

May 31, 2020

Baseline Water Project: 10-9000

Lor-Al Springs  
Ms. S. Johnson  
Box 200  
Rimbey, Alberta  
T0C 2J0**RE: 2020 Spring Water Source Testing – SW 12-044-02 W5M****INTRODUCTION**

Baseline Water Resource Inc. (Baseline Water) was retained by Lor-Al Springs to conduct annual water sampling at a spring located within SW 12-044-02 W5M on May 05, 2020. The spring is the source of high-quality groundwater used in an active bottle water operation.

**SAMPLING PROCEDURE**

Testing was completed by collecting water samples from the 4-inch source discharge pipe at the spring. Water samples were submitted to AGAT Laboratories (AGAT) in Calgary, Alberta for analysis of routine potability, microbiological (*E. coli*, Total Coliform Bacteria, Iron Related Bacteria, Sulfate Reducing Bacteria), bromide, turbidity and total/dissolved metals analysis.

**WATER QUALITY RESULTS**

Field parameters including electrical conductivity (EC), pH, temperature and flow rate were measured prior to water sample collection. Field parameter results are listed below.

pH	EC (µS/cm)	Temperature (°C)	Flow (L/min)
7.40	500	4.9	114

Water quality analytical results were compared to the “Guidelines for Canadian Drinking Water Quality” (GCDWQ) (Health Canada, 2019). Complete laboratory results are summarized in Tables 1 – 3. A copy of the 2020 laboratory analytical report is attached.

## DISCLAIMER

Baseline Water has used proficient skill and diligence conducting the water testing and preparation of this report. This report is a representation of the conditions and information present and available at the time of the water testing. Information received from all other sources is considered to be accurate but cannot be guaranteed. Baseline Water Resource Inc. is not responsible for any individual interpretation of this material nor any decisions based upon findings in this report.

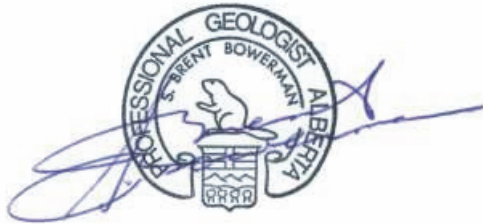
## CLOSURE

Baseline Water Resource Inc. is pleased to submit this report as fulfillment of Lor-AI Springs' request for spring water source testing.

Respectfully submitted,

**Baseline Water Resource Inc.**

APEGA Permit to Practice: P09366



S. Brent Bowerman, P.Geol.  
President

## REFERENCE

Health Canada. 2019. Guidelines for Canadian Drinking Water Quality - Summary Table. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario, Canada.

**Table 1: Water Analytical Results: Routine Potability (Lor-AI Springs)**

Water Well Name	Sample Date	Laboratory	Chloride (Cl) (mg/L)	Fluoride (F) (mg/L)	Nitrate & Nitrite as Nitrogen (mg/L)	Nitrate-Nitrogen (NO <sub>3</sub> -N) (mg/L)	Nitrite-Nitrogen (NO <sub>2</sub> -N) (mg/L)	Sulphate (SO <sub>4</sub> ) (mg/L)	pH	Electrical Conductivity (EC) (µS/cm)	Ion Balance	Bicarbonate (HCO <sub>3</sub> ) (mg/L)	Carbonate (CO <sub>3</sub> ) (mg/L)	Hydroxide (OH) (mg/L)	P-Alkalinity (as CaCO <sub>3</sub> ) (mg/L)	T-Alkalinity (as CaCO <sub>3</sub> ) (mg/L)
<b>GCDWQ<sup>1</sup> Criteria</b>			<b>250</b>	<b>1.5</b>	<b>nr<sup>2</sup></b>	<b>10</b>	<b>1</b>	<b>500</b>	<b>7.0-10.5</b>	<b>nr</b>	<b>nr</b>	<b>nr</b>	<b>nr</b>	<b>nr</b>	<b>nr</b>	<b>nr</b>
<b>Type of Objective (MAC, AO or OG)<sup>3</sup></b>			<b>AO</b>	<b>MAC</b>	<b>-</b>	<b>MAC</b>	<b>MAC</b>	<b>AO</b>	<b>OG</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Lor-AI Springs	07-Dec-87	AEC <sup>4</sup>	1.0	0.20	0.020	na <sup>5</sup>	0.005	10.0	9.30	577	1.01	293	32.0	na	na	294
	22-May-91	AEC	2.0	0.08	0.798	na	0.001	7.0	8.16	442	1.00	280	na	na	na	230
	4-Jan-01	U of A <sup>6</sup>	1.1	0.07	0.660	na	na	8.0	8.32	504	1.10	312	2.0	0	na	259
	9-Jul-04	MAI <sup>7</sup>	16.6	0.14	0.340	0.340	<0.003	20.2	7.67	656	1.02	390	<0.5	<0.5	<0.5	320
	18-Jul-05	MAI	15.0	<0.10	0.500	0.500	<0.06	18.0	7.90	604	0.98	403	<1.0	<1.0	<1.0	330
	3-Dec-06	MAI	<0.5	0.12	0.225	0.225	<0.003	25.5	8.20	535	0.91	329	<0.5	<0.5	<0.5	270
	27-Jun-07	MAI	20.0	na	1.900	1.900	<0.06	9.0	8.30	543	0.94	304	2.0	<1.0	2.0	253
	6-Dec-07	ALS <sup>8</sup>	9.9	<0.10	0.770	0.770	<0.05	12.4	8.10	538	95.3	339	<5.0	<5.0	na	278
	5-Aug-08	ALS	31.0	0.08	0.400	0.400	<0.05	14.8	8.10	658	98.0	363	<5.0	<5.0	na	297
	11-Feb-09	ALS	10.3	<0.10	0.240	0.240	<0.05	16.0	7.98	613	100	393	<5.0	<5.0	na	322
	18-May-10	ALS	49.5	<0.10	0.453	0.453	<0.050	23.7	8.00	607	95.0	395	<5.0	<5.0	na	324
	13-Aug-10	ALS	22.7	<0.10	1.400	1.400	<0.050	11.4	8.24	534	97.9	327	<5.0	<5.0	na	268
	16-May-11	ALS	30.9	<0.10	1.560	1.560	<0.050	10.6	8.16	595	93.4	317	<5.0	<5.0	na	260
	10-May-12	ALS	21.2	<0.10	0.614	0.614	<0.050	14.8	7.68	535	101.0	365	<5.0	<5.0	na	299
	22-May-13	ALS	18.3	<0.10	0.611	0.611	<0.050	12.5	8.08	587	94.3	337	<5.0	<5.0	na	276
	13-May-14	ALS	18.7	<0.10	1.210	1.210	<0.020	9.0	7.99	490	102.0	305	<5.0	<5.0	na	250
	26-May-15	ALS	31.4	0.062	0.545	0.545	<0.010	15.1	8.09	606	93.0	347	<5.0	<5.0	na	285
	12-May-16	AGAT <sup>9</sup>	46	0.070	0.410	0.410	<0.01	19.0	8.27	743	107.0	364	<5.0	<5.0	<5.0	300
9-May-17	AGAT	28	0.010	0.520	0.520	<0.01	17.0	7.88	701	93.0	387	<5.0	<5.0	<5.0	317	
3-May-18	AGAT	31	0.090	0.880	0.880	<0.01	17.0	8.16	659	97.0	377	<5.0	<5.0	<5.0	309	
16-May-19	AGAT	29	0.060	0.610	0.610	<0.01	20.0	8.05	650	98.0	397	<5	<5	<5	325	
5-May-20	AGAT	20.5	<0.01	0.68	0.68	<0.01	19.6	8.13	681	116	366	<5	<5	<5	300	

**NOTES:**

1. Health Canada, 2019. "Guidelines for Canadian Drinking Water Quality Summary Table (Prepared by the Federal-Provincial-Territorial Committee on Drinking Water)
2. 'nr' denotes parameter not directly regulated.
3. MAC denotes "Maximum Acceptable Concentration", AO denotes "Aesthetic Objective" and OG denotes "Operational Guidance Value".
4. Alberta Environmental Centre in Vegreville, Alberta conducted the water analysis.
5. 'na' denotes value not applicable or not available.
6. University of Alberta (U of A) in Edmonton, Alberta conducted the water analysis.
7. Maxxam Analytics Inc. in Edmonton, Alberta conducted the water analysis.
8. ALS Laboratory Group (ALS) in Calgary, Alberta conducted the water analysis.
9. AGAT Laboratories (AGAT) in Calgary, Alberta conducted the water analysis.
10. **BOLD** denotes an exceedance in Health Canada (2019) MAC or AO criteria.
11. 'na' and values below the laboratory reportable detection limit have been greyed-out for readability.

