Unit# 288, 2880 45 Ave S.E.
Calgary, AB, T2B 3M1
Phone (403) 297-0868
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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 #:** | **333067** |
| **DATE RECEIVED:** | 23-Aug-2023 |
| **DATE REPORTED:** | 07-Sep-2023 |
| **PROJECT ID:** | PKG 1 Sched 3+4, HAA, THM SRRUC Water to Distro |
| **LOCATION:** | |

**KaizenLAB Sample #:** 333067_001 **Sample ID:** SRRUC Enter Distro
**Date Sampled:** 23-Aug-2023 9:00 **Matrix:** Water

| Parameter Description | Units | Result | Detection Limit |
|---|---|---|---|
| **Routine Water Potability Analysis (Potability pkg #2)** | | | |
| pH | | 7.4 | |
| Electrical Conductivity (EC) | uS/cm | 460 | 10 |
| **Alkalinity parameters of water** | | | |
| Alkalinity (total, as CaCO3) | mg/L | 169.6 | 2.0 |
| Alkalinity (phenolphthalein, as CaCO3) | mg/L | <2.0 | 2.0 |
| Bicarbonate (as HCO3) | mg/L | 206.8 | 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 | 282 | 10 |
| **Anions in Water by IC** | | | |
| Fluoride | mg/L | 0.28 | 0.10 |
| Chloride | mg/L | 3.85 | 0.50 |
| Nitrite-N | mg/L | <0.005 | 0.005 |
| Nitrate-N | mg/L | <0.010 | 0.010 |
| Nitrite-N + Nitrate-N | mg/L | <0.015 | 0.015 |
| Phosphate | mg/L | <0.10 | 0.10 |
| Sulphate | mg/L | 86.82 | 0.50 |
| Bromide | mg/L | <0.10 | 0.10 |
| **Cations in Water by ICP-OES** | | | |
| Dissolved Calcium | mg/L | 58.2 | 0.1 |
| Dissolved Magnesium | mg/L | 19.6 | 0.1 |
| Dissolved Potassium | mg/L | 1.1 | 0.1 |
| Dissolved Sodium | mg/L | 9.2 | 0.1 |
| Dissolved Iron | mg/L | <0.05 | 0.05 |
| Dissolved Manganese | mg/L | <0.05 | 0.05 |
| Hardness (calculated, as CaCO3) | mg/L | 226.2 | 0.1 |

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**KaizenLAB Sample #:** 333067_001 **Sample ID:** SRRUC Enter Distro
**Date Sampled:** 23-Aug-2023 9:00 **Matrix:** Water

| Parameter Description | Units | Result | Detection Limit |
|---|---|---|---|
| Sodium Adsorption Ratio | | 0.26 | |
| True Colour | TCU | <4 | 4 |
| Turbidity | NTU | 0.18 | 0.10 |
| Cyanide, Total | mg/L | <0.003 | 0.003 |
| Ammonia-N | mg/L | <0.05 | 0.05 |
| **Oxyhalides in water** | | | |
| **Oxyhalides in Water by IC** | | | |
| Bromate | mg/L | <0.005 | 0.005 |
| Chlorite | mg/L | <0.05 | 0.05 |
| Chlorate | mg/L | <0.05 | 0.05 |
| **Organic Chemicals & Pesticides (Primary) in water** | | | |
| **Base/Neutral and Acid Extractable Organic Compounds in Water** | | | |
| Atrazine + Metabolites | mg/L | <0.001 | 0.001 * |
| Benzo(a)Pyrene | mg/L | <0.000005 | 0.000005 |
| 2,4-Dichlorophenol | mg/L | <0.002 | 0.002 |
| 2,4,6-Trichlorophenol | mg/L | <0.002 | 0.002 |
| 2,3,4,6-Tetrachlorophenol | mg/L | <0.002 | 0.002 |
| Pentachlorophenol | mg/L | <0.002 | 0.002 |
| Chlorpyrifos | mg/L | <0.002 | 0.002 |
| Cyanazine | mg/L | <0.002 | 0.002 |
| Diazinon | mg/L | <0.002 | 0.002 |
| Diclofop-methyl | mg/L | <0.002 | 0.002 |
| Dimethoate | mg/L | <0.002 | 0.002 |
| Diuron | mg/L | <0.003 | 0.003 |
| Malathion | mg/L | <0.002 | 0.002 |
| Methoxychlor | mg/L | <0.002 | 0.002 |
| Metolachlor | mg/L | <0.002 | 0.002 |
| Metribuzin | mg/L | <0.002 | 0.002 |
| Simazine | mg/L | <0.002 | 0.002 |
| Terbufos | mg/L | <0.0005 | 0.0005 |
| Triallate | mg/L | <0.002 | 0.002 |
| Trifluralin | mg/L | <0.002 | 0.002 |
| Glyphosate | mg/L | <0.020 | 0.020 |
| **Herbicides in Water** | | | |
| Bromoxynil | mg/L | <0.002 | 0.002 |
| 2,4-D | mg/L | <0.002 | 0.002 |
| Dicamba | mg/L | <0.002 | 0.002 |
| Picloram | mg/L | <0.002 | 0.002 |

