Unit# 288, 2880 45 Ave S.E.
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KaizenLAB

# ANALYTICAL REPORT

**Client:** Sheep River Regional Corp.
Box 5605
High River, AB. T1V 1M7

**Care of:** Foothills County
**Attention:** Cory Lyons

| | |
|---|---|
| **KaizenLAB JOB #:** | **335464** |
| **DATE RECEIVED:** | 13-Dec-2023 |
| **DATE REPORTED:** | 19-Dec-2023 |
| **PROJECT ID:** | Pkg 3 - Schedule 3A (PSBlend) |
| **LOCATION:** | SRRUC |

**KaizenLAB Sample #:** 335464_001 **Sample ID:** PSBlend
**Date Sampled:** 9:45 13-Dec-2023

| Parameter Description | Units | Result | Guideline Limits* | Comment |
|---|---|---|---|---|
| **Routine Water Potability Analysis (Potability pkg #2)** | | | | |
| Electrical Conductivity (EC) at 25°C | uS/cm | 473 | | |
| pH | | 7.2 | 7.0-10.5 (AO) | Acceptable |
| Total Dissolved Solids (calculated) | mg/L | 286 | 500 (AO) | Acceptable |
| True Colour | TCU | <4 | 15 (AO) | Acceptable |
| Turbidity | NTU | 0.20 | 0.1/0.3/1.0 see notes | See notes |
| **Alkalinity Parameters of Water** | | | | |
| Alkalinity (phenolphthalein, as CaCO3) | mg/L | <2.0 | | |
| Alkalinity (total, as CaCO3) | mg/L | 164.4 | | |
| Bicarbonate (as HCO3) | mg/L | 200.4 | | |
| Carbonate (as CO3) | mg/L | <1.5 | | |
| Hydroxide (as OH) | mg/L | <0.5 | | |
| **Cations in Water by ICP-OES** | | | | |
| Dissolved Calcium | mg/L | 64.9 | | |
| Dissolved Magnesium | mg/L | 19.0 | | |
| Dissolved Potassium | mg/L | 1.1 | | |
| Dissolved Sodium | mg/L | 7.5 | 200 (AO) | Acceptable |
| Hardness (calculated, as CaCO3) | mg/L | 240.2 | | |
| Sodium Adsorption Ratio | | 0.21 | | |
| **Anions in Water by IC** | | | | |
| Bromide | mg/L | <0.10 | | |
| Chloride | mg/L | 2.06 | 250 (AO) | Acceptable |
| Fluoride | mg/L | 0.43 | 1.5 (MAC) | Pass |

*CDWQG = Canadian Drinking Water Quality Guidelines, Health Canada 2020: MAC = Maximum Acceptable Concentration (affects health), AO = Aesthetic Objective (does not affect health but affects color, taste, etc.), OG = Operational Guidance

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|---|---|---|---|---|
| Nitrate-N | mg/L | 0.039 | 10 (MAC) | Pass |
| Nitrite-N | mg/L | <0.005 | 1 (MAC) | Pass |
| Nitrite-N + Nitrate-N | mg/L | 0.039 | | |
| Phosphate | mg/L | <0.10 | | |
| Sulphate | mg/L | 90.42 | 500 (AO) | Acceptable |

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|---|---|---|---|---|
| **Cyanide (Total) in water** | | | | |
| Cyanide, Total | mg/L | <0.003 | 0.2 (MAC) | Pass |
| Dissolved Mercury | ug/L | <0.001 | | |
| F2 | mg/L | <0.10 | | |
| Total Kjeldahl Nitrogen | mg/L | <2.00 | | |
| Total Organic Carbon | mg/L | 0.87 | | |
| F1 | mg/L | <0.05 | | |
| **BTEX in Water** | | | | |
| Benzene | mg/L | <0.001 | | |
| Ethylbenzene | mg/L | <0.001 | | |
| Toluene | mg/L | <0.0005 | | |
| Total Xylenes | mg/L | <0.003 | 0.09 (MAC) | Pass |
| **Polycyclic Aromatic Hydrocarbons in Water** | | | | |
| Acenaphthene | mg/L | <0.000004 | | |
| Acenaphthylene | mg/L | <0.000004 | | |
| Anthracene | mg/L | <0.000004 | | |
| Benzo(a)anthracene | mg/L | <0.000004 | | |
| Benzo(a)pyrene | mg/L | <0.000004 | | |
| Benzo(a)Pyrene Total Potency Equivalents | mg/L | <0.000010 | | |
| Benzo(b,j)fluoranthene | mg/L | <0.000004 | | |
| Benzo(g,h,i)perylene | mg/L | <0.000004 | | |
| Benzo(k)fluoranthene | mg/L | <0.000004 | | |
| Chrysene | mg/L | <0.000004 | | |
| Dibenzo(a,h)anthracene | mg/L | <0.000004 | | |
| Fluoranthene | mg/L | <0.000004 | | |
| Fluorene | mg/L | <0.000004 | | |
| Indeno(1,2,3-c,d)pyrene | mg/L | <0.000004 | | |
| Naphthalene | mg/L | <0.000004 | | |
| Phenanthrene | mg/L | <0.000004 | | |
| Pyrene | mg/L | <0.000004 | | |
| **Dissolved Metals in Water by ICP-MS** | | | | |
| Dissolved Aluminum | mg/L | <0.004 | see notes | |
| Dissolved Antimony | mg/L | <0.0002 | | |
| Dissolved Arsenic | mg/L | 0.00012 | | |
| Dissolved Barium | mg/L | 0.0599 | | |

