City of Saskatoon
Saskatoon Water

Water Treatment Plant Permit to Operate Laboratory Report

2024 - THIRD 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 for parameters listed on their respective scope. Parameters reported herein were analyzed by Sub-Contraced laboratories, except where indicated as analyzed by the City of Saskatoon Water Lab (*COS-WL parameter).*

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:
Cleo Jahraus
Laboratory Services Coordinator - Water Treatment (306)975-2539
831 11th Street West, Saskatoon, SK S7M 5Z4

PHYSICAL CHARACTERISTICS		Drinking Water LIMIT*	Drinking Water	Main Raw Water Intake
Colour, True	CU	15	<5.0	6.3
Conductivity	µS/cm	none applied	452	466
pH	pH	7.0 to 10.5	8.28	8.48
Solids, Total Dissolved (TDS), calculated	mg/L	500	273	291
Solids, Total Suspended (TSS)	mg/L	none applied	<3.0	7.4
Turbidity	NTU	3	0.1	4.26

CHEMICAL - General (Major Ions)		Drinking Water LIMIT*	Drinking Water	Main Raw Water Intake
Alkalinity, Total (as $CaCO_3$)	mg/L	500	119	167
Alkalinity, Bicarbonate (HCO_3)	mg/L	none applied	145	197
Alkalintity, Carbonate (CO_3)	mg/L	none applied	<1.0	3.1
Chloride (Cl)	mg/L	250	15.5	13.5
Chlorine (Cl_2), Total *(COS-WL parameter)*	mg/L	0.5 - 3.0	1.8	
Fluoride (F)	mg/L	1.5	0.59	0.154
Hardness (Total as $CaCO_3$), dissolved	mg/L	800	169	196
Calcium (Ca) - Dissolved	mg/L	none applied	36.2	45.6
Magnesium (Mg) - Dissolved	mg/L	200	19.1	20
Potassium (K) - Dissolved	mg/L	none applied	3.34	3.32
Sodium (Na) - Dissolved	mg/L	200	26.4	25.9
Sulfate (SO_4)	mg/L	500	95	77.7

City of Saskatoon
Saskatoon Water

CHEMICAL - Health and Toxicity		Drinking Water LIMIT*	Drinking Water	Main Raw Water Intake
Aluminum (Al) - Total	mg/L	0.1	0.0359	0.123
Antimony (Sb) - Total	mg/L	0.006	0.00015	0.00018
Arsenic (As) - Total	mg/L	0.01	0.00029	0.0009
Barium (Ba) - Total	mg/L	1	0.062	0.0944
Boron (B) - Total	mg/L	5	0.03	0.029
Cadmium (Cd) - Total	mg/L	0.005	0.0000079	0.0000196
Chromium (Cr) - Total	mg/L	0.05	<0.00050	<0.00050
Copper (Cu) - Total	mg/L	1	0.00234	0.00211
Cyanide (CN) - Total	mg/L	0.2	<0.0050	<0.0050
Iron (Fe) - Total	mg/L	0.3	0.013	0.188
Lead (Pb) - Total	mg/L	0.005	<0.000050	0.00033
Manganese (Mn) - Total	mg/L	0.05	0.00029	0.0175
Mercury (Hg) - Total	mg/L	0.001	<0.0000050	<0.0000050
Selenium (Se) - Total	mg/L	0.01	0.000322	0.000402
Silver (Ag) - Total	mg/L	none applied	<0.000010	<0.000010
Uranium (U) - Total	mg/L	0.02	0.00101	0.00122
Zinc (Zn) - Total	mg/L	5	<0.0030	0.0082

OTHER		Drinking Water LIMIT*	Drinking Water	Main Raw Water Intake
Ammonia, Total (as N)	mg/L	none applied	0.382	0.0149
Nitrate (as N)	mg/L	10	0.053	0.044
Nitrate + Nitrite (as N)	mg/L	none applied	0.053	<0.0500
Nitrite (as N)	mg/L	1	<0.010	<0.010
Total Kjeldahl Nitrogen (N)	mg/L	none applied	0.61	0.462
Nitrogen, Total	mg/L	none applied	0.663	0.506
Biochemical Oxygen Demand (5-day)	mg/L	none applied		<2.0
Carbon (TOC) - Total Organic	mg/L	none applied	2.42	3.7
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	0.004	0.0146

MICROORGANISMS		Drinking Water LIMIT*	Drinking Water	Main Raw Water Intake
Chlorophyll a (Plant Pigment)	µg/L	none applied		1.49
*E.coli*** *(COS-WL parameter)*	MPN/100mL	0		13
Total Coliform *(COS-WL parameter)*	CFU/100mL	0	0	200
Background Non-Coliform *(COS-WL parame*	CFU/100mL	200	0	12000
Giardia	cysts/100 L	3 log inactivation		3.1
Cryptosporidium	oocysts/100 L	3 log inactivation		0.0
Microcystins***	µg/L	1.5	<0.20	

