BASELINE WATER®

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August 20, 2019 Baseline Water Project: # 10-9000

Lor-Al Springs
Ms. S. Johnson
Box 200
Rimbey, Alberta
T0C 2J0

RE: 2019 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 16, 2019. The spring is the source of high quality groundwater used in the active bottled 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)
7.20	380	4.8	114

Water quality analytical results were compared to the “Guidelines for Canadian Drinking Water Quality” (GCDWQ) (Health Canada, 2017). No water quality parameters exceeded the GCDWQ criteria. Complete laboratory results are summarized in Tables 1 – 3. A copy of the 2019 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-Al 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-Al Springs)

Water Well Name	Sample Date	Laboratory	Chloride (Cl) (mg/L)	Fluoride (F) (mg/L)	Nitrate & Nitrite as Nitrogen (mg/L)	Nitrate-Nitrogen (NO_3-N) (mg/L)	Nitrite-Nitrogen (NO_2-N) (mg/L)	Sulphate (SO_4) (mg/L)	pH	Electrical Conductivity (EC) (uS/cm)	Ion Balance	Bicarbonate (HCO_3) (mg/L)	Carbonate (CO_3) (mg/L)	Hydroxide (OH) (mg/L)	P-Alkalinity (as $CaCO_3$) (mg/L)	T-Alkalinity (as $CaCO_3$) (mg/L)
GCDWQ [1] Criteria			**250**	**1.5**	**nr [2]**	**10**	**1**	**500**	**7.0-10.5**	**nr**	**nr**	**nr**	**nr**	**nr**	**nr**	**nr**
Type of Objective (MAC, AO or OG) [3]			**AO**	**MAC**	**-**	**MAC**	**MAC**	**AO**	**OG**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Lor-Al Springs	7-Dec-87	AEC [4]	1.0	0.20	0.020	na [5]	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 [6]	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 [7]	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 [8]	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 [9]	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

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-Al 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 $CaCO_3$) (mg/L)	Turbidity (NTU)	Colour (TCU)	Flow Rate (L/min)
GCDWQ [1] Criteria			nr [2]	0.3	0.3	nr	0.02	0.02	nr	200	500	nr	0.1 [3]	15	nr
Type of Objective (MAC, AO or OG) [4]			-	AO	AO	-	AO	AO	-	AO	AO	-	OG	AO	-
Lor-Al Springs	7-Dec-87	AEC [5]	1.0	na [6]	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 [7]	60.0	na	<0.020	28.0	na	na	2.00	15.0	272	263	na	na	na
	9-Jul-04	MAI [8]	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 [9]	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 [10]	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

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-Al Springs)

Water Well Name	Sample Date	Laboratory	Total Coliform Bacteria (CFU/100mL)	Fecal Coliform Bacteria (MPN/100mL)	Escherichia coli Bacteria (CFU/100mL)	Iron Related Bacteria (CFU/mL)	Sulfate Reducing Bacteria (CFU/mL)
GCDWQ [1] Criteria			0	0	0	nr [2]	nr
Type of Objective (MAC, AO or OG) [3]			MAC	MAC	MAC	-	-
Lor-Al Springs	7-Dec-87	AEC [4]	na [5]	na	na	na	na
	22-May-91	AEC	na	na	na	na	na
	4-Jan-01	U of A [6]	na	na	na	na	na
	9-Jul-04	MAI [7]	na	na	na	520	<1
	18-Jul-05	MAI	na	na	na	na	<1
	3-Dec-06	MAI	<1	na	<1	9000	<200
	27-Jun-07	MAI	na	na	na	<30	<200
	19-Dec-07	ALS [8]	<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 [9]	<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

NOTES:

1. Health Canada, 2019. "Guidelines for Canadian Drinking Water Quality Summary Table (Prepared by the Federal-Provincial-Territorial Committee on Drinking Water)".
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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-Al 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)
GCDWQ [1] Criteria			**0.1**	**0.006**	**0.01**	**1.0**	**nr [2]**	**nr**	**5**	**0.01**	**nr**	**0.005**	**0.05**	**nr**	**1.0**	**0.3**	**0.005**
Type of Objective (MAC, AO or OG) [3]			**OG**	**MAC**	**MAC**	**MAC**	**-**	**-**	**MAC**	**MAC**	**-**	**MAC**	**MAC**	**-**	**AO**	**AO**	**MAC**
Lor-Al Springs	7-Dec-87	AEC [4]	na [5]	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
	4-Jan-01	U of A [6]	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	9-Jul-04	MAI [7]	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
	3-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
	5-Aug-08	ALS [8]	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 [9]	<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

