

Water Treatment Plant Permit to Operate Laboratory Report

2023 - FOURTH QUARTER

Procedures used are based upon recognized Provincial, Federal or U.S. method compendia such as CCME, APHA, EPA. The results relate only to the items tested or sampled. Unless qualified otherwise, all samples were received in acceptable condition. Estimated uncertainties and additional information provided upon request.

Test methods and data are validated by the laboratory's Quality Assurance Program. Analyses are conducted by ISO/IEC 17025 accredited laboratories (including sub-contracted laboratories) for parameters listed on their respective scope.

Interpretation and use of test results are the sole responsibility of the Client/Customer. The retained laboratory is not responsible for the accuracy or any data impacts that result from the information provided by the Client/Customer or their agent.

Results authorized by:

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PHYSICAL CHARACTERISTICS		Drinking Water LIMIT*	Drinking Water	Main Raw Water Intake
Colour, True	CU	15	<5.0	5.2
Conductivity	µS/cm	none applied	470	467
pH	pH	7.0 to 10.5	7.99	8.08
Solids, Total Dissolved (TDS), calculated	mg/L	500	286	279
Solids, Total Suspended (TSS)	mg/L	none applied	<3.0	4.1
Turbidity	NTU	3	<0.10	2.19

CHEMICAL - General (Major Ions)		Drinking Water LIMIT*	Drinking Water	Main Raw Water Intake
Alkalinity, Total (as CaCO ₃)	mg/L	500	134	154
Alkalinity, Bicarbonate (HCO ₃)	mg/L	none applied	163	188
Alkalinity, Carbonate (CO ₃)	mg/L	none applied	<1.0	<1.0
Chloride (Cl)	mg/L	250	15.8	12.9
Chlorine (Cl ₂), Total	mg/L	0.5 - 3.0	1.8	
Fluoride (F)	mg/L	1.5	0.66	0.15
Hardness (Total as CaCO ₃), dissolved	mg/L	800	186	189
Calcium (Ca) - Dissolved	mg/L	none applied	42	45
Magnesium (Mg) - Dissolved	mg/L	200	20	19
Potassium (K) - Dissolved	mg/L	none applied	3.3	3.2
Sodium (Na) - Dissolved	mg/L	200	28	26
Sulfate (SO ₄)	mg/L	500	89	74

CHEMICAL - Health and Toxicity		Drinking Water LIMIT*	Drinking Water	Main Raw Water Intake
Aluminum (Al) - Total	mg/L	0.1	0.019	0.049
Antimony (Sb) - Total	mg/L	0.006	0.00013	0.00013
Arsenic (As) - Total	mg/L	0.01	0.00031	0.00095
Barium (Ba) - Total	mg/L	1	0.059	0.090
Boron (B) - Total	mg/L	5	0.028	0.029
Cadmium (Cd) - Total	mg/L	0.005	<0.0000050	0.0000095
Chromium (Cr) - Total	mg/L	0.05	<0.00050	<0.00050
Copper (Cu) - Total	mg/L	1	0.0019	0.0010
Cyanide (CN) - Total	mg/L	0.2	<0.0050	<0.0050
Iron (Fe) - Total	mg/L	0.3	<0.010	0.075
Lead (Pb) - Total	mg/L	0.005	<0.000050	0.000066
Manganese (Mn) - Total	mg/L	0.05	<0.00010	0.0137
Mercury (Hg) - Total	mg/L	0.001	<0.0000050	<0.0000050
Selenium (Se) - Total	mg/L	0.01	0.00031	0.00037
Silver (Ag) - Total	mg/L	none applied	<0.000010	<0.000010
Uranium (U) - Total	mg/L	0.02	0.0011	0.0012
Zinc (Zn) - Total	mg/L	5	<0.0030	0.0034

OTHER		Drinking Water LIMIT*	Drinking Water	Main Raw Water Intake
Ammonia, Total (as N)	mg/L	none applied	0.26	0.017
Nitrate (as N)	mg/L	10	0.062	0.072
Nitrate + Nitrite (as N)	mg/L	none applied	0.062	0.072
Nitrite (as N)	mg/L	1	<0.010	<0.010
Total Kjeldahl Nitrogen (N)	mg/L	none applied	0.44	<0.200
Nitrogen, Total	mg/L	none applied	0.50	<0.201
Biochemical Oxygen Demand (5-day)	mg/L	none applied		<2.0
Carbon (TOC) - Total Organic	mg/L	none applied	3.66	5.06
Phenols	mg/L	none applied	<0.0010	<0.0010
Phosphate, Ortho-, Dissolved (as P)	mg/L	none applied	<0.050	<0.050
Phosphorus, Total	mg/L	none applied	0.0038	0.013

MICROORGANISMS		Drinking Water LIMIT*	Drinking Water	Main Raw Water Intake
Chlorophyll a	µg/L	none applied		3.04
<i>E.coli</i> **	MPN/100mL	0		210
Total Coliform	CFU/100mL	0	0	1400
Background Non-Coliform	CFU/100mL	200	0	5760
<i>Giardia</i>	cysts/100 L	3 log inactivation		0.0
<i>Cryptosporidium</i>	oocysts/100 L	3 log inactivation		0.0
Microcystins***	µg/L	1.5	<0.20	

TRihalOMETHANES		Drinking Water LIMIT*	Drinking Water	East Distribution	West Distribution
• Bromodichloromethane	µg/L	none applied	6.6	8.1	8.0
• Bromoform	µg/L	none applied	<1.0	<1.0	<1.0
• Chloroform	µg/L	none applied	26.1	30.1	29.6
• Dibromochloromomethane	µg/L	none applied	1.1	1.5	1.4
Total Trihalomethanes (calc)	µg/L	100	33.8	39.7	39.0

HALOACETIC ACIDS		Drinking Water LIMIT*	Drinking Water	East Distribution	West Distribution
• Bromochloroacetic Acid	µg/L	none applied	1.70	1.93	1.93
• Dibromoacetic Acid	µg/L	none applied	<1.00	<1.00	<1.00
• Dichloroacetic Acid	µg/L	none applied	8.54	11.65	10.85
• Monobromoacetic Acid	µg/L	none applied	<1.00	<1.00	<1.00
• Monochloroacetic Acid	µg/L	none applied	<1.00	<1.00	1.1
• Trichloroacetic Acid	µg/L	none applied	6.98	9.04	8.49
Halo Acetic Acids 5, Total (calc)	µg/L	80	15.5	20.7	19.9

*Drinking Water Limit: This is the Limit for the parameter specified, as determined by Health Canada and/or the City of Saskatoon *Permit to Operate a Waterworks* issued by the Water Security Agency under the jurisdiction of the Saskatchewan Minister of Environment. Limits may be a MAC (Maximum Acceptable Concentration), Interim or Guideline MAC (MAC has yet to be determined) or AO (Aesthetic Objective - may affect acceptance of water by consumers but are not a health-based limit. Compliance within this range is not mandatory). Further information can be obtained by consulting the Health Canada document *Guidelines for Canadian Drinking Water Quality*.

**Analyzed only if indicated by a Total Coliform sample ≥ 1 cfu/100mL.

***Analyzed May to October only

Symbol of "<" means "less than" and indicates that the analyte was not detected above the stated level.

- END REPORT -