

Chapter 15 Government Relations—Providing Safe Drinking Water in Northern Settlements

1.0 MAIN POINTS

Access to safe drinking water is essential to the health and well-being of northern settlements. Northern settlements are unincorporated communities in the Northern Saskatchewan Administration District that the Ministry of Government Relations administers.^{1,2}

As of March 2021, the Ministry made some progress in improving its processes relating to providing safe drinking water to Saskatchewan's northern settlements, but it has more work to do.

The Ministry began implementing strategies to resolve significant drinking water quality issues for the northern settlements of Uranium City and Brabant Lake, outstanding since 2001 and 2018, respectively. At March 2021, the Ministry was in the process of securing \$1.7 million of funding for upgrades to the Uranium City water treatment plant. It was actively upgrading Brabant Lake's water treatment facility with further upgrades planned. It estimates the Brabant Lake upgrades to cost \$1.5 million.

The Federal Government, on behalf of the Lac La Ronge Indian Band, is upgrading the water system that supplies Stanley Mission, a northern settlement with trihalomethane levels exceeding maximum allowable limits.³ The Ministry is providing funding of approximately \$1.1 million for this project. At March 2021, the construction of this upgrade was approximately 80 percent complete. The Ministry estimates the Stanley Mission upgrades to cost a total of \$13.8 million.

However, the Ministry continues not to consistently test drinking water samples as required by its water system permits. In addition, it does not always complete water system maintenance nor properly supervise whether water system operators complete maintenance activities as expected. Systematic testing of drinking water and ongoing maintenance are essential to reducing the risk of providing unsafe drinking water.

2.0 INTRODUCTION

2.1 Providing Drinking Water to Northern Settlements

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

¹ The Ministry administers the northern settlements through the Northern Municipal Services branch of the Ministry.

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

³ Trihalomethanes are formed when chlorine, which is generally used for disinfections, reacts with naturally occurring organic compounds present in water. Consuming more than the maximum acceptable concentration for total Trihalomethanes increases the cancer risk, particularly of colorectal cancer in humans. www.saskh20.ca/pdf/epb211b.pdf (24 March 2021).



The Ministry uses various water systems to provide drinking water to northern settlements. As shown in **Figure 1**, it owns and operates water systems for five settlements, and it obtains drinking water for two settlements through contracts with First Nations communities.⁴

Figure 1—Drinking Water Systems for Northern Settlements at March 2021

Northern Settlement	Dwellings Served	Type of Water Delivery System of Drinking Water to Dwellings (i.e., to residents)
Ministry-owned Water Systems		
Bear Creek	18	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	56	Ministry pipeline distribution from the Ministry's water treatment plant at Missinipe to residents' homes.
Sled Lake	27	Ministry pipeline distribution from the Ministry's water treatment plant at Sled Lake to residents' homes.
Uranium City	74	Ministry pipeline distribution from the Ministry's water treatment plant at Uranium City to residents' homes.
Ministry Contracts with First Nations Communities that Own Water Systems		
Stanley Mission	28	Ministry pipeline distribution from nearby First Nations community's water treatment plant to off-reserve northern settlement residents' homes.
Wollaston Lake	26	Ministry pipeline distribution from nearby First Nations community's water treatment plant to off-reserve northern settlement residents' homes.

Source: Ministry of Government Relations' records.

The Minister of Government Relations functions as the municipal council for each of the northern settlements.⁵ As the municipal council for each of the northern settlements, the Ministry must work within the legislative framework established for drinking water.

Section 4.0 describes Provincial Government agencies with varied responsibilities for drinking water in Saskatchewan. For example, the Water Security Agency uses provincial water quality and water system standards under *The Environmental Management and Protection Act, 2010*. The Agency issues permits to the Ministry where the Ministry operates water systems to provide drinking water to northern settlements (see **Figure 1**).

