

**Ministry of the Environment  
Conservation and Parks**  
435 James Street South  
Suite 331  
Thunder Bay ON P7E 6S7  
Tel.: 807 475-1205  
Fax: 807 475-1754

**Ministère de l'Environnement, de la  
Protection de la nature et des Parcs**  
435, rue James sud  
Bureau 331  
Thunder Bay ON P7E 6S7  
Tél. : 807 475-1205  
Télec. : 807 475-1754

January 25, 2022

The Corporation of the Town of  
Marathon 4 Hemlo Dr.  
Marathon, ON  
P0T 2E0

Attention: Mr. Brian Hyshka, Water Works/Operation Manager

Dear Mr. Hyshka

**Re: Marathon Drinking Water System Inspection Report (2021/2022)**

Please find attached the 2021/2022 municipal water works inspection report. The announced focused inspection was conducted on September 22, 2021. The time and co-operation of all involved was greatly appreciated.

There are several non-compliance items with associated actions required that must be completed. Please note that "Actions Required" 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.

Best practice issues and associated recommendations, for the continued improvement of operations of the Marathon drinking-water system, are outlined within the report. "Recommended Actions" convey information that the owner or operating authority should consider implementing in order to advance efforts already in place to address such issues as emergency preparedness, the fulsome availability of information to consumers, and conformance with existing and emerging industrial standards. Please note that items which appear as recommended actions do not, in themselves, constitute violations.

In order to measure individual inspection results, the Ministry has established an inspection compliance risk framework based on the principles on the Inspection, Investigation & Enforcement (II&E) Secretariat and advice in internal/external risk experts. The Inspection Summary Rating Record (IRR), included as Appendix B of the

inspection report, provides the Ministry, the system owner and the local Public Health Units with a summarized quantitative measure of the drinking water system's annual inspection and regulated water quality testing performance. Please note the attached IRR methodology memo describing how the risk rating model has improved to better reflect the health related and administrative non-compliance found in an inspection report. 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 Paula Spencer, Drinking Water Program Supervisor, at (807) 707-6346.

Section 19 of the Safe Drinking Water Act (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. These steps could include asking for a copy of this inspection report and a 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 council" found under "Resources" on the Drinking Water Ontario website at [www.ontario.ca/drinkingwater](http://www.ontario.ca/drinkingwater).

If you have any questions or comments in regard to this inspection, or if you would like to discuss Ontario's drinking water legislation, please contact Danielle Krawec at 807-708-5748.

Sincerely,



Danielle Krawec  
Water Inspector  
Ministry of the Environment, Conservation and Parks  
Thunder Bay District Office

CL/cl

cc. Town of Marathon  
4 Hemlo Dr.  
Marathon, Ontario  
P0T 2E0  
**Attention:** Daryl Skworchinski, Chief Administrative  
Officer,

- cc. Northern Waterworks Inc.  
14 Young St.  
Red Lake, Ontario  
P0V 2M0  
**Attention:** Andrew Hallett, Vice President, Municipal Operations  
Nicholas Kyle, Compliance Manager  
Rodger Betts, Overall Responsible Operator
  
- cc. Thunder Bay District Health Unit  
999 Balmoral Ave.  
Thunder Bay,  
Ontario P7B 6E7  
**Attention:** Abby Mackie, Senior Public Health Inspector
  
- cc. Ministry of Natural Resources and Forestry  
P.O. Box 970  
Nipigon,  
Ontario P0T  
2J0  
**Attention:** Chris Magee, District Manager
  
- cc. Ministry of the Environment, Conservation and Parks  
808 Robertson St., 2<sup>nd</sup> Floor  
Kenora, Ontario  
P9N 1X9  
**Attention:** Glen Niznowski, Water Supervisor (A)
  
- cc. Thunder Bay District, Thunder Bay Office



MARATHON DRINKING WATER SYSTEM  
41 HOWE ST, MARATHON, ON, P0T 2E0

## Inspection Report

System Number: 220000255  
Inspection Start Date: 09/22/2021  
Inspection End Date: 01/25/2022  
Inspected By: Danielle Krawec  
Badge #:  
Inspected By: Aaron Causyn  
Badge #: 1560

  
\_\_\_\_\_  
(signature)

