

Drinking Water Quality and Compliance
Jackfish Lake West Water Utility Corporation
Station Number - SK05EG0282
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 Jackfish Lake West Water Utility Corporation 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 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	91	91	0
E. coli	0 Organisms/100 mL	91	91	0
Background Bacteria	Less than 200/100 mL	91	91	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 requirement for bacteriological sampling changed from one sample per week to two samples per week as of March 31, 2019. In consult with the EPO, SaskWater began sampling at a more representative location in the distribution system as of July 9, 2019.

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	0.76 – 1.49	91	91	91
Total Chlorine	0.5 mg/L	0.91 – 1.77	91	91	

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. 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.

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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 0.20	0.60 – 2.46	365	Continuous	100

Residuals are continuously monitored and recorded. Tests normally performed on a daily basis by waterworks operators are recorded in operation records.

TURBIDITY

Turbidity for Water Leaving the Filter

Parameter	Limit (NTU)	Range (NTU)	95 th Percentile (NTU)	# Tests Required	# Tests Performed	Exceeded 95% Limit
Turbidity	< 0.3 or 0.2 – 95% of measurements; not to exceed 0.3 or 0.2 for more than 12 consecutive hours; never >1.0	0.04 - 0.26	0.19	728	728	No

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	0.09 – 0.41	0	91	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). All waterworks are required to monitor turbidity at the water treatment plant. Multiple turbidity tests are done daily with a bench testing instrument, and recorded in operation records. Additional testing was done for informational purposes.

CHEMICAL – HEALTH

The Jackfish Lake Water Utility Corporation WTP is required to submit water samples for the WSA’s Chemical Health category once every 2 years. 2019 is not a required sampling year. The 2018 results are included for informational purposes.

Parameter	MAC (mg/L)	IMAC (mg/L)	AO * (mg/L)	2018 Sample Results (mg/L)	# of Samples Required	# of Samples Submitted
Aluminum		No Objective		0.017	0	0
Antimony	0.006			<0.0002	0	0
Arsenic	0.010			0.0001	0	0
Barium	1.0			0.057	0	0
Boron		5.0		0.04	0	0
Cadmium	0.005			<0.00001	0	0
Chromium	0.05			<0.0005	0	0
Copper			1.0	0.0012	0	0
Iron			0.3	0.0067	0	0
Lead	0.01			0.0001	0	0
Manganese			0.05	0.0010	0	0
Selenium	0.01			<0.0001	0	0
Silver		No Objective		<0.00005	0	0
Uranium	0.02			<0.0001	0	0
Zinc			5.0	0.0051	0	0

MAC – Maximum Acceptable Concentrations

AO – Aesthetic Objective

IMAC – Interim Maximum Acceptable Concentrations

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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	0.065	4	4

CHEMICAL – GENERAL

The Jackfish Lake Water Utility Corporation WTP is required to submit water samples for the WSA's General Chemical category once every second year. 2019 is not a required sampling year. The 2018 results are included for informational purposes.

Parameter	MAC	AO *	2018		
			Sample Results	# of Samples Required	# of Samples Submitted
Total Alkalinity (mg/L)		500	196	0	0
Bicarbonate (mg/L)	No Objective		239	0	0
Calcium (mg/L)	No Objective		65	0	0
Carbonate (mg/L)	No Objective		<1	0	0
Chloride (mg/L)		250	13	0	0
Fluoride (mg/L)	1.5		0.16	0	0
Total Hardness (mg/L)		800	251	0	0
Hydroxide (mg/L)	No Objective		<1	0	0
Magnesium (mg/L)		200	22	0	0
Nitrate (mg/L)	45		2.1	0	0
pH (pH units)		6.5 - 9.0	7.92	0	0
Potassium (mg/L)	No Objective		2.0	0	0
Sodium (mg/L)		300	34	0	0
Specific Conductivity (µs/cm)	No Objective		613	0	0
Sulphate (mg/L)		500	117	0	0
Sum of Ions	No Objective		493	0	0
Total Dissolved Solids (mg/L)		1500	386	0	0

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.

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

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