

Chapter 11

Government Relations—Providing Safe Drinking Water in Northern Settlements

1.0 MAIN POINTS

Access to safe drinking water is essential to the health and wellbeing of people living in seven northern settlements, which are unincorporated communities in the Northern Saskatchewan Administration District administered by the Ministry of Government Relations.^{1,2}

As of January 2024, the Ministry made some progress in improving its processes to provide safe drinking water to these seven northern settlements, but it still has more work to do.

We found the Ministry did not fully implement two recommendations—Uranium City continued to have an emergency boil water advisory in place and other northern settlements had drinking water systems requiring significant maintenance (e.g., water distribution lines leaking).

Since our last follow-up audit in 2021, the Ministry contracted with a third-party to install a new modular water treatment plant in Uranium City, which has had a precautionary drinking water advisory in place since May 2001, and an emergency boil water advisory in place since February 2015. The Ministry expects the plant to be in operation by summer 2024.

The Ministry completed upgrades to the Brabant Lake water treatment plant in 2023 resulting in the boil water advisory lifted for that settlement.

The Ministry improved the testing of drinking water samples as required by water system permits. It utilizes a third-party consultant to monitor the collection and submission of samples in accordance with the water system permit for each of the seven water systems. Our audit work found most sampling took place regularly as expected. For any tests missed, the Ministry provided additional training to the drinking water system operator to reduce the risk that future water sample tests are missed again.

The Ministry also leveraged its third-party consultant and hired a public works manager to supervise whether water system operators complete necessary maintenance activities (e.g., fix leaks, calibrate monitors). However, as of January 2024, three water treatment plants in the Northern Saskatchewan Administration District still required some significant maintenance.

Systematic testing of drinking water and ongoing maintenance are essential to reducing the risk of providing unsafe drinking water to northern settlement residents.

¹ The Ministry of Government Relations administers the northern settlements through its Northern Municipal Services Branch.

² The Northern Saskatchewan Administration District is a geographical area in northern Saskatchewan defined under *The Northern Municipalities Regulations*.



2.0 INTRODUCTION

2.1 Providing Safe Drinking Water to Northern Settlements

The Ministry of Government Relations is responsible for providing safe drinking water to Saskatchewan’s northern settlements.

The Ministry uses various water systems to provide drinking water to northern settlements. The Water Security Agency sets the provincial water quality and water system standards in *The Environmental Management and Protection Act, 2010*, and *The Waterworks and Sewage Works Regulations*. The Agency issues permits to the Ministry where the Ministry operates water systems to provide drinking water to northern settlements.

As shown in **Figure 1**, the Ministry owns and operates drinking water systems for five settlements, and it obtains drinking water for two settlements through contracts with First Nation communities.³

Figure 1—Drinking Water Systems for Northern Settlements at January 2024

Northern Settlement	Estimated Population and Dwellings ^A	Type of Drinking Water Delivery System to Residents
Ministry-owned Water Systems		
Bear Creek	45	The Ministry transports drinking water from its water treatment plant at Bear Creek to residents' homes
Brabant Lake	27	Residents contract with a private company to transport drinking water from the Ministry's water treatment plant at Brabant Lake to residents' homes
Missinipe	27	Ministry pipeline distribution from the Ministry's water treatment plant at Missinipe to residents' homes
Sled Lake	24	Ministry pipeline distribution from the Ministry's water treatment plant at Sled Lake to residents' homes
Uranium City	91	Ministry pipeline distribution from the Ministry's water treatment plant at Uranium City to residents' homes
First Nation-owned Water Systems with Ministry Contracts		
Stanley Mission	104	Ministry pipeline distribution from nearby First Nation water treatment plant to off-reserve northern settlement residents' homes
Wollaston Lake	96	Ministry pipeline distribution from nearby First Nation water treatment plant to off-reserve northern settlement residents' homes

Source: Ministry of Government Relations' records.

^A Estimated permanent population information from Government of Canada 2021 Census data. www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (5 March 2024).

The Minister of Government Relations functions as the municipal council for each of the northern settlements.⁴ As the municipal council for each settlement, the Ministry must work within the legislative framework established for drinking water.

³ Other northern settlements that do not have water systems were outside the scope of our audit and follow-ups.

⁴ The Minister's responsibilities are set out in *The Northern Municipalities Act, 2010*.