## TABLE OF CONTENTS

	<u>Page</u>
<b>Non-Compliance/Non-Conformance Items</b> .....	3 – 4
<b>Inspection Details</b> .....	5 – 21
<b>Appendices</b>	
Appendix A – Key Reference and Guidance Material for Municipal Residential Drinking Water Systems	

**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: Capacity Assessment**

<b>Question ID</b>	MRDW1014000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Is there sufficient monitoring of flow as required by the MDWL or DWWP issued under Part V of the SDWA?	Legislative	SDWA   31   (1)
<b>Observation/Corrective Action(s)</b>		
<p>There was not sufficient monitoring of flow as required by the Municipal Drinking Water Licence (MDWL) or Drinking Water Works Permit (DWWP) issued under Part V of the SDWA. MDWL 230-101 requires that continuous flow measurement and recording shall be undertaken for flow rate (L/S) and daily volume (m3/day) of treated water that flows from the treatment subsystem to the distribution system and flow rate (L/s) and daily volume (m3/day) of water that flows into the treatment subsystem.</p> <p>Each well house is equipped with a flow meter. SCADA trends for flow, at each well, were reviewed and it was determined that flow meters at wells #2, #3 and #4 were not recording accurate flow data during the review period. The flow meters were malfunctioning, recording solid "blocks" of data or spikes where the flow rate cannot be accurately determined. The operating authority has stated that this type of data are indicative of failing devices and that these meters are approaching the end of their expected service life. The operating authority stated that the accuracy of the flow meters is verified on an annual basis. CT is calculated using the maximum pump output.</p> <p>Note: Flow meter on well #2 was replaced and calibrated on October 13, 2021.</p> <p>Required Action(s): The monitoring and recording of flow at wells #2 and 3 during the inspection period is unacceptable and does not meet the requirement set out in the MDWL 230-101 Schedule C. The owner and operating authority has advised the undersigned inspector that the new flow meter for well #3 will be installed in February 2022. Records of the installation shall be sent to the undersigned inspector once installed.</p>		

**Question Group: Logbooks**

<b>Question ID</b>	MRDW1061000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
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)
<b>Observation/Corrective Action(s)</b>	
<p>Logbooks were not properly maintained and/or did not contain the required information. Section 27 of O. Reg. 128/04 lists the record-keeping requirements for the operation of all subsystems in which shall be made chronologically.</p> <p>This includes, but is not limited to:</p> <ul style="list-style-type: none"> <li>- ensure logs record information concerning the operation of the subsystem</li> <li>- record any unusual or abnormal conditions that were observed in the subsystem during the shift, any action that was taken and any conclusions drawn from the observations</li> <li>- record any departures from normal operating procedures that occurred during the shift and the time they occurred.</li> <li>- record any equipment that was taken out of service or ceased to operate during the shift and any action taken to maintain or repair equipment during the shift.</li> </ul> <p>During the review period, the following was observed:</p> <p>On May 23, 2021 the system alarmed for low chlorine at well #4 at 10:37am. The well should have automatically shut down with the alarm but did not shut down in this instance. The main power switch to the building was shut off in order to shut the well down at 10:51am. CT was calculated to be 12.4 with a flow of 22.3L/s and a chlorine residual of 0.66mg/L.</p> <p>There were no further details in the logbook as to the resolution of the automatic well shut down. The operating authority stated that it was determined to be an isolated incident. After troubleshooting and repairs to the chemical system, the operator did not identify any further issues and the automatic shutdown feature worked as intended later the same day at 18:58 and again on May 24, 2021. These latter details were added to the logbook on November 1, 2021.</p> <p>During the inspection period there were numerous instances where the specific well that the entry was referencing was not clear.</p> <p>Action(s) Required: The owner and operating authority shall ensure that all details pertaining to events as mentioned above are recorded in future logbook entries chronologically and meet requirements as detailed in Section 27 of O.Reg. 128.</p> <p>Logbook records are to be sent to the undersigned inspector for the months of December 2021 and January 2022.</p>	

