Bold** indicate values that are above CARO's method reporting limits. Any results that are above regulatory limits are highlighted **red**. Please note that results will only be highlighted red if the regulatory limits are included on the CARO report. Any Bold and/or highlighted results do not take into account method uncertainty. If you would like method uncertainty or regulatory limits to be included on your report, please contact your Account Manager:bwhitehead@caro.ca

Please note any regulatory guidelines applied to this report are added as a convenience to the client, at their request, to help provide some initial context to analytical results obtained. Although CARO makes every effort to ensure accuracy of the associated regulatory guideline(s) applied, the guidelines applied cannot be assumed to be correct due to a variety of factors and as such CARO Analytical Services assumes no liability or responsibility for the use of those guidelines to make any decisions. The original source of the regulation should be verified and a review of the guideline (s) should be validated as correct in order to make any decisions arising from the comparison of the analytical data obtained to the relevant regulatory guideline for one's particular circumstances. Further, CARO Analytical Services assumes no liability or responsibility for any loss attributed from the use of these guidelines in any way.

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B2B2583										
Blank (B2B2583-BLK1)				Prepared: 2022-02-27, Analyzed: 2022-02-27						
Chloride	< 0.10	0.10	mg/L							
Nitrate (as N)	< 0.010	0.010	mg/L							
Nitrite (as N)	< 0.010	0.010	mg/L							
Sulfate	< 1.0	1.0	mg/L							
Blank (B2B2583-BLK2)				Prepared: 2028-02-22, Analyzed: 2028-02-22						
Chloride	< 0.10	0.10	mg/L							
Nitrate (as N)	< 0.010	0.010	mg/L							
Nitrite (as N)	< 0.010	0.010	mg/L							
Sulfate	< 1.0	1.0	mg/L							
LCS (B2B2583-BS1)				Prepared: 2022-02-27, Analyzed: 2022-02-27						
Chloride	16.3	0.10	mg/L	16.0		102	90-110			
Nitrate (as N)	4.05	0.010	mg/L	4.00		101	90-110			
Nitrite (as N)	2.02	0.010	mg/L	2.00		101	85-115			
Sulfate	16.3	1.0	mg/L	16.0		102	90-110			
LCS (B2B2583-BS2)				Prepared: 2028-02-22, Analyzed: 2028-02-22						
Chloride	16.3	0.10	mg/L	16.0		102	90-110			
Nitrate (as N)	4.11	0.010	mg/L	4.00		103	90-110			
Nitrite (as N)	2.11	0.010	mg/L	2.00		106	85-115			
Sulfate	16.2	1.0	mg/L	16.0		101	90-110			
LCS (B2B2583-BS3)				Prepared: 2022-03-01, Analyzed: 2022-03-01						
Chloride	16.1	0.10	mg/L	16.0		100	90-110			
Nitrate (as N)	3.96	0.010	mg/L	4.00		99	90-110			
Nitrite (as N)	2.04	0.010	mg/L	2.00		102	85-115			
Sulfate	16.1	1.0	mg/L	16.0		101	90-110			
Dissolved Metals, Batch B2C0161										
Blank (B2C0161-BLK1)				Prepared: 2022-03-01, Analyzed: 2022-03-01						
Aluminum, dissolved	< 0.0050	0.0050	mg/L							
Antimony, dissolved	< 0.00020	0.00020	mg/L							
Arsenic, dissolved	< 0.00050	0.00050	mg/L							
Barium, dissolved	< 0.0050	0.0050	mg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B2C0161, Continued										
Blank (B2C0161-BLK1), Continued				Prepared: 2022-03-01, Analyzed: 2022-03-01						
Beryllium, dissolved	< 0.00010	0.00010	mg/L							
Bismuth, dissolved	< 0.00010	0.00010	mg/L							
Boron, dissolved	< 0.0500	0.0500	mg/L							
Cadmium, dissolved	< 0.000010	0.000010	mg/L							
Calcium, dissolved, dissolved	< 0.20	0.20	mg/L							
Chromium, dissolved	< 0.00050	0.00050	mg/L							
Cobalt, dissolved	< 0.00010	0.00010	mg/L							
