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March 16, 2022

by email to: francine.desormeau@mattawa.ca

Francine Desormeau
Chief Administrative Officer/Treasurer
The Corporation of the Town of Mattawa
160 Water St,
Mattawa, ON
P0H 1V0

RE: 2021-2022 Inspection Report for the Mattawa Drinking Water System
Drinking Water System no. 210001905
Inspection Report No. 1-64164922

On January 19, 2022 I conducted the annual inspection of the Mattawa Drinking Water System. The inspection included a physical inspection of the Mattawa Water Treatment Plant, an interview with Mr. Tim Fraser, Overall Responsible Operator, Ontario Clean Water Agency (OCWA), follow up virtual meeting with Mr. Josh DeWaal, ORO, OCWA and Joshua Gravelle, Process Compliance Technician, OCWA on February 1, 2022, and a document review for the period from November 17, 2020 to January 18, 2022. The resulting inspection report is attached.

Please note that section “Non-compliance/Non-conformance items” contains “Required Actions” that are linked to incidents of non-compliance with regulatory requirements contained within an Act, a Regulation or site-specific approvals, licenses, permits, orders, or instructions. Such violations could result in the issuance of mandatory abatement instruments including Orders, tickets, penalties, or referrals to the Ministry’s Investigations and Enforcement Branch.

Section “Non-compliance/Non-conformance items” also suggests “Recommended Actions” the owner and the operating authority should consider implementing in order to advance efforts already in place to address issues of source protection and emergency preparedness. Items which appear as “recommended actions” do not, in themselves, constitute violations. Recommendations can also be found in the “Observation” fields of some of the questions of the inspection report with suggestions for better management practices.

Attached in Appendix A is a document entitled “DWS Components Information” and in Appendix B is a document titled “Key Reference and Guidance Material for Municipal Residential Drinking Water Systems”.

Section 19 of the Safe Drinking Water Act, 2002 (Standard of Care) creates a number of obligations for individuals who exercise decision-making authority over municipal drinking water systems. Please be aware that the Ministry has encouraged such individuals, particularly

municipal councilors, to take steps to be better informed about the drinking water systems over which they have decision making authority. There steps could include asking for a copy of this inspection report and review of its findings. Further information about Section 19 can be found in "Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils" found at https://www.ontario.ca/page/drinking-water.

To measure the individual inspection results, the Ministry has established an inspection compliance risk framework based on the principles of the Inspection, Investigation and Enforcement Secretariat and the advice of internal and external risk experts.

Please note that due to a change in IT systems, the Inspection Rating Report (IRR) cannot be generated at the same time as the inspection report. The IRR will be sent separately and prior to any public release (typically within 1-2 month of the completion of the inspection)".

IRR ratings are published (for the previous inspection year) in the Ministry's Chief Drinking Water Inspector's Annual Report. If you have any questions or concerns regarding the rating, please contact Sherry Ilersich, Water Compliance Supervisor at (705) 845-1544.

Electronic copies of this inspection report have been sent to the North Bay Parry Sound Health Unit and the North Bay-Mattawa Conservation Authority in accordance with the Ministry's Municipal Drinking Water Inspection Protocol.

Thank you for your co-operation. If you have any questions about this inspection report, please contact me at (705) 491-2781 or by email at vesna.alimpic@ontario.ca.

Sincerely,

VAlimpic

Vesna Alimpic
Water Inspector/Provincial Officer
Drinking, Water and Environmental Compliance Division
Ministry of the Environment, Conservation and Parks
North Bay Office

c: Paul Dyrda, Senior Operations Manager, Near North Cluster, Ontario Clean Water Agency (OCWA)
Yvan Rondeau, Safety, Process and Compliance Manager, North Eastern Ontario Hub, OCWA
Joshua Gravelle, Process and Compliance Technician, North Eastern Ontario Hub, OCWA
Josh DeWaal, Operator with Overall Responsibility, North Eastern Ontario Hub, OCWA
Robert A-Muhong, Manager, Environmental Health Programs, North Bay Parry Sound District Health Unit
David Ellingwood, Supervisor, Source Water Protection, North Bay-Mattawa Conservation Authority
Sherry Ilersich, Water Compliance Supervisor, Timmins/North Bay, Northern Region, Drinking Water and Environmental Compliance Division, Ministry of the Environment, Conservation and Parks

MATTAWA DRINKING WATER SYSTEM
400 BISSETT ST, MATTAWA, ON,

Inspection Report

System Number:	210001905
Inspection Start Date:	01/19/2022
Inspection End Date:	03/01/2022
Inspected By:	Vesna Alimpic
Badge #:	1882

VAlimpic

_____
(signature)

NON-COMPLIANCE/NON-CONFORMANCE ITEMS

The following item(s) have been identified as non-compliance/non-conformance, based on a "No" response captured for a legislative or best management practice (BMP) question (s), respectively.

Question Group: Other Inspection Findings

Question ID	MRDW1116000	
Question	**Question Type**	**Legislative Requirement**
Were the inspection questions sufficient to address other identified best practice issues?	BMP	Not Applicable
Observation/Corrective Action(s)		
The following issues were also noted during the inspection: Mattawa DWS is a groundwater system that uses ultraviolet (UV) irradiation for primary disinfection and chlorination for secondary disinfection. The system was designed with two UV units to provide redundancy. One of Mattawa's UV units has not been functioning since July 26, 2021. The operating authority has put in significant efforts to repair the unit, but due to the aging UV units and system control and data acquisition (SCADA) system the attempts did not succeed as planned. Based on the information provided by the operating authority, it appears that the solution to this problem is an upgrade of the both UV units and SCADA system. It is recommended that municipality should upgrade the UV system as soon as possible to provide the UV redundancy.		

Question Group: Treatment Processes

Question ID	MRDW1039000	
Question	**Question Type**	**Legislative Requirement**
If primary disinfection equipment that does not use chlorination or chloramination is provided, has the owner and operating authority ensured that the equipment has a recording device that continuously records the performance of the disinfection equipment?	Legislative	SDWA | O. Reg. 170/03 | 1-6 | (3)
Observation/Corrective Action(s)		
The owner and operating authority did not ensure that the primary disinfection equipment had a recording device that continuously recorded the performance of the disinfection equipment. Subsection 1-6(3) of Schedule 1 to O. Reg. 170/03 specifies that if primary disinfection equipment that does not use chlorination or chloramination is provided by a large municipal residential system, the		

owner of the system and the operating authority for the system must ensure that the disinfection equipment has a recording device that continuously records the performance of the disinfection equipment.

