

**Ministry of the
Environment,
Conservation and Parks**
Eastern Region
Peterborough District Office
300 Water Street
2nd Floor, South Tower
Peterborough ON K9J 3C7
Phone: 705.755.4300
or 800.558.0595

**Ministère de l'Environnement,
de la Protection de la nature
et des Parcs**
Région de l'Est
Bureau du district de Peterborough
300, rue Water
2^e étage, Tour Sud
Peterborough (Ontario) K9J 3C7
Tél: 705 755-4300
558-0595230,



October 6, 2022

Mr. Troy Gilmour
Township of Alnwick/Haldimand
Chief Administrative Officer
10836 County Road 2
P.O. Box 70 Grafton ON
K0K 2G0

Dear Mr. Gilmour,

Re: Compliance Inspection Report for the Grafton Drinking Water System

The enclosed report documents findings of the inspection that was performed at the Grafton Drinking Water System on September 1, 2022.

“Non-Compliances”, are found on page 3 of the report, 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. Please note that the required actions may contain required dates for completion.

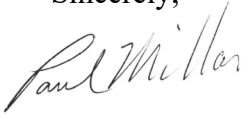
“Recommended Actions”, as Other Inspection Findings are found also on page 3 of the report, convey information that the owner or operating authority should consider implementing in order to advance efforts already in place to address such issues as emergency preparedness, the fulsome availability of information to consumers, and conformance with existing and emerging industry standards. Please note that items which appear as recommended actions do not, in themselves, constitute violations.

“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)”.

Thank you for the assistance afforded to me during the conduct of the compliance assessment.

Should you have any questions regarding the content of the enclosed report please do not hesitate to contact me.

Sincerely,



Paul Millar
Water Inspector
(613) 827-2531
Fax: (613) 962-6809
E-mail: paul.millar@ontario.ca

Enclosure (1)

SI NO AH GR ED 540 (2022/23)

c:

Mr. Larry Spyrka, Operating Authority, Lakefront Utilities – Manager

Dr. Natalie Bocking, Medical Officer of Health, Haliburton, Kawartha, Pine Ridge District
Health Unit

Ms. Rhonda Bateman, CAO/Treasurer, Lower Trent Conservation Authority, 714 Murray Street,
RR1, Trenton, ON K8V 5P4

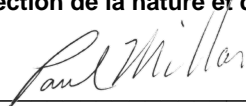
Ms. Jacqueline Fuller, Water Supervisor, Ministry of Environment, Conservation & Parks,
Peterborough



Grafton Drinking Water System
434 EDWARDSON RD, ALNWICK-HALDIMAND, ON,
Inspection Report

System Number: 220009158
Entity: THE CORPORATION OF THE
TOWNSHIP OF ALNWICK-
HALDIMAND
LAKEFRONT UTILITY SERVICES
INC.

Inspection Start Date: 09/01/2022
Inspection End Date: 09/26/2022
Inspected By: Paul Millar
Badge #: 1130



(signature)

Type text here

TABLE OF CONTENTS

1. Drinking Water System Inspection Report

Appendix:

A. Stakeholders Appendix

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	MRDW1025001	Question Type	Legislative
Question:			
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 Requirement	SDWA 31 (1);		
Observation/Corrective Action(s)			
All parts of the drinking water system were not disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit.			
Records provided regarding distribution system repairs made on June 9, 2022, in the area of 133 Canning Factory Road failed to confirm that disinfection was completed in accordance with Drinking Water Works Permit #238-201, Section 2.0, and the Ministry's-2020 Watermain Disinfection Procedure.			
Please be advised that according to your DWWP and the 2020-WDP, the following shall be completed;			
2.3 All parts of the drinking water system in contact with drinking water that are added, modified, replaced, extended shall be disinfected in accordance with a procedure approved by the Director or in accordance with the applicable provisions of the following documents:			
a) Until August 25, 2022 the ministry's Watermain Disinfection Procedure, dated November 2015. As of August 26, 2022 the ministry's Watermain Disinfection Procedure, dated August 1, 2020;			
b) Subject to condition 2.3.2, any updated version of the ministry's Watermain Disinfection Procedure;			
2.3.1 For greater clarity, where an activity has occurred that could introduce contamination, including but not limited to repair, maintenance, or physical / video inspection, all equipment that may come in contact with the drinking water system shall be disinfected in accordance with the requirements of condition 2.3.			

above.

Therefore by no later than October 31, 2022, provide written confirmation to the attention of the author/Provincial Officer of this Inspection Report that details how you will ensure that future distribution work will complete the appropriate disinfection requirements and document all activities.

Question ID	MRDW1046001	Question Type	BMP
Question:			
Is there a backflow prevention program, policy and/or bylaw in place that addresses cross connections and connections to high hazard facilities?			
Legislative Requirement	Not Applicable		
Observation/Corrective Action(s)			
There was no backflow prevention program, policy and/or bylaw in place.			
It is recommended that the Operating Authority/Owner consider drafting a policy to be included in the O/M Manual to address the inspection and testing of backflow preventers at the wellhouse, as well as those (as applicable) within the distribution system.			

Question ID	MRDW1052001	Question Type	BMP
Question:			
Is there a by-law or policy in place limiting access to hydrants?			
Legislative Requirement	Not Applicable		
Observation/Corrective Action(s)			
There was no by-law or policy in place limiting access to hydrants.			

Question ID	MRDW1061001	Question Type	Legislative
Question:			
Are logbooks properly maintained and contain the required information?			
Legislative Requirement	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);		

<p>Observation/Corrective Action(s)</p> <p>Logbooks were not properly maintained and/or did not contain the required information.</p> <p>Records provided indicate that a few distribution &/or appurtenance repairs occurred over the inspection period, specifically on January 12, June 2 and 9 of 2022. The log records provided for the January 12 & June 2, maintenance activities presented poorly from a legibility perspective. In addition, the records failed to identify the author, and if they were OIC or ORO for the tasks.</p> <p>According to O.Reg. 128/04, Section 27, subsection 27(3&4);</p> <p>(3) paraphrased - only an overall responsible operator (ORO), or an operator-in-charge (OIC) is authorized to make entries by the owner, the O/A, the ORO/OIC.</p> <p>(4) paraphrased - entries in a log or other record-keeping mechanism shall do so in a manner that permits the person to be unambiguously identified as the maker of the entry.</p> <p>By no later than October 31, 2022, provide to the attention & satisfaction of the author/Provincial Officer of this report a revised log sheet or records capture system, that will ensure that the items noted above will be captured and available for any future dist system repairs or activities.</p>

Question ID	MRDW1072001	Question Type	BMP
Question:			
Has the owner and/or operating authority undertaken efforts to promote water conservation and reduce water losses in their system?			
Legislative Requirement	Not Applicable		
Observation/Corrective Action(s)			
<p>The owner and/or operating authority did not undertake efforts to promote water conservation and/or reduce water losses in their system.</p> <p>No formal Bylaw or Policy was provided that directly speaks to water conservation. That said, the Municipality has implemented By-Law #38-2021, being a by-law to establish water rates for 2021-2026 upon the users of the water system to recover the operating and capital costs required to operate, repair and maintain the water system in the township of Alnwick/Haldimand by Lakefront Utility Services Inc.</p> <p>It is understood that consumer misuse of the water supply comes at a cost to the owner of the residences in accordance with the above noted by-law, which in itself encourages water conservation and mitigates to some degree water misuse.</p>			

No further actions required.

