

**Drinking Water Quality and Compliance**  
**Town of Kindersley**  
**Station Number SK05GB0004**  
**2021 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, 2021 to December 31, 2021 time period. This report was completed on January 31, 2022. Readers should refer to the WSA's Municipal Drinking Water Quality Monitoring Guidelines 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	100	0
E. Coli	0 Organisms/100mL	104	100	0
Background Bacteria	Less than 200/100mL	104	100	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.

Two samples collected on February 23, 2021 were not tested by the lab because of a courier error. Two samples collected on November 16, 2021 were not tested by the lab because of a courier delay caused by extreme weather conditions. The EPO was notified of both instances.

**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	0.10 mg/L	0.50 – 1.67	104	104	104
Total Chlorine	0.50 mg/L	0.73 – 2.09	104	104	

A minimum of 0.10 milligrams per litre (mg/L) Free Chlorine residual **OR** 0.50 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	Minimum Limit (mg/L)	Range (mg/L)	# Tests Required	# Tests Performed	% Adequate Chlorine
Free Chlorine	0.30	0.49 – 2.46	365	1039	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.

**Town of Kindersley**

**TURBIDITY**

**Turbidity in Raw Water Entering the Water Treatment Plant**

Parameter	Limit (NTU)	Range (NTU)	# Tests Required	# Tests Performed	# Exceeding Limit
Turbidity	No Limit	0.36 – 167	38	363	0

Additional testing done for information purposes.

**Turbidity for Water Leaving the Filter**

**Filter #1**

Parameter	Limit (NTU)	Range (NTU)	95th Percentile	# Tests Required	# Tests Performed	# of Months Exceeding 95 <sup>th</sup> 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	0.02 – 0.19	0.03	Continuous	Continuous	0

**Filter #2**

Parameter	Limit (NTU)	Range (NTU)	95th Percentile	# Tests Required	# Tests Performed	# of Months Exceeding 95 <sup>th</sup> 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	0.03 – 0.27	0.05	Continuous	Continuous	0

**Filter #3**

Parameter	Limit (NTU)	Range (NTU)	95th Percentile	# Tests Required	# Tests Performed	# of Months Exceeding 95 <sup>th</sup> 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	0.02 – 0.19	0.04	Continuous	Continuous	0

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

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**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 – 0.86	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	Maximum Limit (mg/L)	Average (mg/L)	# Samples Required	# Samples Submitted
Total Trihalomethanes	0.100	0.022	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 HAA5 is a long term objective based on an annual average of seasonal samples.

Parameter	Maximum Limit (mg/L)	Average (mg/L)	# Samples Required	# Samples Submitted
Haloacetic Acids 5	0.080	0.009	4	4

**ULTRAVIOLET DOSAGE**

Parameter	Limit (%T)	Range (% T)	# Samples Required	# Samples Submitted	# Samples Less than Limit
Ultraviolet Transmittance	90	88.5 – 99.8	365	368	6

The EPO was made aware of the readings less than 90%, there was no concern with the low UV transmittance because of the sufficient Free Chlorine residual at the time. Additional testing done for informational purposes.

**MANGANESE (on-site testing)**

Parameter	Regulatory Limit	Aesthetic Objective (mg/L)	Average (mg/L)	# Tests Required	# Tests Submitted
Manganese	No Limit	0.05	0.02	18	364

Additional testing done for informational purposes.



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**FLUORIDE**

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

Parameter	Maximum Limit (mg/L)	Average (mg/L)	Maximum (mg/L)	# Samples Required	# Samples Submitted	# Exceeding Limit
Fluoride	1.50	0.43	0.95	365	366	0

Additional testing done for informational purposes.

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

Parameter	Maximum Limit (mg/L)	Average (mg/L)	Maximum (mg/L)	# Samples Required	# Samples Submitted	# Exceeding Limit
Fluoride	1.50	0.21	0.73	52	50	0

One fluoride sample collected on February 23, 2021 was not tested by the lab because of a courier error. One sample collected on November 16, 2021 was not tested by the lab because of a courier delay caused by extreme weather conditions. The EPO was notified of both instances.

**CHEMICAL – GENERAL**

The Town of Kindersley is required to submit water samples for the WSA's General Chemical category once every year.

Parameter	MAC	AO *	Sample Results	# of Samples Required	# of Samples Submitted
Total Alkalinity (mg/L)		500	163	1	1
Bicarbonate (mg/L)	No Objective		199	1	1
Calcium (mg/L)	No Objective		53	1	1
Carbonate (mg/L)	No Objective		<1	1	1
Chloride (mg/L)		250	20	1	1
Fluoride (mg/L)	1.5		0.24	1	1
Total Hardness (mg/L)		800	223	1	1
Hydroxide (mg/L)	No Objective		<1	1	1
Magnesium (mg/L)		200	22	1	1
Nitrate (mg/L)	45		1.10	1	1
pH (pH units)		7.0 – 10.5	7.62	1	1
Potassium (mg/L)	No Objective		2.9	1	1
Sodium (mg/L)		300	39	1	1
Specific Conductivity (µs/cm)	No Objective		609	1	1
Sulphate (mg/L)		500	120	1	1
Sum of Ions	No Objective		457	1	1
Total Dissolved Solids (mg/L)		1500	366	1	1

MAC – Maximum Acceptable Concentration

AO – Aesthetic Objective

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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 year.

Parameter	MAC (mg/L)	IMAC (mg/L)	AO (mg/L)	Sample Results (mg/L)	# of Samples Required	# of Samples Submitted
Aluminum	No Objective			0.024	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		0.06	1	1
Cadmium	0.005			<0.00001	1	1
Chromium	0.05			<0.0005	1	1
Copper			1.0	0.0013	1	1
Iron			0.3	0.0017	1	1
Lead	0.01			<0.0001	1	1
Manganese			0.05	0.0038	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	0.0017	1	1

MAC – Maximum Acceptable Concentrations  
 IMAC – Interim Maximum Acceptable Concentrations  
 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 CaCO<sub>3</sub>, magnesium, sodium and total dissolved solids) consider regional differences in drinking water sources and quality.

**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.

Parameter	Limit (mg/L)	Average (mg/L)	# Samples Required	# Samples Submitted
Microcystin	No Standard	<0.0001	1	1

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