Condition 1.6.2 of Schedule C to the MDWL specifies that for Mattawa Water Treatment Plant while directing water to the distribution system and in addition to any other sampling, analysis and recording that may be required, the ultraviolet light disinfection equipment must test for calculated UV dose, flow rate; UV transmittance, UV lamp status at a testing frequency of once every five (5) minutes or less and record the test data at a recording frequency of once every four (4) hours or less.

Performance of the disinfection equipment is continuously monitored and recorded using a supervisory control and data acquisition (SCADA) control system and a chart recorder. According to the information provided, SCADA performs tests for the test parameters every 12 seconds and the chart recorder tests every 5 seconds. SCADA records the calculated UV dose and flow rate continuously. SCADA also monitors and records the UV lamp status by recording of flow rate – when there is flow and the UV lamp is active. UV transmittance (UVT) is tested by an on-line UVT analyzer and the test results are communicated to SCADA and Wonderware, which is software for recording and analysis of the required data used by the operators to review trends. On-line UVT analyzer is calibrated every three months.

Based on the information provided by the operating authority, Wonderware did not continuously record the required parameters in the period between November 11, 2021 to December 1, 2021. During this period, there was continuous recording of UV dose, flow rate and UV lamp status on SCADA, which was confirmed by a review of the trends during the physical inspection on January 19, 2022. During this period the time, SCADA was not programmed to record UVT test data, however programmable logic controller in the water treatment plant was providing records of minimum, maximum and average daily UVT confirming that testing was taking place. The operating authority took several actions to recover the UVT test data from Wonderware, but the data remained unrecoverable for the above period.

Additionally, there were two events when continuous recording showed missing or flat-lined UV transmittance data for periods longer than 5 minutes: on December 31, 2021 for 27 minutes and March 12, 2021 for 17 minutes.

On February 23, 2022, the operating authority provided a written notification to the inspecting officer that SCADA computer has been updated to include trends for UVT tests performed every 5 minutes. This provides back-up recording of UVT tests and provides easier review of UVT trends while in the water treatment plant.

The operators examining the continuous monitoring test results are reminded to examine the results on the level of minimum frequency specified by Condition 1.6.2 of Schedule C to the MDW and to ensure that data are being recorded with this frequency and in the required format.

Failure to ensure that the disinfection equipment has a recording device that continuously records the performance of the disinfection equipment, if primary disinfection equipment that does not use chlorination or chloramination is provided by a large municipal residential system, is a violation of Subsection 1-6(3) of Schedule 1 to O. Reg. 170/03.

Required action:

The operating authority has taken the appropriate action to address the non-compliance. No further action required.

INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

Ministry Program: Regulated Activity: DRINKING WATER : DW Municipal Residential

Question ID	MRDW1001000	
Question	**Question Type**	**Legislative Requirement**
What was the scope of this inspection?	Information	Not Applicable

Observation

The primary focus of this inspection is to confirm compliance with Ministry of the Environment, Conservation and Parks (MECP) legislation as well as evaluating conformance with ministry drinking water policies and guidelines during the inspection period. The ministry utilizes a comprehensive, multi-barrier approach in the inspection of water systems that focuses on the source, treatment, and distribution components as well as management practices.

This drinking water system is subject to the legislative requirements of the Safe Drinking Water Act, 2002 (SDWA) and regulations made therein, including Ontario Regulation 170/03, "Drinking Water Systems" (O.Reg. 170/03). This inspection has been conducted pursuant to Section 81 of the SDWA.

This inspection report does not suggest that all applicable legislation and regulations were evaluated. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

On January 19, 2022 Ministry of the Environment, Conservation and Parks Water Inspector and Provincial Officer Vesna Alimpic conducted an announced focused inspection of the Mattawa Drinking Water System (DWS) with assistance from Tim Fraser, Overall Responsible Operator (ORO) with Ontario Clean Water Agency (OCWA). The data requested for the inspection was provided by Mr. Joshua DeWaal, ORO, OCWA and Joshua Gravelle, Process Compliance Technician (PCT), OCWA in a follow up virtual meeting on February 1, 2022 and email correspondence.

The Corporation of the Town of Mattawa is the owner of the system. The accredited operating authority for the Mattawa DWS is OCWA.

The inspection included a tour and physical review of the components of the drinking water system and a review of the system documents for the period from the last inspection completed on November 17, 2020 to the date of the current inspection. This period is referred to as the "inspection period" in this report. Specifically, this included a review and assessment of operating practices in relation to the following documents:
- Drinking Water Systems Regulation O. Reg. 170/03
- Certification of Drinking Water Systems Operators Regulation O. Reg. 128/04
- Permit to Take Water (PTTW) No. 1546-9GHPLM issued on February 27, 2014
- Municipal Drinking Water Licence (MDWL) No. 195-101, Issue No. 4 dated December 3, 2021

- Drinking Water Works Permit (DWWP) No. 195-201, Issue No. 3 dated December 3, 2021 and
- Previous ministry inspection report dated November 17, 2020.

Question ID	MRDW1000000		
Question		**Question Type**	**Legislative Requirement**
Does this drinking water system provide primary disinfection?		Information	Not Applicable
Observation			
This Drinking Water System provides for both primary and secondary disinfection and distribution of water.			

Question ID	MRDW1007000		
Question		**Question Type**	**Legislative Requirement**
Is the owner maintaining the production well(s) in a manner sufficient to prevent entry into the well of surface water and other foreign materials?		Legislative	SDWA | O. Reg. 170/03 | 1-2 | (1)
Observation			
The owner was maintaining the production well(s) in a manner sufficient to prevent entry into the well of surface water and other foreign materials. A visual inspection of the above ground section of the production wells showed no evidence of entry of surface water and other foreign materials into the wells.			

Question ID	MRDW1009000		
Question		**Question Type**	**Legislative Requirement**
Are measures in place to protect the groundwater and/or GUDI source in accordance with any MDWL and DWWP issued under Part V of the SDWA?		Legislative	SDWA | 31 | (1)
Observation			
Measures were in place to protect the groundwater and/or GUDI source in accordance with any the Municipal Drinking Water Licence and Drinking Water Works Permit issued under Part V of the SDWA. Condition 16.2.8 of Schedule B of MDWL requires there to be an inspection schedule for all wells associated with the drinking water system, including all protection wells, standby wells, test wells and monitoring wells. Condition 16.2.9 of the MDWL requires that there are well inspection and maintenance procedures for the entire well structure of each well including all above and below grade well components. Condition 16.2.10 requires that remedial action plans are developed for situations where an inspection indicates non-compliance with respect to regulatory requirements and/or risk to raw well water quality.			

Visual inspections of the above ground sections of the production wells are done annually and findings are recorded in a report.