**Table 1: Water Analytical Results: Routine Potability (Lor-AI Springs) Continued**

Water Well Name	Sample Date	Laboratory	Calcium (Ca) - Dissolved (mg/L)	Iron (Fe) - Total (mg/L)	Iron (Fe) - Dissolved (mg/L)	Magnesium (Mg) - Dissolved (mg/L)	Manganese (Mn) - Total (mg/L)	Manganese (Mn) - Dissolved (mg/L)	Potassium (K) - Dissolved (mg/L)	Sodium (Na) - Dissolved (mg/L)	Total Dissolved Solids (TDS) (mg/L)	Hardness (as CaCO <sub>3</sub> ) (mg/L)	Turbidity (NTU)	Colour (TCU)	Flow Rate (L/min)
<b>GCDWQ<sup>1</sup> Criteria</b>			<b>nr<sup>2</sup></b>	<b>0.3</b>	<b>0.3</b>	<b>nr</b>	<b>0.02</b>	<b>0.02</b>	<b>nr</b>	<b>200</b>	<b>500</b>	<b>nr</b>	<b>0.1<sup>3</sup></b>	<b>15</b>	<b>nr</b>
<b>Type of Objective (MAC, AO or OG)<sup>4</sup></b>			<b>-</b>	<b>AO</b>	<b>AO</b>	<b>-</b>	<b>AO</b>	<b>AO</b>	<b>-</b>	<b>AO</b>	<b>AO</b>	<b>-</b>	<b>OG</b>	<b>AO</b>	<b>-</b>
Lor-AI Springs	07-Dec-87	AEC <sup>5</sup>	1.0	na <sup>6</sup>	0.020	1.0	na	na	0.30	139.0	328	5	na	na	na
	22-May-91	AEC	54.0	na	<0.010	22.0	na	na	1.50	8.0	236	225	na	na	na
	4-Jan-01	U of A <sup>7</sup>	60.0	na	<0.020	28.0	na	na	2.00	15.0	272	263	na	na	na
	9-Jul-04	MAI <sup>8</sup>	73.1	na	0.050	33.2	na	<0.0040	2.10	23.3	362	320	0.30	na	71
	18-Jul-05	MAI	70.5	na	0.033	33.8	na	<0.0010	2.00	20.8	372	320	0.20	na	na
	3-Dec-06	MAI	32.3	na	<0.060	16.0	na	<0.0040	1.70	56.0	295	150	0.20	na	na
	27-Jun-07	MAI	58.9	na	<0.060	24.2	na	<0.0040	1.70	14.2	289	250	na	na	na
	6-Dec-07	ALS <sup>9</sup>	59.5	0.061	<0.030	26.4	<0.005	<0.0050	1.70	15.5	296	257	na	na	164
	5-Aug-08	ALS	69.8	<0.050	<0.050	29.8	<0.010	<0.0100	1.60	24.0	351	297	na	na	na
	11-Feb-09	ALS	67.1	<0.030	<0.030	31.5	<0.005	<0.0005	2.22	25.4	347	297	0.35	<5.0	na
	18-May-10	ALS	73.4	<0.030	<0.030	34.2	<0.005	<0.0050	2.22	33.2	413	324	<0.20	na	na
	13-Aug-10	ALS	61.7	<0.030	<0.030	26.2	<0.005	<0.0050	1.93	21.1	312	262	<0.20	na	144
	16-May-11	ALS	58.9	<0.030	<0.030	25.3	<0.005	<0.0050	1.84	20.9	311	251	<0.20	<5.0	192
	10-May-12	ALS	67.7	<0.030	<0.030	30.1	<0.005	<0.0050	2.08	24.5	342	293	0.20	<5.0	132
	22-May-13	ALS	60.1	<0.030	<0.030	23.9	<0.005	<0.0050	1.82	22.3	307	248	0.12	<5.0	227
	13-May-14	ALS	60.4	<0.030	<0.030	23.6	<0.005	<0.0050	1.91	20.3	289	248	0.16	na	176
	26-May-15	ALS	62.3	<0.030	<0.030	25.0	<0.005	<0.0050	1.82	27.1	337	261	0.12	<5.0	97
12-May-16	AGAT <sup>10</sup>	72.3	<0.100	<0.100	32.8	<0.005	<0.0050	2.00	43.7	440	316	<0.2	na	82	
9-May-17	AGAT	61.7	<0.100	<0.100	26.6	<0.005	<0.0050	1.90	38.6	366	264	<0.2	na	111	
3-May-18	AGAT	66.2	<0.100	<0.100	27.9	<0.005	<0.0050	2.10	37.2	371	280	<0.2	na	114	
16-May-19	AGAT	68.9	<0.1	<0.1	29.7	<0.005	<0.005	2.00	38.4	386	294	<0.2	na	114	
5-May-20	AGAT	70.9	<0.1	<0.1	33.2	<0.005	<0.005	2.3	42.8	372	314	0.2	na	114	

**NOTES:**

1. Health Canada, 2019. "Guidelines for Canadian Drinking Water Quality Summary Table (Prepared by the Federal-Provincial-Territorial Committee on Drinking Water)
2. 'nr' denotes parameter not directly regulated.
3. Guideline is based on conventional treatment (0.3 mg/L), slow sand or diatomaceous earth filtration (1.0 mg/L), and membrane filtration (0.1 mg/L). This guideline is intended specifically for water treatment facilities, and is not directly comparable to private water wells or springs.
4. MAC denotes "Maximum Acceptable Concentration", AO denotes "Aesthetic Objective" and OG denotes "Operational Guidance Value".
5. Alberta Environmental Centre in Vegreville, Alberta conducted the water analysis.
6. 'na' denotes value not applicable or not available.
7. University of Alberta (U of A) in Edmonton, Alberta conducted the water analysis.
8. Maxxam Analytics Inc. in Edmonton, Alberta conducted the water analysis.
9. ALS Laboratory Group (ALS) in Calgary, Alberta conducted the water analysis.
10. AGAT Laboratories (AGAT) in Calgary, Alberta conducted the water analysis.
11. **BOLD** denotes an exceedance in Health Canada (2019) MAC or AO criteria.
12. 'na' and values below the laboratory reportable detection limit have been greyed-out for readability.

**Table 2: Water Analytical Results: Microbiological Parameters (Lor-AI Springs)**

Water Well Name	Sample Date	Laboratory	Total Coliform Bacteria (MPN/100mL)	Fecal Coliform Bacteria (MPN/100mL)	Escherichia coli Bacteria (CFU/100mL)	Iron Related Bacteria (CFU/mL)	Sulfate Reducing Bacteria (CFU/mL)
<b>GCDWQ<sup>1</sup> Criteria</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>nr<sup>2</sup></b>	<b>nr</b>
<b>Type of Objective (MAC, AO or OG)<sup>3</sup></b>			<b>MAC</b>	<b>MAC</b>	<b>MAC</b>	<b>-</b>	<b>-</b>
Lor-AI Springs	07-Dec-87	AEC <sup>4</sup>	na <sup>5</sup>	na	na	na	na
	22-May-91	AEC	na	na	na	na	na
	04-Jan-01	U of A <sup>6</sup>	na	na	na	na	na
	09-Jul-04	MAI <sup>7</sup>	na	na	na	520	<1
	18-Jul-05	MAI	na	na	na	na	<1
	03-Dec-06	MAI	<1	na	<1	9000	<200
	27-Jun-07	MAI	na	na	na	<30	<200
	19-Dec-07	ALS <sup>8</sup>	<1	<1	na	9000	<200
	5-Aug-08	ALS	<1	<1	na	9000	<200
	11-Feb-09	ALS	<1	na	<1	500	<200
	18-May-09	ALS	<1	na	<1	2300	<200
	16-May-11	ALS	<1	na	<1	9000	<200
	10-May-12	ALS	<1	na	<1	9000	<200
	22-May-13	ALS	<1	na	<1	9000	<200
	13-May-14	ALS	<1	na	<1	9000	<200
	26-May-15	ALS	<1	na	<1	9000	<200
	12-May-16	AGAT <sup>9</sup>	<1	<1	<1	8	<1
	9-May-17	AGAT	<1	na	<1	150	<1
3-May-18	AGAT	<1	na	<1	500	<1	
16-May-19	AGAT	<1	na	<1	9000	<1	
5-May-20	AGAT	<b>2</b>	na	<1	9000	<1	