2.2 Focus of Follow-Up Audit

This chapter describes our third follow-up audit of management's actions on the recommendations we made in 2012.⁶

⁴ There are additional northern settlements, however, since they do not have water systems, they were outside the scope of our audit and follow-up.

⁵ The Minister's responsibilities are set out in *The Northern Municipalities Act, 2010*.

⁶ *2012 Report – Volume 1*, Chapter 12, pp. 111–125.

Our *2012 Report – Volume 1*, Chapter 12 concluded that the Ministry did not have effective processes to provide safe drinking water to seven northern settlements in the Northern Saskatchewan Administration District. By September 2018, the Ministry implemented six out of the ten original recommendations.⁷

To conduct this audit, we followed the standards for assurance engagements published in the *CPA Canada Handbook – Assurance* (CSAE 3001). To evaluate the Ministry's progress towards meeting our recommendations, we used the relevant criteria from the 2012 audit. The Ministry agreed with the criteria in the 2012 audit.

In performing this follow-up audit, we examined management records relating to maintaining water systems used to provide drinking water, tested samples 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 March 5, 2021, and the Ministry's actions up to that date.

3.1 Solutions to Provide Quality Drinking Water Options to Northern Settlements Developed

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, as part of its responsibility as the municipal council, developed strategies to supply quality drinking water to dwellings in the seven northern settlements listed in **Figure 1** and is in the process of implementing those strategies.

At March 2021, the following two northern settlements have long standing drinking water advisories:

- **Uranium City since May 2001:** The Water Security Agency issued a precautionary drinking water advisory for Uranium City in May 2001, and an emergency boil water advisory in February 2015; those advisories continue at March 2021.^{8,9}

⁷ 2019 Report – Volume 1, Chapter 25, pp. 263–271.

⁸ 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 fruits and vegetables. A listing of these orders and advisories are publicly available on the SaskH2O website at www.saskh2o.ca/advisories.asp. (30 March 2021).

⁹ The Saskatchewan Health Authority issues emergency boil water orders when a confirmed threat to public health exists (i.e., microbial contamination).



The advisories note the Uranium City water treatment plant lacks minimum water treatment processes, and there is inadequate disinfection residual in the distribution system with E.coli detected in the drinking water system.^{10,11,12}

- **Brabant Lake since October 2018:** The Water Security Agency issued a precautionary drinking water advisory in October 2018 for Brabant Lake due to equipment failure or damage.¹³

Also, since 2017, one northern settlement (Stanley Mission) has, at times, trihalomethane levels that exceed maximum allowable limits.¹⁴

With respect to Uranium City: Since our 2018 follow-up audit, the Ministry determined its strategy to address the long-standing drinking water concerns in Uranium City. The Ministry's strategy has two stages.

- Its first stage was to upgrade Uranium City's water distribution and sewer systems to improve the systems' performance and reliability. The Ministry completed these upgrades in August 2017.
- Its second stage is to update Uranium City's water treatment plant to address the outstanding water advisories. In early 2020, the Ministry engaged an engineering firm to develop a scope of work for necessary water treatment plant upgrades. It estimates the upgrades will cost \$1.7 million.
- At March 2021, the Ministry is in the process of securing funding for these upgrades. It hopes to obtain federal-provincial funding under the Investing in Canada Infrastructure Program, and is also considering other funding options.¹⁵

With respect to Brabant Lake: Since our 2018 follow-up audit, the Ministry determined its strategy to address the drinking water concerns in Brabant Lake. The Ministry's strategy has three stages.

- Its first stage was to drill new ground wells to facilitate an upgraded water treatment system. In 2020, the Ministry drilled two new ground wells.
- Its second stage is to upgrade the control system in the water treatment facility.¹⁶ In March 2021, the Ministry awarded a supplier contract for upgrading this system at an estimated cost of \$115 thousand. It expects this upgrade to be completed by June 2021.

¹⁰ www.saskh20.ca/reports/GOC/EnvActive.pdf (30 March 2021).