Question ID	MRDW1014000	
Question	**Question Type**	**Legislative Requirement**
Is there sufficient monitoring of flow as required by the MDWL or DWWP issued under Part V of the SDWA?	Legislative	SDWA | 31 | (1)

Observation

There was sufficient monitoring of flow as required by the Municipal Drinking Water Licence or Drinking Water Works Permit issued under Part V of the SDWA.

As per DWWP, there are magnetic flow meters installed on the discharge of well # 2 and on the treated water discharge from the well house to the distribution system. The production from well # 1 is calculated as the difference in flow between the treated water and raw water readings.

A review of flow records confirmed that the flow meters were in service at all times during the inspection period.

Question ID	MRDW1016000	
Question	**Question Type**	**Legislative Requirement**
Is the owner in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the MDWL issued under Part V of the SDWA?	Legislative	SDWA | 31 | (1)

Observation

The owner was in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the Municipal Drinking Water Licence issued under Part V of the SDWA.

Rated capacity identified in the MDWL is 6,540 m^3/day. Review of daily water takings provided by the operating authority has shown that maximum daily takings were below the rated capacity. Maximum water taking was recorded on July 6, 2021 with 2,057.35 m^3 taken on that day, which is 31% of the rated capacity.

Question ID	MRDW1033000	
Question	**Question Type**	**Legislative Requirement**
Is the secondary disinfectant residual measured as required for the large municipal residential distribution system?	Legislative	SDWA | O. Reg. 170/03 | 7-2 | (3), SDWA | O. Reg. 170/03 | 7-2 | (4)

Observation

The secondary disinfectant residual was measured as required for the distribution system.

Subsection 7-2(3) of Schedule 7 of O. Reg. 170/03 requires that the owner of a large municipal residential system that provides secondary disinfection and the operating authority for the system must ensure that at least seven distribution samples are taken each week and are tested immediately for free chlorine residual. Unless at least one sample is taken on each day of the week, at least four of the samples must be taken on one day of the week, at least 48 hours after the last sample was taken in the previous week. At least three of the samples must be taken on a second day of the week, at least 48 hours after the last sample was taken. When more than one sample is taken on the same day of the week under paragraph 1 or 2, each sample must be taken from a different location.

A review of sampling data confirmed that during the inspection period the operating authority sampled for free chlorine residuals twice a week, taking four samples on one day of the week and three samples on a second day of the week with at least 48 hours between the samples.

Question ID	MRDW1039000	
Question	**Question Type**	**Legislative Requirement**
If primary disinfection equipment that does not use chlorination or chloramination is provided, has the owner and operating authority ensured that the equipment has a recording device that continuously records the performance of the disinfection equipment?	Legislative	SDWA | O. Reg. 170/03 | 1-6 | (3)

Observation

The owner and operating authority did not ensure that the primary disinfection equipment had a recording device that continuously recorded the performance of the disinfection equipment.

Subsection 1-6(3) of Schedule 1 to O. Reg. 170/03 specifies that if primary disinfection equipment that does not use chlorination or chloramination is provided by a large municipal residential system, the owner of the system and the operating authority for the system must ensure that the disinfection equipment has a recording device that continuously records the performance of the disinfection equipment.

Condition 1.6.2 of Schedule C to the MDWL specifies that for Mattawa Water Treatment Plant while directing water to the distribution system and in addition to any other sampling, analysis and recording that may be required, the ultraviolet light disinfection equipment must test for calculated UV dose, flow rate; UV transmittance, UV lamp status at a testing frequency of once every five (5) minutes or less and record the test data at a recording frequency of once every four (4) hours or less.

Performance of the disinfection equipment is continuously monitored and recorded using a supervisory control and data acquisition (SCADA) control system and a chart recorder. According to the information provided, SCADA performs tests for the test parameters every 12 seconds and the chart recorder tests every 5 seconds. SCADA records the calculated UV dose and flow rate continuously. SCADA also monitors and records the UV lamp status by recording of flow rate – when there is flow and the UV lamp is active. UV transmittance (UVT) is tested by an on-line UVT analyzer and the test results are communicated to SCADA and Wonderware, which is

software for recording and analysis of the required data used by the operators to review trends. On-line UVT analyzer is calibrated every three months.

Based on the information provided by the operating authority, Wonderware did not continuously record the required parameters in the period between November 11, 2021 to December 1, 2021. During this period, there was continuous recording of UV dose, flow rate and UV lamp status on SCADA, which was confirmed by a review of the trends during the physical inspection on January 19, 2022. During this period the time, SCADA was not programmed to record UVT test data, however programmable logic controller in the water treatment plant was providing records of minimum, maximum and average daily UVT confirming that testing was taking place. The operating authority took several actions to recover the UVT test data from Wonderware, but the data remained unrecoverable for the above period.

Additionally, there were two events when continuous recording showed missing or flat-lined UV transmittance data for periods longer than 5 minutes: on December 31, 2021 for 27 minutes and March 12, 2021 for 17 minutes.

On February 23, 2022, the operating authority provided a written notification to the inspecting officer that SCADA computer has been updated to include trends for UVT tests performed every 5 minutes. This provides back-up recording of UVT tests and provides easier review of UVT trends while in the water treatment plant.

The operators examining the continuous monitoring test results are reminded to examine the results on the level of minimum frequency specified by Condition 1.6.2 of Schedule C to the MDW and to ensure that data are being recorded with this frequency and in the required format.

Failure to ensure that the disinfection equipment has a recording device that continuously records the performance of the disinfection equipment, if primary disinfection equipment that does not use chlorination or chloramination is provided by a large municipal residential system, is a violation of Subsection 1-6(3) of Schedule 1 to O. Reg. 170/03.

Required action:

The operating authority has taken the appropriate action to address the non-compliance.

No further action required.

Question ID	MRDW1042000	
Question	**Question Type**	**Legislative Requirement**
If UV disinfection is used were duty sensors and reference UV sensors checked and calibrated as per the requirements of Schedule E of the MDWL or at a frequency as otherwise recommended by the UV equipment manufacturer?	Legislative	SDWA | 31 | (1)
Observation		
All UV sensors were checked and calibrated as required.		

The MDWL specifies the following requirements for Duty UV Sensor Checks and Calibration:
1. Duty UV sensors shall be checked on at least a monthly basis against a reference UV sensor or at a frequency as otherwise recommended by the UV equipment manufacturer;
2. When comparing a duty UV sensor to a reference UV sensor, the calibration ratio (intensity measured with the duty UV sensor/intensity measured with the reference UV sensor) shall be less than or equal to 1.2;
3. If the calibration ratio is greater than 1.2, the duty UV sensor shall be replaced with a calibrated UV sensor or a UV sensor correction factor shall be applied while the problem with the UV sensor is being resolved; and
4. Reference UV sensors shall be checked against a Master Reference Assembly at a minimum frequency of once every three years or on a more frequent basis depending upon the recommendations of the equipment manufacturer.