NOTES:

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Table 3: Water Analytical Results: Dissolved Metals (Lor-Al 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)
GCDWQ [1] Criteria			**nr [2]**	**nr**	**0.02**	**0.001**	**nr**	**nr**	**0.05**	**nr**	**7.0**	**nr**	**nr**	**nr**	**0.02**	**nr**	**5.0**
Type of Objective (MAC, AO or OG) [3]			**-**	**-**	**AO**	**MAC**	**-**	**-**	**MAC**	**-**	**MAC**	**-**	**-**	**-**	**MAC**	**-**	**AO**
Lor-Al Springs	7-Dec-87	AEC [4]	na [5]	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
	4-Jan-01	U of A [6]	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	9-Jul-04	MAI [7]	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
	3-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
	5-Aug-08	ALS [8]	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 [9]	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

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.

AGAT Laboratories

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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/SW-12-044-02W5M

AGAT WORK ORDER: 19C468163

WATER ANALYSIS REVIEWED BY: Krystyna Krauze, Senior Analyst

DATE REPORTED: May 29, 2019

PAGES (INCLUDING COVER): 13

VERSION*: 1

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

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

CLIENT NAME: BASELINE WATER RESOURCE INC

AGAT WORK ORDER: 19C468163

PROJECT: 10-9000/SW-12-044-02W5M

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

Metals - Dissolved - CCME with Mercury

SAMPLE TYPE: Water **SAMPLE ID: 201063** **DATE RECEIVED: May 16, 2019**

DATE SAMPLED: May 16, 2019 **DATE REPORTED: May 29, 2019**

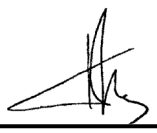
SAMPLE DESCRIPTION: SW12 Spring SW-12-044-02W5M

PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Dissolved Aluminum	mg/L	<0.004	(VARIABLE)	0.004	May 23, 2019	EB	May 23, 2019
Dissolved Antimony	mg/L	<0.001	0.006	0.001	May 23, 2019	EB	May 23, 2019
Dissolved Arsenic	mg/L	<0.001	0.010	0.001	May 23, 2019	EB	May 23, 2019
Dissolved Barium	mg/L	0.13	1.0	0.05	May 23, 2019	EB	May 23, 2019
Dissolved Beryllium	mg/L	<0.001		0.001	May 23, 2019	EB	May 23, 2019
Dissolved Boron	mg/L	0.03	5	0.01	May 23, 2019	EB	May 23, 2019
Dissolved Cadmium	mg/L	0.000019	0.005	0.000016	May 23, 2019	EB	May 23, 2019
Dissolved Chromium	mg/L	<0.001	0.05	0.001	May 23, 2019	EB	May 23, 2019
Dissolved Copper	mg/L	<0.0008	(1.0)	0.0008	May 23, 2019	EB	May 23, 2019
Dissolved Iron	mg/L	<0.1	(0.3)	0.1	May 23, 2019	AL	May 23, 2019
Dissolved Lead	mg/L	<0.0005	0.010	0.0005	May 23, 2019	EB	May 23, 2019
Dissolved Manganese	mg/L	<0.005	0.05	0.005	May 23, 2019	AL	May 23, 2019
Dissolved Mercury	mg/L	<0.000025	0.001	0.000025	May 25, 2019	PS	May 25, 2019
Dissolved Molybdenum	mg/L	0.003		0.001	May 23, 2019	EB	May 23, 2019
Dissolved Nickel	mg/L	<0.003		0.003	May 23, 2019	EB	May 23, 2019
Dissolved Selenium	mg/L	<0.0005	0.05	0.0005	May 23, 2019	EB	May 23, 2019
Dissolved Silver	mg/L	0.00007		0.00005	May 23, 2019	EB	May 23, 2019
Dissolved Sodium	mg/L	38.4	(200)	0.6	May 23, 2019	AL	May 23, 2019
Dissolved Thallium	mg/L	<0.0001		0.0001	May 23, 2019	EB	May 23, 2019
Dissolved Titanium	mg/L	0.003		0.001	May 23, 2019	EB	May 23, 2019
Dissolved Uranium	mg/L	0.005	0.02	0.001	May 23, 2019	EB	May 23, 2019
Dissolved Zinc	mg/L	<0.005	(5.0)	0.005	May 23, 2019	EB	May 23, 2019

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to 2017 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.
< - Values refer to Report Detection Limit.
Dissolved Titanium is higher than total; the results have been confirmed.