**NOTES:**

1. Health Canada, 2019. "Guidelines for Canadian Drinking Water Quality Summary Table (Prepared by the Federal-Provincial-Territorial Committee on Drinking Water)".
2. 'nr' denotes parameter not directly regulated.
3. MAC denotes "Maximum Acceptable Concentration", AO denotes "Aesthetic Objective" and OG denotes "Operational Guidance Value".
4. Alberta Environmental Centre in Vegreville, Alberta conducted the water analysis.
5. 'na' denotes value not applicable or not available.
6. University of Alberta (U of A) in Edmonton, Alberta conducted the water analysis.
7. Maxxam Analytics Inc. in Edmonton, Alberta conducted the water analysis.
8. ALS Laboratory Group (ALS) in Calgary, Alberta conducted the water analysis.
9. AGAT Laboratories (AGAT) in Calgary, Alberta conducted the water analysis.
10. **BOLD** denotes an exceedance in Health Canada (2019) MAC or AO criteria.
11. 'na' and values below the laboratory reportable detection limit have been greyed-out for readability.

**Table 3: Water Analytical Results: Dissolved Metals (Lor-AI Springs)**

Water Well Name	Sample Date	Laboratory	Aluminum (Al) (mg/L)	Antimony (Sb) (mg/L)	Arsenic (As) (mg/L)	Barium (Ba) (mg/L)	Beryllium (Be) (mg/L)	Bismuth (Bi) (mg/L)	Boron (B) (mg/L)	Bromate (mg/L)	Bromide (mg/L)	Cadmium (Cd) (mg/L)	Chromium (Cr) (mg/L)	Cobalt (Co) (mg/L)	Copper (Cu) (mg/L)	Iron (Fe) (mg/L)	Lead (Pb) (mg/L)
<b>GCDWQ<sup>1</sup> Criteria</b>			<b>0.1</b>	<b>0.006</b>	<b>0.01</b>	<b>1.0</b>	<b>nr<sup>2</sup></b>	<b>nr</b>	<b>5</b>	<b>0.01</b>	<b>nr</b>	<b>0.005</b>	<b>0.05</b>	<b>nr</b>	<b>1.0</b>	<b>0.3</b>	<b>0.005</b>
<b>Type of Objective (MAC, AO or OG)<sup>3</sup></b>			<b>OG</b>	<b>MAC</b>	<b>MAC</b>	<b>MAC</b>	<b>-</b>	<b>-</b>	<b>MAC</b>	<b>MAC</b>	<b>-</b>	<b>MAC</b>	<b>MAC</b>	<b>-</b>	<b>AO</b>	<b>AO</b>	<b>MAC</b>
Lor-AI Springs	07-Dec-87	AEC <sup>4</sup>	na <sup>5</sup>	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	22-May-91	AEC	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	04-Jan-01	U of A <sup>6</sup>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	09-Jul-04	MAI <sup>7</sup>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	18-Jul-05	MAI	<0.04	<0.02	<0.02	0.128	<0.001	<0.2	<0.05	na	na	<0.002	<0.007	<0.005	<0.009	0.033	<0.1
	03-Dec-06	MAI	<0.04	<0.0002	<0.001	0.08	<0.001	na	0.06	na	na	<0.0002	<0.01	<0.0003	0.0017	<0.06	<0.0002
	27-Jun-07	MAI	<0.04	na	na	0.10	na	na	<0.02	na	na	na	<0.01	na	na	<0.06	na
	05-Aug-08	ALS <sup>8</sup>	na	na	na	na	na	na	na	na	na	na	na	na	na	<0.05	na
	11-Feb-09	ALS	0.027	<0.00050	<0.00050	0.115	<0.0025	<0.0025	<0.050	<0.01	na	<0.00025	<0.0025	<0.00050	0.00089	na	0.00062
	18-May-10	ALS	<0.025	<0.00050	<0.00050	0.147	<0.0025	<0.0025	<0.050	na	<0.10	<0.00025	<0.0025	<0.00050	<0.00050	na	<0.00050
	16-May-11	ALS	<0.0050	<0.00010	0.00011	0.107	<0.00050	<0.00050	0.016	na	<0.10	<0.000050	<0.00050	<0.00010	0.00048	na	<0.00010
	10-May-12	ALS	<0.010	<0.00020	<0.00020	0.125	<0.0010	<0.0010	<0.020	na	<0.10	<0.00010	<0.0010	<0.00020	0.00045	na	<0.00020
	22-May-13	ALS	<0.0050	<0.00010	<0.00010	0.128	<0.00050	na	0.019	na	na	<0.000050	<0.00050	<0.00010	0.00034	<0.030	<0.00010
	13-May-14	ALS	<0.0010	<0.00010	<0.00010	0.115	<0.00050	na	0.013	na	na	<0.000010	0.00023	<0.00010	0.00020	<0.030	<0.000050
	26-May-15	ALS	0.0043	<0.00010	<0.00010	0.132	<0.00010	na	0.023	na	<0.10	0.0000116	0.00022	<0.00010	0.00036	<0.030	<0.000050
	12-May-16	AGAT <sup>9</sup>	<0.0040	<0.0010	<0.0010	0.140	<0.0010	na	0.030	na	<0.10	<0.000016	<0.0010	na	<0.00080	<0.1	<0.00050
	9-May-17	AGAT	<0.0040	<0.0010	<0.0010	0.120	<0.0010	na	0.020	na	<0.10	<0.000016	<0.0010	na	<0.00080	<0.1	<0.00050
3-May-18	AGAT	<0.0040	<0.0010	<0.0010	0.120	<0.0010	na	0.020	na	<0.10	<0.000016	<0.001	na	<0.0008	<0.1	<0.0005	
16-May-19	AGAT	<0.004	<0.001	<0.001	0.130	<0.001	na	0.030	na	<0.1	0.0000190	<0.001	na	<0.0008	<0.1	<0.0005	
5-May-20	AGAT	<0.004	<0.001	<0.001	0.14	<0.001	na	0.02	na	<0.1	<0.000016	<0.001	<0.0009	<0.0008	<0.1	<0.0005	

**NOTES:**

1. Health Canada, 2019. "Guidelines for Canadian Drinking Water Quality Summary Table (Prepared by the Federal-Provincial-Territorial Committee on Drinking Water)
2. 'nr' denotes parameter not directly regulated.
3. MAC denotes "Maximum Acceptable Concentration", AO denotes "Aesthetic Objective" and OG denotes "Operational Guidance Value".
4. Alberta Environmental Centre in Vegreville, Alberta conducted the water analysis.
5. 'na' denotes value not applicable or not available.
6. University of Alberta (U of A) in Edmonton, Alberta conducted the water analysis.
7. Maxxam Analytics Inc. in Edmonton, Alberta conducted the water analysis.
8. ALS Laboratory Group (ALS) in Calgary, Alberta conducted the water analysis.
9. AGAT Laboratories (AGAT) in Calgary, Alberta conducted the water analysis.
10. **BOLD** denotes an exceedance in Health Canada (2019) MAC or AO criteria.
11. 'na' and values below the laboratory reportable detection limit have been greyed-out for readability.