Based on the review of available data and information provided by the operating authority, the following has been noted:
1. During the inspection period, duty UV sensors were checked on monthly basis against a reference UV sensor.
2. and 3. During the inspection period, the calibration ratio was less than or equal to 1.2; and
4. There are currently two reference sensors on site. One reference sensor was calibrated by the manufacturer in August 2019. The second reference sensor was delivered on site in January 2020. The operating authority plans to have both reference sensors calibrated in March 2022.

Question ID	MRDW1109000	
Question	**Question Type**	**Legislative Requirement**
If the system uses equipment for primary disinfection other than chlorination or chloramination and the equipment has malfunctioned, lost power or ceased to provide the appropriate level of disinfection, causing an alarm or an automatic shut-off, did a qualified person respond in a timely manner and take appropriate actions?	Legislative	SDWA | O. Reg. 170/03 | 1-6 | (1)
Observation		
When the primary disinfection equipment, other than that used for chlorination or chloramination, has failed causing an alarm to sound or an automatic shut-off to occur, a certified operator responded in a timely manner and took appropriate actions.		

Question ID	MRDW1018000	
Question	**Question Type**	**Legislative Requirement**
Has the owner ensured that all equipment is installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit?	Legislative	SDWA | 31 | (1)
Observation		
The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit.		

Question ID	MRDW1023000		
Question		**Question Type**	**Legislative Requirement**
Do records indicate that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a DWWP and/or MDWL issued under Part V of the SDWA at all times that water was being supplied to consumers?		Legislative	SDWA | O. Reg. 170/03 | 1-2 | (2)

Observation

Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a Drinking Water Works Permit and/or Municipal Drinking Water Licence issued under Part V of the SDWA at all times that water was being supplied to consumers. Section 1-2(2) of Schedule 1 of O. eg. 170/03 requires that the owner of a drinking water system and the operating authority for the system must ensure that the treatment equipment required by Section 1-3 is operated in a manner that achieves the design capabilities it is required to have under this section.

Section 1-3 of Schedule 1 of O. Reg. 170/03 requires that the owner of a drinking water system that uses water from a raw water supply that is ground water must ensure that the water treatment equipment provided is designed to be capable of achieving, at all times, primary disinfection in accordance with the Ministry's Procedure for Disinfection of Drinking Water in Ontario, including at least 99 per cent (2 log) removal or inactivation of viruses by the time water enters the distribution system.

Schedule E to the MDWL assigns 2 log removal/inactivation credits for viruses to the existing UV disinfection system operating at UV dosage of 40 mJ/cm², as well as 2 log removal/inactivation for Cryptosporidium oocysts and 3 log removal/inactivation for Giardia cysts. Log removal/inactivation credit assignment is based on each treatment process being fully operational and the applicable log removal/inactivation credit assignment criteria being met.

In order to achieve the assigned removal credits for primary disinfection, the UV system must be operated within the validated limits for flow rate, calculated UV dosage, UV Transmittance, and UV lamp status in accordance with MDWL. A UV reactor is operating off specification when it operates outside of the validated range. The MDWL specifies the following operational requirements for the achievement of assigned log removal/inactivation credits for the process of UV disinfection at Mattawa DWS:
- Ultraviolet light disinfection equipment shall have a feature that ensures that no water is directed to users of water treated by the equipment or that causes an alarm to sound in the event that the equipment malfunctions, loses power or ceases to provide the appropriate level of disinfection;
- Water shall not flow through a UV reactor when the reactor's UV lights are off or not fully energized;
- UV lamp status shall indicate whether each UV lamp is on or off;
- All UV sensors shall operate within their calibration range or corrective measures shall be taken; and
- Installed or replaced UV equipment components shall be equal or better than the components used during validation testing unless the UV equipment was revalidated.

A review of the provided UV dosage and flow records confirmed that the treatment equipment was operated in a manner that achieved the required design capabilities during the inspection period.

Question ID	MRDW1024000		
Question		**Question Type**	**Legislative Requirement**
Do records confirm that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/l free or 0.25 mg/l combined?		Legislative	SDWA | O. Reg. 170/03 | 1-2 | (2)

Observation

Records confirmed that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/l free or 0.25 mg/l combined.

A review of distribution system chlorine residuals confirmed that the free chlorine residual was never less that 0.05 mg/L. The free chlorine residual measured in the distribution system ranged from 0.21 mg/L to 1.91 mg/L during the inspection period.

Question ID	MRDW1026000		
Question		**Question Type**	**Legislative Requirement**
If primary disinfection equipment that does not use chlorination or chloramination is provided, is the equipment equipped with alarms or shut-off mechanisms that satisfy the standards described in Section 1-6 (1) of Schedule 1 of Ontario Regulation 170/03?		Legislative	SDWA | O. Reg. 170/03 | 1-6 | (1)

Observation

The primary disinfection equipment was equipped with alarms or shut-off mechanisms that satisfied the standards described in Section 1-6 (1) of Schedule 1 of Ontario Regulation 170/03. Section 1-6(1) of Schedule 1 of O. Reg. 170/03 states that the owner must ensure that the disinfection equipment is designed and operated so that, if the disinfection equipment malfunctions, loses power or ceases to provide the appropriate level of disinfection, no water is directed to users and a certified operator takes appropriate action at the location where the equipment is installed before water is again directed to users.

The UV reactors are equipped with alarms and shut off mechanisms. The alarm set point for the UV dosage is set at 48 mJ/cm². If the UV dosage falls below 48 mJ/cm², the duty UV reactor (UVR) will alarm and shut down both the UVR unit and the duty well pump. The standby UVR is then brought online and the duty pump restarted when the UVR unit completes its required start-up protocols. In case of an alarm on the stand-by UVR unit, the unit would alarm and shut off the UVR unit and the duty well pump. In this case, an operator intervention is required to resolve the

issue and continue with water treatment. The UVR will shut off after 60 seconds cumulative time with dosage below 48 mJ/cm². Based on consultation with the ministry's Municipal Water & Wastewater Permissions and Water Program Services, this alarm strategy as an acceptable practice and is considered is as an "equivalent" to using the "alarm/shutdown option". The operating authority may wish to add a second alarm at 40 mJ/cm² which would shut down the water immediately (or the shortest amount of time necessary to avoid nuisance alarms).

The facility also has a shut off mechanism for events when the UV transmittance analyzer reads less than 95% or the instrument losses power or malfunctions.