2.2 Focus of Follow-Up Audit

This chapter describes our fourth follow-up audit of management's actions on the recommendations we originally made in 2012.⁵

Our *2012 Report – Volume 1*, Chapter 12, concluded that the Ministry of Government Relations did not have effective processes to provide safe drinking water to seven northern settlements in the Northern Saskatchewan Administration District for the period September 1, 2011, to March 31, 2012. By March 2021, the Ministry implemented six out of 10 original recommendations.

To conduct this audit engagement, we followed the standards for assurance engagements published in the *CPA Canada Handbook—Assurance* (CSAE 3001). To evaluate the Ministry's progress toward meeting our recommendations, we used the relevant criteria from the original audit. Ministry management agreed with the criteria in the original audit.

To carry out our follow-up audit, we examined management records relating to maintaining water systems used to provide drinking water, tested a sample of water quality test results, examined related monitoring activities, and reviewed other supporting documentation. We also interviewed relevant Ministry staff and management responsible for the provision of drinking water to northern settlements.

3.0 STATUS OF RECOMMENDATIONS

This section sets out each recommendation including the date on which the Standing Committee on Public Accounts agreed to the recommendation, the status of the recommendation at January 31, 2024, and the Ministry of Government Relations' actions up to that date.

3.1 Progress Made in Lifting Remaining Boil Water Advisories

We recommended the Ministry of Government Relations take prompt action to address problems in providing safe drinking water to northern settlements. (*2012 Report – Volume 1*, p. 122, Recommendation 10; Public Accounts Committee agreement January 13, 2014)

Status—Partially Implemented

The Ministry of Government Relations has developed strategies to supply safe drinking water to dwellings in the seven northern settlements listed in **Figure 1** and was in the process of fully implementing those strategies at January 2024.

Two northern settlements continued to have safe drinking water issues at the time of our last follow up in 2021—Uranium City and Brabant Lake. Since then, the Ministry upgraded the water treatment plant in Brabant Lake resulting in the boil water advisory for that community lifted in 2023.

⁵ *2012 Report – Volume 1*, Chapter 12, pp. 111–125; *2016 Report – Volume 1*, Chapter 24, pp. 257–267; *2019 Report – Volume 1*, Chapter 25, pp. 263–271; and *2021 Report – Volume 1*, Chapter 15, pp. 189–197.



The Water Security Agency issued a precautionary drinking water advisory for Uranium City in May 2001, and the Saskatchewan Health Authority issued an emergency boil water advisory in February 2015. As at January 31, 2024, this emergency boil water advisory remained in place.^{6,7,8} The advisory noted that the Uranium City water treatment plant has inadequate disinfection residual in the distribution system with E.coli detected in the drinking water system.^{9,10}

Since our last follow up in 2021, the Ministry contracted with a third-party to install a new modular water treatment plant in Uranium City. Significant construction has already taken place and system training for operators has occurred. The Ministry expects the plant to be in operation by summer 2024. Once in operation, the Ministry will require final testing, but it expects this new treatment plant to address the outstanding boil water advisory in Uranium City.

With respect to other northern settlements, the Ministry systematically monitors the trihalomethane levels for each water system and tracks when they are over the maximum allowable limits.¹¹ During our audit period, no northern settlements exceeded these maximum allowable limits.

Taking prompt corrective action to resolve drinking water quality issues is essential to ensure the safety of water consumed by northern settlement residents.

3.2 Drinking Water Tests Completed Regularly

We recommended the Ministry of Government Relations test drinking water samples and document the results as required by its water system permits issued by the Water Security Agency (previously issued by the Ministry of Environment). (2012 Report – Volume 1, p. 120, Recommendation 7; Public Accounts Committee agreement January 13, 2014)

Status—Intent of Recommendation Met

The Ministry of Government Relations received regular test results for drinking water samples at each of the seven water treatment plants we tested. For any tests not submitted, the Ministry, along with its consultant, provided training and suggested procedures to the water treatment plant operators to rectify the issue.

Drinking water permits issued by the Saskatchewan Water Security Agency require operators of these systems to regularly test the quality of the drinking water to ensure its safety.

⁶ The Water Security Agency issues precautionary drinking water advisories where drinking water quality problems may exist, but an immediate public health threat has not been identified. Under a precautionary drinking water advisory, water must be boiled before it is used for drinking purposes, or used for other activities where it could be consumed, such as brushing teeth, dishwashing or washing produce. The Ministry of Environment publicly lists all active advisories: www.saskatchewan.ca/residents/environment-public-health-and-safety/environmental-health/water-and-wastewater-management/advisories-and-warnings (11 March 2024).

⁷ The Saskatchewan Health Authority issues emergency boil water advisories when a confirmed threat to public health exists (i.e., microbial contamination).

