

**Ministry of the Environment
and Climate Change**

Safe Drinking Water
Branch

Ottawa District Office
2430 Don Reid Drive
Ottawa ON K1H 1E1

**Ministère de l'Environnement et
de l'Action en matière de
changement climatique**

Direction du contrôle de la qualité de
l'eau potable

Bureau du district d'Ottawa
2430, chemin Don Reid
Ottawa (Ontario) K1H 1E1



December 13, 2017

Email: dsauriol@lvtownship.ca

The Township of the Laurentian Valley
460 Witt Road
Pembroke
K8A 6W5

Attention: Mr. Dean Sauriol
Chief Administrative Officer-Clerk

Dear Mr. Sauriol,

Re: Drinking Water Inspection Program – 2017-2018 Inspection Report
Laurentian Valley Distribution System – Inspection Number 1-FMCTS

The enclosed report documents findings of the inspection that was performed at the Laurentian Valley Distribution System on November 8, 2017.

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.

“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 industry standards. Please note that items which appear as recommended actions do not, in themselves, constitute violations.

There are two (2) Actions Required and associated compliance dates identified in the inspection report.

In order to measure individual inspection results, the ministry has established an inspection compliance risk framework based on the principles of the Inspection, Investigation & Enforcement (II&E) Secretariat and advice of internal/external risk experts. The Inspection Rating Record (IRR), appended to 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 IRR methodology

document, also appended to the inspection report, describes how the risk rating model was 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 Jim Mahoney, Drinking Water Program Supervisor, at 613-548-6902.

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.

Yours truly,

Christina Des Rochers
Water Inspector, Provincial Officer #1439
Safe Drinking Water Branch
Ottawa District Office
613-521-3450 ext. 231

enclosure

- ec: Mr. Claus Trost, Water Quality Analyst, The Township of Laurentian Valley, 460 Witt Road, Pembroke, K8A 6W5, ctrost@lvtownship.ca
Mr. Mark Behm, Public Works Manager, The Township of Laurentian Valley, 460 Witt Road, Pembroke, K8A 6W5, mbehm@lvtownship.ca
Mr. Lorne Rathwell, Public Works Operations Forman, The Township of Laurentian Valley, 460 Witt Road, Pembroke, K8A 6W5, lrathwell@lvtownship.ca
Mr. Mike Grace, Manager, Environmental Health, Renfrew County and District Health Unit, 7 International Drive, Pembroke, Ontario, K8A 6W5, mgrace@rcdhu.com
Mr. John Swick, District Manager, Ministry of Natural Resources, Pembroke District Office, 31 Riverside Drive, Ontario K8A 8R6, john.swick@ontario.ca
- c: File SI-RE-LV-540 (2017) Laurentian Valley Distribution System



Ministry of the Environment and Climate Change

**LAURENTIAN VALLEY DISTRIBUTION SYSTEM
Inspection Report**

Site Number:	260007465
Inspection Number:	1-FMCTS
Date of Inspection:	Nov 08, 2017
Inspected By:	Christina Des Rochers

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OWNER INFORMATION:

Company Name:	LAURENTIAN VALLEY, THE TOWNSHIP OF	Unit Identifier:	
Street Number:	460		
Street Name:	WITT Rd		
City:	PEMBROKE		
Province:	ON	Postal Code:	K8A 6W5

CONTACT INFORMATION

Type:	Owner	Name:	Mark Behm
Phone:	(613) 735-6291	Fax:	(613) 735-5820
Email:	mbehm@lvtownship.ca		
Title:	Public Works Manager, Township of Laurentian Valley		
Type:	Operating Authority	Name:	Lorne Rathwell
Phone:	(613) 635-3241	Fax:	
Email:	lrathwell@lvtownship.ca		
Title:	Public Works Operations Foreman, Township of Laurentian Valley		
Type:	Operating Authority	Name:	Claus Trost
Phone:	(613) 735-6291	Fax:	(613) 735-5820
Email:	claus@laurvall.on.ca		
Title:	Water Quality Analyst, Township of Laurentian Valley		

INSPECTION DETAILS:

Site Name:	LAURENTIAN VALLEY DISTRIBUTION SYSTEM
Site Address:	460 WITT RD LAURENTIAN VALLEY K8A 6W5
County/District:	Laurentian Valley
MOECC District/Area Office:	Ottawa District
Health Unit:	RENFREW COUNTY AND DISTRICT HEALTH UNIT
Conservation Authority:	
MNR Office:	
Category:	Large Municipal Residential
Site Number:	260007465
Inspection Type:	Announced
Inspection Number:	1-FMCTS
Date of Inspection:	Nov 08, 2017
Date of Previous Inspection:	

COMPONENTS DESCRIPTION

Site (Name):	MOE DWS Mapping	Sub Type:	
Type:	DWS Mapping Point		
Site (Name):	Distribution System Information - General	Sub Type:	Other
Type:	Other		

Comments:

The Laurentian Valley Distribution System is categorized as a Class 1 Water Distribution Subsystem (Certificate No. 2893, issued July 15, 2005) and serves a population of approximately 1,550 in 645 homes and businesses. The areas served are Stafford Village, part of Pembroke Street East and part of Pembroke Street West.

The Township of Laurentian Valley obtains treated water from the City of Pembroke. A Water Service Agreement dated October 31, 1996 provides the details of the contract. The water supplied by the City originates from the Ottawa River, is treated with chemically-assisted filtration and chlorination, and is distributed to the City of Pembroke, the Township of Laurentian Valley, and the Town of Petawawa.

Distribution samples are collected by the Township of Laurentian Valley within its own distribution subsystem. The Laurentian Valley Distribution Subsystem consists of approximately 14 kilometres of water mains, branch lines, and appurtenances located to west, east and south-west of the City of Pembroke. Water mains are reported to consist mainly (90%) of PVC material with some cast steel ductile water mains ranging in diameter from 150 millimeter (mm), 250 mm and 300 mm diameter piping, with shorter sections of 400 mm, 200 mm and 100 mm water mains (reference: Certificate of Approval (C of A) No. 7-0659-87-006). The distribution system also consists of approximately 81 hydrants, 75 hydrant valves and 96 main valves.

There are no storage structures and no chlorine, flow, or pressure boosting stations as part of the Laurentian Valley Distribution System. There are 7 water meters equipped with backflow preventers installed within the distribution system to measure the drinking-water supplied by the City of Pembroke. There are 36 water meters used to measure the drinking-water consumed by Industrial, Commercial and Institutional (ICI) users.

The Township of Laurentian Valley measures the water that they purchase from the City of Pembroke on a quarterly basis.

The distribution system can be considered to be comprized of three zones:

1. The East Zone, starts approximately at Rankin Street and goes East up to the Home Depot.
2. The South West Zone (Stafford Village), is bordered on the North by Boundary Rd E., on the East by Elgin St. on the South by the CNR rail line and to the west by Jean Avenue.
3. The West Zone is bordered on the East by Lloyd Drive, then along Pembroke Street West then up Irene Street to the Ottawa River. Laurentian Valley ends at the Township of Petawawa border. This section has commercial and institutional buildings connected to the distribution system.

INSPECTION SUMMARY:

Introduction

- **The primary focus of this inspection is to confirm compliance with Ministry of the Environment and Climate Change (MOECC) legislation as well as evaluating conformance with ministry drinking water policies and guidelines during the inspection period.**

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

This report is based on an inspection of a "stand alone connected distribution system". This type of system receives treated water from a separately owned "donor" system. This report contains the elements required to assess key compliance and conformance issues associated with a "receiver" system. This report does not contain items associated with the inspection of the donor system, such as source waters, intakes/wells and treatment facilities.

This report is based on a "focused" inspection of the system. Although the inspection involved fewer activities than those normally undertaken in a detailed inspection, it contained critical elements required to assess key compliance issues. This system was chosen for a focused inspection because the system's performance met the ministry's criteria, most importantly that there were no deficiencies as identified in O.Reg. 172/03 over the past 3 years. The undertaking of a focused inspection at this drinking water system does not ensure that a similar type of inspection will be conducted at any point in the future.