Question ID	MRDW1062000	
Question	**Question Type**	**Legislative Requirement**
Do records or other record keeping mechanisms confirm that operational testing not performed by continuous monitoring equipment is being done by a certified operator, water quality analyst, or person who meets the requirements of O. Reg. 170/03 7-5?	Legislative	SDWA | O. Reg. 170/03 | 7-5
Observation		
Records or other record keeping mechanisms confirmed that operational testing not performed by continuous monitoring equipment was being done by a certified operator, water quality analyst, or person who suffices the requirements of O. Reg. 170/03 7-5.		

Question ID	MRDW1060000	
Question	**Question Type**	**Legislative Requirement**
Do the operations and maintenance manuals meet the requirements of the DWWP and MDWL issued under Part V of the SDWA?	Legislative	SDWA | 31 | (1)
Observation		
The operations and maintenance manuals met the requirements of the Drinking Water Works Permit and Municipal Drinking Water Licence issued under Part V of the SDWA.		

Question ID	MRDW1071000	
Question	**Question Type**	**Legislative Requirement**
Has the owner provided security measures to protect components of the drinking water system?	BMP	Not Applicable
Observation		
The owner had provided security measures to protect components of the drinking water system. The facility is equipped with an intrusion alarm system, security fencing and lighting. Operators visit the treatment plant on work days or more frequently when required.		

The in-ground reservoir is located within a secured fenced compound. The reservoir's control and monitoring systems are contained within a locked building equipped with entry alarms.

Question ID	MRDW1073000	
Question	**Question Type**	**Legislative Requirement**
Has the overall responsible operator been designated for all subsystems which comprise the drinking water system?	Legislative	SDWA | O. Reg. 128/04 | 23 | (1)
Observation		
The overall responsible operator has been designated for each subsystem. OCWA is the operating authority for the Mattawa Drinking Water System. For the Mattawa WTP and Distribution System, the ORO alternates on a weekly basis between operators Tim Fraser and Joshua DeWaal each serving as backup ORO to each other. Alternate operators that may function as backup ORO are Don Michaud and Gerald Duguay.		

Question ID	MRDW1074000	
Question	**Question Type**	**Legislative Requirement**
Have operators in charge been designated for all subsystems for which comprise the drinking water system?	Legislative	SDWA | O. Reg. 128/04 | 25 | (1)
Observation		
Operators-in-charge had been designated for all subsystems which comprised the drinking water system. In November 2021, the operating authority developed an SOP designating operators in charge (OIC) for the facilities operated by Near North Cluster of OCWA. There are three regular designated operators for Mattawa WTP, however all OCWA operators from the cluster can function as OIC for all facilities depending on staff availability.		

Question ID	MRDW1075000	
Question	**Question Type**	**Legislative Requirement**
Do all operators possess the required certification?	Legislative	SDWA | O. Reg. 128/04 | 22
Observation		
All operators possessed the required certification.		

Question ID	MRDW1076000	
Question	**Question Type**	**Legislative Requirement**
Do only certified operators make adjustments to the treatment equipment?	Legislative	SDWA | O. Reg. 170/03 | 1-2 | (2)

Observation
Only certified operators made adjustments to the treatment equipment.

Question ID	MRDW1099000		
Question		**Question Type**	**Legislative Requirement**
Do records show that all water sample results taken during the inspection review period did not exceed the values of tables 1, 2 and 3 of the Ontario Drinking Water Quality Standards (O. Reg.. 169/03)?		Information	Not Applicable
Observation			
Records showed that all water sample results taken during the inspection review period did not exceed the values of tables 1, 2 and 3 of the Ontario Drinking Water Quality Standards (O.Reg. 169/03).			

Question ID	MRDW1096000		
Question		**Question Type**	**Legislative Requirement**
Do records confirm that chlorine residual tests are being conducted at the same time and at the same location that microbiological samples are obtained?		Legislative	SDWA | O. Reg. 170/03 | 6-3 | (1)
Observation			
Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.			

Question ID	MRDW1081000		
Question		**Question Type**	**Legislative Requirement**
Are all microbiological water quality monitoring requirements for distribution samples being met?		Legislative	SDWA | O. Reg. 170/03 | 10-2 | (1),SDWA | O. Reg. 170/03 | 10-2 | (2),SDWA | O. Reg. 170/03 | 10-2 | (3)
Observation			
All microbiological water quality monitoring requirements for distribution samples were being met. Section 10-2 of Schedule 10 of O. Reg. 170/03 requires that the owner of a drinking-water system and the operating authority for the system must ensure that at least ten distribution samples are taken every month, with at least one of the samples being taken in each week. The owner of the drinking-water system and the operating authority for the system must ensure that each of the samples is tested for Escherichia coli and total coliforms and that at least 25 per cent of the			

samples required to be taken are tested for general bacteria population expressed as colony counts on a heterotrophic plate count (HPC).

A review of the sampling records confirmed that samples from distribution were collected weekly and tested for E. coli and total coliforms, resulting in 12 to 15 monthly samples during the inspection period. Three distribution samples were tested for HPC monthly, satisfying the requirement that at least 25 per cent of the 10 required monthly distribution samples are tested for HPC.

Question ID	MRDW1083000	
Question	**Question Type**	**Legislative Requirement**
Are all microbiological water quality monitoring requirements for treated samples being met?	Legislative	SDWA | O. Reg. 170/03 | 10-3

Observation

All microbiological water quality monitoring requirements for treated samples were being met.

Section 10-3 of Schedule 10 of O. Reg. 170/03 requires the owner of a drinking-water system and the operating authority for the system must ensure that a treated water sample is taken at least once every week and tested for Escherichia coli, total coliforms and general bacteria population expressed as colony counts on a heterotrophic plate count (HPC).

A review of the sampling records confirmed that samples of treated water were collected weekly and tested for Escherichia coli, total coliforms and HPC during the inspection period.

Question ID	MRDW1084000	
Question	**Question Type**	**Legislative Requirement**
Are all inorganic water quality monitoring requirements prescribed by legislation conducted within the required frequency?	Legislative	SDWA | O. Reg. 170/03 | 13-2

Observation

All inorganic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.

Section 13-2 of Schedule 13 of O. Reg. 170/03 requires that the owner of a large municipal residential system and the operating authority for the system must ensure that at least one treated water sample is taken every 36 months, if the system obtains water from a raw water supply that is ground water. The owner of a large municipal residential system and the operating authority for the system must ensure that each of the samples is tested for every parameter set out in Schedule 23 (Inorganics).

Sampling for the purpose of testing for Schedule 23 parameters was conducted on September 8, 2021.

Question ID	MRDW1085000		
Question		**Question Type**	**Legislative Requirement**
Are all organic water quality monitoring requirements prescribed by legislation conducted within the required frequency?		Legislative	SDWA | O. Reg. 170/03 | 13-4 | (1),SDWA | O. Reg. 170/03 | 13-4 | (2),SDWA | O. Reg. 170/03 | 13-4 | (3)

Observation

All organic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.