Certified By:



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Certificate of Analysis

CLIENT NAME: BASELINE WATER RESOURCE INC

AGAT WORK ORDER: 19C468163

PROJECT: 10-9000/SW-12-044-02W5M

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

Metals - Total - CCME with Mercury

SAMPLE TYPE: Water **SAMPLE ID: 201063** **DATE RECEIVED: May 16, 2019**

DATE SAMPLED: May 16, 2019 **DATE REPORTED: May 29, 2019**

SAMPLE DESCRIPTION: SW12 Spring SW-12-044-02W5M

PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Total Aluminum	mg/L	0.005	(VARIABLE)	0.004	May 22, 2019	EB	May 22, 2019
Total Antimony	mg/L	<0.001	0.006	0.001	May 22, 2019	EB	May 22, 2019
Total Arsenic	mg/L	<0.001	0.010	0.001	May 22, 2019	EB	May 22, 2019
Total Barium	mg/L	0.13	1.0	0.05	May 22, 2019	EB	May 22, 2019
Total Beryllium	mg/L	<0.0005		0.0005	May 22, 2019	EB	May 22, 2019
Total Boron	mg/L	0.03	5	0.01	May 22, 2019	EB	May 22, 2019
Total Cadmium	mg/L	0.000019	0.005	0.000016	May 22, 2019	EB	May 22, 2019
Total Chromium	mg/L	<0.0005	0.05	0.0005	May 22, 2019	EB	May 22, 2019
Total Cobalt	mg/L	<0.0009		0.0009	May 22, 2019	EB	May 22, 2019
Total Copper	mg/L	<0.0008	(1.0)	0.0008	May 22, 2019	EB	May 22, 2019
Total Iron	mg/L	<0.1	(0.3)	0.1	May 21, 2019	AJ	May 21, 2019
Total Lead	mg/L	<0.0005	0.010	0.0005	May 22, 2019	EB	May 22, 2019
Total Manganese	mg/L	<0.005	(0.05)	0.005	May 21, 2019	AJ	May 21, 2019
Total Mercury	mg/L	<0.000025	0.001	0.000025	May 22, 2019	PS	May 22, 2019
Total Molybdenum	mg/L	0.003		0.001	May 22, 2019	EB	May 22, 2019
Total Nickel	mg/L	<0.003		0.003	May 22, 2019	EB	May 22, 2019
Total Selenium	mg/L	<0.0005	0.05	0.0005	May 22, 2019	EB	May 22, 2019
Total Silver	mg/L	0.00007		0.00005	May 22, 2019	EB	May 22, 2019
Total Sodium	mg/L	38.7	(200)	0.6	May 21, 2019	AJ	May 21, 2019
Total Thallium	mg/L	<0.0005		0.0005	May 22, 2019	EB	May 22, 2019
Total Titanium	mg/L	0.001		0.001	May 22, 2019	EB	May 22, 2019
Total Uranium	mg/L	0.005	0.02	0.001	May 22, 2019	EB	May 22, 2019
Total Zinc	mg/L	0.003	(5.0)	0.001	May 22, 2019	EB	May 22, 2019

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to 2017 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.
< - Values refer to Report Detection Limit.

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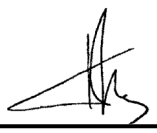

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Certificate of Analysis

CLIENT NAME: BASELINE WATER RESOURCE INC

AGAT WORK ORDER: 19C468163

PROJECT: 10-9000/SW-12-044-02W5M

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

Microbial Analysis - Coal Bed Methane Water Quality

SAMPLE TYPE: Water **SAMPLE ID: 201063** **DATE RECEIVED: May 16, 2019**

DATE SAMPLED: May 16, 2019 **DATE REPORTED: May 29, 2019**

SAMPLE DESCRIPTION: SW12 Spring SW-12-044-02W5M

PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Total Coliforms (MPN)	MPN/100 mL	<1	<1	1	May 17, 2019	AZ	May 16, 2019
Escherichia coli (MPN)	MPN/100 mL	<1	<1	1	May 17, 2019	AZ	May 16, 2019
Iron Related Bacteria**		Present			May 31, 2019	AZ	May 16, 2019
IRB Approximate Population Count**	CFU/mL	9000		1	May 31, 2019	AZ	May 16, 2019
Sulfate Reducing Bacteria**		Absent			May 31, 2019	AZ	May 16, 2019
SRB Approximate Population Count**	CFU/mL	<1		1	May 31, 2019	AZ	May 16, 2019

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to 2017 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.