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**Date Sampled:** 23-Aug-2023 9:00 **Matrix:** Water

| Parameter Description | Units | Result | Detection Limit |
|---|---|---|---|
| Nitrilotriacetic Acid (NTA) | mg/L | <0.4 | 0.4 |
| **Volatile Organic Compounds in Water** | | | |
| Benzene | mg/L | <0.001 | 0.001 |
| Ethylbenzene | mg/L | <0.001 | 0.001 |
| MTBE | mg/L | <0.004 | 0.004 |
| Tetrachloroethene | mg/L | <0.001 | 0.001 |
| Toluene | mg/L | <0.0005 | 0.0005 |
| Trichloroethene | mg/L | <0.00030 | 0.00030 |
| Vinyl Chloride | mg/L | <0.001 | 0.001 |
| m,p-Xylenes | mg/L | <0.002 | 0.002 |
| o-Xylenes | mg/L | <0.001 | 0.001 |
| Total Xylenes | mg/L | <0.003 | 0.003 |
| Carbon Tetrachloride | mg/L | <0.0005 | 0.0005 |
| Chlorobenzene | mg/L | <0.001 | 0.001 |
| 1,2-Dichlorobenzene | mg/L | <0.0005 | 0.0005 |
| 1,4-Dichlorobenzene | mg/L | <0.0005 | 0.0005 |
| 1,2-Dichloroethane | mg/L | <0.002 | 0.002 |
| 1,1-Dichloroethene | mg/L | <0.002 | 0.002 |
| Dichloromethane | mg/L | <0.002 | 0.002 |
| Sulphide | mg/L | <0.010 | 0.010 |
| Total Organic Carbon | mg/L | 0.54 | 0.50 |
| **Total Metals for Drinking Water** | | | |
| Total Mercury | ug/L | <0.001 | 0.001 |
| **Total Metals in Water by ICP-MS** | | | |
| Total Aluminum | mg/L | 0.152 | 0.005 |
| Total Antimony | mg/L | <0.0006 | 0.0006 |
| Total Arsenic | mg/L | 0.00020 | 0.00008 |
| Total Barium | mg/L | 0.059 | 0.005 |
| 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 Copper | mg/L | 0.0012 | 0.0008 |
| Total Iron | mg/L | <0.02 | 0.02 |
| Total Lead | mg/L | <0.0003 | 0.0003 |
| Total Manganese | mg/L | <0.005 | 0.005 |
| Total Selenium | mg/L | 0.0008 | 0.0006 |
| Total Silver | mg/L | <0.00007 | 0.00007 |
| Total Strontium | mg/L | 0.298 | 0.001 |
| Total Uranium | mg/L | 0.00054 | 0.00005 |

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**KaizenLAB Sample #:** 333067_001 **Sample ID:** SRRUC Enter Distro
**Date Sampled:** 23-Aug-2023 9:00 **Matrix:** Water

| Parameter Description | Units | Result | Detection Limit |
|---|---|---|---|
| Total Zinc | mg/L | 0.009 | 0.007 |
| UV Absorbance (254 nm) | Abs. unit | 0.013 | 0.005 |

* The detection limit has been adjusted due to sample matrix type and/or insufficient sample volume.

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
Ammonia in Water: Modified from SM 4500-NH3 F
Anions in Water: Modified from SM 4110 B
Base/Neutral and Acid Extractable Organic Compounds in Water: Modified from EPA 3510C, EPA 8151A, and EPA 8270E
Cations in Water: 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
Electrical Conductivity in Water: Modified from SM 2510 B and CCME Guidance Manual Volume 4, 2016
Glyphosate in Water: Modified from Journal of Chromatography A, 886 (2000) 207-216
Herbicides in Water: Modified from EPA 1653, EPA 8151A, EPA 8270E, and Supelco Application Note 100
Nitrilotriacetic Acid in Water: Modified from Journal of Chromatography A, 690 (1995) 109-118
Oxyhalides in Water: Modified from SM 4110 D and EPA 317.0
pH of Water: Modified from SM 4500-H+ B
Sulphide in Water: Modified from SM 4500-S2- D and HACH Method 8131
Total Dissolved Solids (calculated): Modified from SM 1030 E
Total Mercury in Water: Modified from EPA 1631 Revision E
Total Metals in Water: 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
UV Absorbance/Transmittance in Water: Modified from SM 5910 B
Volatile Organic Compounds in Water: Modified from EPA 8260D and EPA 5030C

**Final Review by:**

Irene De Leon
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.