⁸ The Ministry of Government Relations assumed responsibility for the water system in Uranium City in 1984.

⁹ waterquality.saskatchewan.ca/GoCReports/EnvActive.pdf (11 March 2024).

¹⁰ E. coli is a group of bacteria that can cause infections in a person's gut, urinary tract and other parts of the body publications.saskatchewan.ca/#/products/114884 (11 March 2024).

¹¹ Trihalomethanes includes chloroform, bromodichloromethane, dibromochloromethane, and bromoform that forms when chlorine (used to disinfect) reacts with naturally occurring organic compounds present in water. Consuming more than the maximum acceptable concentration of total trihalomethanes can increase cancer risk, particularly of colorectal cancer in humans.

For 109 drinking water tests examined, we found all daily, weekly, monthly and bi-annual water quality tests completed in accordance with the related permit. This is an improvement from the results of our previous follow-up audit where 5% of weekly tests our Office tested were not conducted in accordance with related permits.

However, as shown in **Figure 2**, our testing did note seven instances where documenting or completing water quality tests for twice monthly and quarterly water quality tests were not completed in accordance with the related permit. Our testing found:

- 25% of twice monthly (4 of 16) water tests were not completed in accordance with the related permit (2021 follow-up audit: no exceptions noted)
- 38% of quarterly tests (3 of 8) were not completed in accordance with the related permit (2021 follow-up audit: 14% not completed in accordance with permit)

Figure 2—Provincial Auditor Analysis of Drinking Water Test Results January 1, 2023, to January 31, 2024

Required Water Quality Tests (per Permit)	Required Frequency of Tests (per Permit)	Provincial Auditor Test Results of Permit Samples for each Water System
Turbidity and Chlorine	Various (daily, weekly, twice monthly, monthly)	All tests we examined completed as required except: - 4 of 16 twice monthly tests not completed at Wollaston Lake water treatment plant (First Nations' owned and operated)
Bacteria	Various (weekly, twice monthly, monthly)	All tests we examined completed as required except: - 4 of 16 twice monthly tests not completed at Wollaston Lake water treatment plant (First Nations' owned and operated)
Chemical (general)	Once every 2 years (except for Uranium City, which requires quarterly testing)	All tests we examined completed as required. Uranium City test results we examined showed abnormal results relating to chlorine levels.
Chemical (health)	Once every 2 years	All tests we examined completed as required
Trihalomethanes ^A and Haloacetic Acid ^B	Quarterly	All tests we examined completed as required except: - 1 of 2 Haloacetic and Trihalomethane tests not completed at Stanley Mission water treatment plant (operated by First Nations community) - 2 of 2 tests of both Haloacetic Acid and Trihalomethanes tests not completed at Uranium City water treatment plant (Ministry owned and operated)

Source: Individual water system operating permits and the Office of the Provincial Auditor of Saskatchewan's testing results. Shaded rows highlight where certain tests were missed by the operator.

^A Trihalomethanes include chloroform, bromodichloromethane, dibromochloromethane, and bromoform that forms when chlorine reacts with naturally occurring organic compounds present in water.

^B Haloacetic acids refer to the total of monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid and dibromoacetic acid that forms when chlorine reacts with organic matter and small amounts of bromide present in water.

The Water Security Agency monitors the Ministry of Government Relations' compliance with completing water testing, as well as communicates and reports abnormal test results and findings (such as significant concerns with the completion of water testing) to the public.



We found the results of testing noted in **Figure 2** consistent with findings in publicly available 2023 inspection reports.¹² For example:

- The Agency's July 12, 2023, inspection report indicated the Uranium City water treatment plant had instances where the Ministry did not always notify the Agency of abnormal test results (e.g., low chlorine levels as noted in **Figure 2**). This is consistent with **Section 3.1** above where a boil water advisory remains in place at Uranium City.

Ministry management was aware of these missed tests and took corrective action to address the missed tests. It indicated these missed tests were mostly due to human error. The Ministry conducted mandatory training, through its consultant, for the operators of these water treatment plants so they better understand the testing required at each location and to reduce the risk of missing these tests in the future. None of the missed tests had an adverse impact on the health and safety of the communities affected or on the permit to operate at these locations.

Completing all drinking water tests that permits require is essential to ensure the safety of drinking water consumed by northern settlement residents.