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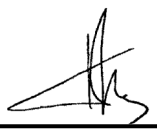

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CLIENT NAME: BASELINE WATER RESOURCE INC

AGAT WORK ORDER: 19C468163

PROJECT: 10-9000/SW-12-044-02W5M

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

Routine Chemistry Water Analysis

SAMPLE TYPE: Water **SAMPLE ID: 201063** **DATE RECEIVED: May 16, 2019**

DATE SAMPLED: May 16, 2019 **DATE REPORTED: May 29, 2019**

SAMPLE DESCRIPTION: SW12 Spring SW-12-044-02W5M

PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
pH	pH Units	8.05	7.0-10.5	N/A	May 28, 2019	JM	May 28, 2019
p - Alkalinity (as CaCO3)	mg/L	<5		5	May 28, 2019	JM	May 28, 2019
T - Alkalinity (as CaCO3)	mg/L	325		5	May 28, 2019	JM	May 28, 2019
Bicarbonate	mg/L	397		5	May 28, 2019	JM	May 28, 2019
Carbonate	mg/L	<5		5	May 28, 2019	JM	May 28, 2019
Hydroxide	mg/L	<5		5	May 28, 2019	JM	May 28, 2019
Electrical Conductivity	uS/cm	650		5	May 28, 2019	JM	May 28, 2019
Chloride	mg/L	29	(250)	1	May 17, 2019	JM	May 17, 2019
Fluoride	mg/L	0.06	1.5	0.01	May 17, 2019	JM	May 17, 2019
Nitrate	mg/L	2.7	45	0.1	May 17, 2019	JM	May 17, 2019
Nitrate-N	mg/L	0.61	10	0.02	May 17, 2019	SYS	May 17, 2019
Nitrite	mg/L	<0.05	3	0.05	May 17, 2019	JM	May 17, 2019
Nitrite-N	mg/L	<0.01	1	0.01	May 17, 2019	SYS	May 17, 2019
Nitrate+Nitrite - Nitrogen	mg/L	0.61		0.02	May 17, 2019	SYS	May 17, 2019
Sulfate	mg/L	20	(500)	1	May 17, 2019	JM	May 17, 2019
Dissolved Calcium	mg/L	68.9		0.3	May 23, 2019	AL	May 23, 2019
Dissolved Magnesium	mg/L	29.7		0.2	May 23, 2019	AL	May 23, 2019
Dissolved Sodium	mg/L	38.4	(200)	0.6	May 23, 2019	AL	May 23, 2019
Dissolved Potassium	mg/L	2.0		0.6	May 23, 2019	AL	May 23, 2019
Dissolved Iron	mg/L	<0.1	(0.3)	0.1	May 23, 2019	AL	May 23, 2019
Dissolved Manganese	mg/L	<0.005	0.05	0.005	May 23, 2019	AL	May 23, 2019
Calculated TDS	mg/L	386		0.6	May 28, 2019	SYS	May 28, 2019
Sodium Adsorption Ratio	N/A	0.97			May 23, 2019	SYS	May 23, 2019
Hardness	mg CaCO3/L	294		1	May 23, 2019	SYS	May 23, 2019
Ion Balance	%	98		1	May 28, 2019	SYS	May 28, 2019

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to 2017 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.
< - 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.

Certified By:

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Certificate of Analysis

CLIENT NAME: BASELINE WATER RESOURCE INC

AGAT WORK ORDER: 19C468163

PROJECT: 10-9000/SW-12-044-02W5M

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

Water Analysis - Bromide, Turbidity

SAMPLE TYPE: Water **SAMPLE ID: 201063** **DATE RECEIVED: May 16, 2019**

DATE SAMPLED: May 16, 2019 **DATE REPORTED: May 29, 2019**

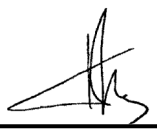
SAMPLE DESCRIPTION: SW12 Spring SW-12-044-02W5M

PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Bromide	mg/L	<0.1		0.1	May 17, 2019	JM	May 17, 2019
Turbidity	NTU	<0.2	VARIABLE	0.2	May 16, 2019	KT	May 16, 2019

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to 2017 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:



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Quality Assurance

CLIENT NAME: BASELINE WATER RESOURCE INC

AGAT WORK ORDER: 19C468163

PROJECT: 10-9000/SW-12-044-02W5M

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

Water Analysis

RPT Date: May 29, 2019

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			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	206206		7.52	7.52	0.0%	N/A	100%	90%	110%						
T - Alkalinity (as CaCO3)	206206		482	482	0.0%	< 5	106%	80%	120%						
Electrical Conductivity	206206		1900	1870	1.6%	< 5	103%	80%	120%						
Chloride	201063	201063	26	27	3.8%	< 1	104%	80%	120%	100%	80%	120%	104%	80%	120%
Fluoride	201063	201063	<0.06	<0.06	NA	< 0.01	104%	80%	120%	106%	80%	120%	110%	80%	120%
Nitrate	201063	201063	3.0	2.8	6.9%	< 0.1	108%	80%	120%	108%	80%	120%	106%	80%	120%
Nitrite	201063	201063	<0.20	<0.20	NA	< 0.05	103%	80%	120%	102%	80%	120%	102%	80%	120%
Sulfate	201063	201063	19	19	0.0%	< 1	103%	80%	120%	103%	80%	120%	105%	80%	120%
Dissolved Calcium	201063	201063	68.9	69.3	0.6%	< 0.3	114%	80%	120%	112%	80%	120%	NA	80%	120%
Dissolved Magnesium	201063	201063	29.7	29.5	0.7%	< 0.2	109%	80%	120%	108%	80%	120%	NA	80%	120%
Dissolved Sodium	201063	201063	38.4	38.7	0.8%	< 0.6	107%	80%	120%	107%	80%	120%	NA	80%	120%
Dissolved Potassium	201063	201063	2.0	2.1	NA	< 0.6	104%	80%	120%	102%	80%	120%	102%	80%	120%
Dissolved Iron	201063	201063	<0.1	<0.1	NA	< 0.1	110%	80%	120%	107%	80%	120%	104%	80%	120%
Dissolved Manganese	201063	201063	<0.005	<0.005	NA	< 0.005	107%	80%	120%	105%	80%	120%	100%	80%	120%

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	201063	201063	<0.2	<0.2	NA	< 0.1	104%	80%	120%	104%	80%	120%	106%	80%	120%
Turbidity	199647		13.7	13.9	1.4%	< 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 - CCME with Mercury															
Dissolved Aluminum	201063	201063	<0.004	<0.004	NA	< 0.004	92%	80%	120%	99%	80%	120%	104%	80%	120%
Dissolved Antimony	201063	201063	<0.001	<0.001	NA	< 0.001	106%	80%	120%	104%	80%	120%	105%	80%	120%
Dissolved Arsenic	201063	201063	<0.001	<0.001	NA	< 0.001	87%	80%	120%	82%	80%	120%	101%	80%	120%
Dissolved Barium	201063	201063	0.13	0.13	NA	< 0.05	95%	80%	120%	101%	80%	120%	105%	80%	120%
Dissolved Beryllium	201063	201063	<0.001	<0.001	NA	< 0.001	96%	80%	120%	99%	80%	120%	111%	80%	120%
Dissolved Boron	201063	201063	0.03	0.03	NA	< 0.01	95%	80%	120%	98%	80%	120%	106%	80%	120%
Dissolved Cadmium	201063	201063	0.000022	0.000029	NA	< 0.000016	101%	80%	120%	102%	80%	120%	104%	80%	120%
Dissolved Chromium	201063	201063	<0.001	<0.001	NA	< 0.001	99%	80%	120%	98%	80%	120%	99%	80%	120%
Dissolved Copper	201063	201063	<0.0008	<0.0008	NA	< 0.0008	98%	80%	120%	100%	80%	120%	97%	80%	120%
Dissolved Iron	201063	201063	<0.1	<0.1	NA	< 0.1	110%	80%	120%	107%	80%	120%	104%	80%	120%
Dissolved Lead	201063	201063	<0.0005	<0.0005	NA	< 0.0005	98%	80%	120%	100%	80%	120%	100%	80%	120%
Dissolved Manganese	201063	201063	<0.005	<0.005	NA	< 0.005	107%	80%	120%	105%	80%	120%	100%	80%	120%
Dissolved Mercury	201063	201063	<0.	<0.	NA	< 0.000025	100%	90%	110%	93%	90%	110%	107%	80%	120%
Dissolved Molybdenum	201063	201063	0.003	0.003	NA	< 0.001	98%	80%	120%	99%	80%	120%	101%	80%	120%

AGAT Laboratories

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Quality Assurance

CLIENT NAME: BASELINE WATER RESOURCE INC

AGAT WORK ORDER: 19C468163

PROJECT: 10-9000/SW-12-044-02W5M

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

Water Analysis (Continued)