Question ID	MRDW1116001	Question Type	BMP
Question:			
Were the inspection questions sufficient to address other identified best practice issues?			
Legislative Requirement	Not Applicable		
Observation/Corrective Action(s)			
The following issues were also noted during the inspection:			
<p>1.) It is recommended that the O/A consider the merits of creating & utilizing a monthly anomalous data sheet to capture & document details where SCADA or compliance data is considered erroneous due to contributing factors such as calibrations, power-blips, maintenance or the operation of the gen-set for example.</p>			

INSPECTION DETAILS

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

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

Question ID	MRDW1001001	Question Type	Information
Question:			
What was the scope of this inspection?			
Legislative Requirement	Not Applicable		
Observation			
<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.</p> <p>On September 1, 2022, the undersigned Ministry of the Environment, Conservation and Parks (MECP) Water Inspector visited the Grafton Drinking Water System (DWS) for the purpose of performing a detailed, announced drinking-water system inspection.</p> <p>The MECP Inspector was accompanied during the physical inspection of the water treatment plant by Mr. Larry Spyrka, Manager of Water Capital Projects, as well as Mr. Scott Prins, Duty Operator/Operator In Charge & Ms. Mina Aminnejad, identified as the interim compliance coordinator.</p> <p>The Corporation of the Township of Alnwick/Haldimand is the owner of the drinking water system, with Lakefront Utility Services Incorporated (L.U.S.I.) identified as the Operating Authority of the entire drinking water system, including the distribution system.</p> <p>The Grafton Drinking Water system serves approximately ~1000 residents, and under the Regulation is therefore considered to be a large municipal residential system, subject to the</p>			

Regulation.

The drinking water inspection included a physical inspection of the treatment plant, production wells and plant exterior, as well as a document review for the period of Oct. 1, 2021 to Aug. 31, 2022, hereafter, referred to as the inspection period in this report.

Last year's inspection did not cite any Issues of Non-Compliances but did provide nine (9) recommendations as noted within the Other identified best practises section of the report.

Question ID	MRDW1000001	Question Type	Information
Question:			
Does this drinking water system provide primary disinfection?			
Legislative Requirement	Not Applicable		
Observation			
This Drinking Water System provides for both primary and secondary disinfection and distribution of water.			
Primary disinfection (as well as secondary) is satisfied with liquid sodium hypochlorite and sufficient contact times.			

Question ID	MRDW1007001	Question Type	Legislative
Question:			
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 Requirement	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.			
As noted in last years compliance inspection report and again identified during the physical inspection this year of the wells, each of the production wells were surrounded by chain link fencing, that was topped with barbed wire and each were equipped with padlocks on the entry gates. Further, all steel well casings were capped with suitable well caps, with the exception of the older former production well-TW3. This well is being utilized for water level monitoring purposes. Sloping around each of the wells appeared adequate and all casing were above grade. Further, it was reported that on a monthly basis a work order is generated and assigned to staff to inspect the above ground components to confirm integrity. According to records provided the below ground component and casing were			

video inspected, with well #2 having a new pump installed. The work was carried out by International Water Supply Limited in 2019 (July, Oct. & Nov.).

Question ID	MRDW1008001	Question Type	Legislative
Question:			
If there are municipal wells not being used as a raw water supply, is the owner maintaining the wells in a manner to prevent the entry of surface water and other foreign materials?			
Legislative Requirement	OWRA R.R.O. 1990, Reg. 903 21 (3);		
Observation			
The owner was maintaining the municipal wells not being used as a raw water supply in a manner to prevent the entry of surface water and other foreign materials.			
Due to elevated concentrations of ammonia in well #1, the Owner & Operating Authority have decided to utilize this well only on an "emergency as needed bases", however, the source is adequately protected as noted previously, as well as being sampled routinely as per legislation.			

Question ID	MRDW1009001	Question Type	Legislative
Question:			
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 Requirement	SDWA 31 (1);		
Observation			
Measures were in place to protect the groundwater and/or GUDI source in accordance with the Municipal Drinking Water Licence and Drinking Water Works Permit issued under Part V of the SDWA.			
Measures to protect the source water have been identified in Municipal License and Permit #238-101/238-201, as well as Permits To Take Water #5086-9BPM4A & #3872-C8LQQF. Each of the aforementioned documents prescribes limits as to the water treatment plant's rated capacity &/or the amounts of water that can be taken from either potential well source. In addition, as previously mentioned the O/A undertakes monthly inspections of the wells.			

Question ID	MRDW1010001	Question Type	BMP
Question:			

Are trends in source water quality being monitored?	
Legislative Requirement	Not Applicable
Observation	
<p>Trends in source water quality were being monitored.</p> <p>The Grafton Drinking Water System does monitor trends in accordance with their active Permit To Take Water and also as required by Ontario Regulation 170/03. The Owner is to ensure that monitoring of the production & sentinel monitoring wells are carried out in accordance with Permits To Take Water (PTTW) #5086-9BPM4A & #3872-C8LQQF, Condition 4, entitled Monitoring. This includes, monitoring for flows, levels measurements, chloride, sodium, calcium, magnesium, potassium, hardness, pH, alkalinity, iron, conductivity, nitrite, nitrate, total kjeldahl nitrogen, ammonia, organic nitrogen, dissolved reactive phosphorus, total organic carbon, benzene, toluene, ethylbenzene and xylene. Further, these PTTW also stipulate that an Interpretive Report be generated annually and submitted to the Director. Annual interpretive reports shall include: analysis of the hydrogeology of the area, the aquifer characteristics, the natural and induced flow directions, the changes and trends in hydraulics, water levels, well yields and water quality; and evaluations of the potential for future contamination of the municipal production wells, the potential for interference with wells outside the serviced area and the adequacy of the monitoring program along with any proposed changes to the monitoring program based on current information. Stipulations are also in place should monitoring yield detections of concern as it relates benzene, toluene, ethylbenzene and xylene or flow directions towards the Municipal supply.</p> <p>For a complete breakdown of the requirements of the monitoring prescribed by this control document I encourage you to review the above noted PTTW.</p> <p>Also, the regulatory requirements include monitoring for microbiological parameters of total coliforms and E.coli, weekly, and in addition every thirty-six (36) months the production wells are to be sampled & tested for inorganics and organic parameters as per Schedules 23 & 24.</p>	

Question ID	MRDW1014001	Question Type	Legislative
Question:			
Is there sufficient monitoring of flow as required by the MDWL or DWWP issued under Part V of the SDWA?			
Legislative Requirement	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.			

Municipal License #238-101, Schedule C, section 2.0, states that the Drinking Water System (DWS) shall ensure continuous flow measurement and recording for;

2.1.1) the flow rate and daily volume of treated water that flows from the treatment system conveyed into the treatment sub system to the distribution system and;

2.1.2) the flow rate and daily volume of water that flows into the treatment subsystem.

During the field inspection of the water treatment pumphouse three (3) flow meters were identified, to include two (2) ABB mag meters, monitoring the raw & treated waters, as well as a third Siemens mag meter unit monitoring the bulk water fill station.

Question ID	MRDW1015001	Question Type	Legislative
Question:			
Are the flow measuring devices calibrated or verified in accordance with the requirements of the MDWL issued under Part V of the SDWA?			
Legislative Requirement	SDWA 31 (1);		
Observation			
The flow measuring devices were calibrated or verified in accordance with the requirements of the MDWL issued under Part V of the SWDA.			
According to Municipal License 238-101, (Issue 4) Schedule C, Condition 3.0, entitled "Calibration of Flow Measuring Devices",			
The Works owner shall ensure;			
3.1 All flow measuring devices that are required by regulation, by a condition in the drinking water works permit 238-201, or by a condition otherwise imposed by the Ministry, shall be checked and where necessary calibrated in accordance with the manufacturer's instructions.			
3.2 If the manufacturer's instructions do not indicate how often to check and calibrate a flow measuring device, the equipment shall be checked and where necessary calibrated at least once every 12 months during which the drinking water system is in operation.			
3.2.1 For greater certainty, if condition 3.2 applies, the equipment shall be checked and where necessary calibrated not more than 30 days after the first anniversary of the day the equipment was checked and calibrated in the previous 12-month period.			
Records provided indicate that the flow meters (x3) were all last successfully calibrated by Franklin Empire, specifically Mr. Mitch Manley (Technician) on June 13, 2022.			

