Unit# 288, 2880 45 Ave S.E.
Calgary, AB, T2B 3M1
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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 #:** | **335045** |
| **DATE RECEIVED:** | 22-Nov-2023 |
| **DATE REPORTED:** | 28-Nov-2023 |
| **PROJECT ID:** | Pkg 3 - Schedule 3A (PSBlend) |
| **LOCATION:** | SRRUC |

**KaizenLAB Sample #:** 335045_001 **Sample ID:** PSBlend
**Date Sampled:** 22-Nov-2023 7:10 **Matrix:** Water

| Parameter Description | Units | Result | Detection Limit |
|---|---|---|---|
| **Routine Water Potability Analysis (Potability pkg #2)** | | | |
| pH | | 7.5 | |
| Electrical Conductivity (EC) at 25°C | uS/cm | 442 | 10 |
| **Alkalinity parameters of water** | | | |
| Alkalinity (total, as CaCO3) | mg/L | 155.4 | 2.0 |
| Alkalinity (phenolphthalein, as CaCO3) | mg/L | <2.0 | 2.0 |
| Bicarbonate (as HCO3) | mg/L | 189.5 | 2.5 |
| Carbonate (as CO3) | mg/L | <1.5 | 1.5 |
| Hydroxide (as OH) | mg/L | <0.5 | 0.5 |
| Total Dissolved Solids (calculated) | mg/L | 279 | 10 |
| **Anions in Water by IC** | | | |
| Fluoride | mg/L | 0.31 | 0.10 |
| Chloride | mg/L | 2.02 | 0.50 |
| Nitrite-N | mg/L | <0.005 | 0.005 |
| Nitrate-N | mg/L | 0.024 | 0.010 |
| Nitrite-N + Nitrate-N | mg/L | 0.024 | 0.015 |
| Phosphate | mg/L | <0.10 | 0.10 |
| Sulphate | mg/L | 87.59 | 0.50 |
| Bromide | mg/L | <0.10 | 0.10 |
| **Cations in Water by ICP-OES** | | | |
| Dissolved Calcium | mg/L | 66.2 | 0.1 |
| Dissolved Magnesium | mg/L | 19.0 | 0.1 |
| Dissolved Potassium | mg/L | 1.1 | 0.1 |
| Dissolved Sodium | mg/L | 7.5 | 0.1 |
| Dissolved Iron | mg/L | <0.05 | 0.05 |
| Dissolved Manganese | mg/L | <0.05 | 0.05 |
| Hardness (calculated, as CaCO3) | mg/L | 243.4 | 0.1 |

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**Date Sampled:** 22-Nov-2023 7:10 **Matrix:** Water

| Parameter Description | Units | Result | Detection Limit |
|---|---|---|---|
| Sodium Adsorption Ratio | | 0.21 | |
| True Colour | TCU | <4 | 4 |
| Turbidity | NTU | 0.21 | 0.10 |
| **CCME Petroleum Hydrocarbons in water: BTEX/F1-F2** | | | |
| **BTEX in Water** | | | |
| Benzene | mg/L | <0.001 | 0.001 |
| Toluene | mg/L | <0.0005 | 0.0005 |
| Ethylbenzene | mg/L | <0.001 | 0.001 |
| Total Xylenes | mg/L | <0.003 | 0.003 |
| F1 | mg/L | <0.05 | 0.05 |
| F2 | mg/L | <0.10 | 0.10 |
| **Polycyclic Aromatic Hydrocarbons (PAH) in water** | | | |
| Naphthalene | mg/L | <0.000004 | 0.000004 |
| Acenaphthylene | mg/L | <0.000004 | 0.000004 |
| Acenaphthene | mg/L | <0.000004 | 0.000004 |
| Phenanthrene | mg/L | <0.000004 | 0.000004 |
| Anthracene | mg/L | <0.000004 | 0.000004 |
| Fluoranthene | mg/L | <0.000004 | 0.000004 |
| Pyrene | mg/L | <0.000004 | 0.000004 |
| Benzo(a)anthracene | mg/L | <0.000004 | 0.000004 |
| Chrysene | mg/L | <0.000004 | 0.000004 |
| Benzo(b,j)fluoranthene | mg/L | <0.000004 | 0.000004 |
| Benzo(k)fluoranthene | mg/L | <0.000004 | 0.000004 |
| Benzo(a)pyrene | mg/L | <0.000004 | 0.000004 |
| Indeno(1,2,3-c,d)pyrene | mg/L | <0.000004 | 0.000004 |
| Dibenzo(a,h)anthracene | mg/L | <0.000004 | 0.000004 |
| Benzo(g,h,i)perylene | mg/L | <0.000004 | 0.000004 |
| Fluorene | mg/L | <0.000004 | 0.000004 |
| Benzo(a)Pyrene Total Potency Equivalents | mg/L | <0.000010 | 0.000010 |
| Total Kjeldahl Nitrogen | mg/L | <2.00 | 2.00 |
| Total Organic Carbon | mg/L | 0.73 | 0.50 |
| **Total Metals in water including Mercury** | | | |
| Total Mercury | ug/L | 0.009 | 0.001 |
| **Total Metals in Water by ICP-MS** | | | |
| Total Aluminum | mg/L | <0.005 | 0.005 |
| Total Antimony | mg/L | <0.0006 | 0.0006 |
| Total Arsenic | mg/L | 0.00013 | 0.00008 |
| Total Barium | mg/L | 0.058 | 0.005 |

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| Parameter Description | Units | Result | Detection Limit |
|---|---|---|---|
| Total Beryllium | mg/L | <0.001 | 0.001 |
| Total Bismuth | mg/L | <0.0005 | 0.0005 |
| Total Boron | mg/L | <0.03 | 0.03 |
| Total Cadmium | mg/L | <0.00004 | 0.00004 |
| Total Chromium | mg/L | <0.0008 | 0.0008 |
| Total Cobalt | mg/L | <0.0002 | 0.0002 |
| Total Copper | mg/L | 0.0013 | 0.0008 |
| Total Iron | mg/L | <0.02 | 0.02 |
| Total Lanthanum | mg/L | <0.0005 | 0.0005 |
| Total Lead | mg/L | <0.0003 | 0.0003 |
| Total Lithium | mg/L | 0.008 | 0.008 |
| Total Manganese | mg/L | <0.005 | 0.005 |
| Total Molybdenum | mg/L | 0.0009 | 0.0005 |
| Total Nickel | mg/L | <0.0005 | 0.0005 |
| Total Selenium | mg/L | <0.0006 | 0.0006 |
| Total Silver | mg/L | <0.00007 | 0.00007 |
| Total Strontium | mg/L | 0.306 | 0.001 |
| Total Thallium | mg/L | <0.0002 | 0.0002 |
| Total Tin | mg/L | 0.02 | 0.02 |
| Total Titanium | mg/L | 0.089 | 0.005 |
| Total Tungsten | mg/L | <0.008 | 0.008 |
| Total Uranium | mg/L | 0.00056 | 0.00005 |
| Total Vanadium | mg/L | <0.0006 | 0.0006 |
| Total Zinc | mg/L | 0.009 | 0.007 |
| Total Zirconium | mg/L | <0.005 | 0.005 |

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The theoretical holding time requirement for pH in Water of 15 minutes was not met.

**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
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 Mercury in Water: Modified from EPA 1631 Revision E
Total Metals in Water by ICP-MS: Modified from EPA 200.2 and SM 3125 B
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.