**Table 3: Water Analytical Results: Dissolved Metals (Lor-AI Springs) Continued**

Water Well Name	Sample Date	Laboratory	Lithium (Li) (mg/L)	Magnesium (Mg) (mg/L)	Manganese (Mn) (mg/L)	Mercury (Hg) (mg/L)	Molybdenum (Mo) (mg/L)	Nickel (Ni) (mg/L)	Selenium (Se) (mg/L)	Silver (Ag) (mg/L)	Strontium (Sr) (mg/L)	Thallium (Tl) (mg/L)	Tin (Sn) (mg/L)	Titanium (Ti) (mg/L)	Uranium (U) (mg/L)	Vanadium (V) (mg/L)	Zinc (Zn) (mg/L)
<b>GCDWQ<sup>1</sup> Criteria</b>			<b>nr<sup>2</sup></b>	<b>nr</b>	<b>0.02</b>	<b>0.001</b>	<b>nr</b>	<b>nr</b>	<b>0.05</b>	<b>nr</b>	<b>7.0</b>	<b>nr</b>	<b>nr</b>	<b>nr</b>	<b>0.02</b>	<b>nr</b>	<b>5.0</b>
<b>Type of Objective (MAC, AO or OG)<sup>3</sup></b>			<b>-</b>	<b>-</b>	<b>AO</b>	<b>MAC</b>	<b>-</b>	<b>-</b>	<b>MAC</b>	<b>-</b>	<b>MAC</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>MAC</b>	<b>-</b>	<b>AO</b>
Lor-AI Springs	07-Dec-87	AEC <sup>4</sup>	na <sup>5</sup>	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	22-May-91	AEC	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	04-Jan-01	U of A <sup>6</sup>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	09-Jul-04	MAI <sup>7</sup>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	18-Jul-05	MAI	0.03	34.1	0.001	na	<0.00600	<0.0080	<0.03	<0.01	0.720	<0.050	<0.040	<0.006	<1.00	<0.050	<0.005
	03-Dec-06	MAI	0.03	16.0	<0.004	na	0.00500	0.0014	<0.001	<0.0001	0.380	<0.0002	<0.001	0.002	0.0033	<0.001	0.035
	27-Jul-07	MAI	<0.02	24.2	<0.004	na	na	na	na	na	0.560	na	na	na	na	na	na
	05-Aug-08	ALS <sup>8</sup>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	11-Feb-09	ALS	<0.025	na	na	<0.00005	0.00333	<0.0025	<0.0050	<0.000050	0.613	<0.00050	<0.00050	<0.0050	0.00494	<0.0050	<0.025
	18-May-10	ALS	<0.025	na	na	<0.00005	0.00327	<0.0025	<0.0050	<0.000050	0.704	<0.00050	<0.00050	<0.0050	0.00489	<0.0050	<0.025
	16-May-11	ALS	0.0176	na	na	<0.00005	0.00276	<0.0005	<0.0010	<0.000010	0.518	<0.00010	<0.00010	<0.0010	0.00337	<0.0010	<0.0050
	10-May-12	ALS	0.0200	na	na	<0.00005	0.00302	<0.0010	<0.0020	<0.000020	0.583	<0.00020	0.00025	<0.0020	0.00423	<0.0020	<0.010
	22-May-13	ALS	0.0205	23.9	<0.005	<0.00010	0.00309	<0.00050	<0.0010	<0.000010	na	<0.00010	<0.00010	<0.0010	0.00423	<0.0010	<0.0050
	13-May-14	ALS	0.0159	23.6	<0.005	<0.00005	0.00267	0.00021	0.00043	<0.000010	na	<0.000050	<0.00010	<0.00030	0.00319	0.00036	<0.0050
	26-May-15	ALS	0.0221	25.6	<0.005	<0.000005	0.00320	<0.00050	0.000687	<0.000010	na	<0.000010	<0.00010	<0.00030	0.00463	<0.00050	0.0025
	12-May-16	AGAT <sup>9</sup>	na	32.8	<0.005	<0.000025	0.00300	<0.0030	0.000700	<0.000050	na	<0.00050	na	<0.001	0.00500	na	<0.01
	9-May-17	AGAT	na	26.6	<0.005	<0.000025	0.00300	<0.0030	<0.000500	<0.000050	na	<0.00050	na	0.004	0.00500	na	<0.01
3-May-18	AGAT	na	27.9	<0.005	<0.000025	0.00300	<0.0030	0.000800	<0.00005	na	<0.0001	na	0.003	0.00500	na	<0.005	
16-May-19	AGAT	na	29.7	<0.005	<0.000025	0.00300	<0.003	<0.0005	0.00007	na	<0.0001	na	0.003	0.005	na	<0.005	
5-May-20	AGAT	na	33.2	<0.005	<0.0000025	0.003	<0.003	<0.0005	<0.0001	na	<0.0001	na	0.003	0.005	na	<0.005	

**NOTES:**

1. Health Canada, 2019. "Guidelines for Canadian Drinking Water Quality Summary Table (Prepared by the Federal-Provincial-Territorial Committee on Drinking Water)"
2. 'nr' denotes parameter not directly regulated.
3. MAC denotes "Maximum Acceptable Concentration", AO denotes "Aesthetic Objective" and OG denotes "Operational Guidance Value".
4. Alberta Environmental Centre in Vegreville, Alberta conducted the water analysis.
5. 'na' denotes value not applicable or not available.
6. University of Alberta (U of A) in Edmonton, Alberta conducted the water analysis.
7. Maxxam Analytics Inc. in Edmonton, Alberta conducted the water analysis.
8. ALS Laboratory Group (ALS) in Calgary, Alberta conducted the water analysis.
9. AGAT Laboratories (AGAT) in Calgary, Alberta conducted the water analysis.
10. **BOLD** denotes an exceedance in Health Canada (2019) MAC or AO criteria.
11. 'na' and values below the laboratory reportable detection limit have been greyed-out for readability.



**CLIENT NAME: BASELINE WATER RESOURCE INC  
7, 3800 19 STREET N.E.  
CALGARY , AB T2E6V2  
(403) 282-3999**

**ATTENTION TO: Greg Farrell**

**PROJECT: 10-9000**

**AGAT WORK ORDER: 20C598474**

**WATER ANALYSIS REVIEWED BY: Dev Vyas, Inorganics Laboratory Manager**

**DATE REPORTED: May 28, 2020**

**PAGES (INCLUDING COVER): 17**

**VERSION\*: 1**

Should you require any information regarding this analysis please contact your client services representative at (403) 735-2005

\*Notes

**Disclaimer:**

- *All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.*
- *All samples will be disposed of within 30 days following analysis, unless expressly agreed otherwise in writing. Please contact your Client Project Manager if you require additional sample storage time.*
- *AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.*
- *This Certificate shall not be reproduced except in full, without the written approval of the laboratory.*
- *The test results reported herewith relate only to the samples as received by the laboratory.*
- *Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.*
- *All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.*





## Certificate of Analysis

AGAT WORK ORDER: 20C598474

PROJECT: 10-9000

2910 12TH STREET NE  
CALGARY, ALBERTA  
CANADA T2E 7P7  
TEL (403)735-2005  
FAX (403)735-2771  
<http://www.agatlabs.com>

CLIENT NAME: BASELINE WATER RESOURCE INC

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

### Metals - Dissolved - Alberta Tier 1 with Mercury

DATE RECEIVED: 2020-05-05

DATE REPORTED: 2020-05-28

SW-12 Lor-AI  
Spring  
SW-12-044-  
02W5M  
Water  
2020-05-05  
10:45

SAMPLE DESCRIPTION:  
SAMPLE TYPE:  
DATE SAMPLED:

Parameter	Unit	G / S	RDL	1108162
Dissolved Aluminum	mg/L	(VARIABLE	0.004	<0.004
Dissolved Antimony	mg/L	0.006	0.001	<0.001
Dissolved Arsenic	mg/L	0.010	0.001	<0.001
Dissolved Barium	mg/L	1.0	0.05	0.14
Dissolved Beryllium	mg/L		0.001	<0.001
Dissolved Boron	mg/L	5	0.01	0.02
Dissolved Cadmium	mg/L	0.005	0.000016	<0.000016
Dissolved Chromium	mg/L	0.05	0.001	<0.001
Dissolved Cobalt	mg/L		0.0009	<0.0009
Dissolved Copper	mg/L	2 (1.0)	0.0008	<0.0008
Dissolved Iron	mg/L	(0.3)	0.1	<0.1
Dissolved Lead	mg/L	0.005	0.0005	<0.0005
Dissolved Manganese	mg/L	0.12 (0.02)	0.005	<0.005
Dissolved Mercury- Ultra Low Level	mg/L	0.001	0.0000025	< 2.50E-06
Dissolved Molybdenum	mg/L		0.001	0.003
Dissolved Nickel	mg/L		0.003	<0.003
Dissolved Selenium	mg/L	0.05	0.0005	<0.0005
Dissolved Silver	mg/L		0.0001	<0.0001
Dissolved Sodium	mg/L	(200)	0.6	42.8
Dissolved Thallium	mg/L		0.0001	<0.0001
Dissolved Titanium	mg/L		0.001	0.003
Dissolved Uranium	mg/L	0.02	0.001	0.005
Dissolved Zinc	mg/L	(5.0)	0.005	<0.005

Certified By:



**AGAT** Laboratories

# Certificate of Analysis

AGAT WORK ORDER: 20C598474

PROJECT: 10-9000

2910 12TH STREET NE  
CALGARY, ALBERTA  
CANADA T2E 7P7  
TEL (403)735-2005  
FAX (403)735-2771  
<http://www.agatlabs.com>

CLIENT NAME: BASELINE WATER RESOURCE INC

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

## Metals - Dissolved - Alberta Tier 1 with Mercury

DATE RECEIVED: 2020-05-05

DATE REPORTED: 2020-05-28

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to 2019 Canadian Drinking Water Quality MAC (AO)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

**1108162** < - Values refer to Report Detection Limit.

Analysis performed at AGAT Calgary (unless marked by \*)

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 20C598474

PROJECT: 10-9000

2910 12TH STREET NE  
 CALGARY, ALBERTA  
 CANADA T2E 7P7  
 TEL (403)735-2005  
 FAX (403)735-2771  
<http://www.agatlabs.com>

CLIENT NAME: BASELINE WATER RESOURCE INC

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

### Metals - Total - Alberta Tier 1 with Mercury

DATE RECEIVED: 2020-05-05

DATE REPORTED: 2020-05-28

SAMPLE DESCRIPTION: SW-12 Lor-AI Spring  
 SW-12-044-02W5M  
 SAMPLE TYPE: Water  
 DATE SAMPLED: 2020-05-05 10:45  
 1108162

Parameter	Unit	G / S	RDL	1108162
Total Aluminum	mg/L	(VARIABLE	0.004	0.005
Total Antimony	mg/L	0.006	0.001	<0.001
Total Arsenic	mg/L	0.010	0.001	<0.001
Total Barium	mg/L	1.0	0.05	0.14
Total Beryllium	mg/L		0.0005	<0.0005
Total Boron	mg/L	5	0.01	0.03
Total Cadmium	mg/L	0.005	0.000016	<0.000016
Total Chromium	mg/L	0.05	0.0005	<0.0005
Total Cobalt	mg/L		0.0009	<0.0009
Total Copper	mg/L	(1.0)	0.0008	<0.0008
Total Iron	mg/L	(0.3)	0.1	<0.1
Total Lead	mg/L	0.005	0.0001	<0.0001
Total Manganese	mg/L	(0.05)	0.005	<0.005
Total Mercury- Ultra Low Level	mg/L	0.001	0.0000025	< 2.50E-06
Total Molybdenum	mg/L		0.001	0.003
Total Nickel	mg/L		0.003	<0.003
Total Selenium	mg/L	0.05	0.0005	0.0012
Total Silver	mg/L		0.00005	0.00013
Total Sodium	mg/L	(200)	0.6	42.1
Total Thallium	mg/L		0.0005	<0.0005
Total Titanium	mg/L		0.001	<0.001
Total Uranium	mg/L	0.02	0.001	0.005
Total Zinc	mg/L	(5.0)	0.01	<0.01

Certified By:



**AGAT** Laboratories

# Certificate of Analysis

AGAT WORK ORDER: 20C598474

PROJECT: 10-9000

2910 12TH STREET NE  
CALGARY, ALBERTA  
CANADA T2E 7P7  
TEL (403)735-2005  
FAX (403)735-2771  
<http://www.agatlabs.com>

CLIENT NAME: BASELINE WATER RESOURCE INC

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

## Metals - Total - Alberta Tier 1 with Mercury

DATE RECEIVED: 2020-05-05

DATE REPORTED: 2020-05-28

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to 2019 Canadian Drinking Water Quality MAC (AO)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

**1108162** < - Values refer to Report Detection Limit.

Analysis performed at AGAT Calgary (unless marked by \*)

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 20C598474

PROJECT: 10-9000

2910 12TH STREET NE  
 CALGARY, ALBERTA  
 CANADA T2E 7P7  
 TEL (403)735-2005  
 FAX (403)735-2771  
<http://www.agatlabs.com>

CLIENT NAME: BASELINE WATER RESOURCE INC

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

### Microbial Analysis - E. Coli, Total Coliforms, IRB, SRB

DATE RECEIVED: 2020-05-05

DATE REPORTED: 2020-05-28

SAMPLE DESCRIPTION: SW-12 Lor-AI  
 Spring  
 SW-12-044-02W5M  
 SAMPLE TYPE: Water  
 DATE SAMPLED: 2020-05-05  
 10:45  
 1108162

Parameter	Unit	G / S	RDL	Result
Total Coliforms (MPN)	MPN/100 mL	<1	1	2
Escherichia coli (MPN)	MPN/100 mL	<1	1	<1
Iron Related Bacteria**				Present
IRB Approximate Population Count**	CFU/mL		1	9000
Sulfate Reducing Bacteria**				Absent
SRB Approximate Population Count**	CFU/mL		1	<1

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to 2019 Canadian Drinking Water Quality MAC (AO)  
 Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Calgary (unless marked by \*)

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 20C598474

PROJECT: 10-9000

2910 12TH STREET NE  
CALGARY, ALBERTA  
CANADA T2E 7P7  
TEL (403)735-2005  
FAX (403)735-2771  
<http://www.agatlabs.com>

CLIENT NAME: BASELINE WATER RESOURCE INC

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

### Routine Chemistry Water Analysis

DATE RECEIVED: 2020-05-05

DATE REPORTED: 2020-05-28

SW-12 Lor-AI  
Spring

SAMPLE DESCRIPTION: 02W5M  
SAMPLE TYPE: Water  
DATE SAMPLED: 2020-05-05

10:45  
1108162

Parameter	Unit	G / S	RDL	1108162
pH	pH Units	7.0-10.5	N/A	8.13
p - Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	<5
T - Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	300
Bicarbonate	mg/L		5	366
Carbonate	mg/L		5	<5
Hydroxide	mg/L		5	<5
Electrical Conductivity	uS/cm		5	681
Chloride	mg/L	(250)	1.0	20.5
Fluoride	mg/L	1.5	0.01	<0.01
Nitrate	mg/L	45	0.5	3.0
Nitrate-N	mg/L	10	0.02	0.68
Nitrite	mg/L	3	0.05	<0.05
Nitrite-N	mg/L	1	0.01	<0.01
Nitrate+Nitrite - Nitrogen	mg/L		0.02	0.68
Sulfate	mg/L	(500)	1.0	19.6
Dissolved Calcium	mg/L		0.3	70.9
Dissolved Magnesium	mg/L		0.2	33.2
Dissolved Sodium	mg/L	(200)	0.6	42.8
Dissolved Potassium	mg/L		0.6	2.3
Dissolved Iron	mg/L	(0.3)	0.1	<0.1
Dissolved Manganese	mg/L	0.12 (0.02)	0.005	<0.005
Sodium Adsorption Ratio				1.05
Calculated TDS	mg/L		0.6	372
Hardness	mg CaCO <sub>3</sub> /L		1	314
Ion Balance	%		1	116

Certified By:



**AGAT** Laboratories

# Certificate of Analysis

AGAT WORK ORDER: 20C598474

PROJECT: 10-9000

2910 12TH STREET NE  
CALGARY, ALBERTA  
CANADA T2E 7P7  
TEL (403)735-2005  
FAX (403)735-2771  
<http://www.agatlabs.com>

CLIENT NAME: BASELINE WATER RESOURCE INC

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

## Routine Chemistry Water Analysis

DATE RECEIVED: 2020-05-05

DATE REPORTED: 2020-05-28

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to 2019 Canadian Drinking Water Quality MAC (AO)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

**1108162** < - Values refer to Report Detection Limits.

If sodium results in mg/L are less than detection, SAR is non-calculable and is reported as 0.