--

Question ID	MRDW1016001	Question Type	Legislative
Question:			
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 Requirement	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.			
A review of the treated water flow data recorded over the inspection period (Nov.1/21-Aug. 31/22) indicates that there were no incidences where flows exceeded the limit of 1253 M3/day.			
Maximum flows ranged from ~246 - ~808 m3/d.			
These values equate to 20% - 64%, of the MDWL maximum allowable daily takings.			

Question ID	MRDW1017000	Question Type	Legislative
Question:			
Were appropriate records of flows and any capacity exceedances made in accordance with the MDWL issued under Part V of the SDWA?			
Legislative Requirement	SDWA 31 (1);		
Observation			
Appropriate records of flows and any capacity exceedances were made in accordance with the Municipal Drinking Water Licence issued under Part V of the SDWA.			

Question ID	MRDW1013001	Question Type	Legislative
Question:			
Is the owner in compliance with all conditions of the PTTW?			
Legislative Requirement	OWRA 34 (3);		
Observation			
The owner was in compliance with all conditions of the PTTW.			

Permits To Take Water (PTTW) #5086-9BPM4A & 3872-C8LQQF, dated Sept. 26, 2013 & Dec. 16, 2021, (respectively) prescribes the maximum allowable takings as 870 L/min (~14.5 L/s), or 1252,800 L/day for the production wells. In addition, the Permit also prescribes that sampling of the production and sentinel monitoring wells shall be carried out as per Condition 4.0, "Monitoring", which obligates the Works Owner to ensure that this comprehensive sampling regime is carried out as defined, to include the production of an annual interpretive report to be submitted to the MECP-Director. This includes sampling of multiple raw water quality parameters, as well as level measurements in the production, sentinel and monitoring wells in the vicinity of Cranberry Lake.

It should be mentioned that PTTW #5086-9BPM4A, Condition 4.6 states;

If water quality testing with respect to Conditions 4.2 and 4.5 detects benzene, toluene, ethylbenzene, or xylene (BTEX), or detects chloride concentrations greater than 125 mg/L, the Director shall be notified immediately. In addition the Permit Holder shall immediately commence weekly sampling and analysis for benzene, toluene, ethylbenzene, xylene, chloride, sodium, calcium, magnesium, potassium, hardness, pH, alkalinity, iron, conductivity, nitrite, nitrate, total kjeldahl nitrogen, ammonia; organic nitrogen, dissolved reactive phosphorus, and total organic carbon. An interpretive report shall be submitted to the Director within 2 months of the occurrence.

Records provided indicate that this condition was satisfied and verbally reported to the Ministry of Environment, Conservation & Parks (MECP) on Dec. 22, 2021, with lab results provided on Jan. 8, 2021, from the Dec. 8, 2020 sampling effort, which yielded low level detections of toluene and xylene from the intermediate sentinel monitoring well, with results below the Ontario Drinking Water Quality Standards. Subsequent weekly sampling yielded further detections of toluene & xylene from the intermediate and shallow monitoring wells, although no level monitoring data obtained suggested that these contaminants may be coming from the former landfill in the area. Technical memos & updates were provided by GeoKamp Limited to MECP subsequent to sampling efforts in January, March, April, July & October of 2021 and March and June of 2022. Of note, between January and the end of April -2021, nine (9) sets of weekly samples were taken, yielding repeated detections of BTEX from the intermediate and shallow sentinel monitoring wells.

A meeting was convened on May 18, 2021 with MECP and all stakeholders to discuss sample results collected thus far subsequent to the initial detection of BTEX, to outline next steps. It was decided that sampling would be transitioned from weekly to quarterly, subsequent to the last April weekly sampling effort. Ultimately, the quarterly sampling results continued to yield BTEX detections up till the December-2021 sampling effort.

It should be noted that the March & June - 2022 sampling efforts did not detect any further BTEX results.

Of note, the "2021" Interpretive Report, dated Jan. 31, 2022 has also been provided to MECP as per Condition 4.7.

Question ID	MRDW1018001	Question Type	Legislative
Question: Has the owner ensured that all equipment is installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit?			
Legislative Requirement	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	MRDW1028001	Question Type	Legislative
Question: Are up-to-date plans for the drinking water system kept in place, or made available in such a manner, that they may be readily viewed by all persons responsible for all or part of the operation of the drinking water system in accordance with the DWWP and MDWL issued under Part V of the SDWA?			
Legislative Requirement	SDWA 31 (1);		
Observation			
Up-to-date plans for the drinking water system were kept in a place, or made available in such a manner, that they could be readily viewed by all persons responsible for all or part of the operation of the drinking water system in accordance with the DWWP and MDWL issued under Part V of the SDWA.			
During the field inspection multiple "As Built" plans and drawings were identified located adjacent to the operator's log & data entry station.			

Question ID	MRDW1021001	Question Type	Legislative
Question: 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 Requirement	SDWA 31 (1);		
Observation			
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.			

A single Form #2 - Record of Minor Modifications or Replacements to the Drinking Water System was provided, dated May 13, 2022, and was signed by Mr. Larry Spyrka, Manager of Water Capital Projects for Lakefront Utilities Services Incorporated (LUSI) on behalf of the Township of Alnwick/Haldimand. The Form #2 provided was for the removal and replacement of process piping located between the well discharge and clearwell. Corroding stainless steel piping was removed and replaced with PVC piping. New dosing quills were installed for sodium silicate and sodium hypochlorite, replacing the existing dosing points. Location of the dosing points was changed slightly but are still in line between the flow control valve and mixer. Also, the existing static inline mixer was replaced with a new unit.

Question ID	MRDW1114001	Question Type	Legislative
Question:			
Does the owner have evidence that, when required, all legal owners associated with the DWS were notified of the requirements of the Licence & Permit?			
Legislative Requirement	SDWA 31 (1);		
Observation			
The owner had evidence that required notifications to all legal owners associated with the Drinking Water System had been made during the inspection period.			

Question ID	MRDW1025001	Question Type	Legislative
Question:			
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 Requirement	SDWA 31 (1);		
Observation			
All parts of the drinking water system were not disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit.			
Records provided regarding distribution system repairs made on June 9, 2022, in the area of 133 Canning Factory Road failed to confirm that disinfection was completed in accordance with Drinking Water Works Permit #238-201, Section 2.0, and the Ministry's-2020 Watermain Disinfection Procedure.			
Please be advised that according to your DWWP and the 2020-WDP, the following shall be completed;			
2.3 All parts of the drinking water system in contact with drinking water that are added,			

modified, replaced, extended shall be disinfected in accordance with a procedure approved by the Director or in accordance with the applicable provisions of the following documents:

a) Until August 25, 2022 the ministry's Watermain Disinfection Procedure, dated November 2015. As of August 26, 2022 the ministry's Watermain Disinfection Procedure, dated August 1, 2020;

b) Subject to condition 2.3.2, any updated version of the ministry's Watermain Disinfection Procedure;

2.3.1 For greater clarity, where an activity has occurred that could introduce contamination, including but not limited to repair, maintenance, or physical / video inspection, all equipment that may come in contact with the drinking water system shall be disinfected in accordance with the requirements of condition 2.3. above.

Therefore by no later than October 31, 2022, provide written confirmation to the attention of the author/Provincial Officer of this Inspection Report that details how you will ensure that future distribution work will complete the appropriate disinfection requirements and document all activities.