Copper, dissolved	< 0.00040	0.00040	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							
Lead, dissolved	< 0.00020	0.00020	mg/L							
Lithium, dissolved	< 0.00010	0.00010	mg/L							
Manganese, dissolved	< 0.00020	0.00020	mg/L							
Molybdenum, dissolved	< 0.00010	0.00010	mg/L							
Nickel, dissolved	< 0.00040	0.00040	mg/L							
Phosphorus, dissolved	< 0.050	0.050	mg/L							
Potassium, dissolved	< 0.10	0.10	mg/L							
Selenium, dissolved	< 0.00050	0.00050	mg/L							
Silicon, dissolved	< 1.0	1.0	mg/L							
Silver, dissolved	< 0.000050	0.000050	mg/L							
Sodium, dissolved	< 0.10	0.10	mg/L							
Strontium, dissolved	< 0.0010	0.0010	mg/L							
Sulfur, dissolved	< 3.0	3.0	mg/L							
Tellurium, dissolved	< 0.00050	0.00050	mg/L							
Thallium, dissolved	< 0.000020	0.000020	mg/L							
Thorium, dissolved	< 0.00010	0.00010	mg/L							
Tin, dissolved	< 0.00020	0.00020	mg/L							
Titanium, dissolved	< 0.0050	0.0050	mg/L							
Tungsten, dissolved	< 0.0010	0.0010	mg/L							
Uranium, dissolved	< 0.000020	0.000020	mg/L							
Vanadium, dissolved	< 0.0010	0.0010	mg/L							
Zinc, dissolved	< 0.0040	0.0040	mg/L							
Zirconium, dissolved	< 0.00010	0.00010	mg/L							
LCS (B2C0161-BS1)				Prepared: 2022-03-01, Analyzed: 2022-03-01						
Aluminum, dissolved	0.0216	0.0050	mg/L	0.0200		108	80-120			
Antimony, dissolved	0.0199	0.00020	mg/L	0.0200		100	80-120			
Arsenic, dissolved	0.0192	0.00050	mg/L	0.0200		96	80-120			
Barium, dissolved	0.0183	0.0050	mg/L	0.0200		91	80-120			
Beryllium, dissolved	0.0200	0.00010	mg/L	0.0200		100	80-120			
Bismuth, dissolved	0.0200	0.00010	mg/L	0.0200		100	80-120			
Boron, dissolved	< 0.0500	0.0500	mg/L	0.0200		90	80-120			
Cadmium, dissolved	0.0186	0.000010	mg/L	0.0200		93	80-120			
Calcium, dissolved, dissolved	1.94	0.20	mg/L	2.00		97	80-120			
Chromium, dissolved	0.0191	0.00050	mg/L	0.0200		96	80-120			
Cobalt, dissolved	0.0191	0.00010	mg/L	0.0200		95	80-120			
Copper, dissolved	0.0200	0.00040	mg/L	0.0200		100	80-120			
Iron, dissolved	1.88	0.010	mg/L	2.00		94	80-120			
Lead, dissolved	0.0218	0.00020	mg/L	0.0200		109	80-120			
Lithium, dissolved	0.0182	0.00010	mg/L	0.0200		91	80-120			
Magnesium, dissolved, dissolved	2.06	0.010	mg/L	2.00		103	80-120			
Manganese, dissolved	0.0184	0.00020	mg/L	0.0200		92	80-120			
Molybdenum, dissolved	0.0208	0.00010	mg/L	0.0200		104	80-120			
Nickel, dissolved	0.0192	0.00040	mg/L	0.0200		96	80-120			
Phosphorus, dissolved	2.09	0.050	mg/L	2.00		104	80-120			
Potassium, dissolved	1.95	0.10	mg/L	2.00		97	80-120			
Selenium, dissolved	0.0197	0.00050	mg/L	0.0200		98	80-120			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B2C0161, Continued										
LCS (B2C0161-BS1), Continued				Prepared: 2022-03-01, Analyzed: 2022-03-01						
Silicon, dissolved	2.3	1.0	mg/L	2.00		115	80-120			
Silver, dissolved	0.0183	0.000050	mg/L	0.0200		92	80-120			
Sodium, dissolved	2.03	0.10	mg/L	2.00		101	80-120			
Strontium, dissolved	0.0172	0.0010	mg/L	0.0200		86	80-120			
Sulfur, dissolved	5.5	3.0	mg/L	5.00		111	80-120			
Tellurium, dissolved	0.0189	0.00050	mg/L	0.0200		95	80-120			
Thallium, dissolved	0.0190	0.000020	mg/L	0.0200		95	80-120			
Thorium, dissolved	0.0184	0.00010	mg/L	0.0200		92	80-120			
Tin, dissolved	0.0204	0.00020	mg/L	0.0200		102	80-120			
Titanium, dissolved	0.0212	0.0050	mg/L	0.0200		106	80-120			
Tungsten, dissolved	0.0207	0.0010	mg/L	0.0200		104	80-120			
Uranium, dissolved	0.0186	0.000020	mg/L	0.0200		93	80-120			
Vanadium, dissolved	0.0184	0.0010	mg/L	0.0200		92	80-120			