3.3 Water System Maintenance Improving

We recommended the Ministry of Government Relations consistently carry out all required maintenance for its water systems. (2012 Report – Volume 1, p. 117, Recommendation 4; Public Accounts Committee agreement January 13, 2014)

Status—Partially Implemented

We recommended the Ministry of Government Relations document its monthly supervision of maintenance carried out on its water systems to evidence that all required maintenance is occurring. (2012 Report – Volume 1, p. 118, Recommendation 5; Public Accounts Committee agreement January 13, 2014)

Status—Implemented

The Ministry of Government Relations sufficiently supervises water system maintenance and monitors such maintenance. However, high-priority maintenance like repairing leaks in water distribution lines was not completed in a timely manner in some instances.

The Ministry bases its maintenance expectations on the advice of its third-party infrastructure management consultant. Since our last follow-up audit, the Ministry also contracted this consultant to provide supervision of water systems and to monitor whether operators conduct the required maintenance for each water system.

The consultant reviews the maintenance records prepared by operators of Ministry-owned and operated water systems during site visits (twice a year) to ensure good records are present at all drinking water facilities.

¹² Inspection reports by community available at: waterquality.saskatchewan.ca/DrinkingWater (6 March 2024).

As described in **Figure 3**, the Ministry uses various processes to supervise maintenance of the five Ministry-owned and operated water systems, and the two water systems operated by First Nation communities. Key aspects of its processes include receipt of bi-annual reports from consultants on the condition of each water system and periodic inspection reports from its regulator—the Water Security Agency.

Figure 3—Processes to Supervise Maintenance of Water Systems

- For both types of water distribution systems, the Ministry engages an infrastructure management consultant to prepare bi-annual reports on the condition of each water system. The Ministry is to review these reports along with annual regulatory inspection reports of the Water Security Agency. These regulatory inspection reports of the Agency and consultant report on the condition of each of water distribution system.^A
- For First Nations' owned and operated water distribution systems, the Ministry, through its contract with each First Nation community, makes the relevant First Nation communities responsible for all normal maintenance of these systems. The Ministry does not receive detailed maintenance records to show whether the operator conducts maintenance on these systems. Instead, Ministry staff review the twice annual consultant reports to monitor each community's completion of maintenance.
- For Ministry-owned water systems, the Ministry engages its consultant to review the detailed maintenance records of the water systems and report twice annually in their consultant reports. Ministry staff review these consultant reports to determine whether each operator completed proper maintenance.

Source: Adapted from Ministry of Government Relations' information.

^A Inspection reports available at: waterquality.saskatchewan.ca/DrinkingWater (11 March 2024).

For both types of water systems (i.e., Ministry-owned and First Nations' owned and operated), our testing found the reports the Ministry received and reviewed during 2023 showed maintenance completed. The Ministry also completed adequate follow-up as required.

For the 2023 reports of each of the five Ministry-owned systems and two contracted First Nation community-owned systems, we found:

- The consultant's 2023 reports for three of seven northern settlement water systems showed some persistent urgent maintenance issues continued from the first report to the second report of 2023. For example, repairs to leaks in water distribution lines were not fixed in a timely manner, which can have an adverse effect on both water quality and supply.

This indicates that operators may not always complete important maintenance on a timely basis as expected. One of these maintenance issues was first reported in September 2020, as something that needed to be addressed "as soon as possible," but still remained incomplete on January 31, 2024.

Our testing did find the Ministry rectifying certain urgent maintenance issues (e.g., installing a spare pump, replacing a check valve) during the year, but it needs to reduce the time it takes to complete all urgent items.

- The consultant's 2023 reports for all seven northern settlement water systems also showed persistent minor maintenance issues that continued from the first report to the second report of 2023. These minor items included calibrating monitors and repairing berm damage on a lagoon storage cell.



- The Water Security Agency's 2023 inspection reports for these northern settlement water systems also cited some minor maintenance issues (e.g., pipe requiring additional sealant, water meters installed but not yet inspected).

In addition, the 2023 Water Security Agency inspection report on Uranium City's water system cited minor issues with completion of maintenance at the water treatment plant. For example, the inspection report indicated that the current water reservoir hatch was not watertight and expected it to be replaced with an aluminum hatch.

The Ministry noted it expects to address outstanding maintenance concerns at Uranium City with the completion of the new water treatment plant underway to address the long-standing drinking water concerns at Uranium City (see **Section 3.1**).

The Ministry also hired a public works manager who began piloting the use of a digital maintenance application in 2023 available to both operators and Ministry staff. The application logs and tracks maintenance in real-time which allows the Ministry to better monitor if, and when, operators conduct key maintenance activities at the water treatment plants.

Not completing maintenance in a timely manner increases the risk that water quality and water supply to northern settlements could be adversely affected.