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.

This inspection covers the period from October 1, 2016 to November 1, 2017.

Specifically, this inspection examines compliance with Municipal Drinking Water Licence (MDWL) #192-101 and Drinking Water Works Permit (DWWP) #192-201, in addition to relevant Ministry of the Environment and Climate Change (MOECC) legislation as addressed in specific inspection questions.

The Laurentian Valley Distribution System is owned and operated by The Township of the Laurentian Valley (Township).

The inspection began November 8, 2017 when the announced physical inspection of Laurentian Valley Distribution System (DS) was conducted consisting of an inspection interview with Township staff, review of operational information, log books, and sampling records.

Additional review of documentation and results relevant to the inspection were conducted at MOECC offices.

Treatment Processes

- **The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit.**

DWWP #192-201 states:

The Laurentian Valley Distribution System receives water from the Pembroke Water Purification Plant and serves

Treatment Processes

connections to over 600 residential and business consumers. There are no storage, booster pumping or re-chlorination facilities operating on the distribution system.

Treatment Process Monitoring

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

Secondary disinfectant residual is measured based on the 4/3 model. Four samples are collected from separate locations within the system on a single day and three samples are collected from separate locations at least 24 hours later.

Disinfection residual monitoring is habitually performed by two operators, one responsible for the four location date and the second responsible for the three location date.

- **All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation.**

Distribution System

- **Existing parts of the distribution system that are taken out of service for inspection, repair or other activities that may lead to contamination, and all new parts of the distribution system that come in contact with drinking water, were disinfected in accordance with Schedule B, Condition 2.3 of the Drinking Water Works Permit, or an equivalent procedure (i.e. the Watermain Disinfection Procedure).**

The Laurentian Valley DS operations manual contains standard procedures for dead-end flushing, water main repair, and pipe and/or connection repair. Copies of the MOECC's Watermain Disinfection Procedure and AWWA C651-05 are included in the manuals.

Contractors currently seeking to provide services to Laurentian Valley DS submit proposals detailing superchlorination of all mains under work/repair and the Township operators will perform microbiological sampling before lines are placed into use.

Operations Manuals

- **The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.**
- **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.**

MDWL #159-101 Schedule B: General Conditions, 16.0 Operations and Maintenance Manual states that the operations and maintenance manual or manuals, shall include at a minimum:

16.2.1 The requirements of this licence and associated procedures;

16.2.2 The requirements of the drinking water works permit for the drinking water system;

16.2.3 Procedures for monitoring and recording the in-process parameters necessary for the control of any treatment subsystem and for assessing the performance of the drinking water system;

16.2.4 Procedures for the operation and maintenance of monitoring equipment;

16.2.5 Contingency plans and procedures for the provision of adequate equipment and material to deal with

Operations Manuals

emergencies, upset conditions and equipment breakdown;

16.2.6 Procedures for dealing with complaints related to the drinking water system, including the recording of the nature of the complaint and any investigation and corrective action taken in respect of the complaint; 16.2.7 An inspection schedule for all wells associated with the drinking water system, including all production wells, standby wells, test wells and monitoring wells;

16.2.8 Well inspection and maintenance procedures for the entire well structure of each well including all above and below grade well components; and

16.2.9 Remedial action plans for situations where an inspection indicates non-compliance with respect to regulatory requirements and/or risk to raw well water quality.

A review of the Operations and Maintenance manual indicates these requirements were met.

Logbooks

- **Logbooks were properly maintained and contained the required information.**
- **Records or other record keeping mechanisms did not confirm 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.**

During the inspection review period, an uncertified operator performed operational testing in the Laurentian Valley DS from August 1, 2017 when the operator's Water Distribution and Supply certificate expired until November 8, 2017 when the undersigned inspector was made aware of the situation.

On November 9, 2017, the undersigned inspector issued an email notification to the Township requiring that the uncertified individual not perform any unsupervised work within the drinking water system until such time as written correspondence from OWWCO documenting an extension of the previous certificate is received or a valid operator certificate is issued.

