



Northern Settlement of Missinipe
Drinking Water Quality and Compliance
Annual Notice to Consumers
2024

Introduction

The Water Security Agency and the Ministry of Environment require 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 Minister's Order or Permit to Operate a waterworks. The following is a summary of the **Northern Settlement of Missinipe** water quality and sample submission compliance record from January 1, 2024, to December 31, 2024. This report was completed on April 3, 2025. Readers should refer to the Water Security Agency's "Municipal Drinking Water Quality Monitoring Guidelines, June 2015, EPB 502" for more information on minimum sample submission requirements. Permit requirements for specific waterworks may require more sampling than outlined in the department's monitoring guidelines. If consumers need more information on the nature and significance of specific water tests, for example, "What is the significance of selenium in a water supply", more detailed information is available from: http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/index_e.html.

Water Quality Standards

Bacteriological Quality

Parameter/Location	Limit	Regular Samples Required	Regular Samples Submitted	# of Positive Regular Submitted (%)
Total Coliform	0 Organisms/100 mg/L	24	40	0%
E. coli	0 Organisms/100 ml	24	40	0%
Background Bacteria	Less than 200 Organisms/100 mL	24	40	0%

The owner/operator is responsible for ensuring that 100 percent of all bacteriological samples are submitted as required. 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 for Test Results Submitted with Bacteriological Samples

Parameter	Minimum Limit (mg/L)	Free Chlorine Residual Range	Total Chlorine Residual Range	# Tests Required	# Tests Submitted	# Adequate Chlorine (%)
Chlorine Residual	0.1 mg/L free OR 0.5 mg/L total	0.4- 0.9	0.67- 1.9	24	47	100%

A minimum of 0.68 milligrams per liter (mg/L) free chlorine residual ensures adequate 4 log virus inactivation OR 0.5 mg/L total chlorine residual is always required throughout the distribution system unless otherwise approved. A proper chlorine submission is defined as a bacteriological sample submission form filled out with both the free and total chlorine residual fields. Adequate chlorine is a result that indicates that the chlorine level is above the regulated minimum. Adequate chlorine may be counted even if the chlorine results were submitted incorrectly. A waterworks is required to submit chlorine residual test results on every bacteriological sample they submit.



Water Disinfection

Free Chlorine Residual for Water Entering Distribution System from Waterworks Records-From Water Treatment Plant Records

Parameter	Limit (mg/L)	Test Level Range	# Tests Performed	# Tests Not Meeting Requirements
Free Chlorine Residual	at least 0.68	0.51 – 2.1	366	1

A minimum of 0.68 milligrams per liter (mg/L) of free chlorine residual is required for water entering the distribution system. Tests are normally performed daily by the waterworks operator and are to be recorded in operational records. This data includes the number of free chlorine residual tests performed, the overall range of free chlorine residual (highest and lowest recorded values), and the number of tests and percentage of results not meeting the minimum requirement of 0.68 mg/L free chlorine residual.

Turbidity – From Water Treatment Plant Records

Parameter	Limit (NTU)	Test Level Range	# Tests Not Meeting Requirements	Maximum Turbidity (NTU)	# Tests Required	# Tests Performed
Turbidity	< 1.0	0.14 – 0.41	0	0.69	1 per day	364*

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. The frequency of measurement varies daily for small systems to continuous for larger waterworks. *The plant was shut down for upgrades for 2 days.

Chemical – Health Category

Samples for a chemical health analysis were submitted on **April 22, 2024**.

Parameter	Limit MAC (mg/L)	Limit IMAC (mg/L)	Sample Results	# Samples Exceeding MAC/IMAC	# Samples Required	# Samples Submitted
Arsenic	0.010		0.002	0	1	1
Barium	1.0		0.0191	0	1	1
Boron		5.0	<0.1	0	1	1
Cadmium	0.005		0.0015	0	0	1
Chromium	0.05		0.0019	0	1	1
Fluoride (avg.*)	1.5		0.09	0	1	1
Lead	0.01		<0.00007	0	1	1
Nitrate (avg.*)	45.0		0.5	0	1	1
Selenium	0.01		<0.00113	0	1	1
Uranium	0.02		0.0011	0	1	1



The health category includes analysis for arsenic, barium, boron, cadmium, chromium, fluoride, lead, nitrate, selenium, and uranium. Some waterworks will add fluoride to drinking water to aid in the prevention of dental decay. Substances within the chemical health category may be naturally occurring in drinking water sources or may be the result of human activities. These substances may represent a long-term health risk if the Maximum Acceptable Concentration (MAC) or Interim Maximum Acceptable Concentration (IMAC) is exceeded. All waterworks serving less than 5000 persons are required to submit water samples for SE's chemical health category once every two years.

General Chemical

Samples for a general chemical analysis were submitted on **April 22, 2024**.

Parameter	Aesthetic Objectives* (mg/L)	Sample Results (average)	# Samples Required	# Samples Submitted
Alkalinity	500	74.6	1	1
Bicarbonate	No Objective	91	1	1
Calcium	No Objective	18	1	1
Carbonate	No Objective	0	1	1
Chloride	250	17.5	1	1
Hardness	800	74	1	1
Magnesium	200	0.01	1	1
PH	No Objective	7.6	1	1
Sodium	300	13	1	1
Sulfate	500	6.5	1	1
Total dissolved solids	1500	156	1	1

All waterworks serving less than 5000 persons are required to submit water samples for SE's General Chemical category once every two years if a groundwater source or once per three months every second year if a surface water or blended surface/groundwater source. The General Chemical category includes analysis for alkalinity, bicarbonate, calcium, carbonate, chloride, conductivity, hardness (as CaCO₃), magnesium, sodium, sulfate, and total dissolved solids.

*Objectives apply to certain characteristics of 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 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.



Chemical – Trihalomethanes (THMs) and Halo acetic Acids (HAAs)

Parameter Limit IMAC (mg/L)	Sample Result (average)	# Samples Required	# Samples Submitted
Trihalomethanes (THMs) 0.1	.0662	4	4
Halo acetic Acids (HAAs) 0.080	.0601	3	3

THMs and Halo acetic Acids are generated during the water disinfection process as a by-product of reactions between chlorine and organic material. THMs are generally found only in drinking water obtained from surface water supplies. THMs and HAAs are to be monitored every quarter and the IMAC result is expressed as an average of 4 quarterly samples. Only water supplies derived from surface water or groundwater under the influence of surface water are required to monitor THMs and Halo acetic Acids unless otherwise specified in the facility's Permit to Operate.

Algal Toxins –Microcystin-LR

Date of last sample: August 30, 2022

Parameter	Limit MAC (mg/L)	Sample Results	# Samples Exceeding MAC	# Samples Required	# Samples Submitted
Microcystin LR	0.0015	<0.001	0	1	1

Microcystin LR is an algal toxin typically released following die-off on an algal bloom in a raw surface water supply. Samples should typically be collected and analyzed on a monthly basis during periods when algae bloom on reservoirs or other surface water sources.

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

Northern Municipal Trust Account
Northern Settlement of Missinipe
c/o District Public Works Manager
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