

Drinking Water Quality and Compliance
Town of Kindersley
Station Number SK05GB0004
2019 Notification to Consumers

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 Town of Kindersley water quality and sample submission compliance record for the January 1, 2019 to December 31, 2019 time period. This report was completed on February 10, 2020. 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

Sampling from Distribution System

Parameter	Limit	Regular Samples Required	Regular Samples Submitted	# of Positive Regular Submitted
Total Coliform	0 Organisms/100mL	104	103	1
E. Coli	0 Organisms/100m/L	104	103	0
Background Bacteria	Less than 200/100mL	104	103	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.

The sample collected on June 11, 2019 was not tested by the lab because it was broken in transit. The EPO was notified and no additional sampling was required.

Received a positive result from a sample taken on July 23, 2019. The follow up (repeat) bacteriological sample was negative, indicating a likely sampling error on the first sample. The EPO was notified.

WATER DISINFECTION

Chlorine Residual in the 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	0.32 – 1.33	104	104	104
Total Chlorine	0.5 mg/L	0.42 – 1.45	104	104	

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 residual 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 0.10	0.44 – 1.57	365	1077	100

Residuals are monitored continuously and tests performed regularly by waterworks operators and are to be recorded in operation records. Additional testing was done for informational purposes.

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TURBIDITY

Turbidity for Water Leaving the Filter

Parameter	Limit (NTU)	Range (NTU)	95th Percentile	# Tests Required	# Tests Performed	# of Months Exceeding 95 th Percentile Limit
Turbidity	< 0.3 or 0.2 – 95% of measurements each month; not to exceed 0.3 or 0.2 for more than 12 consecutive hours; never >1.0	0.003 – 0.360	0.060	Continuous	Continuous	0

Turbidity is monitored continuously and multiple tests are done daily by waterworks operators and are recorded in daily records.

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	0.07 – 0.80	104	104	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). The turbidity is tested at the same frequency as the bacteriological testing with a bench testing instrument.

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
Total Trihalomethanes	0.100	0.024	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.

Parameter	Limit (mg/L)	Average (mg/L)	# Samples Required	# Samples Submitted
Haloacetic Acids 5	0.080	0.012	4	4

Ultraviolet Dosage

Parameter	Limit (%T)	Range (% T)	# Samples Required	# Samples Submitted
Ultraviolet Transmittance	No Standard	85.7 – 100.9	365	365

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FLUORIDE

Fluoride – From Treated Water at the Water Treatment Plant (on-site testing)

Parameter	Limit (mg/L)	Average (mg/L)	Maximum (mg/L)	# Samples Required	# Samples Submitted	# Exceeding Limit
Fluoride	1.5	0.49	1.08	365	367	0

Additional testing done for informational purposes.

Fluoride – From Test Results Submitted with Bacteriological Samples (off-site testing)

Parameter	Limit (mg/L)	Average (mg/L)	Maximum (mg/L)	# Samples Required	# Samples Submitted	# Exceeding Limit
Fluoride	1.5	0.30	0.63	52	52	0

One fluoride sample was missed the week of September 17, 2019. The EPO was notified. Additional testing was done for informational purposes.

CHEMICAL – GENERAL

The Town of Kindersley is required to submit water samples for the WSA's General Chemical category once per three months every second year. 2019 is a required sampling year.

Parameter	MAC	AO *	Sample Results	# of Samples Required	# of Samples Submitted
Total Alkalinity (mg/L)		500	155	4	4
Bicarbonate (mg/L)	No Objective		189	4	4
Calcium (mg/L)	No Objective		54	4	4
Carbonate (mg/L)	No Objective		<1	4	4
Chloride (mg/L)		250	20	4	4
Fluoride (mg/L)	1.5		0.28	4	4
Total Hardness (mg/L)		800	233	4	4
Hydroxide (mg/L)	No Objective		<1	4	4
Magnesium (mg/L)		200	24	4	4
Nitrate (mg/L)	45		1.0	4	4
pH (pH units)		6.5 - 9.0	7.62	4	4
Potassium (mg/L)	No Objective		3.0	4	4
Sodium (mg/L)		300	42	4	4
Specific Conductivity (µs/cm)	No Objective		639	4	4
Sulphate (mg/L)		500	143	4	4
Sum of Ions	No Objective		475	4	4
Total Dissolved Solids (mg/L)		1500	400	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. The aesthetic objectives for several parameters (including hardness as CaCO₃, magnesium, sodium and total dissolved solids) consider regional differences in drinking water sources and quality.

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CHEMICAL – HEALTH

The Town of Kindersley is required to submit water samples for the WSA’s Chemical Health category once every 2 years. 2019 is a required sampling year.

Parameter	MAC (mg/L)	IMAC (mg/L)	AO (mg/L)	Sample Results (mg/L)	# of Samples Required	# of Samples Submitted
Aluminum		No Objective		0.020	1	1
Antimony	0.006			<0.0002	1	1
Arsenic	0.010			<0.0001	1	1
Barium	1.0			0.049	1	1
Boron		5.0		0.08	1	1
Cadmium	0.005			<0.00001	1	1
Chromium	0.05			<0.0005	1	1
Copper			1.0	0.0010	1	1
Iron			0.3	0.0015	1	1
Lead	0.01			<0.0001	1	1
Manganese			0.05	<0.0005	1	1
Selenium	0.01			0.0002	1	1
Silver		No Objective		<0.00005	1	1
Uranium	0.02			0.0013	1	1
Zinc			5.0	0.0030	1	1

MAC – Maximum Acceptable Concentrations

AO – Aesthetic Objective

IMAC – Interim Maximum Acceptable Concentrations

TOTAL MICROCYSTIN – RAW WATER

The Town of Kindersley is required to sample in the raw water at the water treatment plant following detection of significant algal blooms affecting the water intake. There was no significant algal blooms in 2019, the EPO is aware no testing was needed.

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

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