Zinc, dissolved	0.0207	0.0040	mg/L	0.0200		103	80-120			
Zirconium, dissolved	0.0225	0.00010	mg/L	0.0200		112	80-120			
LCS (B2C0161-BS2)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Aluminum, dissolved	0.0229	0.0050	mg/L	0.0200		115	80-120			
Antimony, dissolved	0.0188	0.00020	mg/L	0.0200		94	80-120			
Arsenic, dissolved	0.0184	0.00050	mg/L	0.0200		92	80-120			
Barium, dissolved	0.0187	0.0050	mg/L	0.0200		94	80-120			
Beryllium, dissolved	0.0202	0.00010	mg/L	0.0200		101	80-120			
Bismuth, dissolved	0.0204	0.00010	mg/L	0.0200		102	80-120			
Boron, dissolved	< 0.0500	0.0500	mg/L	0.0200		108	80-120			
Cadmium, dissolved	0.0181	0.000010	mg/L	0.0200		90	80-120			
Calcium, dissolved, dissolved	1.95	0.20	mg/L	2.00		98	80-120			
Chromium, dissolved	0.0186	0.00050	mg/L	0.0200		93	80-120			
Cobalt, dissolved	0.0188	0.00010	mg/L	0.0200		94	80-120			
Copper, dissolved	0.0196	0.00040	mg/L	0.0200		98	80-120			
Iron, dissolved	1.93	0.010	mg/L	2.00		97	80-120			
Lead, dissolved	0.0223	0.00020	mg/L	0.0200		112	80-120			
Lithium, dissolved	0.0184	0.00010	mg/L	0.0200		92	80-120			
Magnesium, dissolved, dissolved	2.08	0.010	mg/L	2.00		104	80-120			
Manganese, dissolved	0.0181	0.00020	mg/L	0.0200		91	80-120			
Molybdenum, dissolved	0.0203	0.00010	mg/L	0.0200		101	80-120			
Nickel, dissolved	0.0191	0.00040	mg/L	0.0200		95	80-120			
Phosphorus, dissolved	2.04	0.050	mg/L	2.00		102	80-120			
Potassium, dissolved	1.98	0.10	mg/L	2.00		99	80-120			
Selenium, dissolved	0.0188	0.00050	mg/L	0.0200		94	80-120			
Silicon, dissolved	2.3	1.0	mg/L	2.00		117	80-120			
Silver, dissolved	0.0183	0.000050	mg/L	0.0200		92	80-120			
Sodium, dissolved	2.02	0.10	mg/L	2.00		101	80-120			
Strontium, dissolved	0.0172	0.0010	mg/L	0.0200		86	80-120			
Sulfur, dissolved	5.6	3.0	mg/L	5.00		111	80-120			
Tellurium, dissolved	0.0180	0.00050	mg/L	0.0200		90	80-120			
Thallium, dissolved	0.0197	0.000020	mg/L	0.0200		98	80-120			
Thorium, dissolved	0.0187	0.00010	mg/L	0.0200		94	80-120			
Tin, dissolved	0.0201	0.00020	mg/L	0.0200		100	80-120			
Titanium, dissolved	0.0229	0.0050	mg/L	0.0200		114	80-120			
Tungsten, dissolved	0.0205	0.0010	mg/L	0.0200		102	80-120			
Uranium, dissolved	0.0191	0.000020	mg/L	0.0200		96	80-120			
Vanadium, dissolved	0.0182	0.0010	mg/L	0.0200		91	80-120			
Zinc, dissolved	0.0210	0.0040	mg/L	0.0200		105	80-120			
Zirconium, dissolved	0.0203	0.00010	mg/L	0.0200		101	80-120			
Reference (B2C0161-SRM1)				Prepared: 2022-03-01, Analyzed: 2022-03-01						
Aluminum, dissolved	0.226	0.0050	mg/L	0.235		96	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B2C0161, Continued										
Reference (B2C0161-SRM1), Continued				Prepared: 2022-03-01, Analyzed: 2022-03-01						
Antimony, dissolved	0.0451	0.00020	mg/L	0.0431		105	70-130			
Arsenic, dissolved	0.435	0.00050	mg/L	0.423		103	70-130			
Barium, dissolved	3.02	0.0050	mg/L	3.30		91	70-130			
Beryllium, dissolved	0.214	0.00010	mg/L	0.209		102	70-130			
Boron, dissolved	1.82	0.0500	mg/L	1.65		110	70-130			
Cadmium, dissolved	0.210	0.000010	mg/L	0.221		95	70-130			
Calcium, dissolved, dissolved	7.72	0.20	mg/L	7.72		100	70-130			
Chromium, dissolved	0.425	0.00050	mg/L	0.434		98	70-130			
Cobalt, dissolved	0.125	0.00010	mg/L	0.124		101	70-130			
Copper, dissolved	0.845	0.00040	mg/L	0.815		104	70-130			
Iron, dissolved	1.23	0.010	mg/L	1.27		97	70-130			
Lead, dissolved	0.123	0.00020	mg/L	0.110		112	70-130			
Lithium, dissolved	0.0927	0.00010	mg/L	0.100		93	70-130			
Magnesium, dissolved, dissolved	6.94	0.010	mg/L	6.59		105	70-130			