Question ID	MRDW1023001	Question Type	Legislative
Question:			
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 Requirement	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 O. Reg. 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.			
The Grafton treatment system includes two inter-connected underground clearwells (ea 525 m3 - with dimension of ~7.35 M x ~17.55 x ~4-5.8 m), at a minimum level of 4.0 m, along with chlorination, which together has been credited with 2.0+-log R/I of Viruses, based on Municipal License #238-101, (issue 4) Schedule E, providing that the CT provided shall be greater than or equal to the CT required to achieve the log removal credits assigned. Liquid			

sodium hypochlorite (~12%) is injected immediately upstream of clearwell #1 for purposes of satisfying primary & secondary disinfection.

CT calculations completed by the undersigned utilizing worst case variables of; max flow rate of 14.4 L/s (.864 m3/min), baffle factor of 0.3, the lowest free chlorine residual recorded over the inspection period of 0.93 ppm, a max pH of ~8, min clearwell volume of 1050 m3, and a min temperature of ~10 degrees Celsius, yielded CT achieved value of ~339 mg.min/L.

The required CT value, according to the Ministry's-Procedure for Disinfection of Drinking Water in Ontario, indicates that a CT Required value of 3 mg.min/L is necessary.

Question ID	MRDW1027000	Question Type	Legislative
Question:			
Does the owner have evidence indicating that all chemicals and materials which come in contact with water within the drinking water system have met all applicable AWWA and ANSI standards in accordance with the DWWP and MDWL issued under Part V of the SDWA?			
Legislative Requirement	SDWA 31 (1);		
Observation			
The owner had evidence indicating that all chemicals and materials that come in contact with water within the drinking water system met the AWWA and ANSI standards in accordance with the Municipal Drinking Water Licence and Drinking Water Works Permit issued under Part V of the SDWA.			
Documentation was provided to indicate that the sodium hypochlorite and sodium silicate both have ANSI/NSF-60 certification.			

Question ID	MRDW1024001	Question Type	Legislative
Question:			
Do records confirm that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated as required?			
Legislative Requirement	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.

Records provided indicate that secondary disinfectant residuals are sampled & tested "daily", seven (7) days a week.

Question ID	MRDW1033001	Question Type	Legislative
Question: Is the secondary disinfectant residual measured as required for the large municipal residential distribution system?			
Legislative Requirement	SDWA O. Reg. 170/03 7-2 (3); SDWA O. Reg. 170/03 7-2 (4);		
Observation			
<p>The secondary disinfectant residual was measured as required for the large municipal residential distribution system.</p> <p>According to O.Reg. 170/03, Schedule 7, section 7-2(3a), obligates the Owner of the drinking water system to ensure that secondary disinfection monitoring is completed at least seven times a week from the distribution system and tested for free chlorine residual.</p> <p>The Grafton DWS staff ensure that sampling is carried out daily, seven days a week according to records & information provided. Records indicate that secondary residuals ranged from 0.61 mg/L - 1.67 mg/L.</p>			

Question ID	MRDW1036001	Question Type	Legislative
Question: Where continuous monitoring equipment is not used for chlorine residual analysis, are samples tested using an acceptable portable device?			
Legislative Requirement	SDWA O. Reg. 170/03 6-7 (1);		
Observation			
<p>Samples for chlorine residual analysis were tested using an acceptable portable device.</p> <p>During the field inspection it was confirmed that the secondary disinfectant is monitored daily, via grab sampling with the assistance of a Hach portable colorimeter II unit.</p>			

Question ID	MRDW1049001	Question Type	BMP
Question:			

Do records confirm that disinfectant residuals are routinely checked at the extremities and dead ends of the distribution system?	
Legislative Requirement	Not Applicable
Observation	
Records confirmed that disinfectant residuals were routinely checked at the extremities and dead ends of the distribution system.	
According to secondary disinfectant residual data provided and distribution mapping, it appears that staff commonly will take regulatory samples from Brimley & Station Roads, as well as along the east and west extremities of Hwy #2.	

Question ID	MRDW1030000	Question Type	Legislative
Question:			
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 Requirement	SDWA O. Reg. 170/03 7-2 (1); SDWA O. Reg. 170/03 7-2 (2);		
Observation			
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.			
Chlorine residual monitoring was observed in place just downstream of the highlift pump discharge header via a Siemens pH compensated continuous monitoring chlorine residual analyzer, reading 1.12 mg/L at the time of review. Records provided indicate that primary chlorine residuals ranged from 0.93 mg/L - 1.99 mg/L.			

Question ID	MRDW1031001	Question Type	BMP
Question:			
Are operators aware of the operational criteria necessary to achieve primary disinfection within the drinking water system?			
Legislative Requirement	Not Applicable		
Observation			
Operators were aware of the operational criteria necessary to achieve primary disinfection within the drinking water system.			

All staff are reported to understand primary disinfection and have access to documentation to explain further, such as the Grafton Critical Control Points document; "QMS-D03-CCP & CCL". Further, staff also have access to the Grafton Chlorine Contact Time Calculation Procedure, that details variables utilized, as well as CT Required vs Achieved values. One point of clarification should be mentioned is that the CT Procedure utilizes the raw water flows, instead of the highlift flows.

Since it is the highlift pump flows that dictate the duration or contact time that the reservoir water is in contact with the hypo, this flow is considered to be a more accurate and conservative approach for calculating CT.

It is strongly recommended that immediate efforts be implemented to alter historical CT calculation procedure documentation and also ensure that the log inactivation required specified within this excel document references a value of; 2 log Removal/Inactivation (R/I) for Viruses, vs that identified within currently as; 0.20 log R/I.

Question ID	MRDW1035001	Question Type	Legislative
Question:			
Are operators examining continuous monitoring test results and are they examining the results within 72 hours of the test?			
Legislative Requirement	SDWA O. Reg. 170/03 6-5 (1)1-4; SDWA O. Reg. 170/03 6-5 (1)5-10;		
Observation			
Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.			
Based upon log sheets provided and reports given during the field inspection, staff visit the drinking water system daily, seven (7) days a week, at which time data is captured and trends reviewed as necessary.			

Question ID	MRDW1038001	Question Type	Legislative
Question:			
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 Requirement	SDWA O. Reg. 170/03 6-5 (1)1-4;		
Observation			

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.

Question ID	MRDW1037001	Question Type	Legislative
Question:			
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 Requirement	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);		
Observation			
<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.</p> <p>The Grafton DWS utilizes chlorine to satisfy primary & secondary disinfection needs.</p> <p>Consequentially, three (3) Siemens (Wallace & Tiernan) continuous monitoring analyzers are utilized to measure the disinfectant residuals of the water pre-clearwell & at the point where primary disinfection is achieved, as well as a backup unit also capable of measuring the primary disinfectant, incorrectly identified as a "secondary" chlorine residual analyzer.</p> <p>The alarm set-points, as reported are;</p> <ul style="list-style-type: none"> - pre Cl2 lolo alarm of 0.70 mg.L - lo Cl2 alarm of 0.75 mg/L - hi Cl2 alarm of 2.40 mg/L. <p>The pre clearwell analyzer is also reportedly inter-locked with the well pumps and will interrupt their operation should the lolo or hi alarms values be reached.</p> <p>The primary or CT alarm set-points are reported as;</p> <ul style="list-style-type: none"> - lolo Cl2 alarm of 0.60 mg/L, - lo Cl2 alarm of 0.70 mg/L - hi Cl2 alarm of 2.15 mg/L. <p>The redundant primary analyzer will reportedly alarm out at;</p>			

- low Cl₂ alarm of 0.60 mg/L,
- low Cl₂ alarm of 0.70 mg/L
- high Cl₂ alarm of 2.0 mg/L.

