



**Drinking Water Quality and Compliance**  
**SaskWater Meadow Lake Potable Water Supply System**  
**2023 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 SaskWater Meadow Lake Potable Water Supply System water quality and sample submission compliance record for the January 1, 2023, to December 31, 2023, time period. This report was completed on February 1, 2024. 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**

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.

One sample collected for the week of October 22, 2023, was not able to be tested because of a delay by the delivery service. The Environment Officer was notified.

**WATER DISINFECTION**

**Chlorine Residual – From Test Results Submitted with Bacteriological Samples from WTP**

Parameter	Minimum Limit (either/or)	Range (mg/L)	# Tests Required	# Tests Submitted	# Adequate Chlorine
Free Chlorine	0.10 mg/L	0.67 – 1.74	52	52	52
Total Chlorine	0.50 mg/L	1.20 – 2.25	52	52	

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 is a result that indicates that the chlorine level is above the regulated minimum. 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)	Average (mg/L)	# Tests Required	# Tests Performed	% Adequate Chlorine
Free Chlorine	0.51	0.06 – 3.09	1.26	Continuous	Continuous	99.9

The free chlorine residual dropped below the required minimum on April 11, 2023, because of an equipment breakdown, and April 17, 2023, because of a new process being implemented. Measures are taken to avoid either incident happening again. There is ultraviolet (UV) disinfection as a secondary disinfection process. The Environment Officer was notified.

The free residual is continuously monitored and recorded. Tests routinely performed by waterworks operators are recorded in operation records.

**Meadow Lake Potable Water Supply System**

**TURBIDITY**

**Turbidity for Water Leaving the Filters**

**Filter #1**

Parameter	Limit (NTU)	Range (NTU)	95 <sup>th</sup> Percentile (NTU)	# Tests Required	# Tests Performed	# of Months Exceeding 95% 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	0.038 – 1.283	0.199	Continuous	Continuous	0

**Filter #2**

Parameter	Limit (NTU)	Range (NTU)	95 <sup>th</sup> Percentile (NTU)	# Tests Required	# Tests Performed	# of Months Exceeding 95% 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	0.033 – 1.265	0.196	Continuous	Continuous	0

**Filter #3**

Parameter	Limit (NTU)	Range (NTU)	95 <sup>th</sup> Percentile (NTU)	# Tests Required	# Tests Performed	# of Months Exceeding 95% 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	0.035 – 1.229	0.197	Continuous	Continuous	0

**Filter #6**

Parameter	Limit (NTU)	Range (NTU)	95 <sup>th</sup> Percentile (NTU)	# Tests Required	# Tests Performed	# of Months Exceeding 95% 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	0.028 – 1.240	0.179	Continuous	Continuous	0

**Filter #7**

Parameter	Limit (NTU)	Range (NTU)	95 <sup>th</sup> Percentile (NTU)	# Tests Required	# Tests Performed	# of Months Exceeding 95% 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	0.044 – 3.272	0.195	Continuous	Continuous	0

There was one instance where each filter exceeded the maximum limit of 1.0 NTU. Filter 1 on May 13, filter 2, 3, 6, 7 on April 10. The Environment Officer was notified.

**Meadow Lake Potable Water Supply System**

**Turbidity – From Test Results Submitted with Bacteriological Samples from the WTP**

Parameter	Limit (NTU)	Range (NTU)	# Tests Required	# Tests Performed	# Exceeding Limit
Turbidity	No standard	0.12 – 1.17	52	52	0

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

Parameter	Limit (NTU)	Range (NTU)	# Tests Required	# Tests Performed	# Exceeding Limit
Turbidity	No standard	1.09 – 12.8	52	365	0

Turbidity is a measure of water treatment efficiency. Turbidity measures the “clarity” of the drinking water and is reported in Nephelometric Turbidity Units (NTU). All waterworks are required to monitor turbidity at the water treatment plant. The turbidity is done routinely with bench testing instrument, as well as continuously with on-line analysers.