RPT Date: May 29, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Dissolved Nickel	201063	201063	<0.003	<0.003	NA	< 0.003	100%	80%	120%	98%	80%	120%	96%	80%	120%
Dissolved Selenium	201063	201063	<0.0005	0.0007	NA	< 0.0005	102%	80%	120%	101%	80%	120%	102%	80%	120%
Dissolved Silver	201063	201063	0.00007	<0.00005	NA	< 0.00005	91%	80%	120%	88%	80%	120%	84%	80%	120%
Dissolved Sodium	201063	201063	38.4	38.7	0.8%	< 0.6	107%	80%	120%	107%	80%	120%	NA	80%	120%
Dissolved Thallium	201063	201063	<0.0001	<0.0001	NA	< 0.0001	96%	80%	120%	99%	80%	120%	98%	80%	120%
Dissolved Titanium	201063	201063	0.004	0.004	NA	< 0.001	99%	80%	120%	98%	80%	120%	100%	80%	120%
Dissolved Uranium	201063	201063	0.005	0.005	0.0%	< 0.001	99%	80%	120%	98%	80%	120%	101%	80%	120%
Dissolved Zinc	201063	201063	<0.005	<0.005	NA	< 0.004	100%	80%	120%	105%	80%	120%	102%	80%	120%

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 - CCME with Mercury

Total Aluminum	203104	0.826	0.861	4.1%	< 0.004	96%	80%	120%	88%	80%	120%	NA	80%	120%
Total Antimony	203104	<0.001	<0.001	NA	< 0.001	104%	80%	120%	103%	80%	120%	112%	80%	120%
Total Arsenic	203104	<0.001	<0.001	NA	< 0.001	102%	80%	120%	111%	80%	120%	114%	80%	120%
Total Barium	203104	0.17	0.18	NA	< 0.05	95%	80%	120%	94%	80%	120%	117%	80%	120%
Total Beryllium	203104	<0.0005	<0.0005	NA	< 0.0005	100%	80%	120%	104%	80%	120%	110%	80%	120%
Total Boron	203104	0.02	0.02	NA	< 0.01	88%	80%	120%	97%	80%	120%	109%	80%	120%
Total Cadmium	203104	0.000016	0.000018	NA	< 0.000016	100%	80%	120%	102%	80%	120%	107%	80%	120%
Total Chromium	203104	<0.0005	<0.0005	NA	< 0.0005	99%	80%	120%	98%	80%	120%	105%	80%	120%
Total Cobalt	203104	<0.0009	<0.0009	NA	< 0.0009	103%	80%	120%	99%	80%	120%	108%	80%	120%
Total Copper	203104	<0.0008	<0.0008	NA	< 0.0008	101%	80%	120%	100%	80%	120%	102%	80%	120%
Total Iron	203104	<0.1	<0.1	NA	< 0.1	108%	80%	120%	101%	80%	120%	104%	80%	120%
Total Lead	203104	<0.0005	<0.0005	NA	< 0.0005	97%	80%	120%	97%	80%	120%	100%	80%	120%
Total Manganese	203104	0.011	0.011	NA	< 0.005	107%	80%	120%	99%	80%	120%	103%	80%	120%
Total Mercury	204119	<0.	<0.	NA	< 0.000025	101%	90%	110%	99%	90%	110%	92%	80%	120%
Total Molybdenum	203104	0.002	0.002	NA	< 0.001	94%	80%	120%	96%	80%	120%	105%	80%	120%
Total Nickel	203104	<0.003	<0.003	NA	< 0.003	99%	80%	120%	99%	80%	120%	104%	80%	120%
Total Selenium	203104	0.0007	0.0011	NA	< 0.0005	100%	80%	120%	101%	80%	120%	107%	80%	120%
Total Silver	203104	0.00022	0.00012	NA	< 0.00005	91%	80%	120%	86%	80%	120%	83%	80%	120%
Total Sodium	203104	57.1	57.3	0.3%	< 0.6	103%	80%	120%	100%	80%	120%	NA	80%	120%
Total Thallium	203104	<0.0005	<0.0005	NA	< 0.0005	97%	80%	120%	99%	80%	120%	103%	80%	120%
Total Titanium	203104	<0.001	<0.001	NA	< 0.001	95%	80%	120%	97%	80%	120%	106%	80%	120%
Total Uranium	203104	<0.001	<0.001	NA	< 0.001	98%	80%	120%	102%	80%	120%	108%	80%	120%
Total Zinc	203104	0.002	0.003	NA	< 0.001	100%	80%	120%	99%	80%	120%	111%	80%	120%

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.