Manganese, dissolved	0.325	0.00020	mg/L	0.342		95	70-130			
Molybdenum, dissolved	0.408	0.00010	mg/L	0.404		101	70-130			
Nickel, dissolved	0.839	0.00040	mg/L	0.835		101	70-130			
Phosphorus, dissolved	0.517	0.050	mg/L	0.499		104	70-130			
Potassium, dissolved	2.99	0.10	mg/L	2.88		104	70-130			
Selenium, dissolved	0.0328	0.00050	mg/L	0.0324		101	70-130			
Sodium, dissolved	16.9	0.10	mg/L	18.0		94	70-130			
Strontium, dissolved	0.821	0.0010	mg/L	0.935		88	70-130			
Thallium, dissolved	0.0384	0.000020	mg/L	0.0385		100	70-130			
Uranium, dissolved	0.240	0.000020	mg/L	0.258		93	70-130			
Vanadium, dissolved	0.843	0.0010	mg/L	0.873		97	70-130			
Zinc, dissolved	0.904	0.0040	mg/L	0.848		107	70-130			
Reference (B2C0161-SRM2)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Aluminum, dissolved	0.223	0.0050	mg/L	0.235		95	70-130			
Antimony, dissolved	0.0436	0.00020	mg/L	0.0431		101	70-130			
Arsenic, dissolved	0.426	0.00050	mg/L	0.423		101	70-130			
Barium, dissolved	3.03	0.0050	mg/L	3.30		92	70-130			
Beryllium, dissolved	0.219	0.00010	mg/L	0.209		105	70-130			
Boron, dissolved	2.00	0.0500	mg/L	1.65		121	70-130			
Cadmium, dissolved	0.207	0.000010	mg/L	0.221		94	70-130			
Calcium, dissolved, dissolved	7.72	0.20	mg/L	7.72		100	70-130			
Chromium, dissolved	0.422	0.00050	mg/L	0.434		97	70-130			
Cobalt, dissolved	0.124	0.00010	mg/L	0.124		100	70-130			
Copper, dissolved	0.835	0.00040	mg/L	0.815		102	70-130			
Iron, dissolved	1.24	0.010	mg/L	1.27		98	70-130			
Lead, dissolved	0.122	0.00020	mg/L	0.110		111	70-130			
Lithium, dissolved	0.0968	0.00010	mg/L	0.100		97	70-130			
Magnesium, dissolved, dissolved	7.01	0.010	mg/L	6.59		106	70-130			
Manganese, dissolved	0.325	0.00020	mg/L	0.342		95	70-130			
Molybdenum, dissolved	0.405	0.00010	mg/L	0.404		100	70-130			
Nickel, dissolved	0.834	0.00040	mg/L	0.835		100	70-130			
Phosphorus, dissolved	0.560	0.050	mg/L	0.499		112	70-130			
Potassium, dissolved	3.01	0.10	mg/L	2.88		104	70-130			
Selenium, dissolved	0.0338	0.00050	mg/L	0.0324		104	70-130			
Sodium, dissolved	17.3	0.10	mg/L	18.0		96	70-130			
Strontium, dissolved	0.822	0.0010	mg/L	0.935		88	70-130			
Thallium, dissolved	0.0380	0.000020	mg/L	0.0385		99	70-130			
Uranium, dissolved	0.239	0.000020	mg/L	0.258		93	70-130			
Vanadium, dissolved	0.829	0.0010	mg/L	0.873		95	70-130			
Zinc, dissolved	0.876	0.0040	mg/L	0.848		103	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B2C0256										
Blank (B2C0256-BLK1)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Mercury, dissolved	< 0.000010	0.000010	mg/L							
Blank (B2C0256-BLK2)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Mercury, dissolved	< 0.000010	0.000010	mg/L							
Blank (B2C0256-BLK3)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Mercury, dissolved	< 0.000010	0.000010	mg/L							
Duplicate (B2C0256-DUP1)		**Source: 22B3252-01**		Prepared: 2022-03-02, Analyzed: 2022-03-02						
Mercury, dissolved	< 0.000010	0.000010	mg/L		< 0.000010				20	
Matrix Spike (B2C0256-MS1)		**Source: 22B3252-02**		Prepared: 2022-03-02, Analyzed: 2022-03-02						
Mercury, dissolved	0.000201	0.000010	mg/L	0.000250	< 0.000010	80	70-130			
Reference (B2C0256-SRM1)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Mercury, dissolved	0.000222	0.000010	mg/L	0.000250		89	0-200			
Reference (B2C0256-SRM2)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Mercury, dissolved	0.000235	0.000010	mg/L	0.000250		94	0-200			
Reference (B2C0256-SRM3)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Mercury, dissolved	0.000228	0.000010	mg/L	0.000250		91	0-200			