### INSPECTION DETAILS

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

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

<b>Question ID</b>	MRDW1001000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
What was the scope of this inspection?	Information	Not Applicable
<b>Observation</b>		
<p>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.</p> <p>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.</p> <p>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. The announced field inspection was conducted on September 22, 2021 by the undersigned officer, Danielle Krawec and accompanied by water inspector Aaron Causyn. The inspection included a tour of the wells and their associated treatment buildings, Penn Lake Booster Station, Industrial Park Booster Station, document and trending review and interview with system personnel.</p> <p>The inspection review period referred to herein is the period of time from the date of the previous Ministry of the Environment, Conservation and Parks inspection (i.e. September 30, 2020), to the date of this inspection, September 22, 2021, unless otherwise stated.</p>		

<b>Question ID</b>	MRDW1000000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Does this drinking water system provide primary disinfection?	Information	Not Applicable
<b>Observation</b>		
<p>This Drinking Water System provides for both primary and secondary disinfection and distribution of water. The Marathon Drinking Water System is comprised of five (5) groundwater wells, wells #2, 3, 4, 5, and 6. The treatment system for each well is designed to achieve the minimum 2-log (99%) removal or inactivation of viruses using chlorination in accordance with the Ministry's procedure for disinfection of drinking water. In order to achieve CT, each well house has a specifically designed</p>		

chlorine contact loop to provide a minimum of 15 minutes chlorine contact time at peak flows. Disinfection of the raw water source for all wells is achieved by injecting sodium hypochlorite as the raw water enters the contact loop.

<b>Question ID</b>	MRDW1007000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
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)
<b>Observation</b>		
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. Pumps are located over top each well. Each well is located within a well house building, which is equipped with video security and remains locked; additionally well 5 is fenced in.		

<b>Question ID</b>	MRDW1009000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
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)
<b>Observation</b>		
<p>Measures were in place to protect the groundwater source in accordance with the Municipal Drinking Water Licence and Drinking Water Works Permit issued under Part V of the SDWA. Inspection and maintenance of above ground components are conducted on a monthly basis as described in the operating authority's "Planned Maintenance Activities SOP". A monthly "Planned Maintenance Record" is used to document maintenance activities and findings.</p> <p>Below ground components are inspected every 10 years as outlined in the asset management system. Wells 3 and 5 underwent their 10 year inspection in August 2021.</p> <p>The other wells are scheduled to be inspected:          Well 2: scheduled for 2022          Well 4: scheduled for 2022          Well 6: scheduled for 2023</p> <p>Remedial action plans are detailed in the "Source Water Contamination (NWI-ERP-9)" emergency response procedure within the series of contingency plans.</p>		

<b>Question ID</b>	MRDW1011000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Does the owner have a harmful algal bloom monitoring plan in place?	BMP	Not Applicable
<b>Observation</b>		

The owner had a harmful algal bloom monitoring plan in place.

<b>Question ID</b>	MRDW1014000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Is there sufficient monitoring of flow as required by the MDWL or DWWP issued under Part V of the SDWA?	Legislative	SDWA   31   (1)
<b>Observation</b>		
<p>There was not sufficient monitoring of flow as required by the Municipal Drinking Water Licence (MDWL) or Drinking Water Works Permit (DWWP) issued under Part V of the SDWA. MDWL 230-101 requires that continuous flow measurement and recording shall be undertaken for flow rate (L/S) and daily volume (m<sup>3</sup>/day) of treated water that flows from the treatment subsystem to the distribution system and flow rate (L/s) and daily volume (m<sup>3</sup>/day) of water that flows into the treatment subsystem.</p> <p>Each well house is equipped with a flow meter. SCADA trends for flow, at each well, were reviewed and it was determined that flow meters at wells #2, #3 and #4 were not recording accurate flow data during the review period. The flow meters were malfunctioning, recording solid "blocks" of data or spikes where the flow rate cannot be accurately determined. The operating authority has stated that this type of data are indicative of failing devices and that these meters are approaching the end of their expected service life. The operating authority stated that the accuracy of the flow meters is verified on an annual basis. CT is calculated using the maximum pump output.</p> <p>Note: Flow meter on well #2 was replaced and calibrated on October 13, 2021.</p> <p>Required Action(s): The monitoring and recording of flow at wells #2 and 3 during the inspection period is unacceptable and does not meet the requirement set out in the MDWL 230-101 Schedule C. The owner and operating authority has advised the undersigned inspector that the new flow meter for well #3 will be installed in February 2022. Records of the installation shall be sent to the undersigned inspector once installed.</p>		