**pH (on-site testing)**

**For Water Entering the Distribution System**

Parameter	Regulatory Limit	Aesthetic Objective	Average	# Tests Required	# Tests Submitted
pH	No Limit	7.0 – 10.5	7.53	365	365

**CONDUCTIVITY (on-site testing)**

**For Water Entering the Distribution System**

Parameter	Limit	Range	# Tests Required	# Tests Submitted
Conductivity (µs/cm)	No Limit	53.9 – 777.7	365	365

**MANGANESE (on-site testing)**

**For Water Entering the Distribution System**

Parameter	Regulatory Limit	Aesthetic Objective (mg/L)	Average (mg/L)	# Tests Required	# Tests Submitted
Manganese	No Limit	0.05	0.03	52	364

Additional testing was done for informational purposes.

**Meadow Lake Potable Water Supply System**

**CHEMICAL – GENERAL**

SaskWater Meadow Lake Potable Water Supply System is required to submit samples for the WSA’s General Chemical category once per three months every year.

Parameter	MAC	AO *	Sample Results	# of Samples Required	# of Samples Submitted
Total Alkalinity (mg/L)		500	143	4	4
Bicarbonate (mg/L)	No Objective		175	4	4
Calcium (mg/L)	No Objective		34	4	4
Carbonate (mg/L)	No Objective		<1	4	4
Chloride (mg/L)		250	36	4	4
Fluoride (mg/L)	1.5		0.08	4	4
Total Hardness (mg/L)		800	163	4	4
Hydroxide (mg/L)	No Objective		<1	4	4
Magnesium (mg/L)		200	19	4	4
Nitrate (mg/L)	45		0.32	4	4
pH (pH units)		7.0 – 10.5	7.78	4	4
Potassium (mg/L)	No Objective		4.5	4	4
Sodium (mg/L)		300	15	4	4
Specific Conductivity (µs/cm)	No Objective		396	4	4
Sulphate (mg/L)		500	7.5	4	4
Total Dissolved Solids (mg/L)		1500	219	4	4

MAC – Maximum Acceptable Concentration

AO – Aesthetic Objective

**CHEMICAL – HEALTH**

SaskWater Meadow Lake Potable Water Supply System is required to submit water samples for the WSA’s Chemical Health category once per three months 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			0.0258	4	4
Antimony	0.006			<0.0002	4	4
Arsenic	0.01			0.0003	4	4
Barium	1.0			0.022	4	4
Boron		5.0		0.04	4	4
Cadmium	0.005			<0.00001	4	4
Chromium	0.05			<0.0005	4	4
Copper			1.0	0.0085	4	4
Iron			0.3	0.0008	4	4
Lead	0.01			0.0002	4	4
Manganese			0.05	0.0098	4	4
Selenium	0.01			<0.0001	4	4
Silver	No Objective			<0.00005	4	4
Uranium	0.02			<0.0001	4	4
Zinc			5	0.0061	4	4

MAC – Maximum Acceptable Concentration IMAC – Interim 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.

**Meadow Lake Potable Water Supply System**

**CHEMICAL – ORGANICS**

SaskWater Meadow Lake Potable Water Supply System is required to submit water samples for the WSA's Synthetic Organic category once every 2 years. 2023 is not a required sampling year. The 2022 results are included for informational purposes.

Parameter	MAC (mg/L)	IMAC (mg/L)	AO * (mg/L)	2022 Sample Results (mg/L)	# of Samples Required (2023)	# of Samples Submitted (2023)
Benzene	0.005			<0.0005	0	0
Benzo(a)pyrene	0.00001			<0.00001	0	0
Carbon tetrachloride	0.005			<0.002	0	0
Dichlorobenzene 1,2	0.2			<0.0005	0	0
Dichlorobenzene 1,4	0.005			<0.0005	0	0
Dichloroethane 1,2		0.005		<0.0005	0	0
Dichloroethylene 1,1	0.014			<0.0005	0	0
Dichloromethane	0.05			<0.0005	0	0
Dichlorophenol 2,4	0.9			<0.0002	0	0
Ethylbenzene			0.0016	<0.0005	0	0
Monochlorobenzene	0.080			<0.0005	0	0
Tetrachloroethylene	0.05			<0.0005	0	0
Tetrachlorophenol 2,3,4,6	0.10			<0.001	0	0
Toluene			0.024	<0.0005	0	0
Trichloroethylene	0.05			<0.0005	0	0
Trichlorophenol 2,4,6	0.005			<0.002	0	0
Vinyl Chloride	0.002			<0.0005	0	0
Xylene			0.02	<0.0005	0	0