General Parameters, Batch B2B2593										
Blank (B2B2593-BLK1)				Prepared: 2022-02-28, Analyzed: 2022-02-28						
Carbon, Total Organic	< 0.50	0.50	mg/L							
Blank (B2B2593-BLK2)				Prepared: 2022-02-28, Analyzed: 2022-02-28						
Carbon, Total Organic	< 0.50	0.50	mg/L							
Blank (B2B2593-BLK3)				Prepared: 2022-02-28, Analyzed: 2022-02-28						
Carbon, Total Organic	< 0.50	0.50	mg/L							
Blank (B2B2593-BLK4)				Prepared: 2022-02-28, Analyzed: 2022-02-28						
Carbon, Total Organic	< 0.50	0.50	mg/L							
LCS (B2B2593-BS1)				Prepared: 2022-02-28, Analyzed: 2022-02-28						
Carbon, Total Organic	10.2	0.50	mg/L	10.0		102	78-116			
LCS (B2B2593-BS2)				Prepared: 2022-02-28, Analyzed: 2022-02-28						
Carbon, Total Organic	10.6	0.50	mg/L	10.0		106	78-116			
LCS (B2B2593-BS3)				Prepared: 2022-02-28, Analyzed: 2022-02-28						
Carbon, Total Organic	10.4	0.50	mg/L	10.0		104	78-116			
LCS (B2B2593-BS4)				Prepared: 2022-02-28, Analyzed: 2022-02-28						
Carbon, Total Organic	10.7	0.50	mg/L	10.0		107	78-116			
General Parameters, Batch B2C0198										
Blank (B2C0198-BLK1)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							
Blank (B2C0198-BLK2)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B2C0198, Continued										
Blank (B2C0198-BLK3)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							
Blank (B2C0198-BLK4)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							
LCS (B2C0198-BS1)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Ammonia, Total (as N)	1.02	0.050	mg/L	1.00		102	90-115			
LCS (B2C0198-BS2)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Ammonia, Total (as N)	1.03	0.050	mg/L	1.00		103	90-115			
LCS (B2C0198-BS3)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Ammonia, Total (as N)	1.04	0.050	mg/L	1.00		104	90-115			
LCS (B2C0198-BS4)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Ammonia, Total (as N)	1.02	0.050	mg/L	1.00		102	90-115			
Duplicate (B2C0198-DUP3)		**Source: 22B3252-02**		Prepared: 2022-03-02, Analyzed: 2022-03-02						
Ammonia, Total (as N)	< 0.050	0.050	mg/L		< 0.050				15	
Matrix Spike (B2C0198-MS3)		**Source: 22B3252-02**		Prepared: 2022-03-02, Analyzed: 2022-03-02						
Ammonia, Total (as N)	0.278	0.050	mg/L	0.250	< 0.050	106	75-125			
General Parameters, Batch B2C0262										
Blank (B2C0262-BLK1)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Solids, Total Suspended	< 2.0	2.0	mg/L							
LCS (B2C0262-BS1)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Solids, Total Suspended	88.0	10.0	mg/L	100		88	85-115			
General Parameters, Batch B2C0317										
Blank (B2C0317-BLK1)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Alkalinity, Total (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L							
Blank (B2C0317-BLK2)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Alkalinity, Total (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L							
Blank (B2C0317-BLK3)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Alkalinity, Total (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L							
LCS (B2C0317-BS1)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Alkalinity, Total (as CaCO3)	106	1.0	mg/L	100		106	80-120			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B2C0317, Continued										
LCS (B2C0317-BS2)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Alkalinity, Total (as CaCO3)	108	1.0	mg/L	100		108	80-120			
LCS (B2C0317-BS3)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Alkalinity, Total (as CaCO3)	107	1.0	mg/L	100		107	80-120			