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Quality Assurance

CLIENT NAME: BASELINE WATER RESOURCE INC

AGAT WORK ORDER: 19C468163

PROJECT: 10-9000/SW-12-044-02W5M

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

Water Analysis (Continued)

RPT Date: May 29, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Microbial Analysis - Coal Bed Methane Water Quality															
Total Coliforms (MPN)	2548	063	< 1	< 1	NA	< 1									
Escherichia coli (MPN)	2548	063	< 1	< 1	NA	< 1									
Iron Related Bacteria**	1037	063	Present	Present	NA	<									
IRB Approximate Population Count**	1037	063	9000	9000	0.0%	< 1									
Sulfate Reducing Bacteria**	1037	063	Absent	Absent	NA	<									
SRB Approximate Population Count**	1037	063	<1	<1	NA	< 1									

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:

AGAT Laboratories

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Method Summary

CLIENT NAME: BASELINE WATER RESOURCE INC

AGAT WORK ORDER: 19C468163

PROJECT: 10-9000/SW-12-044-02W5M

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Dissolved Aluminum	INST 0141	SM 3125 B DW	ICP/MS
Dissolved Antimony	INST 0141	SM 3125 B DW	ICP/MS
Dissolved Arsenic	INST 0141	SM 3125 B DW	ICP/MS
Dissolved Barium	INST 0141	SM 3125 B DW	ICP-MS
Dissolved Beryllium	INST 0141	SM 3125 B	ICP-MS
Dissolved Boron	INST 0141	SM 3125 B DW	ICP/MS
Dissolved Cadmium	INST 0141	SM 3125 B DW	ICP/MS
Dissolved Chromium	INST 0141	SM 3125 B DW	ICP/MS
Dissolved Copper	INST 0141	SM 3125 B DW	ICP-MS
Dissolved Iron	INST 0140	SM 3120 B DW	ICP/OES
Dissolved Lead	INST 0141	SM 3125 B DW	ICP/MS
Dissolved Manganese	INST 0140	SM 3120 B DW	ICP/OES
Dissolved Mercury	INST 0160	SM 3112 B DW	CV/AA
Dissolved Molybdenum		SM 3125 B	ICP-MS
Dissolved Nickel	INST 0141	SM 3125 B DW	ICP/MS
Dissolved Selenium	INST 0141	SM 3125 B DW	ICP/MS
Dissolved Silver	INST 0141	SM 3125 B DW	ICP/MS
Dissolved Sodium	INST 0140	SM 3120 B DW	ICP/OES
Dissolved Thallium	INST 0141	SM 3125 B DW	ICP-MS
Dissolved Titanium	INST 0141	SM 3125 B	ICP-MS
Dissolved Uranium	INST 0141	SM 3125 B DW	ICP/MS
Dissolved Zinc	INST 0141	SM 3125 B DW	ICP/MS
Total Aluminum	WATR 0200; INST 0141	SM 3030 E; SM 3125 B TW	ICP/MS
Total Antimony	WATR 0200; INST 0141	SM 3030 E; SM 3125 B TW	ICP/MS
Total Arsenic	WATR 0200; INST 0141	SM 3030 E; SM 3125 B TW	ICP/MS
Total Barium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B TW	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 TW	ICP/MS
Total Cadmium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B TW	ICP/MS
Total Chromium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B TW	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 TW	ICP/MS
Total Iron	WATR 0200; INST 0140	SM 3030 E; SM 3120 B TW	ICP/OES
Total Lead	WATR 0200; INST 0141	SM 3030 E; SM 3125 B TW	ICP/MS
Total Manganese	WATR 0200; INST 0140	SM 3030 E; SM 3120 B TW	ICP/OES
Total Mercury	WATR 0200; INST 0160	SM 3030 E; SM 3112 B TW	CV/AA
Total Molybdenum	WATR 0200; INST 0141	SM 3030 E; SM 3125 B TW	ICP/MS
Total Nickel	WATR 0200; INST 0141	SM 3030 E; SM 3125 B TW	ICP/MS
Total Selenium	WATR 0200; INST 0141	SM 3030 E; SM 3125 B TW	ICP/MS
Total Silver	WATR 0200; INST 0141	SM 3030 E; SM 3125 B TW	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 TW	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 TW	ICP/MS
Total Zinc	WATR 0200; INST 0141	SM 3030 E; SM 3125 B TW	ICP/MS
Total Coliforms (MPN)	MIC 0205	SM 9223	INCUBATOR
Escherichia coli (MPN)	MIC-0205	SM 9223	INCUBATOR
Iron Related Bacteria**	MIC 0510	IRB-BART	INCUBATOR
IRB Approximate Population Count**	MIC 0510	FLS-011	INCUBATOR