Analysis performed at AGAT Calgary (unless marked by \*)

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 20C598474

PROJECT: 10-9000

2910 12TH STREET NE  
 CALGARY, ALBERTA  
 CANADA T2E 7P7  
 TEL (403)735-2005  
 FAX (403)735-2771  
<http://www.agatlabs.com>

CLIENT NAME: BASELINE WATER RESOURCE INC

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

### Water Analysis - Bromide, Turbidity

DATE RECEIVED: 2020-05-05

DATE REPORTED: 2020-05-28

SW-12 Lor-AI

Spring

SW-12-044-

SAMPLE DESCRIPTION: 02W5M

SAMPLE TYPE: Water

DATE SAMPLED: 2020-05-05

10:45

1108162

Parameter	Unit	G / S	RDL	1108162
Bromide	mg/L		0.1	<0.1
Turbidity	NTU	VARIABLE	0.2	0.2

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to 2019 Canadian Drinking Water Quality MAC (AO)  
 Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:



## Quality Assurance

**CLIENT NAME:** BASELINE WATER RESOURCE INC  
**PROJECT:** 10-9000  
**SAMPLING SITE:**

**AGAT WORK ORDER:** 20C598474  
**ATTENTION TO:** Greg Farrell  
**SAMPLED BY:**

Water Analysis																
RPT Date: May 28, 2020			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits		
								Lower	Upper		Lower	Upper		Lower	Upper	

**Routine Chemistry Water Analysis**

pH	1107864		8.32	8.33	0.1%	N/A	100%	90%	110%						
p - Alkalinity (as CaCO3)	1107864		<5	<5	NA	< 5	NA	80%	120%						
T - Alkalinity (as CaCO3)	1107864		293	295	0.9%	< 5	102%	80%	120%						
Bicarbonate	1107864		351	353	0.6%	< 5	NA								
Carbonate	1107864		<5	<5	NA	< 5	NA								
Hydroxide	1107864		<5	<5	NA	< 5	NA								
Electrical Conductivity	1107864		573	574	0.2%	< 5	105%	90%	110%						
Chloride	1108296		<1.0	<1.0	NA	< 1.0	98%	70%	130%	95%	80%	120%	99%	70%	130%
Fluoride	1108296		<0.01	<0.01	NA	< 0.01	102%	70%	130%	104%	80%	120%	110%	70%	130%
Nitrate	1108296		<0.5	<0.5	NA	< 0.5	102%	70%	130%	101%	80%	120%	102%	70%	130%
Nitrite	1108296		<0.05	<0.05	NA	< 0.05	99%	70%	130%	97%	80%	120%	101%	70%	130%
Sulfate	1108296		<1.0	<1.0	NA	< 1.0	101%	70%	130%	100%	80%	120%	103%	70%	130%
Dissolved Calcium	1108169	1108169	2.5	2.4	3.2%	< 0.3	106%	70%	130%	115%	80%	120%	97%	70%	130%
Dissolved Magnesium	1108169	1108169	0.5	0.6	NA	< 0.2	106%	70%	130%	104%	80%	120%	102%	70%	130%
Dissolved Sodium	1108169	1108169	198	196	0.9%	< 0.6	102%	70%	130%	105%	80%	120%	NA	70%	130%
Dissolved Potassium	1108169	1108169	0.7	0.7	NA	< 0.6	96%	70%	130%	102%	80%	120%	98%	70%	130%
Dissolved Iron	1108169	1108169	<0.1	<0.1	NA	< 0.1	112%	70%	130%	101%	80%	120%	103%	70%	130%
Dissolved Manganese	1108169	1108169	<0.005	<0.005	NA	< 0.005	111%	70%	130%	109%	80%	120%	107%	70%	130%

Comments: If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution.  
 If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

pH has been analyzed past the recommended holding time of 15 minutes from sampling (field measurement ideal if more accurate data required)

Nitrate and Nitrite: The regulatory hold time for the analysis of nitrate and/or nitrite in water is 72 hours.

**Water Analysis - Bromide, Turbidity**

Bromide	1115204		<0.1	<0.1	NA	< 0.1	103%	70%	130%	99%	80%	120%	94%	70%	130%
Turbidity	8056		2.1	2.1	0.0%	< 0.2	100%	80%	120%						

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

**Metals - Dissolved - Alberta Tier 1 with Mercury**

Dissolved Aluminum	1108162	1108162	<0.004	<0.004	NA	< 0.004	111%	70%	130%	105%	80%	120%	106%	70%	130%
Dissolved Antimony	1108162	1108162	<0.001	<0.001	NA	< 0.001	113%	70%	130%	103%	80%	120%	100%	70%	130%
Dissolved Arsenic	1108162	1108162	<0.001	<0.001	NA	< 0.001	101%	70%	130%	103%	80%	120%	107%	70%	130%
Dissolved Barium	1108162	1108162	0.14	0.14	NA	< 0.05	101%	70%	130%	100%	80%	120%	103%	70%	130%
Dissolved Beryllium	1108162	1108162	<0.001	<0.001	NA	< 0.001	101%	70%	130%	102%	80%	120%	109%	70%	130%
Dissolved Boron	1108162	1108162	0.02	0.02	NA	< 0.01	86%	70%	130%	98%	80%	120%	105%	70%	130%
Dissolved Cadmium	1108162	1108162	<0.	0.000018	NA	< 0.000016	98%	70%	130%	98%	80%	120%	102%	70%	130%
Dissolved Chromium	1108162	1108162	<0.001	<0.001	NA	< 0.001	104%	70%	130%	103%	80%	120%	97%	70%	130%
Dissolved Cobalt	1108162	1108162	<0.0009	<0.0009	NA	< 0.0009	107%	70%	130%	103%	80%	120%	92%	70%	130%

## Quality Assurance

**CLIENT NAME: BASELINE WATER RESOURCE INC**
**AGAT WORK ORDER: 20C598474**
**PROJECT: 10-9000**
**ATTENTION TO: Greg Farrell**
**SAMPLING SITE:**
**SAMPLED BY:**

### Water Analysis (Continued)

RPT Date: May 28, 2020			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Dissolved Copper	1108162	1108162	<0.0008	<0.0008	NA	< 0.0008	102%	70%	130%	102%	80%	120%	94%	70%	130%
Dissolved Iron	1108169	1108169	<0.1	<0.1	NA	< 0.1	112%	70%	130%	101%	80%	120%	103%	70%	130%
Dissolved Lead	1108162	1108162	<0.0005	<0.0005	NA	< 0.0005	105%	70%	130%	101%	80%	120%	100%	70%	130%
Dissolved Manganese	1108169	1108169	<0.005	<0.005	NA	< 0.005	111%	70%	130%	109%	80%	120%	107%	70%	130%
Dissolved Mercury- Ultra Low Level	1108162	1108162	< 2.50E-06	< 2.50E-06	NA	< 2.50E-06	89%	70%	130%	93%	80%	120%	96%	70%	130%
Dissolved Molybdenum	1108162	1108162	0.003	0.003	NA	< 0.001	99%	70%	130%	98%	80%	120%	103%	70%	130%
Dissolved Nickel	1108162	1108162	<0.003	<0.003	NA	< 0.003	104%	70%	130%	103%	80%	120%	95%	70%	130%
Dissolved Selenium	1108162	1108162	<0.0005	0.0006	NA	< 0.0005	105%	70%	130%	100%	80%	120%	108%	70%	130%
Dissolved Silver	1108162	1108162	<0.0001	<0.0001	NA	< 0.0001	92%	70%	130%	89%	80%	120%	84%	70%	130%
Dissolved Sodium	1108169	1108169	198	196	0.9%	< 0.6	102%	70%	130%	105%	80%	120%	NA	70%	130%
Dissolved Thallium	1108162	1108162	<0.0001	<0.0001	NA	< 0.0001	99%	70%	130%	99%	80%	120%	99%	70%	130%
Dissolved Titanium	1108162	1108162	0.003	0.002	NA	< 0.001	105%	70%	130%	104%	80%	120%	101%	70%	130%
Dissolved Uranium	1108162	1108162	0.005	0.005	0.1%	< 0.001	105%	70%	130%	100%	80%	120%	102%	70%	130%
Dissolved Zinc	1108162	1108162	<0.005	<0.005	NA	< 0.004	102%	70%	130%	100%	80%	120%	95%	70%	130%