General Parameters, Batch B2C0348										
Blank (B2C0348-BLK2)				Prepared: 2022-03-03, Analyzed: 2022-03-03						
Phosphorus, Total Dissolved	< 0.0050	0.0050	mg/L							
Blank (B2C0348-BLK3)				Prepared: 2022-03-03, Analyzed: 2022-03-03						
Phosphorus, Total Dissolved	< 0.0050	0.0050	mg/L							
LCS (B2C0348-BS2)				Prepared: 2022-03-03, Analyzed: 2022-03-03						
Phosphorus, Total Dissolved	0.112	0.0050	mg/L	0.100		112	85-115			
LCS (B2C0348-BS3)				Prepared: 2022-03-03, Analyzed: 2022-03-03						
Phosphorus, Total Dissolved	0.111	0.0050	mg/L	0.100		111	85-115			
General Parameters, Batch B2C0399										
Blank (B2C0399-BLK1)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Solids, Total Suspended	< 2.0	2.0	mg/L							
Blank (B2C0399-BLK2)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Solids, Total Suspended	< 2.0	2.0	mg/L							
LCS (B2C0399-BS1)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Solids, Total Suspended	96.0	10.0	mg/L	100		96	85-115			
LCS (B2C0399-BS2)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Solids, Total Suspended	101	10.0	mg/L	100		101	85-115			
Total Metals, Batch B2C0203										
Blank (B2C0203-BLK1)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Aluminum, total	< 0.0050	0.0050	mg/L							
Antimony, total	< 0.00020	0.00020	mg/L							
Arsenic, total	< 0.00050	0.00050	mg/L							
Barium, total	< 0.0050	0.0050	mg/L							
Beryllium, total	< 0.00010	0.00010	mg/L							
Bismuth, total	< 0.00010	0.00010	mg/L							
Boron, total	< 0.0500	0.0500	mg/L							
Cadmium, total	< 0.000010	0.000010	mg/L							
Calcium, total	< 0.20	0.20	mg/L							
Chromium, total	< 0.00050	0.00050	mg/L							
Cobalt, total	< 0.00010	0.00010	mg/L							
Copper, total	< 0.00040	0.00040	mg/L							
Iron, total	< 0.010	0.010	mg/L							
Lead, total	< 0.00020	0.00020	mg/L							
Lithium, total	< 0.00010	0.00010	mg/L							
Magnesium, total	< 0.010	0.010	mg/L							
Manganese, total	< 0.00020	0.00020	mg/L							
Molybdenum, total	< 0.00010	0.00010	mg/L							
Nickel, total	< 0.00040	0.00040	mg/L							
Phosphorus, total	< 0.050	0.050	mg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B2C0203, Continued										
Blank (B2C0203-BLK1), Continued				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Potassium, total	< 0.10	0.10	mg/L							
Selenium, total	< 0.00050	0.00050	mg/L							
Silicon, total	< 1.0	1.0	mg/L							
Silver, total	< 0.000050	0.000050	mg/L							
Sodium, total	< 0.10	0.10	mg/L							
Strontium, total	< 0.0010	0.0010	mg/L							
Sulfur, total	< 3.0	3.0	mg/L							
Tellurium, total	< 0.00050	0.00050	mg/L							
Thallium, total	< 0.000020	0.000020	mg/L							
Thorium, total	< 0.00010	0.00010	mg/L							
Tin, total	< 0.00020	0.00020	mg/L							
Titanium, total	< 0.0050	0.0050	mg/L							
Tungsten, total	< 0.0010	0.0010	mg/L							
Uranium, total	< 0.000020	0.000020	mg/L							
Vanadium, total	< 0.0010	0.0010	mg/L							
Zinc, total	< 0.0040	0.0040	mg/L							
Zirconium, total	< 0.00010	0.00010	mg/L							
LCS (B2C0203-BS1)				Prepared: 2022-03-02, Analyzed: 2022-03-02						
Aluminum, total	0.0220	0.0050	mg/L	0.0200		110	80-120			
Antimony, total	0.0197	0.00020	mg/L	0.0200		99	80-120			
Arsenic, total	0.0181	0.00050	mg/L	0.0200		91	80-120			
Barium, total	0.0174	0.0050	mg/L	0.0200		87	80-120			
Beryllium, total	0.0179	0.00010	mg/L	0.0200		90	80-120			
Bismuth, total	0.0187	0.00010	mg/L	0.0200		94	80-120			
Boron, total	< 0.0500	0.0500	mg/L	0.0200		112	80-120			