MAC – Maximum Acceptable Concentrations

AO – Aesthetic Objective

IMAC – Interim Maximum Acceptable Concentrations

**CHEMICAL – PESTICIDES**

SaskWater Meadow Lake Potable Water Supply System is required to submit water samples for the WSA's Pesticide category once every 2 years. 2023 is not a required sampling year. The 2022 results are included for informational purposes.

Parameter	MAC (mg/L)	IMAC (mg/L)	2022 Sample Results (mg/L)	# of Samples Required (2023)	# of Samples Submitted (2023)
Atrazine		0.005	<0.0002	0	0
Bromoxynil		0.005	<0.002	0	0
Carbofuran	0.09		<0.0002	0	0
Chlorpyrifos	0.09		<0.0002	0	0
Dicamba	0.12		<0.001	0	0
2, 4-D		0.10	<0.001	0	0
Diclofop-methyl	0.009		<0.001	0	0
Dimethoate		0.02	<0.005	0	0
Malathion	0.19		<0.0002	0	0
MCPA	0.10		<0.001	0	0
Pentachlorophenol	0.06		<0.0005	0	0
Picloram		0.19	<0.001	0	0
Trifluralin		0.045	<0.0002	0	0

MAC – Maximum Acceptable Concentrations

IMAC – Interim Maximum Acceptable Concentrations

## Meadow Lake Potable Water Supply System

### MICROCYSTIN LR and/or TOTAL MICROCYSTIN TOXINS

The Meadow Lake Potable Water Supply System is required to sample for microcystin at the water treatment plant once every month during the algal bloom period.

Parameter	Maximum Limit (mg/L)	Maximum Result (mg/L)	# Samples Required	# Samples Submitted	# Exceeding Limit
Microcystin	0.0015	<0.0001	3	3	0

### GIARDIA AND CRYPTOSPORIDIUM – RAW WATER

SaskWater Meadow Lake Potable Water Supply System is required to sample from the raw water entering the water treatment plant for giardia & cryptosporidium semi-annually (early spring and fall) and following upsets or significant events that may affect raw water quality.

Parameter	Limit	Average (cysts or oocysts / 100 L)	# Samples Required	# Samples Submitted
Giardia	No Standard	0.0 (cysts)	2	2
Cryptosporidium	No Standard	0.0 (oocysts)	2	2

### RADIOLOGICAL

Gross alpha and beta activity is a measure of radioactivity within water. The activity is the frequency of release of alpha and beta particles after the nuclear decay of radionuclides. Should gross alpha or beta activity exceed a particular standard, further testing is required to identify the specific radionuclides present in water. Radionuclides can enter water from both natural sources and human activities.

Parameter	Limit (Bq/L)	Result (Bq/L)	# Samples Required	# Samples Submitted
Gross alpha	0.5	<0.08	1	1
Gross beta	1.0	0.18 +/- 0.03	1	1

### CYANIDE AND MERCURY

Mercury enters water supplies naturally and as a result of human activities. Cyanide can enter source waters as a result of industrial effluent or spill events. These substances may represent a long-term health risk if the Maximum Acceptable Concentration (MAC) is exceeded.

Parameter	Maximum Limit (mg/L)	Sample Results (mg/L)	# Samples Required	# Samples Submitted
Cyanide	0.2	0.002	1	1
Mercury	0.001	<0.000001	1	1

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

SaskWater  
200 - 111 Fairford Street East  
Moose Jaw SK S6H 1C8  
Toll Free: 1-888-230-1111  
Fax: 306-694-3207  
Email: [customerservice@saskwater.com](mailto:customerservice@saskwater.com)