<b>Question ID</b>	MRDW1016000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
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)
<b>Observation</b>		
<p>The owner was in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the Municipal Drinking Water Licence (MDWL) issued under Part V of the SDWA. The maximum flow rate capacity of each well is specified in MDWL No. 230-101, issue 3: Well 2 - 1961.28 m<sup>3</sup>/d</p>		

Well 3 - 1662.36 m<sup>3</sup>/d  
Well 4 - 2289.60 m<sup>3</sup>/d  
Well 5 - 2289.60 m<sup>3</sup>/d  
Well 6 - 2764.80 m<sup>3</sup>/d

The maximum daily treated flow for the inspection period was:

Well 2 - 927 m<sup>3</sup>/d in August 2021 approximately 47% of the well's rated capacity  
Well 3 - 1422 m<sup>3</sup>/d in October 2020 approximately 86% of the well's rated capacity  
Well 4 - 1834 m<sup>3</sup>/d in August 2021 approximately 80% of the well's rated capacity  
Well 5 - 1517 m<sup>3</sup>/d in October 2020 approximately 66% of the well's rated capacity  
Well 6 - 1675 m<sup>3</sup>/d in October 2020 approximately 61% of the well's rated capacity

<b>Question ID</b>	MRDW1030000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Is primary disinfection chlorine monitoring being conducted at a location approved by MDWL and/or DWWP issued under Part V of the SDWA, or at/near a location where the intended CT has just been achieved?	Legislative	SDWA   O. Reg. 170/03   7-2   (1), SDWA   O. Reg. 170/03   7-2   (2)
<b>Observation</b>		
Primary disinfection chlorine monitoring was conducted at a location approved by Municipal Drinking Water Licence and/or Drinking Water Works Permit issued under Part V of the SDWA, or at/near a location where the intended CT has just been achieved. Raw water is pumped from the well and directed to the chlorine contact loop. As the raw water enters the contact loop sodium hypochlorite is injected. The loop has been specifically designed for each well house, so that a minimum of 15 minutes chlorine contact time is provided at peak flows. Sodium hypochlorite is dosed at a rate to provide both primary and secondary disinfection. The disinfection chlorine residual monitoring is conducted from a sample point at the end of the chlorine contact loop. Each well treatment building has the same set up at mentioned above.		

<b>Question ID</b>	MRDW1033000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
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)
<b>Observation</b>		
The secondary disinfectant residual was measured as required for the distribution system. Secondary disinfection is monitored via continuous monitoring analyzers at both the wastewater treatment plant and the Industrial Park Booster Station. Chlorine was being monitored via continuous monitoring analyzer at the Penn Lake Reservoir and Booster Station until March 15, 2021 when it was removed. Daily grab samples are also taken at the wastewater treatment plant and Industrial Park Booster		

Station and tested for chlorine.

<b>Question ID</b>	MRDW1037000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Are all continuous monitoring equipment utilized for sampling and testing required by O. Reg.170/03, or MDWL or DWWP or order, equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6?	Legislative	SDWA   O. Reg. 170/03   6-5   (1) 1-4,SDWA   O. Reg. 170/03   6-5   (1)5-10,SDWA   O. Reg. 170/03   6-5   (1.1)
<b>Observation</b>		
<p>All continuous monitoring equipment utilized for sampling and testing required by O. Reg.170/03, or Municipal Drinking Water Licence or Drinking Water Works Permit or order, were equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6. Alarm setpoints on all wells are as follows:</p> <ul style="list-style-type: none"> <li>- primary disinfection low chlorine residual alarm set point = 0.70 mg/L</li> <li>- primary disinfection high chlorine residual alarm set point = 5.5 mg/L</li> <li>- distribution sample low chlorine residual alarm set point = 0.25 mg/L</li> <li>- distribution sample high chlorine residual alarm set point = 3.0 mg/L</li> </ul> <p>The low chlorine alarm will shut the well house down at 0.70 mg/L, backflush to draw water back in from the distribution into soak away pit and call out the operator. The backflush continues until it is stopped manually by the operator after the chlorine residual returns to a normal value. The operator manually returns the well to production.</p> <p>The low alarm set points comply with the requirements of Items 1 and 3 of the Table in Schedule 6 of O.Reg. 170/03.</p>		