Cadmium, total	0.0181	0.000010	mg/L	0.0200		91	80-120			
Calcium, total	2.05	0.20	mg/L	2.00		103	80-120			
Chromium, total	0.0180	0.00050	mg/L	0.0200		90	80-120			
Cobalt, total	0.0180	0.00010	mg/L	0.0200		90	80-120			
Copper, total	0.0193	0.00040	mg/L	0.0200		96	80-120			
Iron, total	1.83	0.010	mg/L	2.00		92	80-120			
Lead, total	0.0193	0.00020	mg/L	0.0200		96	80-120			
Lithium, total	0.0180	0.00010	mg/L	0.0200		90	80-120			
Magnesium, total	1.84	0.010	mg/L	2.00		92	80-120			
Manganese, total	0.0189	0.00020	mg/L	0.0200		95	80-120			
Molybdenum, total	0.0188	0.00010	mg/L	0.0200		94	80-120			
Nickel, total	0.0188	0.00040	mg/L	0.0200		94	80-120			
Phosphorus, total	1.81	0.050	mg/L	2.00		90	80-120			
Potassium, total	1.73	0.10	mg/L	2.00		87	80-120			
Selenium, total	0.0192	0.00050	mg/L	0.0200		96	80-120			
Silicon, total	2.0	1.0	mg/L	2.00		99	80-120			
Silver, total	0.0183	0.000050	mg/L	0.0200		92	80-120			
Sodium, total	1.82	0.10	mg/L	2.00		91	80-120			
Strontium, total	0.0177	0.0010	mg/L	0.0200		89	80-120			
Sulfur, total	4.4	3.0	mg/L	5.00		88	80-120			
Tellurium, total	0.0199	0.00050	mg/L	0.0200		100	80-120			
Thallium, total	0.0188	0.000020	mg/L	0.0200		94	80-120			
Thorium, total	0.0184	0.00010	mg/L	0.0200		92	80-120			
Tin, total	0.0198	0.00020	mg/L	0.0200		99	80-120			
Titanium, total	0.0193	0.0050	mg/L	0.0200		97	80-120			
Tungsten, total	0.0190	0.0010	mg/L	0.0200		95	80-120			
Uranium, total	0.0182	0.000020	mg/L	0.0200		91	80-120			
Vanadium, total	0.0175	0.0010	mg/L	0.0200		87	80-120			
Zinc, total	0.0200	0.0040	mg/L	0.0200		100	80-120			
Zirconium, total	0.0195	0.00010	mg/L	0.0200		98	80-120			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B2C0203, Continued										
Duplicate (B2C0203-DUP1)		**Source: 22B3252-01**		Prepared: 2022-03-02, Analyzed: 2022-03-03						
Aluminum, total	0.0775	0.0050	mg/L		0.0683			13	20	
Antimony, total	< 0.00020	0.00020	mg/L		< 0.00020				20	
Arsenic, total	0.00138	0.00050	mg/L		0.00135				20	
Barium, total	0.0411	0.0050	mg/L		0.0430			4	20	
Beryllium, total	< 0.00010	0.00010	mg/L		< 0.00010				20	
Bismuth, total	< 0.00010	0.00010	mg/L		< 0.00010				20	
Boron, total	< 0.0500	0.0500	mg/L		< 0.0500				20	
Cadmium, total	< 0.000010	0.000010	mg/L		< 0.000010				20	
Calcium, total	101	0.20	mg/L		103			2	20	
Chromium, total	< 0.00050	0.00050	mg/L		< 0.00050				20	
Cobalt, total	0.00015	0.00010	mg/L		0.00013				20	
Copper, total	0.00106	0.00040	mg/L		0.00075				20	
Iron, total	0.146	0.010	mg/L		0.147			< 1	20	
Lead, total	< 0.00020	0.00020	mg/L		< 0.00020				20	
Lithium, total	0.00540	0.00010	mg/L		0.00558			3	20	
Magnesium, total	22.5	0.010	mg/L		22.6			< 1	20	
Manganese, total	0.0573	0.00020	mg/L		0.0581			1	20	
Molybdenum, total	0.00569	0.00010	mg/L		0.00566			< 1	20	
Nickel, total	0.00092	0.00040	mg/L		0.00092				20	
Phosphorus, total	< 0.050	0.050	mg/L		< 0.050				20	
Potassium, total	4.67	0.10	mg/L		4.73			1	20	
Selenium, total	0.00117	0.00050	mg/L		0.00122				20	
Silicon, total	10.1	1.0	mg/L		10.6			4	20	
Silver, total	< 0.000050	0.000050	mg/L		< 0.000050				20	
Sodium, total	20.5	0.10	mg/L		20.9			2	20	
Strontium, total	0.880	0.0010	mg/L		0.893			1	20	
Sulfur, total	49.8	3.0	mg/L		52.7			6	20	
Tellurium, total	< 0.00050	0.00050	mg/L		< 0.00050				20	
Thallium, total	< 0.000020	0.000020	mg/L		< 0.000020				20	
Thorium, total	< 0.00010	0.00010	mg/L		< 0.00010				20	
Tin, total	< 0.00020	0.00020	mg/L		< 0.00020				20	
Titanium, total	< 0.0050	0.0050	mg/L		< 0.0050				20	
Tungsten, total	< 0.0010	0.0010	mg/L		< 0.0010				20	