¹¹ The Ministry assumed responsibility for the water system in Uranium City in 1984. The system was initially built for a much larger population. Ministry records indicate there are 74 dwellings in Uranium City as at September 2018. The Ministry notes the system is expensive to maintain and operate.

¹² E. coli is a bacteria that can make people sick.

¹³ www.saskh20.ca/reports/GOC/EnvActive.pdf (30 March 2021).

¹⁴ Trihalomethanes are formed when chlorine, which is generally used for disinfections, reacts with naturally occurring organic compounds present in water. www.saskh20.ca/pdf/epb211b.pdf (24 March 2021).

¹⁵ The Provincial Government enters into various federal-provincial infrastructure funding agreements. The Investing in Canada Infrastructure Program is one of these funding agreements that finances infrastructure projects expected to provide various benefits to the province, including improvements to drinking water.

¹⁶ Control systems at water treatment facilities are automated systems used to control the flow of water through mechanical and chemical processes to prepare water for residential, commercial and industrial use.

- Its third stage is to further upgrade the water treatment facility at an estimated cost of \$1.0 million. At March 2021, the Ministry is in the detailed design stage, and expects to tender this project in April 2021, with completion expected in 2021–22.

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. Since 2017, Stanley Mission is the only northern settlement to exceed the maximum allowable limits. The Ministry, in coordination with the First Nation community responsible for the water system and the Federal Government, are in the process of upgrading the water system to address this issue. As of March 2021, the construction of the upgrade was approximately 80 percent complete.

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

3.2 Not Consistently Completing All Required Drinking Water Tests

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—Partially Implemented

The Ministry of Government Relations does not consistently test and document the results of testing drinking water samples as required issued drinking water system permits.

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 it is safe to drink. Permits set out both the frequency and types of water quality tests required—required water quality tests vary for each water treatment plant.

For 304 drinking water tests examined, we found all daily, bi-monthly, monthly and bi-annual water quality tests were completed in accordance with the related permit. This is an improvement from the results of our 2018 follow-up audit where 1.4 percent of daily and 25 percent of bi-monthly tests were not completed in accordance with related permits (no exceptions noted for monthly and bi-annual).

However, for 304 drinking water tests examined, and as shown in **Figure 2**, our testing noted various deficiencies in documenting or completing water quality tests. We found:

- Five percent of weekly water tests were not completed in accordance with the related permit (2018 follow-up audit: no exceptions noted).
- Fourteen percent of quarterly tests were not completed in accordance with the related permit (2018 follow-up audit - ten percent not completed in accordance with permit).

Management indicated these missed tests were due to human error and travel restrictions due to the COVID-19 pandemic.

**Figure 2—Provincial Auditor Review of Drinking Water Test Results January 1, 2020 to December 31, 2020^A**

Required Water Quality Tests (per Permit)	Required Frequency of Tests (Per Permit)	Provincial Auditor Results of Testing of Sample of Permits for each Water System
Turbidity and Chlorine	Various (daily, weekly, every 2 weeks, monthly)	All tests we examined were completed as required
Bacteria	Various (weekly, every 2 weeks, monthly)	All tests we examined were completed as required except: <ul style="list-style-type: none"> - 3 of 52 weekly tests were not completed at Stanley Mission (First Nations community operated)
Chemical (general)	Every 2 years (either once or quarterly)	All tests we examined were completed as required
Chemical (health)	Once every 2 years	All tests we examined were completed as required
Trihalomethanes ^A (new permit requirement since December 2015) and Haloacetic Acid ^B	Quarterly	All tests we examined were completed as required except: <ul style="list-style-type: none"> - 1 of 4 Haloacetic tests was not completed at Missinipe (ministry-owned and operated) - 2 of 4 of both Trihalomethanes and Haloacetic tests was not completed at Stanley Mission (First Nations community operated)

Source: Individual water system operating permits and provincial auditor testing results.