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|---|---|---|---|---|
| Dissolved Beryllium | mg/L | <0.00006 | | |
| Dissolved Bismuth | mg/L | <0.00006 | | |
| Dissolved Boron | mg/L | 0.019 | | |
| Dissolved Cadmium | mg/L | <0.00002 | | |
| Dissolved Chromium | mg/L | <0.0005 | | |
| Dissolved Cobalt | mg/L | <0.0001 | | |
| Dissolved Copper | mg/L | 0.0007 | | |
| Dissolved Iron | mg/L | <0.004 | 0.3 (AO) | Acceptable |
| Dissolved Lanthanum | mg/L | <0.0005 | | |
| Dissolved Lead | mg/L | <0.00007 | | |
| Dissolved Lithium | mg/L | 0.007 | | |
| Dissolved Manganese | mg/L | <0.0004 | 0.12 (MAC) | Pass |
| Dissolved Molybdenum | mg/L | 0.00080 | | |
| Dissolved Nickel | mg/L | 0.0003 | | |
| Dissolved Selenium | mg/L | 0.0009 | | |
| Dissolved Silver | mg/L | <0.00007 | | |
| Dissolved Strontium | mg/L | 0.3076 | 7.0000 (MAC) | Pass |
| Dissolved Thallium | mg/L | <0.00008 | | |
| Dissolved Tin | mg/L | <0.0006 | | |
| Dissolved Titanium | mg/L | 0.113 | | |
| Dissolved Tungsten | mg/L | <0.001 | | |
| Dissolved Uranium | mg/L | 0.00038 | | |
| Dissolved Vanadium | mg/L | <0.0001 | | |
| Dissolved Zinc | mg/L | <0.007 | | |
| Dissolved Zirconium | mg/L | <0.001 | | |

**Notes:**

- Aluminum: This Operational Guideline applies only to drinking water treatment plants using aluminum-based coagulants: conventional systems - 0.1 mg/L, other systems - 0.2 mg/L
- Turbidity: Based on slow sand or diatomaceous earth filtration (1.0 NTU) / membrane filtration (0.1 NTU) / conventional treatment (0.3 NTU). No limits apply for well water not under the influence of surface water. For further details and additional guidance restriction, see Guidelines for Canadian Drinking Water Quality (GCDWQ 2019).

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**Test Methodologies**

Alkalinity in Water: Modified from SM 2320 B
Anions in Water: Modified from SM 4110 B
BTEX in Water: Modified from EPA 8260D, EPA 5030C/EPA 5021A
Cations in Water by ICP-OES: Modified from SM 3030 B and SM 3120 B
Cyanide, Total, in Water: Modified from ISO 14403:2012(E) and Skalar Analytical B.V., Catnr I295-004w/r issue 010421/99368551
Dissolved Mercury in Water: Modified from EPA 1631 Revision E
Dissolved Metals in Water by ICP-MS: Modified from SM 3030 B and SM 3125 B
Electrical Conductivity in Water: Modified from SM 2510 B and CCME Guidance Manual Volume 4, 2016
Extractable Hydrocarbons in Water: Modified from EPA 8015D and EPA 3520C
pH of Water: Modified from SM 4500-H+ B
Polycyclic Aromatic Hydrocarbons in Water: Modified from EPA 8270E and Royal Society of Chemistry (L-L Micro-extraction)
Total Dissolved Solids (calculated): Modified from SM 1030 E
Total Kjeldahl Nitrogen in Water: Modified from SM 4500-N(org) B and D
Total/Dissolved Organic Carbon in Water: Modified from SM 5310 B
True Colour in Water: Modified from SM 2120 C
Turbidity in Water: Modified from SM 2130 B
Volatile Hydrocarbons in Water: Modified from EPA 8015D, EPA 5030C/EPA 5021A

**Final Review by:**

Ivory Ringor
Client Services Representative

Note: The results in this report relate only to the items tested and as received. Information is available for any items in 7.8.2.1 of ISO/IEC 17025:2017 that cannot be put on a test report. The report shall not be reproduced except in full without written approval of KaizenLAB. The validity of results may be affected if the information is provided by the customer.
Test methodologies are accredited in accordance with ISO/IEC 17025 via CALA, unless otherwise specified in the description of the methods.

**Pass/Acceptable:** The measurement result conforms with the specification limit when the measurement uncertainty is taken into account.
**Pass/Acceptable**:** It is not possible to state conformance using a 95 % coverage probability for the expanded uncertainty although the measurement result is below the limit.
**Fail/Unacceptable**: The measurement result does not conform with the specification limit when the measurement uncertainty is taken into account.

The statement of conformity is based on a 95% coverage probability for the expanded uncertainty. The test results and the statement of conformance with specification in this report relate only to the test sample as analysed/tested and not to the sample/item from which the test sample was drawn.