Uranium, total	0.00218	0.000020	mg/L		0.00223			2	20	
Vanadium, total	< 0.0010	0.0010	mg/L		< 0.0010				20	
Zinc, total	< 0.0040	0.0040	mg/L		< 0.0040				20	
Zirconium, total	< 0.00010	0.00010	mg/L		< 0.00010				20	
Reference (B2C0203-SRM1)				Prepared: 2022-03-02, Analyzed: 2022-03-03						
Aluminum, total	0.195	0.0050	mg/L	0.198		98	70-130			
Antimony, total	0.0245	0.00020	mg/L	0.0230		106	70-130			
Arsenic, total	0.0197	0.00050	mg/L	0.0200		98	70-130			
Barium, total	0.0152	0.0050	mg/L	0.0161		94	70-130			
Beryllium, total	0.00369	0.00010	mg/L	0.00384		96	70-130			
Boron, total	0.170	0.0500	mg/L	0.191		89	70-130			
Cadmium, total	0.00380	0.000010	mg/L	0.00404		94	70-130			
Calcium, total	1.02	0.20	mg/L	0.938		108	70-130			
Chromium, total	0.0247	0.00050	mg/L	0.0256		97	70-130			
Cobalt, total	0.0208	0.00010	mg/L	0.0214		97	70-130			
Copper, total	0.0325	0.00040	mg/L	0.0322		101	70-130			
Iron, total	0.060	0.010	mg/L	0.0580		103	70-130			
Lead, total	0.00815	0.00020	mg/L	0.00796		102	70-130			
Lithium, total	0.00974	0.00010	mg/L	0.0102		96	70-130			
Magnesium, total	0.111	0.010	mg/L	0.112		99	70-130			
Manganese, total	0.0119	0.00020	mg/L	0.0120		99	70-130			
Molybdenum, total	0.0442	0.00010	mg/L	0.0438		101	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

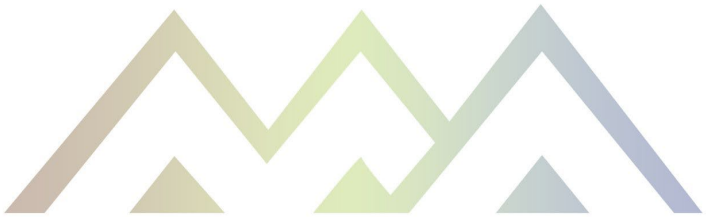
Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B2C0203, Continued										
Reference (B2C0203-SRM1), Continued				Prepared: 2022-03-02, Analyzed: 2022-03-03						
Nickel, total	0.0386	0.00040	mg/L	0.0394		98	70-130			
Potassium, total	0.75	0.10	mg/L	0.820		92	70-130			
Selenium, total	0.118	0.00050	mg/L	0.117		101	70-130			
Sodium, total	0.47	0.10	mg/L	0.490		96	70-130			
Strontium, total	0.265	0.0010	mg/L	0.276		96	70-130			
Thallium, total	0.0119	0.000020	mg/L	0.0118		101	70-130			
Uranium, total	0.00936	0.000020	mg/L	0.00970		97	70-130			
Vanadium, total	0.0260	0.0010	mg/L	0.0274		95	70-130			
Zinc, total	0.0895	0.0040	mg/L	0.0884		101	70-130			
Total Metals, Batch B2C0257										
Blank (B2C0257-BLK1)				Prepared: 2022-03-02, Analyzed: 2022-03-03						
Mercury, total	< 0.000010	0.000010	mg/L							
Blank (B2C0257-BLK2)				Prepared: 2022-03-02, Analyzed: 2022-03-03						
Mercury, total	< 0.000010	0.000010	mg/L							
Reference (B2C0257-SRM1)				Prepared: 2022-03-02, Analyzed: 2022-03-03						
Mercury, total	0.000211	0.000010	mg/L	0.000250		84	0-200			
Reference (B2C0257-SRM2)				Prepared: 2022-03-02, Analyzed: 2022-03-03						
Mercury, total	0.000208	0.000010	mg/L	0.000250		83	0-200			

APPENDIX 3: REVISION HISTORY

REPORTED TO	Western Water Associates Ltd	**WORK ORDER**	22B3252
PROJECT	21-124-01PG	**REPORTED**	2022-03-07 14:35

ANALYSES IN PROGRESS

Sample Number	Sample Name	Pending Analyses
22B3252-01	MW20-1B Hullcar MW (E319191)	Isotope Ratio by CRDS
22B3252-02	MW19-1AR Piezometer (E317950)	Isotope Ratio by CRDS
22B3252-03	MW20-2B Hullcar MW (E319192)	Isotope Ratio by CRDS
22B3252-04	MW19-3A Piezometer (E317974)	Isotope Ratio by CRDS
22B3252-05	MW20-4A Hullcar MW (E319193)	Isotope Ratio by CRDS
22B3252-06	MW19-2A Piezometer (E317972)	Isotope Ratio by CRDS
22B3252-07	Dup21A	Isotope Ratio by CRDS



Groundwater Supply Development and Management

Source Water Assessment and Protection

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Storm & Wastewater Disposal to Ground

Groundwater Modeling

Aquifer Test Design and Analysis

Geothermal / Geoexchange Systems

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