<b>Question ID</b>	MRDW1038000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Is continuous monitoring equipment that is being utilized to fulfill O. Reg. 170/03 requirements performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format?	Legislative	SDWA   O. Reg. 170/03   6-5   (1) 1-4
<b>Observation</b>		
<p>Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format. The operating authority indicated that free chlorine residuals for primary disinfection and secondary disinfection are sampled by the continuous monitoring analyzers every second.</p>		

<b>Question ID</b>	MRDW1035000	
--------------------	-------------	--

Question	Question Type	Legislative Requirement
Are operators examining continuous monitoring test results and are they examining the results within 72 hours of the test?	Legislative	SDWA   O. Reg. 170/03   6-5   (1) 1-4,SDWA   O. Reg. 170/03   6-5   (1)5-10
<b>Observation</b>		
Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test. Operators review continuous data trends for the past 24 hours daily and make a record of this review in the Operational Spreadsheet.		

Question ID	MRDW1040000		
Question	Question Type	Legislative Requirement	
Are all continuous analysers calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation?	Legislative	SDWA   O. Reg. 170/03   6-5   (1) 1-4,SDWA   O. Reg. 170/03   6-5   (1)5-10	
<b>Observation</b>			
All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation. Daily chlorine grab samples are taken and compared to the online chlorine analyzer. If there is a significant discrepancy (+ 0.05mg/L for residuals < 1.00mg/L, or 5% for residuals >1.00mg/L) between the two readings, the sensor is calibrated on two consecutive days in accordance with section 7.2 of the Operating Instructions Manual. Continuous monitoring chlorine analyzers are calibrated in house monthly as recorded in the Calibration Maintenance Records spreadsheet.			

Question ID	MRDW1108000		
Question	Question Type	Legislative Requirement	
Where continuous monitoring equipment used for the monitoring of free chlorine residual, total chlorine residual, combined chlorine residual or turbidity, required by Regulation 170, an Order, MDWL, or DWWP issued under Part V, SDWA, has triggered 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   6-5   (1) 1-4,SDWA   O. Reg. 170/03   6-5   (1)5-10,SDWA   O. Reg. 170/03   6-5   (1.1)	
<b>Observation</b>			
Where required continuous monitoring equipment used for the monitoring of chlorine residual and/or turbidity triggered an alarm or an automatic shut-off, a qualified person responded in a timely manner and took appropriate actions.			

<b>Question ID</b>	MRDW1018000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
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)
<b>Observation</b>		
<p>The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit. Equipment appeared to be installed in accordance with Schedule A of Drinking Water Works Permit No. 230-201 Issue 3, with one exception:</p> <p>One free chlorine residual and pH analyzer was removed at the Penn Lake Reservoir and Booster Station. This was documented in the corresponding Form 2. It is recommended that this change is reflected in the next MDWL/DWWP renewal.</p>		

<b>Question ID</b>	MRDW1021000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Is the owner/operating authority able to demonstrate that, when required during the inspection period, Form 2 documents were prepared in accordance with their Drinking Water Works Permit?	Legislative	SDWA   31   (1)
<b>Observation</b>		
<p>The owner/operating authority was in compliance with the requirement to prepare Form 2 documents as required by their Drinking Water Works Permit during the inspection period. Two Form 2's were prepared during the inspection period:</p> <ul style="list-style-type: none"> <li>- The removal of the free chlorine and pH analyzer at Penn Lake Reservoir and Booster Station and;</li> <li>- The removal of the emergency eyewash station and associated piping and backflow prevention device at the Industrial Park Booster Station.</li> </ul>		

<b>Question ID</b>	MRDW1023000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
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)
<b>Observation</b>		
<p>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. There was an instance on May 23, 2021, where well 4 alarmed out for low chlorine. The well did not shut off automatically to back flush, but CT was met.</p>		

--

<b>Question ID</b>	MRDW1024000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
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)
<b>Observation</b>		
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.		