Comments: If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution.  
 If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

**Metals - Total - Alberta Tier 1 with Mercury**

Total Aluminum	1111084		0.157	0.161	2.5%	< 0.004	102%	70%	130%	96%	80%	120%	NA	70%	130%
Total Antimony	1111084		<0.001	<0.001	NA	< 0.001	113%	70%	130%	107%	80%	120%	111%	70%	130%
Total Arsenic	1111084		0.001	0.001	NA	< 0.001	99%	70%	130%	97%	80%	120%	102%	70%	130%
Total Barium	1111084		0.14	0.14	NA	< 0.05	102%	70%	130%	103%	80%	120%	106%	70%	130%
Total Beryllium	1111084		<0.0005	<0.0005	NA	< 0.0005	97%	70%	130%	91%	80%	120%	106%	70%	130%
Total Boron	1111084		0.02	0.02	NA	< 0.01	96%	70%	130%	90%	80%	120%	107%	70%	130%
Total Cadmium	1111084		<0.	<0.	NA	< 0.000016	100%	70%	130%	98%	80%	120%	100%	70%	130%
Total Chromium	1111084		<0.0005	<0.0005	NA	< 0.0005	103%	70%	130%	93%	80%	120%	101%	70%	130%
Total Cobalt	1111084		<0.0009	<0.0009	NA	< 0.0009	101%	70%	130%	92%	80%	120%	99%	70%	130%
Total Copper	1111084		0.0010	0.0011	NA	< 0.0008	101%	70%	130%	99%	80%	120%	98%	70%	130%
Total Iron	1111084		<0.1	<0.1	NA	< 0.1	122%	70%	130%	111%	80%	120%	98%	70%	130%
Total Lead	1111084		<0.0001	<0.0001	NA	< 0.0001	104%	70%	130%	102%	80%	120%	104%	70%	130%
Total Manganese	1111084		0.020	0.020	NA	< 0.005	122%	70%	130%	114%	80%	120%	108%	70%	130%
Total Mercury- Ultra Low Level	1108162	1108162	0.	0.	NA	< 2.50E-06	89%	70%	130%	93%	80%	120%	79%	70%	130%
Total Molybdenum	1111084		0.002	0.002	NA	< 0.001	99%	70%	130%	95%	80%	120%	100%	70%	130%
Total Nickel	1111084		<0.003	<0.003	NA	< 0.003	95%	70%	130%	91%	80%	120%	98%	70%	130%
Total Selenium	1111084		0.0012	0.0009	NA	< 0.0005	101%	70%	130%	94%	80%	120%	97%	70%	130%
Total Silver	1111084		0.00019	0.00009	NA	< 0.00005	92%	70%	130%	81%	80%	120%	76%	70%	130%
Total Sodium	1111084		64.8	63.1	2.7%	< 0.6	127%	70%	130%	113%	80%	120%	NA	70%	130%
Total Thallium	1111084		<0.0005	<0.0005	NA	< 0.0005	96%	70%	130%	99%	80%	120%	103%	70%	130%

## Quality Assurance

**CLIENT NAME: BASELINE WATER RESOURCE INC**
**AGAT WORK ORDER: 20C598474**
**PROJECT: 10-9000**
**ATTENTION TO: Greg Farrell**
**SAMPLING SITE:**
**SAMPLED BY:**

### Water Analysis (Continued)

RPT Date: May 28, 2020			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits		
								Lower	Upper		Lower	Upper		Lower	Upper	
Total Titanium	1111084		0.001	0.001	NA	< 0.001	100%	70%	130%	95%	80%	120%	101%	70%	130%	
Total Uranium	1111084		<0.001	<0.001	NA	< 0.001	102%	70%	130%	100%	80%	120%	105%	70%	130%	
Total Zinc	1111084		<0.01	<0.01	NA	< 0.01	100%	70%	130%	94%	80%	120%	95%	70%	130%	

Comments: If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution.  
If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

**Metals - Total - Alberta Tier 1**

Total Aluminum	1111084		0.157	0.161	2.5%	< 0.004	102%	70%	130%	96%	80%	120%	NA	70%	130%
Total Antimony	1111084		<0.001	<0.001	NA	< 0.001	113%	70%	130%	107%	80%	120%	111%	70%	130%
Total Arsenic	1111084		0.001	0.001	NA	< 0.001	99%	70%	130%	97%	80%	120%	102%	70%	130%
Total Barium	1111084		0.14	0.14	NA	< 0.05	102%	70%	130%	103%	80%	120%	106%	70%	130%
Total Beryllium	1111084		<0.0005	<0.0005	NA	< 0.0005	97%	70%	130%	91%	80%	120%	106%	70%	130%
Total Boron	1111084		0.02	0.02	NA	< 0.01	96%	70%	130%	90%	80%	120%	107%	70%	130%
Total Cadmium	1111084		<.0	<.0	NA	< 0.000016	100%	70%	130%	98%	80%	120%	100%	70%	130%
Total Chromium	1111084		<0.0005	<0.0005	NA	< 0.0005	103%	70%	130%	93%	80%	120%	101%	70%	130%
Total Cobalt	1111084		<0.0009	<0.0009	NA	< 0.0009	101%	70%	130%	92%	80%	120%	99%	70%	130%
Total Copper	1111084		0.0010	0.0011	NA	< 0.0008	101%	70%	130%	99%	80%	120%	98%	70%	130%
Total Iron	1111084		<0.1	<0.1	NA	< 0.1	122%	70%	130%	111%	80%	120%	98%	70%	130%
Total Lead	1111084		<0.0001	<0.0001	NA	< 0.0001	104%	70%	130%	102%	80%	120%	104%	70%	130%
Total Manganese	1111084		0.020	0.020	NA	< 0.005	122%	70%	130%	114%	80%	120%	108%	70%	130%
Total Molybdenum	1111084		0.002	0.002	NA	< 0.001	99%	70%	130%	95%	80%	120%	100%	70%	130%
Total Nickel	1111084		<0.003	<0.003	NA	< 0.003	95%	70%	130%	91%	80%	120%	98%	70%	130%
Total Selenium	1111084		0.0012	0.0009	NA	< 0.0005	101%	70%	130%	94%	80%	120%	97%	70%	130%
Total Silver	1111084		0.00019	0.00009	NA	< 0.00005	92%	70%	130%	81%	80%	120%	76%	70%	130%
Total Sodium	1111084		64.8	63.1	2.7%	< 0.6	127%	70%	130%	113%	80%	120%	NA	70%	130%
Total Thallium	1111084		<0.0005	<0.0005	NA	< 0.0005	96%	70%	130%	99%	80%	120%	103%	70%	130%
Total Titanium	1111084		0.001	0.001	NA	< 0.001	100%	70%	130%	95%	80%	120%	101%	70%	130%
Total Uranium	1111084		<0.001	<0.001	NA	< 0.001	102%	70%	130%	100%	80%	120%	105%	70%	130%
Total Zinc	1111084		<0.01	<0.01	NA	< 0.01	100%	70%	130%	94%	80%	120%	95%	70%	130%

Comments: If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution.  
If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

**Microbial Analysis - E. Coli, Total Coliforms, IRB, SRB**

Total Coliforms (MPN)	2294	233	< 1	< 1	NA	< 1
Escherichia coli (MPN)	2294	233	< 1	< 1	NA	< 1
Iron Related Bacteria**	1145	233	Present	Present	NA	
IRB Approximate Population Count**	1145	233	9000	9000	0.0%	< 1
Sulfate Reducing Bacteria**	1145	233	Present	Present	NA	

## Quality Assurance

**CLIENT NAME:** BASELINE WATER RESOURCE INC  
**PROJECT:** 10-9000  
**SAMPLING SITE:**

**AGAT WORK ORDER:** 20C598474  
**ATTENTION TO:** Greg Farrell  
**SAMPLED BY:**

### Water Analysis (Continued)

RPT Date: May 28, 2020			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits		
								Lower	Upper		Lower	Upper		Lower	Upper	
SRB Approximate Population Count**	1145	233	500000	500000	0.0%	< 1										

SRB Approximate Population Count\*\*

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

\*\*Non-accredited test. Inquire with lab for details.