Section 13-4 of Schedule 13 of O. Reg. 170/03 requires that the owner of a large municipal residential system and the operating authority for the system must ensure that at least one treated water sample is taken every 36 months, if the system obtains water from a raw water supply that is ground water. The owner of a large municipal residential system and the operating authority for the system must ensure that each of the samples is tested for every parameter set out in Schedule 24 (Organics).

Sampling for the purpose of testing for Schedule 24 parameters was conducted on September 8, 2021.

Question ID	MRDW1086000		
Question		**Question Type**	**Legislative Requirement**
Are all haloacetic acid water quality monitoring requirements prescribed by legislation conducted within the required frequency and at the required location?		Legislative	SDWA | O. Reg. 170/03 | 13-6.1 | (1),SDWA | O. Reg. 170/03 | 13-6.1 | (2),SDWA | O. Reg. 170/03 | 13-6.1 | (3), SDWA | O. Reg. 170/03 | 13-6.1 | (4),SDWA | O. Reg. 170/03 | 13-6.1 | (5),SDWA | O. Reg. 170/03 | 13-6.1 | (6)

Observation

All haloacetic acid water quality monitoring requirements prescribed by legislation are being conducted within the required frequency and at the required location.

Section 13-6.1 of Schedule 13 of O. Reg. 170/03 requires that the owner of a drinking water system that provides chlorination and the operating authority for the system must ensure that at least one distribution sample is taken in each calendar quarter, from a point in the drinking water systems distribution system, or plumbing that is connected to the drinking water system, that is likely to have an elevated potential for the formation of haloacetic acids and tested for haloacetic acids (HAA).

On January 1, 2020, Ontario Drinking Water Quality Standards Regulation, O. Reg. 169/03 standard for HAA (80 µg/L) came into effect and is expressed as a RAA, where RAA is defined as "the running annual average of quarterly results" for HAA for a drinking water system.

A review of sampling data confirmed that the samples for HAA were collected quarterly during the inspection period. Concentrations of HAAs for the inspection period have been reported to be under the lab's Method Detection Limit (MDL), which is 2 µg/L for Near North Laboratories that analyses the Mattawa DWS HAA samples. If the MDL is used for the calculation of RAA, the RAA for HAAs is 2 µg/L as of October 13, 2021.

Question ID	MRDW1087000	
Question	**Question Type**	**Legislative Requirement**
Have all trihalomethane water quality monitoring requirements prescribed by legislation been conducted within the required frequency and at the required location?	Legislative	SDWA | O. Reg. 170/03 | 13-6 | (1)

Observation

All trihalomethane water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location.

Subsection 13-6 of Schedule 13 of O. Reg. 170/03 requires the owner of a drinking water system that provides chlorination and the operating authority for the system must ensure that at least one distribution sample is taken in each calendar quarter, from a point in the drinking water system's distribution system that is likely to have an elevated potential for the formation of trihalomethanes and tested for trihalomethanes (THMs).

Ontario Drinking Water Quality Standards Regulation, O. Reg. 169/03 sets the standard for THMs is 0.100 mg/L (100 µg/L) expressed as a RAA, where RAA is defined as "the running annual average of quarterly results" for THMs for a drinking water system. O. Reg. 170/03 defines the "calendar quarter" as the three-month period that begins on January 1, April 1, July 1 or October 1.

A review of sampling data confirmed that the samples for THMs were collected quarterly during the inspection period. The RAA for THMs was 2.9 µg/L as of October 13, 2021.

Question ID	MRDW1088000	
Question	**Question**	**Legislative**

	Type	Requirement
Are all nitrate/nitrite water quality monitoring requirements prescribed by legislation conducted within the required frequency for the DWS?	Legislative	SDWA | O. Reg. 170/03 | 13-7

Observation

All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the required frequency for the DWS.

Section 13-7 of Schedule 13 of O. Reg. 170/03 requires that the owner of a drinking water system and the operating authority for the system must ensure that at least one water sample is taken every three months and tested for nitrate and nitrite.

A review of the sampling records confirmed that during the inspection period samples of treated water were collected every three months.

Question ID	MRDW1089000

Question	Question Type	Legislative Requirement
Are all sodium water quality monitoring requirements prescribed by legislation conducted within the required frequency?	Legislative	SDWA | O. Reg. 170/03 | 13-8

Observation

All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency.

Section 13-8 of Schedule 13 requires that the owner of a drinking water system and the operating authority for the system must ensure that at least one treated water sample is taken every 60 months and tested for sodium.

The most recent sodium sample was collected on January 16, 2018.

Question ID	MRDW1090000

Question	Question Type	Legislative Requirement
Where fluoridation is not practiced, are all fluoride water quality monitoring requirements prescribed by legislation conducted within the required frequency?	Legislative	SDWA | O. Reg. 170/03 | 13-9

Observation

All fluoride water quality monitoring requirements prescribed by legislation were conducted within the required frequency.

Section 13-9 of Schedule 13 requires that the owner of a drinking water system and the operating authority for the system must ensure that at least one treated water sample is taken every 60 months and tested for fluoride.

The most recent fluoride sample was collected on January 16, 2018.

Question ID	MRDW1100000	
Question	**Question Type**	**Legislative Requirement**
Did any reportable adverse/exceedance conditions occur during the inspection period?	Information	Not Applicable
Observation		
There were no reportable adverse/exceedances during the inspection period.		

Question ID	MRDW1116000	
Question	**Question Type**	**Legislative Requirement**
Were the inspection questions sufficient to address other identified best practice issues?	BMP	Not Applicable
Observation		
The following issues were also noted during the inspection: Mattawa DWS is a groundwater system that uses ultraviolet (UV) irradiation for primary disinfection and chlorination for secondary disinfection. The system was designed with two UV units to provide redundancy. One of Mattawa's UV units has not been functioning since July 26, 2021. The operating authority has put in significant efforts to repair the unit, but due to the aging UV units and system control and data acquisition (SCADA) system the attempts did not succeed as planned. Based on the information provided by the operating authority, it appears that the solution to this problem is an upgrade of the both UV units and SCADA system. It is recommended that municipality should upgrade the UV system as soon as possible to provide the UV redundancy.		

Question ID	MRDW1117000	
Question	**Question Type**	**Legislative Requirement**
Are there any other DWS related items that should be recognized in this report?	Information	Not Applicable
Observation		
The following items are noted as being relevant to the Drinking Water System: Mattawa DWS provides water to the southern part of town by a 15" watermain pipe that crosses Mattawa River. During spring flood in 2019, the watermain lost some of its concrete ballasts and was floating under the water surface. In January 2020, a visual inspection of the pipe was performed by divers, which identified the displacement of concrete collars and a gouge in the pipe. In January 2020, the operating authority in cooperation with Jp2g Consultants Inc. and		

municipal authorities organized sinking of the pipe with new concrete ballasts.