<b>Question ID</b>	MRDW1025000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Were all parts of the drinking water system that came in contact with drinking water (added, modified, replaced or extended) disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit?	Legislative	SDWA   31   (1)
<b>Observation</b>		
All parts of the drinking water system were disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit. Well #3 was out of service from October 2020 to August 2021 following a chemical spill at a property adjacent to the well. The well was disinfected following the site specific Disinfection Procedure prepared on October 23, 2020 in adherence to AWWA Standard C654-13. Details pertaining to the well disinfection were recorded in the logbook and met the requirements set out in Schedule B of the Drinking Water Works Permit.		

<b>Question ID</b>	MRDW1062000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
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
<b>Observation</b>		
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.		

<b>Question ID</b>	MRDW1060000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
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)
<b>Observation</b>		
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.		

<b>Question ID</b>	MRDW1071000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Has the owner provided security measures to protect components of the drinking water system?	BMP	Not Applicable
<b>Observation</b>		
The owner had provided security measures to protect components of the drinking water system. All waterworks buildings are equipped with video surveillance and security alarms and remain locked when an operator is not present. Well #5 is enclosed with a fence which remains locked when an operator is not present.		

<b>Question ID</b>	MRDW1073000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Has the overall responsible operator been designated for all subsystems which comprise the drinking water system?	Legislative	SDWA   O. Reg. 128/04   23   (1)
<b>Observation</b>		
The overall responsible operator has been designated for each subsystem. The Marathon Water Treatment Well Supply is a Class I facility operating under licence number 3665, issued April 30, 2006. An accredited operating authority has overall responsibility for the treatment system. The Marathon Water Distribution System is a Class II facility operating under licence number 1221, issued April 30, 2006. The Town of Marathon has overall responsibility of the distribution system. An appropriately licensed overall responsible operator, was designated for each subsystem, during the review period.		

<b>Question ID</b>	MRDW1074000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Have operators in charge been designated for all subsystems for which comprise the drinking water system?	Legislative	SDWA   O. Reg. 128/04   25   (1)
<b>Observation</b>		

Operators-in-charge had been designated for all subsystems which comprised the drinking water system.

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

<b>Question ID</b>	MRDW1076000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Do only certified operators make adjustments to the treatment equipment?	Legislative	SDWA   O. Reg. 170/03   1-2   (2)
<b>Observation</b>		
Only certified operators made adjustments to the treatment equipment.		

<b>Question ID</b>	MRDW1099000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
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
<b>Observation</b>		
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).		

<b>Question ID</b>	MRDW1096000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
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)
<b>Observation</b>		
Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.		

<b>Question ID</b>	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)
<b>Observation</b>		
<p>All microbiological water quality monitoring requirements for distribution samples were being met. Records reviewed for the inspection period indicate that weekly microbiological distribution water samples were collected and analyzed as prescribed with the following exception:</p> <p>Weekly sampling requires samples to be collected 5-10 days after the previous sample was collected.</p> <p>Samples taken on October 20, 2020 were taken 4 days after the previous samples taken on October 16, 2020. According to the operating authority, samples for these wells were originally collected on October 13, 2020. Issues with courier service resulted in the samples arriving at the laboratory past hold time in which the samples cannot be analyzed. A second set of samples were collected on October 16, 2020. As regular sampling resumed the following week, samples were only taken 4 days apart.</p>		

<b>Question ID</b>	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
<b>Observation</b>		
<p>All microbiological water quality monitoring requirements for treated samples were being met. Records reviewed for the inspection period indicate that weekly microbiological treated water samples were collected and analyzed as prescribed with the following exceptions:</p> <p>Weekly sampling requires samples to be collected 5-10 days after the previous sample was collected.</p> <p>Samples taken from all wells on October 20, 2020 were collected 4 days after the previous samples collected on October 16, 2020. According the operating authority samples for these wells were originally collected on October 13, 2020. Issues with courier service resulted in the samples arriving at the laboratory past hold time in which the samples cannot be analyzed. A second set of samples were collected on October 16, 2020. As regular sampling resumed the following week, samples were only taken 4 days apart.</p> <p>Samples taken from Well #5 on August 25, 2021 were collected 15 days after the previous</p>		

samples collected on August 10, 2021. According to the operating authority Well #5 was offline and not in production for third-party inspection and rehabilitation between August 12 -23, 2021.

Samples taken from Well #3 on August 30, 2021 were collected 20 days after the previous samples collected on August 10, 2021. Well #3 was offline from August 15 - 21, 2021. It was put back online August 27, 2021 but locked out with low chlorine alarm and remained offline until August 30, 2021, when samples were then collected.