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Method Summary

CLIENT NAME: BASELINE WATER RESOURCE INC

AGAT WORK ORDER: 19C468163

PROJECT: 10-9000/SW-12-044-02W5M

ATTENTION TO: Greg Farrell

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
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 CaCO3)	INST 0101	SM 2320 B	TITRATION
T - Alkalinity (as CaCO3)	INST 0101	SM 2320 B	TITRATION
Bicarbonate	INST 0101	SM 2320 B	PC TITRATE
Carbonate	INST 0101	SM 2320 B	PC TITRATE
Hydroxide	WAT 0310	SM 2320 B	TITRATION
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 DW -R	ICP/OES
Dissolved Magnesium	INST 0140	SM 3120 B DW -R	ICP/OES
Dissolved Sodium	INST 0140	SM 3120 B DW -R	ICP/OES
Dissolved Potassium	INST 0140	SM 3120 B DW -R	ICP/OES
Dissolved Iron	INST 0140	SM 3120 B DW -R	ICP/OES
Dissolved Manganese	INST 0140	SM 3120 B DW -R	ICP/OES
Calculated TDS		SM 1030E	CALCULATION
Sodium Adsorption Ratio		CARTER & GREGORICH 2007	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

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Laboratory Use Only
Arrival Temperature: 6.8°C
AGAT Job Number: 19C468163
Date and Time: 16-MAY-19 PM 1:43

Chain of Custody Record

Emergency Support Services Hotline 1-855-AGAT 245 (1-855-242-8245)

Report Information
Company: Baseline Water Resource Inc
Contact: Greg Farrell
Address: #7, 3800-19 Street NE
Calgary AB, T2E-6V2
Phone: 403-282-3999 Fax: —
LSD: SW 12-044-02 W5M
Client Project #: 10-9000

Report Information
1. Name: Greg
Email: labs@baselinewater.com
2. Name:
Email:
3. Name:
Email:

Report Format
☑ Single Sample per Page
☐ Multiple Samples per Page

Turnaround Time Required (TAT)
Regular TAT ☑ 5 to 7 business days
Rush TAT ☐ Less than 24 hours ☐ 24 to 48 hours ☐ 48 to 72 hours
Date Required:
RUSH TAT REQUESTS UPON SELECTING A RUSH TAT, THE CLIENT ACCEPTS THAT A RUSH SURCHARGE WILL BE ADDED TO THE INVOICE. *SEE BACK FOR SURCHARGE.*

Invoice To Same Yes / No
Company:
Contact:
Address:
Phone: Fax:
PO/AFE#:

Requirements *(Selection may impact detection limits)*
☑ CCME ☐ AB Tier 1 ☐ BC CSR
☐ Agricultural ☐ Agricultural ☐ AW
☐ Industrial ☐ Industrial ☐ IW
☐ Residential/Park ☐ Residential/Park ☐ LW
☐ Commercial ☐ Commercial ☐ DW
☑ Drinking Water ☐ Natural Area
☐ FWAL ☐ AB Surface Water
☑ Other GDWQG
☐ D50 (Drilling) ☐ SPIGEC

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT	# OF CONTAINERS	Detailed Soil Salinity (Saturated Paste)	CCME BTEX/F1-F4	Soil Metals ☐ HWS-B ☐ Cr^6 ☐ Hg	Water Metals ☒ Dissolved ☒ Total ☐ Hg ☐ Cr^6	Routine Water Potability	AB Class 2 Landfill	BC Landfill	D50 Detailed Soil Salinity (As Received)	Microtox	BTEXS/VPH/EPH ☐ LEPH/HEPH ☐	Turbidity	Bromide	Total Coliforms/E.Coli	IRB/SRB			HOLD FOR 60 DAYS	PRESERVED (Y/N)	CONTAMINATED/HAZARDOUS (Y/N)
201063	SW 12 Spring	H2O	05/16/19 01:10 H	GFF	8				X X							X	X	X	X				

Samples Relinquished By (Print Name and Sign): Greg Farrell 05/16/19 13:41 H
Samples Relinquished By (Print Name and Sign):
Samples Relinquished By (Print Name and Sign):
Samples Received By (Print Name and Sign):
Samples Received By (Print Name and Sign): 16 May 2019 1:43 pm
Pink Copy - Client
Yellow Copy - AGAT
White Copy- AGAT

Page 1 of 1
N°: AB 060780

Document ID: DIC-50-1507-003
Date Revised: December 9th, 2014

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM

RECEIVING BASICS - Shipping

Company/Consultant: Baseline Water Resource

Courier: DO Prepaid Collect

Waybill#

Branch: EDM GP FN FM RD VAN LYD FSJ EST 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 box (w/ bottles)

TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes (No)

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

Earliest Expiry: 17 MAY 2019 @ 17:10 H

Hydrocarbons: Earliest Expiry

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) 6.9+6.7+6.8+6.8 °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: 19 C468163

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)

Date issued: October 05, 2015
Document ID: SR-9505.003