Further, the clearwells are understood to be equipped with ultrasonic level measurement devices with a reported low alarm set-point of 4.0 m. It should be mentioned that the well water levels are also monitored and could be configured to alarm if desired.

Question ID	MRDW1040000	Question Type	Legislative
Question:			
Are all continuous analysers calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation?			
Legislative Requirement	SDWA O. Reg. 170/03 6-5 (1)1-4; SDWA O. Reg. 170/03 6-5 (1)5-10;		
Observation			
All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation.			
During the field inspection three (3) Siemens (W/T) continuous monitoring chlorine residual analyzers were identified. They were reported to be monitoring the pre (x1) and, primary (x2) disinfectant residual concentrations. According to records provided staff will standardize the analyzers daily if need be, otherwise Nichols Water Services is solicited and performs a calibration on an annual basis. Records indicate that this was last completed on June 15, 2022. According to records all of the units successfully passed the calibrations.			

Question ID	MRDW1108001	Question Type	Legislative
Question:			
Where continuous monitoring equipment used for the monitoring of free chlorine residual, total chlorine residual, combined chlorine residual or turbidity, required by O. Reg. 170/03, 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 Requirement	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);		
Observation			
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.			

Records provided indicate that there were a total of seven (7) events/alarms that resulted in an operator responding to site. Of those, one (1) was relating to a low inlet chlorine residual, two (2) others were for high discharge flow rate alarms, (due to fire department activities), another was for a loss of communications and, one required that a leak be investigated at 133 Canning Factory Road. The last two (2) events relating to work order #s: 6759 & 6760, required actions to be taken within the distribution system, the first of which required that Zone #1-hydrant flushing be carried out due to loss of power at the water plant, and the second event was more of a customer service inquiry seeking input about a boil water advisory in December of 2021.

All alarms were addressed by certified operational staff and without further issue.

Question ID	MRDW1099001	Question Type	Information
Question:			
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)?			
Legislative Requirement	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	MRDW1079001	Question Type	Legislative
Question:			
For LMR systems, are all microbiological water quality monitoring requirements for raw water samples prescribed by legislation being met?			
Legislative Requirement	SDWA O. Reg. 170/03 10-4 (1); SDWA O. Reg. 170/03 10-4 (2); SDWA O. Reg. 170/03 10-4 (3);		
Observation			
All microbiological water quality monitoring requirements prescribed by legislation for raw water samples were being met.			

Question ID	MRDW1081001	Question Type	Legislative
Question:			
For LMR systems, are all microbiological water quality monitoring requirements for			

distribution samples being met?	
Legislative Requirement	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 prescribed by legislation for distribution samples in a large municipal residential system were being met.	
Records of analyses provided indicate that Lakefront Utilities capture three (3) samples each week from the distribution system that are submitted for analysis of total coliforms and e.coli, with 66% of those being submitted for analysis of heterotrophic plate count.	

Question ID	MRDW1083001	Question Type	Legislative
Question:			
For LMR systems, are all microbiological water quality monitoring requirements for treated samples being met?			
Legislative Requirement	SDWA O. Reg. 170/03 10-3;		
Observation			
All microbiological water quality monitoring requirements prescribed by legislation for treated samples were being met.			

Question ID	MRDW1096001	Question Type	Legislative
Question:			
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 Requirement	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.			
Review of the Chain of Custody documentation provided confirmed that the operational staff routinely capture the free & total chlorine residuals during sample collection efforts.			

Question ID	MRDW1084001	Question Type	Legislative
Question:			

Are all inorganic water quality monitoring requirements prescribed by legislation conducted within the required frequency?	
Legislative Requirement	SDWA O. Reg. 170/03 13-2;
Observation	
All inorganic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.	
Schedule 23 - Inorganic sampling was last carried out on January 13, 2022.	
Please be advised that a large municipal drinking water system with true groundwater is obligated to sample & test the treated water every thirty-six (36) months, as per O.Reg. 170/03, Schedule 13-2 (1b).	

Question ID	MRDW1085001	Question Type	Legislative
Question:			
Are all organic water quality monitoring requirements prescribed by legislation conducted within the required frequency?			
Legislative Requirement	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.			
Schedule 24 - Organic sampling was last carried out on January 31, 2022.			
Please be advised that a large municipal drinking water system with true groundwater is obligated to sample & test the treated water every thirty-six (36) months, as per O.Reg. 170/03, Schedule 13-4 (1b).			

Question ID	MRDW1086001	Question Type	Legislative
Question:			
Are all haloacetic acid water quality monitoring requirements prescribed by legislation conducted within the required frequency and at the required location?			
Legislative Requirement	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 were conducted within the required frequency and at the required location.
Records indicate that the last sample collected and submitted for the analyses of haloacetic acid was completed on August 15, 2022 from the Fire Hall yielding a result of 5.3 ug/L. Coincidentally, samples collected over the inspection period under review yielded the same result each time of 5.3 ug/L.

Question ID	MRDW1087001	Question Type	Legislative
Question:			
Have all trihalomethane water quality monitoring requirements prescribed by legislation been conducted within the required frequency and at the required location?			
Legislative Requirement	SDWA O. Reg. 170/03 13-6 (1); SDWA O. Reg. 170/03 13-6 (2); SDWA O. Reg. 170/03 13-6 (3); SDWA O. Reg. 170/03 13-6 (4); SDWA O. Reg. 170/03 13-6 (5); SDWA O. Reg. 170/03 13-6 (6);		
Observation			
All trihalomethane water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location.			
Records indicate that the last sample collected and submitted for the analyses of trihalomethanes (THM) was completed on August 15, 2022 from the Brimley Road SS yielding a result of 22 ug/L.			
THM sample results ranged from 22-29 ug/L over the inspection period under review.			

Question ID	MRDW1088000	Question Type	Legislative
Question:			
Are all nitrate/nitrite water quality monitoring requirements prescribed by legislation conducted within the required frequency for the DWS?			
Legislative Requirement	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.			
Records indicate that sampling for Nitrite (N02) and Nitrates (N03) were last conducted on August 15, 2022, from the treated water. Prior to this, samples were collected on May 2,			

February 14, and November 8 of 2021. Based on the above sample dates, Nitrite results remained steady at 0.003 mg/L, while Nitrate results ranged from 0.019 mg/L - 0.024 mg/L.

Question ID	MRDW1089000	Question Type	Legislative
Question:			
Are all sodium water quality monitoring requirements prescribed by legislation conducted within the required frequency?			
Legislative Requirement	SDWA O. Reg. 170/03 13-8;		
Observation			
All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency.			
Sampling for Sodium last occurred on September 16, 2019 and yielded a result of 17 mg/L.			
According to O.Reg. 170/03 - Schedule 13, subsection 13-8, sampling shall be carried out every sixty (60) months.			

Question ID	MRDW1090000	Question Type	Legislative
Question:			
Where fluoridation is not practiced, are all fluoride water quality monitoring requirements prescribed by legislation conducted within the required frequency?			
Legislative Requirement	SDWA O. Reg. 170/03 13-9;		
Observation			
All fluoride water quality monitoring requirements prescribed by legislation were conducted within the required frequency.			
Sampling for Fluoride last occurred on September 16, 2019 and yielded a result of 0.21 mg/L.			
According to O.Reg. 170/03 - Schedule 13, subsection 13-9 sampling shall be carried out every sixty (60) months.			

Question ID	MRDW1092001	Question Type	Legislative
Question: Has the owner ensured that water samples are taken at the prescribed location?			
Legislative Requirement	SDWA O. Reg. 170/03 6-2;		
Observation			
The owner ensured that water samples were taken at the prescribed location.			