It is important to note that Township staff with oversight responsibility were made aware of the impending expiry date and outstanding requirements for recertification by the Ontario Water Wastewater Certification Office (OWWCO). An email from OWWCO, dated July 27, 2017, clearly identifies that without a valid operator certificate the individual cannot operate a drinking water system. The email also states that without a valid operator certificate, the individual will be contravening section 12 of the Safe Drinking Water Act, 2002 and will be committing an offence under the Act.

By no later than January 1, 2018 the Township shall submit to the undersigned inspector a written statement affirming that the operator in question will not be assigned any work within the Laurentian Valley DS without the supervision of an appropriately certified operator. The statement should be signed by the ORO, the operator in question, and the Public Works Manager.

By no later than January 31, 2018 the Township shall submit to the undersigned inspector a plan for recertification of the operator, including a projected timeline for required work hours and training, and a projected date for receipt of a valid certificate. If the operator does not intend to recertify, the Township shall submit to the undersigned inspector, a written statement affirming this fact signed by the ORO, the operator in question, and the Public Works Manager.

Future contraventions with respect to operator certification will be referred to the MOECC's Investigations and

Logbooks

Enforcement Branch and may result in charges being laid.

Certification and Training

- **The overall responsible operator had been designated for each subsystem.**

The current ORO of Laurentian Valley DS holds a Class 1 Water Distribution licence.

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

Operators are assigned as OIC based on scheduling and specific situational/operational requirements. The assignment is clearly recorded on duty calendars and is also recorded via the Township's payroll software.

Water Quality Monitoring

- **All microbiological water quality monitoring requirements for distribution samples were being met.**

O. Reg. 170/03 10-2 states:

10-2. (1) The owner of a drinking water system and the operating authority for the system shall ensure that,

(a) if the system serves 100,000 people or less, at least eight distribution samples, plus one additional distribution sample for every 1,000 people served by the system, are taken every month, with at least one of the samples being taken in each week; and

(2) The owner of the drinking water system and the operating authority for the system shall ensure that each of the samples taken under subsection (1) is tested for,

(a) Escherichia coli; and

(b) total coliforms.

(3) The owner of the drinking water system and the operating authority for the system shall ensure that at least 25 per cent of the samples required to be taken under subsection (1) are tested for general bacteria population expressed as colony counts on a heterotrophic plate count.

Based on a self-reported population of 1,200, Laurentian Valley DS is required to collect a minimum of nine (9) samples per month.

A minimum of nine samples per month, habitually two/three samples per week, were collected and analyzed as required during the inspection review period.

- **All haloacetic acid water quality monitoring requirements prescribed by legislation are not being conducted within the required frequency and at the required location.**

No samples have been collected for the analysis and monitoring of haloacetic acid (HAA) levels.

O. Reg. 170/03 13-6.1 states:

(1) The owner of a drinking water system that provides chlorination or chloramination and the operating authority for the system shall ensure that at least one distribution sample is taken in each calendar quarter, from a point in the drinking water systems distribution system, or plumbing that is connected to the drinking water system, that is likely to have an elevated potential for the formation of haloacetic acids.

Water Quality Monitoring

(2) The owner of the drinking water system and the operating authority for the system shall ensure that each of the samples taken under subsection (1) is tested for haloacetic acids.

Section 13-6.1 came into force on January 1, 2017. Prior to this date, the MOECC notified all owners and operator of the upcoming changes and new requirements. It is the responsibility of the drinking water system owner and operating authority, the Township, to be aware of and fulfill all regulatory requirements.

The Township shall immediately commence HAA sampling in accordance with the regulation. Analytical results shall be provided to the undersigned inspector no later than January 31, 2018.

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

As per O. Regulation 170/03 Schedule 13-6 (2), samples must be collected and analyzed for trihalomethanes quarterly.

Samples were collected as required on November 1, 2016 and February 7, May 16, and August 8, 2017.

- **Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.**

Water Quality Assessment

- **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).**

Other Inspection Findings

- **The following items are noted as being relevant to the Drinking Water System:**

1) The Township of Laurentian Valley obtains treated water from the City of Pembroke. A Water Service Agreement dated October 31, 1996 provides the details of the contract. Renewal and renegotiation of the agreement are currently underway.