Shaded rows highlight where not all required tests were done

^ATrihalomethanes includes chloroform, bromodichloromethane, dibromochloromethane, and bromoform. Formed when chlorine (used to disinfect) 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. Formed when chlorine (used to disinfect) reacts with organic matter and small amounts of bromide present in water. www.sask20.ca/PDF-WaterCommittee/HaloaceticAcids.pdf (1 April 2021).

The Water Security Agency monitors the Ministry's compliance with completing water testing and communicating abnormal test results, and reports its findings (such as significant concerns with operators' completion of water testing) to the public.

We found the results of testing noted in **Figure 2** were consistent with findings in the Agency's publicly available 2020 inspection reports. For example:

- The Agency's August 13, 2020 inspection report indicates that Wollaston Lake missed four of ten required bacteria tests since their last inspection on March 31, 2020. The Ministry indicated this was due to flight cancellations. The Agency also identified a number of days where chlorine levels for Wollaston Lake were below the range approved by the Agency.

In discussions with officials of the Agency, they informed us the combination of low chlorine levels and missed bacteria testing is a public safety concern as the Ministry may not identify water contaminated with bacteria (e.g., E.coli) in a timely manner.

- The Agency identified two northern settlements—one with ministry-owned and operated water systems (Uranium City) and one with a First Nations community

operated water system (Wollaston Lake)—where the Ministry did not always notify the Agency of abnormal test results (e.g., low chlorine levels).¹⁷

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

3.3 Maintenance and Maintenance Records Not Always Complete

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—Partially Implemented

The Ministry of Government Relations did not consistently complete maintenance nor document its completion and monitoring of maintenance carried out on each of its water systems.

The Ministry bases its maintenance expectations on the advice of an infrastructure management consulting company.¹⁸ It provides operators of ministry-owned and operated water systems with maintenance logs to help them document maintenance completed.

The Ministry supervises the maintenance of water systems to know if the required maintenance is consistently carried out for its water systems. 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 Nations communities. Key aspects of its processes include receipt of bi-annual reports from consultants on the condition of each water system, monthly maintenance logs, 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 of the water systems. The Ministry is to review these along with periodic regulatory inspection reports of the Water Security Agency. These regulatory inspection reports occur annually or bi-annually and contain information on the condition of each of its distribution systems.^A
- For First Nations owned and operated water distribution systems, the Ministry, through its contract with each First Nations community, makes the relevant First Nations communities responsible for all normal maintenance of these systems. The Ministry does not receive detailed maintenance records (logs) to show

¹⁷ Inspection reports are available at www.saskh2o.ca/mydrinkingwater.asp (30 March 2021) under view inspections.

¹⁸ Since 2003, the Ministry uses an infrastructure management consulting company with expertise in water operations to help it determine the required maintenance for each water system. The consultant gave the Ministry information on each maintenance task to complete, and the required frequency of completion (e.g. daily, monthly). The consultant also helped the Ministry design maintenance logs to document completed maintenance. The Ministry uses those logs and periodic inspection reports to monitor maintenance completed on water systems.



whether maintenance is done on these systems. Instead, the Ministry staff review the aforementioned bi-annual consultant reports to monitor each community's completion of maintenance.

- For ministry-owned water systems, the Ministry requires water system operators in the northern settlements to submit monthly maintenance logs to the Ministry's Northern Municipal Services area. Northern Municipal Services staff are to review and initial water system maintenance logs at least monthly to help determine whether each operator completed proper maintenance.

Source: Provincial Auditor Saskatchewan based on information provided by the Ministry.

[^] Inspection reports are available at www.saskh2o.ca/mydrinkingwater.asp (30 March 2021)

For both types of water systems, our testing found, consistent with our 2018 follow-up audit, the reports the Ministry received and reviewed during 2020 showed the maintenance was not always done as expected.