City of Saskatoon
Saskatoon Water

TRIHALOMETHANES		Drinking Water LIMIT*	Drinking Water	East Distribution	West Distribution
• Bromodichloromethane	µg/L	none applied	8.9	14.3	15.2
• Bromoform	µg/L	none applied	<1.0	<1.0	<1.0
• Chloroform	µg/L	none applied	31.1	49.6	52.7
• Dibromochloromomethane	µg/L	none applied	3.3	2.5	2.6
Total Trihalomethanes (calc)	µg/L	100	43.3	66.3	70.4

HALOACETIC ACIDS		Drinking Water LIMIT*	Drinking Water	East Distribution	West Distribution
• Bromochloroacetic Acid	µg/L	none applied	1.7	1.7	2.1
• Dibromoacetic Acid	µg/L	none applied	<1.00	<1.00	<1.00
• Dichloroacetic Acid	µg/L	none applied	8.1	11.1	12.0
• Monobromoacetic Acid	µg/L	none applied	<1.00	<1.00	<1.00
• Monochloroacetic Acid	µg/L	none applied	<1.00	1.4	1.1
• Trichloroacetic Acid	µg/L	none applied	7.6	8.8	10.4
Halo Acetic Acids 5, Total (calc)	µg/L	80	15.8	20.7	22.9

SPECIAL ORGANICS		Drinking Water LIMIT*	Drinking Water	Main Raw Water Intake
Benzene	µg/L	5	<0.50	<0.50
Benzo(a)pyrene	µg/L	0.010	<0.0050	<0.0050
Carbon Tetrachloride	µg/L	5	<0.50	<0.50
Dichlorobenzene, 1,2-	µg/L	200	<0.50	<0.50
Dichlorobenzene, 1,4-	µg/L	5	<0.50	<0.50
Dichloroethane, 1,2-	µg/L	5	<0.50	<0.50
Dichloroethylene, 1,1-	µg/L	14	<0.50	<0.50
Dichloromethane	µg/L	50	<1.0	<1.0
Dichlorophenol, 2,4-	µg/L	900	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.50	<0.50
Monochlorobenzene	µg/L	80	<0.50	<0.50
Perfluorooctane Sulfonate (PFOS)	µg/L	0.60	<0.020	<0.020
Perfluorooctanoic Acid (PFOA)	µg/L	0.20	<0.020	<0.020
Tetrachloroethylene	µg/L	10	<0.50	<0.50
Tetrachlorophenol, 2,3,4,6-	µg/L	100	<0.50	<0.50
Toluene	µg/L	60	<0.50	<0.50
Trichloroethylene	µg/L	50	<0.25	<0.25
Trichlorophenol, 2,4,6-	µg/L	5	<0.50	<0.50
Vinyl Chloride	µg/L	2	<0.50	<0.50
Xylene (Total)	µg/L	90	<0.5	<0.5

City of Saskatoon
Saskatoon Water

RADIOCHEMICALS		Drinking Water LIMIT*	Drinking Water	Main Raw Water Intake
Gross Alpha	Bq/L	0.5	<0.12	<0.14
Gross Beta	Bq/L	1.0	0.22±0.04	0.20±0.04
Cesium-137	Bq/L	10	<0.2	<0.2
Iodine-131	Bq/L	6	<0.2	<0.2
Lead-210	Bq/L	0.2	<0.02	0.05
Potassium-40		none applied	<4	<5
Radium-226	Bq/L	0.5	<0.005	0.008
Radon-222	Bq/L	none applied	<4	<4
Strontium-90	Bq/L	5	<0.05	<0.05
Tritium	Bq/L	7000	<40	<40

PESTICIDES and HERBICIDES		Drinking Water LIMIT*	Drinking Water	Main Raw Water Intake
Atrazine	µg/L	5	<0.050	<0.050
Bromoxynil	µg/L	5	<0.0100	<0.0100
Carbofuran	µg/L	90	<0.0250	<0.0250
Chlorpyrifos	µg/L	90	<0.10	<0.10
Dicamba	µg/L	120	<0.100	<0.100
Dichlorophenoxyacetic Acid (2,4-D)	µg/L	100	0.0809	0.0840
Diclofop-methyl	µg/L	9	<0.100	<0.100
Dimethoate	µg/L	20	<0.050	<0.050
Glyphosate	µg/L	280	<0.20	<0.20
Malathion	µg/L	190	<0.0250	<0.0250
MCPA	µg/L	100	<0.010	<0.010
Pentachlorophenol (PCP)	µg/L	60	<0.50	<0.50
Picloram	µg/L	190	<0.020	<0.020
Trifluralin	µg/L	45	<0.10	<0.10

*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 -