The MOECC requests that a copy of the agreement be provided to the undersigned inspector once finalized.

2) The Laurentian Valley DS has had a number of difficulties in recent years relating to the re-certification of operators.

The stringent recertification requirements set by OWWCO were put in place for the protection of Ontario's drinking water quality and the health of it's residents.

While the undersigned inspector acknowledges the unique scheduling difficulties of smaller systems with few operators, the Township should take greater care to ensure that all training and recertification requirements are met within the timeframes and specifications presented by OWWCO. With foresight, non-compliance issues resulting from uncertified operators can be avoided.

NON-COMPLIANCE WITH REGULATORY REQUIREMENTS AND ACTIONS REQUIRED

This section provides a summary of all non-compliance with regulatory requirements identified during the inspection period, as well as actions required to address these issues. Further details pertaining to these items can be found in the body of the inspection report.

1 Records or other record keeping mechanisms did not confirm 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.

During the inspection review period, an uncertified operator performed operational testing in the Laurentian Valley DS from August 1, 2017 when the operator's Water Distribution and Supply certificate expired until November 8, 2017 when the undersigned inspector was made aware of the situation.

On November 9, 2017, the undersigned inspector issued an email notification to the Township requiring that the uncertified individual not perform any unsupervised work within the drinking water system until such time as written correspondence from OWWCO documenting an extension of the previous certificate is received or a valid operator certificate is issued.

It is important to note that Township staff with oversight responsibility were made aware of the impending expiry date and outstanding requirements for recertification by the Ontario Water Wastewater Certification Office (OWWCO). An email from OWWCO, dated July 27, 2017, clearly identifies that without a valid operator certificate the individual cannot operate a drinking water system. The email also states that without a valid operator certificate, the individual will be contravening section 12 of the Safe Drinking Water Act, 2002 and will be committing an offence under the Act.

Action(s) Required:

By no later than January 1, 2018 the Township shall submit to the undersigned inspector a written statement affirming that the operator in question will not be assigned any work within the Laurentian Valley DS without the supervision of an appropriately certified operator. The statement should be signed by the ORO, the operator in question, and the Public Works Manager.

By no later than January 31, 2018 the Township shall submit to the undersigned inspector a plan for recertification of the operator, including a projected timeline for required work hours and training, and a projected date for receipt of a valid certificate. If the operator does not intend to recertify, the Township shall submit to the undersigned inspector, a written statement affirming this fact signed by the ORO, the operator in question, and the Public Works Manager.

Future contraventions with respect to operator certification will be referred to the MOECC's Investigations and Enforcement Branch and may result in charges being laid.

2 All haloacetic acid water quality monitoring requirements prescribed by legislation are not being conducted within the required frequency and at the required location.

No samples have been collected for the analysis and monitoring of haloacetic acid (HAA) levels.

O. Reg. 170/03 13-6.1 states:

(1) The owner of a drinking water system that provides chlorination or chloramination and the operating authority for the system shall ensure that at least one distribution sample is taken in each calendar quarter, from a point in the drinking water systems distribution system, or plumbing that is connected to the drinking water system, that is likely

to have an elevated potential for the formation of haloacetic acids.

(2) The owner of the drinking water system and the operating authority for the system shall ensure that each of the samples taken under subsection (1) is tested for haloacetic acids.

Section 13-6.1 came into force on January 1, 2017. Prior to this date, the MOECC notified all owners and operator of the upcoming changes and new requirements.

Action(s) Required:

It is the responsibility of the drinking water system owner and operating authority, the Township, to be aware of and fulfill all regulatory requirements.

The Township shall immediately commence HAA sampling in accordance with the regulation. Analytical results shall be provided to the undersigned inspector no later than January 31, 2018.

SUMMARY OF RECOMMENDATIONS AND BEST PRACTICE ISSUES

This section provides a summary of all recommendations and best practice issues identified during the inspection period. Details pertaining to these items can be found in the body of the inspection report. In the interest of continuous improvement in the interim, it is recommended that owners and operators develop an awareness of the following issues and consider measures to address them.