For 2020 reports for each of the five northern settlements and for the two contracted First Nation community-owned systems, we found:

- The consultant's 2020 reports for six of the seven settlements showed at least some findings continued from the first report of 2020 to the second report, which indicates the operators may not always complete maintenance on a timely basis as expected. The report also indicated significant outstanding maintenance at Stanley Mission (i.e., replace a light source to obtain accurate readings on water turbidity) and Uranium City (e.g., repair or replace valve to ensure continued water quality and supply).

Management indicated that in some cases they did not complete the maintenance recommended in the consultant's report as the maintenance applied to a piece of the water system the Ministry planned to take out of service (e.g. raw water pump house).

- The Water Security Agency 2020 regulatory inspection reports for other settlements cited minor maintenance issues (e.g., filter not operating appropriately, pipe requiring additional sealant, water quality meters not checked to appropriate standards on a monthly basis). In addition, the Agency's 2020 inspection reports on the Uranium City water system cites issues with completion of maintenance at the water treatment facility. For example, the September 2020 Water Security Agency inspection report indicated that the majority of the floor drains within the water system building did not work properly.

The Ministry noted it expected to address outstanding maintenance at Uranium City in conjunction with its strategy to address the long-standing drinking water concerns (see **Section 3.1**).

For ministry-owned water systems, we found the Ministry did not have complete records to show it completed maintenance for three of five of its water systems. We found:

- It was missing maintenance logs for one water system (Missinipe).
- It kept only partial records for two water systems (Bear Creek and Uranium City). Bear Creek ran out of the templates for maintenance logs after May 2020 and did not request additional logs to continue documenting maintenance. Uranium City had a new operator between May and November 2020; who was not properly trained to complete the logs as expected.

In addition, Ministry staff did not always document their review of maintenance logs. We found staff did not document their review of the Bear Creek logs that the Ministry received. While it kept expected maintenance logs for the other two settlements (i.e., Brabant Lake and Sled Lake), Ministry staff did not consistently document their review of them.

Not having consistent and timely maintenance increases the risk of water systems not working effectively and increases the risk of providing unsafe drinking water to residents of northern settlements. Not having consistent documentation of maintenance and supervisory activities makes it unclear whether the Ministry actively ensures maintenance is completed as expected.

4.0 OTHER PROVINCIAL GOVERNMENT AGENCIES INVOLVED WITH DRINKING WATER

Name of Agency	Responsibilities for Drinking Water
Water Security Agency	<p>The Agency is the regulator of municipal waterworks, privately owned (publicly accessible) waterworks that have a flow rate of 18,000 litres or more per day, certain pipeline systems, and municipal sewage works. The Agency also focuses on watershed management and source protection, and works to balance competing water and land uses that impact water quality.</p> <p>The Agency administers provincial water quality standards in <i>The Environmental Management and Protection Act, 2010</i>, and <i>The Waterworks and Sewage Works Regulations</i>. The Agency issues permits to municipalities, including the Northern Saskatchewan Administration District, to operate water systems. This includes reservoirs, tanks, buildings, pumps, and pipes.</p> <p>The Agency is responsible for periodically inspecting and enforcing compliance with permits it issues. The Agency does not regulate non-public water systems, nor is the Agency responsible for drinking water on First Nations reserves.</p>
Saskatchewan Water Corporation (SaskWater)	SaskWater owns and operates certain regional water systems throughout the province. It also provides system assessments and project management of water infrastructure projects.
Ministry of Health/Saskatchewan Health Authority	The Ministry of Health and the Saskatchewan Health Authority regulate certain non-municipal water systems with limited capacity that service locations such as tourist accommodations and campgrounds.
Ministry of Agriculture	The Ministry of Agriculture is responsible for the protection of surface and groundwater with respect to intensive livestock operations. The Ministry is also responsible for irrigation-related services.
Ministry of Environment	The Ministry of Environment is the regulator of industrial waterworks and sewage works.

Source: www.saskh2o.ca/RolesAndResponsibilities.asp (24 March 2021).



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