Certified By: \_\_\_\_\_



## Method Summary

**CLIENT NAME: BASELINE WATER RESOURCE INC**
**AGAT WORK ORDER: 20C598474**
**PROJECT: 10-9000**
**ATTENTION TO: Greg Farrell**
**SAMPLING SITE:**
**SAMPLED BY:**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
<b>Water Analysis</b>			
Dissolved Aluminum	INST 0141	SM 3125 B	ICP-MS
Dissolved Antimony	INST 0141	SM 3125 B	ICP-MS
Dissolved Arsenic	INST 0141	SM 3125 B	ICP-MS
Dissolved Barium	INST 0141	SM 3125 B	ICP-MS
Dissolved Beryllium	INST 0141	SM 3125 B	ICP-MS
Dissolved Boron	INST 0141	SM 3125 B	ICP-MS
Dissolved Cadmium	INST 0141	SM 3125 B	ICP-MS
Dissolved Chromium	INST 0141	SM 3125 B	ICP-MS
Dissolved Cobalt	INST 0141	SM 3125 B	ICP-MS
Dissolved Copper	INST 0141	SM 3125 B	ICP-MS
Dissolved Iron	INST 0140	SM 3120 B	ICP/OES
Dissolved Lead	INST 0141	SM 3125 B DW	ICP-MS
Dissolved Manganese	INST 0140	SM 3120 B	ICP/OES
Dissolved Mercury- Ultra Low Level	INST 0162	EPA 1631 DW	CV/AFS
Dissolved Molybdenum		SM 3125 B	ICP-MS
Dissolved Nickel	INST 0141	SM 3125 B	ICP-MS
Dissolved Selenium	INST 0141	SM 3125 B	ICP-MS
Dissolved Silver	INST 0141	SM 3125 B	ICP-MS
Dissolved Sodium	INST 0140	SM 3120 B	ICP/OES
Dissolved Thallium	INST 0141	SM 3125 B	ICP-MS
Dissolved Titanium	INST 0141	SM 3125 B	ICP-MS
Dissolved Uranium	INST 0141	SM 3125 B	ICP-MS
Dissolved Zinc	INST 0141	SM 3125 B	ICP-MS
Total Aluminum	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Antimony	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Arsenic	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Barium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Beryllium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Boron	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Cadmium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Chromium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Cobalt	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Copper	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Iron	WATR 0200; INST 0140	SM 3030 E; SM 3120 B	ICP/OES
Total Lead	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Manganese	WATR 0200; INST 0140	SM 3030 E; SM 3120 B	ICP/OES
Total Molybdenum	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP/MS
Total Nickel	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Selenium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Silver	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Sodium	WATR 0200; INST 0140	SM 3030 E; SM 3120 B TW	ICP/OES
Total Thallium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Titanium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Uranium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Zinc	WATR 0200; INST 0141	SM 3030 E; SM 3125 B	ICP-MS
Total Mercury- Ultra Low Level	INST-0162	EPA 1631	CV/AFS
Total Coliforms (MPN)	MIC 0205	SM 9223	INCUBATOR
Escherichia coli (MPN)	MIC-0205	SM 9223	INCUBATOR
Iron Related Bacteria**	MIC 0510	IRB-BART	INCUBATOR

## Method Summary

**CLIENT NAME: BASELINE WATER RESOURCE INC**
**AGAT WORK ORDER: 20C598474**
**PROJECT: 10-9000**
**ATTENTION TO: Greg Farrell**
**SAMPLING SITE:**
**SAMPLED BY:**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
IRB Approximate Population Count**	MIC 0510	FLS-011	INCUBATOR
Sulfate Reducing Bacteria**	MIC 0500	SRB-BART	INCUBATOR
SRB Approximate Population Count**		FLS-009	
pH	INST 0101, INST 0104	SM 4500 H+	PH METER
p - Alkalinity (as CaCO <sub>3</sub> )	INST 0101	SM 2320 B	TITRATION
T - Alkalinity (as CaCO <sub>3</sub> )	INST 0101	SM 2320 B	TITRATION
Bicarbonate	INST 0101	SM 2320 B	PC TITRATE
Carbonate	INST 0101	SM 2320 B	PC TITRATE
Hydroxide	INST 0101	SM 2320 B	PC TITRATE
Electrical Conductivity	INST 0101, INST 0120	SM 2510 B	CONDUCTIVITY METER
Chloride	INST 0150	SM 4110 B	ION CHROMATOGRAPH
Fluoride	INST 0150	SM 4110 B	ION CHROMATOGRAPH
Nitrate	INST 0150	SM 4110 B	ION CHROMATOGRAPH
Nitrate-N	INST 0150	SM 4110 B	CALCULATION
Nitrite	INST 0150	SM 4110 B	ION CHROMATOGRAPH
Nitrite-N	INST 0150	SM 4110 B	CALCULATION
Nitrate+Nitrite - Nitrogen	INST 0150	SM 4110 B	CALCULATION
Sulfate	INST 0150	SM 4110 B	ION CHROMATOGRAPH
Dissolved Calcium	INST 0140	SM 3120 B	ICP/OES
Dissolved Magnesium	INST 0140	SM 3120 B	ICP/OES
Dissolved Potassium	INST 0140	SM 3120 B	ICP/OES
Sodium Adsorption Ratio		CARTER & GREGORICH 2007	CALCULATION
Calculated TDS		SM 1030E	CALCULATION
Hardness		SM 2340 B	CALCULATION
Ion Balance		SM 1030E	CALCULATION
Bromide	INST 0150	SM 4110 B	ION CHROMATOGRAPH
Turbidity	WATR-0500	SM 2130 B	NEPHELOMETER





# AGAT Laboratories

## SAMPLE INTEGRITY RECEIPT FORM

### RECEIVING BASICS - Shipping

Company/Consultant: Baseline Water Resources Inc.

Courier: DLO Prepaid Collect

Waybill# NA

Branch: EDM GP FN FM RD VAN LYD FSJ EST SASK Other: C

If multiple sites were submitted at once: Yes  No

Custody Seal Intact: Yes No  NA

TAT: <24hr 24-48hr 48-72hr  Reg Other

Cooler Quantity: 1

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes No

Inorganic Tests (Please Circle)  Mibi  BOD, Nitrate/Nitrite, Turbidity, Color, Microtox, Ortho PO4, Tedlar Bag, Residual Chlorine, Chlorophyll\*, Chloroamines\*

Earliest Expiry: 6-May-2020 @ 5pm

Hydrocarbons: Earliest Expiry NA

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES NO  Precaution Taken:

Legal Samples: Yes No

International Samples: Yes No

Tape Sealed: Yes No

Coolant Used: Icepack Bagged Ice Free Ice Free Water  None

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

### FROZEN (Please Circle if samples received Frozen)

1 (Bottle/Jar) 7 + 7 + 7 = 7 °C    2 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 3 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C    4 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 5 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C    6 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 7 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C    8 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C  
 9 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C    10 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

(If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: 20C 498474

Samples Damaged: Yes No If YES why?

No Bubble Wrap Frozen Courier

Other: \_\_\_\_\_

Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes No

Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_

CPM Initial \_\_\_\_\_

General Comments: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\* Subcontracted Analysis (See CPM)