

The Water Security Agency (WSA) requires that, at least once each year, waterworks owners provide notification to consumers of the quality of water produced and supplied as well as information on the performance of the waterworks in submitting samples as required by a Permit to Operate a waterworks. The following is a summary of the SaskWater Edenwold Water Supply System water quality and sample submission compliance record for the January 1, 2017 to December 31, 2017 time period. This report was completed on April 6, 2018. Readers should refer to the WSA's Municipal Drinking Water Quality Monitoring Guidelines, October 2012, EPB 202 for more information on minimum sample submission requirements and types of samples. Permit requirements for a specific waterworks may require more sampling than outlined in the Agency's monitoring guidelines. If consumers need to know more about drinking water in Saskatchewan, more detailed information is available from: <http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/index-eng.php>.

BACTERIOLOGICAL QUALITY

Parameter	Limit	Regular Samples Required	Regular Samples Submitted	# Positive of Regular Submitted
Total Coliform	0 Organisms/100 mL	52	51	0
E. Coli	0 Organisms/100 mL	52	51	0
Background Bacteria	Less than 200/100 mL	52	51	0

Analysis is performed on a single sample for all parameters mentioned above. All waterworks are required to submit samples for bacteriological water quality; the frequency of monitoring depends on the population served by the waterworks.

WATER DISINFECTION

Chlorine Residual in Distribution System – From Test Results Submitted with Bacteriological Samples

Parameter	Minimum Limit (either/or)	Range (mg/L)	# Tests Required	# Tests Submitted	# Adequate Chlorine
Free Chlorine	0.1 mg/L	0.55 – 1.45	52	51	51
Total Chlorine	0.5 mg/L	0.98 – 2.72	52	51	

A minimum of 0.1 milligrams per litre (mg/L) free chlorine residual **OR** 0.5 mg/L total chlorine residual is required at all times throughout the distribution system. An adequate chlorine is a result that indicates that the chlorine level is above the regulated minimums. A waterworks is required to submit chlorine residual test results on every bacteriological sample they submit.

Free Chlorine Residual for Water Entering Distribution System

Parameter	Limit (mg/L)	Range (mg/L)	# Tests Required	# Tests Performed	% Adequate Chlorine
Free Chlorine	At least 0.1	0.07 – 1.93	365	Continuous	99.999

Minimum 0.1 milligrams per litre (mg/L) free chlorine residual is required for water entering a distribution system. Residuals are monitored continuously and tests normally performed daily by waterworks operators and are to be recorded in operation records.

TURBIDITY

Turbidity in the Distribution System – From Test Results Submitted with Bacteriological Samples

Parameter	Limit (NTU)	Range (NTU)	# Tests Required	# Tests Performed	# Exceeding Limit
Turbidity	No standard	0.11 – 0.85	52	51	0

Turbidity for Water Leaving the Filter

Parameter	Limit (NTU)*	Range (NTU)	95 th Percentile (NTU)	# Tests Required	# Tests Performed	# of Months Exceeding 95 th Percentile Limit
Turbidity	< 0.3 – 95% of measurements each month and; never >1.0	0.000 – 0.573	0.140	730	Continuous	0

Turbidity in Water Entering the Distribution System

Parameter	Limit (NTU)	Range (NTU)	Average (NTU)	# Tests Required	# Tests Performed	# Exceeding Limit
Turbidity	No standard	0.011 – 2.000	0.194	365	Continuous	0

Turbidity is a measure of water treatment efficiency. Turbidity measures the “clarity” of the drinking water and is generally reported in Nephelometric Turbidity Units (NTU).

CHEMICAL – TRIHALOMETHANES (THM)

Trihalomethanes are formed when chlorine reacts with organic matter in water. The four THM compounds are: chloroform, dibromochloromethane, bromodichloromethane (BCDM) and bromoform. The sum of the concentrations of these four components is referred to as Total Trihalomethanes. The limit for THM is a long term objective based on an annual average of seasonal samples.

Parameter	Limit (mg/L)	Average (mg/L)	# Samples Required	# Samples Submitted
Trihalomethane	0.100 mg/L	0.052	4	4

CHEMICAL – HALOACETIC ACIDS (HAAs)

Haloacetic acids are formed when chlorine reacts with organic matter in water. The five regulated haloacetic acids are: monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid. The sum of the concentrations of these five components is referred to as HAA5. The limit for HAAs is a long term objective based on an annual average of quarterly samples.

Parameter	Limit (mg/L)	Average (mg/L)	# Samples Required	# Samples Submitted
Haloacetic Acids 5	0.080	0.050	4	4

CHEMICAL – HEALTH

SaskWater's Edenwold Water Supply System is required to submit water samples for the WSA's Chemical Health category once every second year. 2017 is a required sampling year. The last sample for Chemical Health analysis was submitted on February 24, 2017.

Parameter	MAC (mg/L)	IMAC (mg/L)	AO* (mg/L)	Sample Results (mg/L)	# of Samples Required	# of Samples Submitted
Aluminum	No Objective			0.0120	1	1
Antimony	0.006			0.00040	0	1
Arsenic	0.010			0.00032	1	1
Barium	1.0			0.0667	1	1
Boron		5.0		<0.1	1	1
Cadmium	0.005			<0.00015	1	1
Chromium	0.050			<0.00019	1	1
Copper			1.0	0.0267	1	1
Iron			0.3	<0.1	1	4
Lead	0.010			0.00070	1	1
Manganese			0.05	<0.01	1	4
Selenium	0.010			<0.00113	1	1
Silver	No Objective			<0.00020	1	1
Uranium	0.020			0.0022	1	1
Zinc			5	0.0044	1	1

MAC – Maximum Acceptable Concentrations

AO – Aesthetic Objective

IMAC – Interim Maximum Acceptable Concentrations

CHEMICAL – GENERAL

SaskWater's Edenwold Water Supply System is required to submit water samples for the WSA's General Chemical category once per three months every second year. 2017 is a required sampling year. The last sample for General Chemical analysis was submitted on November 14, 2017.

Parameter	MAC	AO*	Sample Results	# Of Samples Required	# Of Samples Submitted
Total Alkalinity (mg/L)		500	215	4	4
Bicarbonate (mg/L)	No Objective		263	4	4
Calcium (mg/L)	No Objective		132	4	4
Carbonate (mg/L)	No Objective		0	4	4
Chloride (mg/L)		250	89.1	4	4
Fluoride (mg/L)	1.5		0.07	4	4
Total Hardness (mg/L)		800	810	4	4
Hydroxide (mg/L)	No Objective		0	4	4
Magnesium (mg/L)		200	117	4	4
Nitrate (mg/L)	45		0.3	4	4
pH (pH units)		6.5 - 9.0	7.6	4	4
Potassium (mg/L)	No Objective		26	4	4
Sodium (mg/L)		300	80	4	4
Specific Conductivity (µs/cm)	No Objective		1723	4	4
Sulphate (mg/L)		500	646.4	4	4
Total Dissolved Solids (mg/L)		1500	1352	4	4

MAC – Maximum Acceptable Concentration AO – Aesthetic Objective

*Objectives apply to certain characteristics of or substances found in water for human consumptive or hygienic use. The presence of these substances will affect the acceptance of water by consumers and/or interfere with the practice of supplying good quality water. Compliance with drinking water aesthetic objectives is not mandatory as these objectives are in the range where they do not constitute a health hazards.

More information on water quality and sample submission performance may be obtained from:

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