Question ID	MRDW1095001	Question Type	Legislative
Question: Have all lead sampling requirements prescribed by Schedule 15.1 of O. Reg. 170/03 been met?			
Legislative Requirement	SDWA O. Reg. 170/03 15.1-10; SDWA O. Reg. 170/03 15.1-4 (1); SDWA O. Reg. 170/03 15.1-5 (1); SDWA O. Reg. 170/03 15.1-5 (10); SDWA O. Reg. 170/03 15.1-5 (11); SDWA O. Reg. 170/03 15.1-5 (12); SDWA O. Reg. 170/03 15.1-5 (2); SDWA O. Reg. 170/03 15.1-5 (3); SDWA O. Reg. 170/03 15.1-5 (4); SDWA O. Reg. 170/03 15.1-5 (5); SDWA O. Reg. 170/03 15.1-5 (6); SDWA O. Reg. 170/03 15.1-5 (7); SDWA O. Reg. 170/03 15.1-5 (8); SDWA O. Reg. 170/03 15.1-5 (9); SDWA O. Reg. 170/03 15.1-7 (1); SDWA O. Reg. 170/03 15.1-7 (2); SDWA O. Reg. 170/03 15.1-7 (3); SDWA O. Reg. 170/03 15.1-7 (4); SDWA O. Reg. 170/03 15.1-9 (1); SDWA O. Reg. 170/03 15.1-9 (2); SDWA O. Reg. 170/03 15.1-9 (3); SDWA O. Reg. 170/03 15.1-9 (4); SDWA O. Reg. 170/03 15.1-9 (5); SDWA O. Reg. 170/03 15.1-9 (6); SDWA O. Reg. 170/03 15.1-9 (7); SDWA O. Reg. 170/03 15.1-9 (8); SDWA O. Reg. 170/03 15.1-9 (9); SDWA O. Reg. 170/03 6-3 (1);		
Observation			
All sampling requirements for lead prescribed by schedule 15.1 of O. Reg. 170/03 were being met.			
Records provided indicate that on April 7, 2022, efforts were made to sample & test for pH and Alkalinity from two different sample stations. The pH values were 7.54 (Station Rd.) and 7.76 (Brimley Rd), while the alkalinity values were 192 mg/L of CaCO ₃ (Station Rd.) and 194 mg/L of CaCO ₃ (Brimley Rd).			

Question ID	MRDW1097000	Question Type	Legislative
Question: If the drinking water system obtains water from a ground water source, is turbidity being tested at least once every month from each well that is supplying water to the system?			
Legislative Requirement	SDWA O. Reg. 170/03 7-3 (1.1);		
Observation			
Turbidity was being tested at least once every month from each well that is supplying water to the system.			
Raw water turbidity values returned from monthly sampling, ranged from 0.12 NTU - 0.70 NTU for well #1, and 0.10 NTU - 0.52 NTU for well #2.			

Question ID	MRDW1098001	Question Type	Legislative
Question: Has the owner indicated that the required records are kept and will be kept for the required time period?			
Legislative Requirement	SDWA O. Reg. 170/03 13 (1); SDWA O. Reg. 170/03 13 (2); SDWA O. Reg. 170/03 13 (3);		
Observation			
The owner indicated that the required records are kept and will be kept for the required time period.			
According to a Drinking Water Quality Management Standards document, regarding records control, dated May 26, 2010 (Rec.#10), Section 2.2, entitled: Storage, Protection & Retention, records shall be maintained for a minimum of ten (10) years.			

Question ID	MRDW1101001	Question Type	Legislative
Question: For LMR Systems, have corrective actions (as per Schedule 17 of O. Reg. 170/03) been taken to address adverse conditions, including any other steps as directed by the Medical Officer of Health?			
Legislative Requirement	SDWA O. Reg. 170/03 17-1; SDWA O. Reg. 170/03 17-10 (1); SDWA O. Reg. 170/03 17-11; SDWA O. Reg. 170/03 17-12; SDWA O. Reg. 170/03 17-13; SDWA O. Reg. 170/03 17-14; SDWA O. Reg. 170/03 17-2; SDWA O. Reg. 170/03 17-3; SDWA O. Reg. 170/03 17-4; SDWA O. Reg. 170/03 17-5; SDWA O. Reg. 170/03 17-		

	6; SDWA O. Reg. 170/03 17-9;
Observation	
Corrective actions (as per Schedule 17), including any other steps that were directed by the Medical Officer of Health, had been taken to address adverse conditions.	

Question ID	MRDW1103000	Question Type	Legislative
Question:			
Have corrective actions as directed by the Medical Officer of Health been taken by the owner and operating authority to address exceedances of the lead standard in plumbing?			
Legislative Requirement	SDWA O. Reg. 170/03 15.1-10;		
Observation			
Corrective actions as directed by the Medical Officer of Health had been taken by the owner and operating authority to address exceedances of the lead standard.			
As noted previously, a single adverse occurred over the inspection period, which compelled the local health unit to implement a Boil Water Order/Advisory on Dec. 11, 2021, which obligated the Works Owner/Operating Authority to make immediate repairs, flush the system and to ensure that two (2) sets of microbial samples were taken from within the dist system to confirm the safety of the water. Results of the micro samples were confirmed acceptable, and the BWO was rescinded on Dec. 15, 2021.			

Question ID	MRDW1104000	Question Type	Legislative
Question:			
Were all required verbal notifications of adverse water quality incidents immediately provided as per O. Reg. 170/03 16-6?			
Legislative Requirement	SDWA O. Reg. 170/03 16-6 (1); SDWA O. Reg. 170/03 16-6 (2); SDWA O. Reg. 170/03 16-6 (3); SDWA O. Reg. 170/03 16-6 (3.1); SDWA O. Reg. 170/03 16-6 (3.2); SDWA O. Reg. 170/03 16-6 (4); SDWA O. Reg. 170/03 16-6 (5); SDWA O. Reg. 170/03 16-6 (6);		
Observation			
All required notifications of adverse water quality incidents were immediately provided as per O. Reg. 170/03 16-6.			

Question ID	MRDW1105000	Question Type	Legislative
--------------------	-------------	----------------------	-------------

Question:	
Were all required written notices of adverse water quality incidents provided as per O. Reg. 170/03 16-7?	
Legislative Requirement	SDWA O. Reg. 170/03 16-7 (1); SDWA O. Reg. 170/03 16-7 (2); SDWA O. Reg. 170/03 16-7 (3); SDWA O. Reg. 170/03 16-7 (4); SDWA O. Reg. 170/03 16-7 (5);
Observation	
All required written notices of adverse water quality incidents were provided as per O. Reg. 170/03 16-7.	

Question ID	MRDW1106001	Question Type	Legislative
Question:			
Were all required written notices of issue resolution provided as per O. Reg. 170/03 16-9?			
Legislative Requirement	SDWA O. Reg. 170/03 16-9 (1); SDWA O. Reg. 170/03 16-9 (2);		
Observation			
All required written notices of issue resolution were provided as per O. Reg. 170/03 16-9.			

Question ID	MRDW1107001	Question Type	Legislative
Question:			
Were all reporting requirements for lead sampling complied with as per Schedule 15.1-9 of O. Reg. 170/03?			
Legislative Requirement	SDWA O. Reg. 170/03 15.1-9 (1); SDWA O. Reg. 170/03 15.1-9 (2); SDWA O. Reg. 170/03 15.1-9 (3); SDWA O. Reg. 170/03 15.1-9 (4); SDWA O. Reg. 170/03 15.1-9 (5); SDWA O. Reg. 170/03 15.1-9 (7); SDWA O. Reg. 170/03 15.1-9 (8); SDWA O. Reg. 170/03 15.1-9 (9);		
Observation			
All reporting requirements for lead sampling were complied with as per schedule 15.1-9 of O. Reg. 170/03.			
Lead sampling this period consisted of "pH and alkalinity" samples taken from Brimley and Station Roads. The results of those samples, were 7.76 & 194 mg/L as CaCO ₃ "&" 7.54 & 192 mg/L as CaCO ₃ , respectively.			