Due to a concern that the potential leaks on the pipe may compromise the water supply, the ministry requested that the operating authority and the consultant provide a confirmation that the pipe integrity has not been compromised and an action plan to address any potential leaks in the pipe. The consultants proposed the following measures in the action plan: a follow up survey of the pipe, monitoring of pressure at the WTP or reservoir and monitoring of flows.

Upon discussing the proposed action plan and measures in place in a teleconference with the owner, operating authority and consultants, it was agreed that the operating authority and the consultant would prepare a proposal for a pressure monitoring station. A pressure monitoring gauge was installed on a distribution line in the water treatment plant to monitor for changes in pressure in the 15" watermain and the distribution pressure has been alarmed in the WTP SCADA. The operating authority provided pressure monitoring trends to demonstrate that a change in pressure on a pipe served by the 15" watermain would show in the pressure trends recorded by SCADA. The operating authority informed the ministry that a second dive was conducted to inspect the pipe with satisfactory results in November 2020; the report and the video of the inspection are to be provided to ministry staff when available.

During the inspection on January 19, 2022, the operating authority indicated that there have been no alarms for loss of pressure in the distribution system caused by change of pressure in the 15' watermain.

The ministry will continue to work closely with the owner, operating authority and the consultants to ensure that Mattawa DWS is supplying safe drinking water to users.

Question ID	MRDW1059000	
Question	**Question Type**	**Legislative Requirement**
Do the operations and maintenance manuals contain plans, drawings and process descriptions sufficient for the safe and efficient operation of the system?	Legislative	SDWA | O. Reg. 128/04 | 28
Observation		
The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.		

Question ID	MRDW1061000	
Question	**Question Type**	**Legislative Requirement**
Are logbooks properly maintained and contain the required information?	Legislative	SDWA | O. Reg. 128/04 | 27 | (1), SDWA | O. Reg. 128/04 | 27 | (2), SDWA | O. Reg. 128/04 | 27 | (3),

		SDWA | O. Reg. 128/04 | 27 | (4), SDWA | O. Reg. 128/04 | 27 | (5), SDWA | O. Reg. 128/04 | 27 | (6), SDWA | O. Reg. 128/04 | 27 | (7)

Observation

Logbooks were properly maintained and contained the required information.

APPENDIX A

DRINKING WATER SYSTEM COMPONENTS

DWS Component Information Report for 210001905

as of 14-MAR-2022

Drinking Water System Profile Information

DWS #	210001905
MOE Assigned Name	Mattawa Drinking Water System
Category	LMRS
Regulation	O.REG 170/03
DWS Type	Well Supply
Source Type	Ground Water
Address	400 Bissett Street, Mattawa, Ontario, P0H 1V0, Canada
Region	Northern Region
District	North Bay Area Office
Municipality	Mattawa
Public Health Unit	North Bay Parry Sound District Health Unit

LWIS Component Name	LWIS Component Type	LWIS Component Sub-Type	Component Address	Comments
Reservoir	Other	Reservoir		The in-ground reservoir has an operating capacity of 795 cubic metres and is located 700 metres to the northwest of the well house. The normal high operating water level in the reservoir is approximately 70 metres of elevation above the well house. The reservoir is located within a fenced compound and is equipped with two access hatches, two vent pipes and an overflow pipe. Monitoring of the reservoir level is used to control the operation of the well pumps at the pumphouse.
Pumphouse	Treated Water Poe	Pumphouse	400 Bissett, Unit: Street,	The pumphouse is located at 400 Bissett Street. Raw water flows from the wells into a common 200 mm discharge header within the pump house. Primary disinfection is achieved using two ultraviolet reactors. Each unit is capable of providing a minimum ultraviolet dosage of 40 mJ/cm² at a peak flow rate of 75.7 L/s and raw water ultraviolet transmittance of 95%. Secondary disinfection with 12% sodium hypochlorite is completed in the common discharge header prior to entry to the distribution system. The hypochlorite system consists of one 200 L storage tank, with spill containment, and two chemical metering pumps (one duty and one standby) with discharge lines into the common discharge header. The chemical metering pumps are equipped with an automatic switch-over device and controls which provide for flow proportional dosing. If both dosing pumps fail an alarm to the pager is initiated and the raw water pumps automatically shut down. A sample line is installed on the 150 mm discharge header so that continuous on-line monitoring for free chlorine residual can be achieved. There is a pipe that leads treated water from the point of entry to the distribution system that is used for cooling of the diesel generator and the UV reactors during their warm up cycle and for water lubrication of the pump for Well # 1. A supervisory control and data acquisition (SCADA) system was put in place in 2011 to enhance the automated control of the water production and treatment components and to produce the required performance and monitoring reports. Backup power is supplied by a 300 kW diesel generator equipped with an automatic transfer switch and a 2,200 L capacity above ground fuel

DWS Component Information Report for 210001905

as of 14-MAR-2022

LWIS Component Name	LWIS Component Type	LWIS Component Sub-Type	Component Address	Comments
				tank. This system can run the entire pumphouse, as well as a nearby sewage lift station. Other meters and appurtenances are contained within the pumphouse in accordance with the requirements of system's recently issued Municipal Drinking Water Licence and Drinking Water Works Permit.
Distribution	Other	Other		The population of Mattawa is approximately 2,150. The distribution system is fed from the well house when the pumps are operating, with excess water being directed to the elevated in ground reservoir. When the well pumps are off the distribution is gravity fed from the reservoir. The system has approximately 1,050 service connections to residential and commercial consumers. There is approximately 20,000 metres of various sized cast iron, ductile iron and polyvinyl chloride piping. There are 107 fire hydrants and 239 valves in the distribution system.
Well 1 Raw	Source	Ground	400 Bissett, Unit: Street,	Well # 1 was constructed in 1958 per well record 4300581. It is the larger of the two wells located within the well house at 400 Bissett Street. It is a gravel wall type of construction and had a total depth of 26.5 m. A 660 mm diameter steel outer casing extends from grade to a depth of 19.1 m. A 400 mm diameter inner casing extends from grade to 22.1 m and a 400 mm diameter stainless steel screen extends from 22.1 m to 26.7 m. Well #1 is equipped with a 100 Hp vertical turbine pump and is rated at 53 L/s at a 105.8 m TDH. The pump is set at approximately 21.9 m below grade. The well head is approximately 30 cm above the pumphouse floor. Well # 1 is generally operated as the duty well from 6 a.m. to midnight to meet higher water demand period. The switchover of well pumps is controlled by a timer within the system's programmable logic controller.
Well 2 Raw	Source	Ground	400 Bissett, Unit: Street,	Well # 2 was constructed in 1949 per well record 4300579. It is the smaller of the two wells located within the well house at 400 Bissett Street. It is a gravel wall type well construction and has a total depth of 23.8 m. A 560 mm diameter steel outer casing extends from grade to a depth of 18.6 m. A 300 mm diameter inner casing extends from grade to 20.6 m and a 300 mm diameter #6 stainless steel screen extends from 20.6 m to 23.6 m. Well # 2 is equipped with a 40 Hp vertical turbine pump and is rated at 22.7 L/s at a 91.5 m TDH. The pump is set at approximately 17.3 m below grade. The well head is approximately 15 cm above the pumphouse floor. Well # 2 is generally operated as the duty well from midnight to 6 a.m. for energy conservation purposes.