<b>Question ID</b>	MRDW1084000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Are all inorganic water quality monitoring requirements prescribed by legislation conducted within the required frequency?	Legislative	SDWA   O. Reg. 170/03   13-2
<b>Observation</b>		
All inorganic water quality monitoring requirements prescribed by legislation were conducted within the required frequency. Sampling for inorganic parameters as required under Schedule 23 of O. Reg. 170/03 was last conducted on February 12, 2019 from wells #3, 4, 5 and 6 and April 23, 2019 from well #2. The sampling frequency for inorganic parameters is every 36 months (+/- 60 days). The next round of sampling is required in 2022, +/- 60 days from the three year anniversary date.		

<b>Question ID</b>	MRDW1085000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
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)
<b>Observation</b>		
All organic water quality monitoring requirements prescribed by legislation were conducted within the required frequency. Sampling for organic parameters as required under Schedule 24 of O. Reg. 170/03 was last conducted on February 12, 2019 from wells #3, 4, 5 and 6 and April 23, 2019 from well #2. The sampling frequency for organic parameters is every 36 months (+/- 60 days). The next round of sampling is required in 2022, +/- 60 days from the three year anniversary date.		

<b>Question ID</b>	MRDW1086000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Are all haloacetic acid water quality monitoring	Legislative	SDWA   O. Reg.

requirements prescribed by legislation conducted within the required frequency and at the required location?		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)
<b>Observation</b>		
<p>All haloacetic acid water quality monitoring requirements prescribed by legislation are being conducted within the required frequency and at the required location. Quarterly haloacetic acid samples have been collected as prescribed.</p> <p>Collection dates and values for this inspection period are as follows:          November 17, 2020 = 2.4ug/L          February 23, 2021 = 3.3 ug/L          May 18, 2021 = 3.2 ug/L          August 18, 2021 = 3.9 ug/L</p> <p>The running annual average at the time of the inspection was 3.2 ug/L.</p>		

<b>Question ID</b>	MRDW1087000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
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)
<b>Observation</b>		
<p>All trihalomethane water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location. Quarterly trihalomethane samples have been collected as prescribed.</p> <p>Collection dates and values for this inspection period are as follows:          November 17, 2020 = 7.2 ug/L          February 23, 2021 = 9.1 ug/L          May 18, 2021 = 8.3 ug/L          August 18, 2021 = 10.3 ug/L</p> <p>The running annual average at the time of the inspection was 8.7 ug/L.</p>		

<b>Question ID</b>	MRDW1088000	
<b>Question</b>	<b>Question</b>	<b>Legislative</b>

	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
<b>Observation</b>		
<p>All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the required frequency for the DWS. Quarterly nitrate/nitrite samples have been collected as prescribed.</p> <p>Collection dates for this inspection period are as follows: November 17, 2020, February 23, 2021, May 18, 2021 and August 18, 2021.</p>		

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
<b>Observation</b>		
<p>All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency. Sodium samples were last collected as follows:</p> <p>Well #2 February 19, 2019 = 14.6 mg/L Well #3 February 12, 2019 = 14.4 mg/L Well #4 February 12, 2019 = 17.6 mg/L Well #5 February 12, 2019 = 15.1 mg/L Well #6 February 12, 2019 = 20.1 mg/L</p> <p>Well #6 was resampled on February 19, 2019 as a result of the initial sample exceeding the limit of 20 mg/L.</p> <p>Sodium is required to be sampled every 60 months and is due in 2024, not more than 90 days before or after the fifth anniversary of the day a sample was taken for that purpose in the previous 60-month period.</p>		

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
<b>Observation</b>		
<p>All fluoride water quality monitoring requirements prescribed by legislation were conducted within the required frequency. Fluoride samples were last collected as follows:</p> <p>Well #2 April 23, 2019 = 0.090 mg/L Well #3 February 12, 2019 = 0.092 mg/L Well #4 February 12, 2019 = 0.092 mg/L Well #5 February 12, 2019 = 0.078 mg/L</p>		

Well #6 February 12, 2019 = 0.157 mg/L

Fluoride is required to be sampled every 60 months and is due in 2024, not more than 90 days before or after the fifth anniversary of the day a sample was taken for that purpose in the previous 60-month period.