Question ID	MRDW1110001	Question Type	Legislative
Question: Was an Annual Report containing the required information prepared by February 28 of the following year?			
Legislative Requirement	SDWA O. Reg. 170/03 11 (6);		
Observation			
The Annual Report containing the required information was prepared by February 28th of the following year.			

Question ID	MRDW1111000	Question Type	Legislative
Question: Have Summary Reports for municipal council been completed on time, include the required content, and distributed in accordance with the regulatory requirements?			
Legislative Requirement	SDWA O. Reg. 170/03 22-2 (1); SDWA O. Reg. 170/03 22-2 (2); SDWA O. Reg. 170/03 22-2 (3); SDWA O. Reg. 170/03 22-2 (4);		
Observation			
Summary Reports for municipal council were completed on time, included the required content, and were distributed in accordance with the regulatory requirements.			
Records provided indicate that the Summary Report was received by Council on March 17, 2022.			

Question ID	MRDW1046001	Question Type	BMP
Question: Is there a backflow prevention program, policy and/or bylaw in place that addresses cross connections and connections to high hazard facilities?			
Legislative Requirement	Not Applicable		
Observation			
There was no backflow prevention program, policy and/or bylaw in place.			
It is recommended that the Operating Authority/Owner consider drafting a policy to be included in the O/M Manual to address the inspection and testing of backflow preventers at the wellhouse, as well as those (as applicable) within the distribution system.			

Question ID	MRDW1053001	Question Type	BMP
Question:			
Is the Owner able to maintain proper pressures in the distribution system and is pressure monitored to alert the operator of conditions which may lead to loss of pressure below the value under which the system is designed to operate?			
Legislative Requirement	Not Applicable		
Observation			
The owner was able to maintain proper pressures in the distribution system and pressure was monitored to alert the operator of conditions which may lead to loss of pressure below the value under which the system is designed to operate.			
Aside from a single isolated event (AWQI #157289) occurring over the inspection period where a wide-scale power outage due to high winds ultimately impacted the Grafton DWS pressures. A utility power supply failure resulted in the PLC shutdown and brief loss of trending. During this time the highlift pumps shut down resulting in a loss of pressure within Zone 1. Corrective actions confirmed that the on-call operator responded to site and re-started the highlift pump/UPS, some ~18 minutes later.			

Question ID	MRDW1047001	Question Type	BMP
Question:			
Does the owner have a program or maintain a schedule for routine cleanout, inspection and maintenance of reservoirs and elevated storage tanks within the distribution system?			
Legislative Requirement	Not Applicable		
Observation			
The owner had a program or maintained a schedule for routine cleanout, inspection and maintenance of reservoirs and elevated storage tanks within the distribution system.			
The Grafton drinking water system does not include any elevated tanks, standpipes, or reservoirs aside from the onsite reservoir and highlift sumps located at the wellhouse. It has been reported by the Operating Authority that inspection of the clearwell is routinely undertaken, and in fact plans are underway to have them inspected in November of this year, via Remote Operated Vehicle.			
It is recommended that the Operating Authority/Owner draft a policy that speaks to inspection of the clearwell and highlift sump, noting frequency, tasks to be performed, actions should inspection yield findings of concerns and microbial sampling where necessary.			

Question ID	MRDW1048001	Question Type	BMP
Question: Has the owner implemented a program for the flushing of watermains as per industry standards?			
Legislative Requirement	Not Applicable		
Observation			
The owner had implemented a program for the flushing of watermains as per industry standards. According to the information provided, flushing is completed bi-annually.			

Question ID	MRDW1050001	Question Type	BMP
Question: Is there a program in place for inspecting and exercising valves?			
Legislative Requirement	Not Applicable		
Observation			
There was a program in place for inspecting and exercising valves. According to the O/M Manual, Section 9.2, system valves are comprised of hydrant valves, main valves and service valves. Hydrant valves and main valves are operated on a 5-year rotational basis to ensure proper operation, although according to information provided valves are operated at least annually. Should this practise be adhered to it is recommended that the O/M Manual be updated accordingly.			

Question ID	MRDW1051001	Question Type	BMP
Question: Is there a program in place for inspecting and operating hydrants?			
Legislative Requirement	Not Applicable		
Observation			
There was a program in place for inspecting and operating hydrants. Fire hydrants are reportedly operated twice per year. It is recommended that the Operating Authority/Owners draft a policy that speaks to who is authorized to access fire hydrants.			

--

Question ID	MRDW1052001	Question Type	BMP
Question: Is there a by-law or policy in place limiting access to hydrants?			
Legislative Requirement	Not Applicable		
Observation There was no by-law or policy in place limiting access to hydrants.			

Question ID	MRDW1058001	Question Type	Legislative
Question: Do operators and maintenance personnel have ready access to operations and maintenance manuals?			
Legislative Requirement	SDWA O. Reg. 128/04 28;		
Observation Operators and maintenance personnel had ready access to operations and maintenance manuals. The Grafton DWS is supported with a comprehensive Operations & Maintenance Manual as well as a Process Control Narrative as created by Genivar, in March-2013.			

Question ID	MRDW1059000	Question Type	Legislative
Question: Do the operations and maintenance manuals contain plans, drawings and process descriptions sufficient for the safe and efficient operation of the system?			
Legislative Requirement	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	MRDW1060000	Question Type	Legislative
Question: Do the operations and maintenance manuals meet the requirements of the DWWP and			

MDWL issued under Part V of the SDWA?	
Legislative Requirement	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	MRDW1061001	Question Type	Legislative
Question: Are logbooks properly maintained and contain the required information?			
Legislative Requirement	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 not properly maintained and/or did not contain the required information.			
Records provided indicate that a few distribution &/or appurtenance repairs occurred over the inspection period, specifically on January 12, June 2 and 9 of 2022. The log records provided for the January 12 & June 2, maintenance activities presented poorly from a legibility perspective. In addition, the records failed to identify the author, and if they were OIC or ORO for the tasks.			
According to O.Reg. 128/04, Section 27, subsection 27(3&4);			
(3) paraphrased - only an overall responsible operator (ORO), or an operator-in-charge (OIC) is authorized to make entries by the owner, the O/A, the ORO/OIC.			
(4) paraphrased - entries in a log or other record-keeping mechanism shall do so in a manner that permits the person to be unambiguously identified as the maker of the entry.			
By no later than October 31, 2022, provide to the attention & satisfaction of the author/Provincial Officer of this report a revised log sheet or records capture system, that will ensure that the items noted above will be captured and available for any future dist system repairs or activities.			

Question ID	MRDW1062001	Question Type	Legislative
Question:			

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 Requirement	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	MRDW1063000	Question Type	Legislative
Question:			
For every required operational test and for every required sample, is a record made of the date, time, location, name of the person conducting the test and result of the test?			
Legislative Requirement	SDWA O. Reg. 170/03 6-10 (1);		
Observation			
For every required operational test and every required sample, a record was made of the date, time, location, name of the person conducting the test and result of the test.			

Question ID	MRDW1064000	Question Type	Legislative
Question:			
Did the operator-in-charge ensure that records were maintained of all adjustments made to the processes within his or her responsibility?			
Legislative Requirement	SDWA O. Reg. 128/04 26 (2);		
Observation			
The operator-in-charge ensured that records were maintained of all adjustments made to the processes within his or her responsibility.			

Question ID	MRDW1065000	Question Type	Legislative
Question:			
Are logs and other record keeping mechanisms available for at least five (5) years?			
Legislative Requirement	SDWA O. Reg. 128/04 27 (6);		
Observation			

Logs or other record keeping mechanisms were available for at least five (5) years.