APPENDIX B

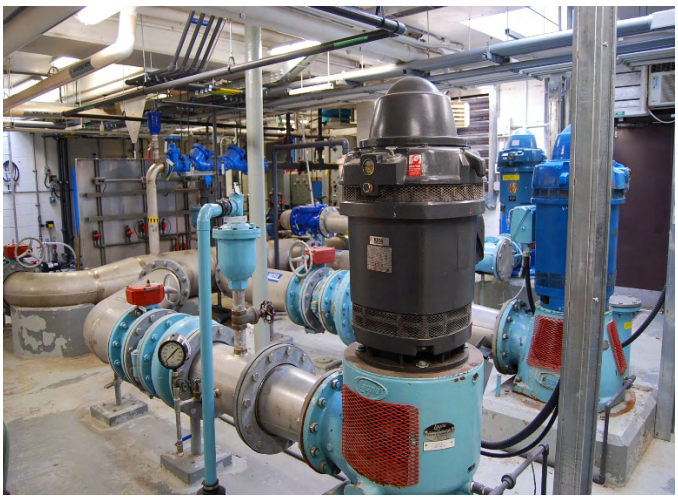
STAKEHOLDER APPENDIX

Key Reference and Guidance Material for Municipal Residential Drinking Water Systems

Many useful materials are available to help you operate your drinking water system. Below is a list of key materials owners and operators of municipal residential drinking water systems frequently use.

To access these materials online click on their titles in the table below or use your web browser to search for their titles. Contact the Ministry if you need assistance or have questions at 1-866-793-2588 or waterforms@ontario.ca.

For more information on Ontario's drinking water visit www.ontario.ca/drinkingwater

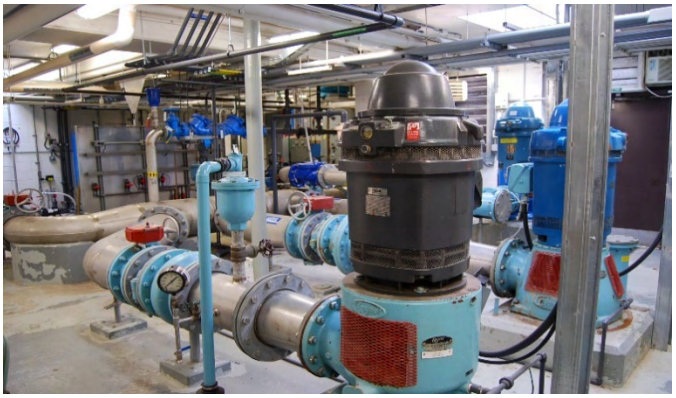


PUBLICATION TITLE	PUBLICATION NUMBER
FORMS: Drinking Water System Profile Information Laboratory Services Notification Adverse Test Result Notification	 012-2149E 012-2148E 012-4444E
Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils	Website
Procedure for Disinfection of Drinking Water in Ontario	Website
Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids	Website
Filtration Processes Technical Bulletin	Website
Ultraviolet Disinfection Technical Bulletin	Website
Guide for Applying for Drinking Water Works Permit Amendments, & License Amendments	Website
Certification Guide for Operators and Water Quality Analysts	Website
Guide to Drinking Water Operator Training Requirements	9802E
Community Sampling and Testing for Lead: Standard and Reduced Sampling and Eligibility for Exemption	Website
Drinking Water System Contact List	7128E01
Ontario's Drinking Water Quality Management Standard - Pocket Guide	Website
Watermain Disinfection Procedure	Website
List of Licensed Laboratories	Website

Ontario

Principaux guides et documents de référence sur les réseaux résidentiels municipaux d'eau potable

De nombreux documents utiles peuvent vous aider à exploiter votre réseau d'eau potable. Vous trouverez ci-après une liste de documents que les propriétaires et exploitants de réseaux résidentiels municipaux d'eau potable utilisent fréquemment. Pour accéder à ces documents en ligne, cliquez sur leur titre dans le tableau ci-dessous ou faites une recherche à l'aide de votre navigateur Web. Communiquez avec le ministère au 1-866-793-2588, ou encore à waterforms@ontario.ca si vous avez des questions ou besoin d'aide.



Pour plus de renseignements sur l'eau potable en Ontario, consultez le site www.ontario.ca/eaupotable

TITRE DE LA PUBLICATION	NUMÉRO DE PUBLICATION
Renseignements sur le profil du réseau d'eau potable Avis de demande de services de laboratoire Avis de résultats d'analyse insatisfaisants et de règlement des problèmes	012-2149F 012-2148F 012-4444F
Prendre soin de votre eau potable - Un guide destiné aux membres des conseils municipaux	Site Web
Marche à suivre pour désinfecter l'eau portable en Ontario	Site Web
Stratégies pour minimiser les trihalométhanes et les acides haloacétiques de sous-produits de désinfection	Site Web
Filtration Processes Technical Bulletin (en anglais seulement)	Site Web
Ultraviolet Disinfection Technical Bulletin (en anglais seulement)	Site Web
Guide de présentation d'une demande de modification du permis d'aménagement de station de production d'eau potable	Site Web
Guide sur l'accréditation des exploitants de réseaux d'eau potable et des analystes de la qualité de l'eau de réseaux d'eau potable	Site Web
Guide sur les exigences relatives à la formation des exploitants de réseaux d'eau potable	9802F
Échantillonnage et analyse du plomb dans les collectivités : échantillonnage normalisé ou réduit et admissibilité à l'exemption	Site Web
Liste des personnes-ressources du réseau d'eau potable	Site Web
L'eau potable en Ontario - Norme de gestion de la qualité - Guide de poche	Site Web
Procédure de désinfection des conduites principales	Site Web
Laboratoires autorisés	Site Web

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