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

<b>Question ID</b>	MRDW1117000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
Are there any other DWS related items that should be recognized in this report?	Information	Not Applicable
<b>Observation</b>		
<p>The following items are noted as being relevant to the Drinking Water System: A diesel fuel spill of approximately 1,800 L was released onto the ground on October 11, 2020 at 54 Stevens Avenue, Marathon, Ontario. Well #3 was shut down within hours of the spill occurring. Pario Engineering oversaw a site remediation program in late October 2020, where the excavation and removal of approximately 1,490 tonnes of diesel impacted soil from the site occurred. It was determined by the results of the remediation program that the potential for diesel fuel impacts to the groundwater beneath the spill site was unlikely. Northern Waterworks Inc. (NWI) collected a sample of untreated water from well #3 on October 21, 2020. Benzene, toluene, ethylbenzene, and xylene (BTEX), and petroleum hydrocarbons (PHCs) were below the laboratory method detection limit. Further hydrocarbon sampling was conducted at well #3 from April 2021 to September 2021, all of which were non-detect for the parameters noted above. The well was disinfected and put back into service in August 2021. Quarterly sampling for hydrocarbons will continue at least until the end of 2022 as part of the TBT Engineering monitoring plan.</p> <p>Action(s) Required: Provide the undersigned inspector with a copy of the formal report, being prepared by TBT Engineering, for the fuel spill once it becomes available.</p>		

<b>Question ID</b>	MRDW1059000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
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

<b>Observation</b>
The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.

<b>Question ID</b>	MRDW1061000	
<b>Question</b>	<b>Question Type</b>	<b>Legislative Requirement</b>
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)
<b>Observation</b>		
<p>Logbooks were not properly maintained and/or did not contain the required information. Section 27 of O. Reg. 128/04 lists the record-keeping requirements for the operation of all subsystems in which shall be made chronologically.</p> <p>This includes, but is not limited to:</p> <ul style="list-style-type: none"> <li>- ensure logs record information concerning the operation of the subsystem</li> <li>- record any unusual or abnormal conditions that were observed in the subsystem during the shift, any action that was taken and any conclusions drawn from the observations</li> <li>- record any departures from normal operating procedures that occurred during the shift and the time they occurred.</li> <li>- record any equipment that was taken out of service or ceased to operate during the shift and any action taken to maintain or repair equipment during the shift.</li> </ul> <p>During the review period, the following was observed: On May 23, 2021 the system alarmed for low chlorine at well #4 at 10:37am. The well should have automatically shut down with the alarm but did not shut down in this instance. The main power switch to the building was shut off in order to shut the well down at 10:51am. CT was calculated to be 12.4 with a flow of 22.3L/s and a chlorine residual of 0.66mg/L. There were no further details in the logbook as to the resolution of the automatic well shut down. The operating authority stated that it was determined to be an isolated incident. After troubleshooting and repairs to the chemical system, the operator did not identify any further issues and the automatic shutdown feature worked as intended later the same day at 18:58 and again on May 24, 2021. These latter details were added to the logbook on November 1, 2021.</p> <p>During the inspection period there were numerous instances where the specific well that the entry</p>		

was referencing was not clear.

Action(s) Required:

The owner and operating authority shall ensure that all details pertaining to events as mentioned above are recorded in future logbook entries chronologically and meet requirements as detailed in Section 27 of O.Reg. 128.

Logbook records are to be sent to the undersigned inspector for the months of December 2021 and January 2022.



---

**Key Reference and Guidance Material for Municipal Residential Drinking  
Water Systems**

---

# 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](mailto:waterforms@ontario.ca).

For more information on Ontario's drinking water visit [www.ontario.ca/drinkingwater](http://www.ontario.ca/drinkingwater)



PUBLICATION TITLE	PUBLICATION NUMBER
<b>FORMS:</b> 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

# 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](mailto: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](http://www.ontario.ca/eaupotable)

TITRE DE LA PUBLICATION	NUMÉRO DE PUBLICATION
Renseignements sur le profil du réseau d'eau potable	012-2149F
Avis de demande de services de laboratoire	012-2148F
Avis de résultats d'analyse insatisfaisants et de règlement des problèmes	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 potable 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