Question ID	MRDW1066000	Question Type	BMP
Question: Is spill containment provided for process chemicals and standby power generator fuel?			
Legislative Requirement	Not Applicable		
Observation			
Spill containment was provided for process chemicals and/or standby power generator fuel.			
During the field inspection it was identified that the day tanks for sodium hypochlorite and sodium silicate were both contained within a concrete containment area.			

Question ID	MRDW1067000	Question Type	BMP
Question: Are clean-up equipment and materials in place for the clean up of spills?			
Legislative Requirement	Not Applicable		
Observation			
Clean-up equipment and materials were in place for the clean up of spills.			
A Spills Kit is reported to be available at the wellhouse.			

Question ID	MRDW1068000	Question Type	BMP
Question: If available, are standby power generators tested under normal load conditions?			
Legislative Requirement	Not Applicable		
Observation			
Standby power generators were tested under normal load conditions.			

Question ID	MRDW1069000	Question Type	BMP
Question: Are all storage facilities completely covered and secure?			

Legislative Requirement	Not Applicable
Observation	
<p>All storage facilities were completely covered and secure.</p> <p>The reservoir was identified to have stainless steel hatches that were equipped with padlocks. Further, the entire reservoir itself was secured via a ~7ft high chain link fence topped with barbed wire, and the entrance gates locked.</p>	

Question ID	MRDW1070000	Question Type	BMP
Question:			
Are air vents and overflows associated with reservoirs and elevated storage structures equipped with screens?			
Legislative Requirement	Not Applicable		
Observation			
<p>Air vents and overflows associated with reservoirs and elevated storage structures were equipped with screens.</p> <p>The reservoir and highlift sumps were all fitted with air vent stacks that were equipped with screens to prevent critter entry.</p>			

Question ID	MRDW1071000	Question Type	BMP
Question:			
Has the owner provided security measures to protect components of the drinking water system?			
Legislative Requirement	Not Applicable		
Observation			
<p>The owner had provided security measures to protect components of the drinking water system.</p> <p>Security was identified during the physical inspection of the Works to include;</p> <ul style="list-style-type: none"> - chain link fencing with locked gates and topped with barbed wire around the 3 wells in proximity to the well house, and the reservoir. - motion sensor cameras inside (x1) and outside (x3). - locked exterior doors, fitted with alarm contacts. 			

- staff attendance seven (7) days a week.

Question ID	MRDW1072001	Question Type	BMP
Question:			
Has the owner and/or operating authority undertaken efforts to promote water conservation and reduce water losses in their system?			
Legislative Requirement	Not Applicable		
Observation			
The owner and/or operating authority did not undertake efforts to promote water conservation and/or reduce water losses in their system.			
No formal Bylaw or Policy was provided that directly speaks to water conservation. That said, the Municipality has implemented By-Law #38-2021, being a by-law to establish water rates for 2021-2026 upon the users of the water system to recover the operating and capital costs required to operate, repair and maintain the water system in the township of Alnwick/Haldimand by Lakefront Utility Services Inc.			
It is understood that consumer misuse of the water supply comes at a cost to the owner of the residences in accordance with the above noted by-law, which in itself encourages water conservation and mitigates to some degree water misuse.			
No further actions required.			

Question ID	MRDW1073001	Question Type	Legislative
Question:			
Has the overall responsible operator been designated for all subsystems which comprise the drinking water system?			
Legislative Requirement	SDWA O. Reg. 128/04 23 (1);		
Observation			
The overall responsible operator had been designated for each subsystem.			
Mr. Spyрка has been identified as the Overall Responsible Operator (ORO) for the entire drinking water system over the inspection period, while Mr. Taggart also served to a lesser extent in this capacity during the term.			
The Grafton DWS has been categorized as a Class III - Water Distribution & Supply Subsystem, certificate #3012. All parties noted above are acknowledged to possess valid			

Class III certificates in Water Distribution & Supply Subsystems.

Question ID	MRDW1078001	Question Type	Legislative
Question: In instances where the overall responsible operator was unable to act, was an adequately certified operator designated to act in place of the overall responsible operator?			
Legislative Requirement	SDWA O. Reg. 128/04 23 (1); SDWA O. Reg. 128/04 23 (2); SDWA O. Reg. 128/04 23 (4); SDWA O. Reg. 128/04 23 (6); SDWA O. Reg. 128/04 23 (7);		
Observation An adequately licenced operator was designated to act in place of the overall responsible operator when the overall responsible operator was unable to act. According to records, both Mr. Spyrka and Mr. Taggart satisfied the ORO capacity over the inspection period.			

Question ID	MRDW1074001	Question Type	Legislative
Question: Have operators-in-charge been designated for all subsystems for which comprise the drinking water system?			
Legislative Requirement	SDWA O. Reg. 128/04 25 (1);		
Observation Operators-in-charge had been designated for all subsystems which comprise the drinking water system. Lakefront Utilities (Grafton DWS) operational staff are all designated as Operator/s-In-Charge (OIC), to include; Mr. Branden Wherry, Mr. Jordan Price, Mr. Nick Cunningham, Mr. Ryan Smith, Mr. Scott Noble, Mr. Scott Prins and Mr. Tim Clarey, Mr. Spyrka and Mr. Taggart.			

Question ID	MRDW1075001	Question Type	Legislative
Question: Do all operators possess the required certification?			
Legislative Requirement	SDWA O. Reg. 128/04 22;		
Observation			

All operators possessed the required certification.

Question ID	MRDW1076001	Question Type	Legislative
Question: Do only certified operators make adjustments to the treatment equipment?			
Legislative Requirement	SDWA O. Reg. 170/03 1-2 (2);		
Observation			
Only certified operators made adjustments to the treatment equipment.			

Question ID	MRDW1116001	Question Type	BMP
Question: Were the inspection questions sufficient to address other identified best practice issues?			
Legislative Requirement	Not Applicable		
Observation			
The following issues were also noted during the inspection:			
1.) It is recommended that the O/A consider the merits of creating & utilizing a monthly anomalous data sheet to capture & document details where SCADA or compliance data is considered erroneous due to contributing factors such as calibrations, power-blips, maintenance or the operation of the gen-set for example.			

Question ID	MRDW1117001	Question Type	Information
Question: Are there any other DWS related items that should be recognized in this report?			
Legislative Requirement	Not Applicable		
Observation			
The following items are noted as being relevant to the Drinking Water System:			
1.) It is understood that funding via the Green Infrastructure Stream has been awarded that will support efforts to locate, install and interconnect a new production well, giving the drinking water system complete redundancy from a supply perspective.			
2.) According to the 2021-Interpretive Report, generated in accordance with the Permit To Take Water #5086-9BPM4A, it is understood that BTEX (benzene, toluene, ethylbenzene			

and xylene) parameters of concern, namely toluene & xylene have been detected in low concentrations at the sentinel monitoring wells (intermediate & shallow) during sampling efforts completed in December 2020, and during the 2021 calendar year. It is important and worth noting that the last two (2) consecutive periods of quarterly sampling (Mar & June-2022) there have been no detections of BTEX (toluene or xylene) at any sampling sites.

3.) Please note that Permit To Take Water #3872-C8LQQF, dated December 16, 2021, (revoking & replacing PTTW # 5086-9BPM4A) shall expire on September 30, 2023. No water shall be taken under authority of this Permit after the expiry date. It is strongly recommended that the Works Owner & Operating Authority make application for a new PTTW well ahead of the expiry date noted above.

4.) The Corporation of the Township of Alnwick/Haldimand and Lakefront Utility Services Inc. (LUSI) have renewed their contract for services for a further five (5) year period, commencing January 1, 2022



APPENDIX A
KEY REFERENCE &
GUIDANCE
MATERIALS

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

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	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