Not Applicable

SIGNATURES

Inspected By:

Christina Des Rochers

Signature: (Provincial Officer)

Reviewed & Approved By:

James Mahoney

Signature: (Supervisor)

Review & Approval Date: 13/12/2017

Note: This inspection does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they apply or may apply to this facility. It is, and remains, the responsibility of the owner and/or operating authority to ensure compliance with all applicable legislative and regulatory requirements.

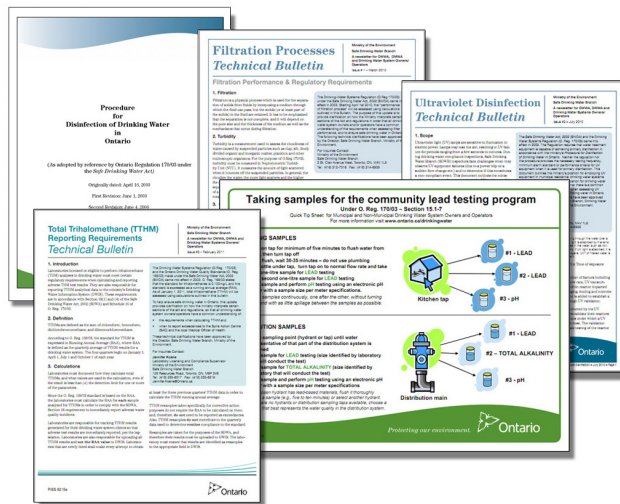
APPENDIX A
STAKEHOLDER APPENDIX

Key Reference and Guidance Material for Municipal Residential Drinking Water Systems

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

To access these materials online click on their titles in the table below or use your web browser to search for their titles. Contact the Public Information Centre if you need assistance or have questions at 1-800-565-4923/416-325-4000 or picemail.moe@ontario.ca.

For more information on Ontario's drinking water visit www.ontario.ca/drinkingwater and email drinking.water@ontario.ca to subscribe to drinking water news.



PUBLICATION TITLE	PUBLICATION NUMBER
Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils	7889e01
FORMS: Drinking Water System Profile Information, Laboratory Services Notification, Adverse Test Result Notification Form	7419e, 5387e, 4444e
Procedure for Disinfection of Drinking Water in Ontario	4448e01
Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids	7152e
Total Trihalomethane (TTHM) Reporting Requirements Technical Bulletin (February 2011)	8215e
Filtration Processes Technical Bulletin	7467
Ultraviolet Disinfection Technical Bulletin	7685
Guide for Applying for Drinking Water Works Permit Amendments, Licence Amendments, Licence Renewals and New System Applications	7014e01
Certification Guide for Operators and Water Quality Analysts	
Guide to Drinking Water Operator Training Requirements	9802e
Taking Samples for the Community Lead Testing Program	6560e01
Community Sampling and Testing for Lead: Standard and Reduced Sampling and Eligibility for Exemption	7423e
Guide: Requesting Regulatory Relief from Lead Sampling Requirements	6610
Drinking Water System Contact List	7128e
Technical Support Document for Ontario Drinking Water Quality Standards	4449e01

ontario.ca/drinkingwater

APPENDIX B
INSPECTION RATING RECORD

Ministry of the Environment - Inspection Summary Rating Record (Reporting Year - 2017-2018)

DWS Name: LAURENTIAN VALLEY DISTRIBUTION SYSTEM
DWS Number: 260007465
DWS Owner: Laurentian Valley, The Township Of
Municipal Location: Laurentian Valley

Regulation: O.REG 170/03
Category: Large Municipal Residential System
Type Of Inspection: Adhoc
Inspection Date: November 8, 2017
Ministry Office: Ottawa District

Maximum Question Rating: 181

Inspection Module	Non-Compliance Rating
Treatment Processes	0 / 14
Distribution System	0 / 21
Operations Manuals	0 / 28
Logbooks	14 / 18
Certification and Training	0 / 14
Water Quality Monitoring	8 / 51
Treatment Process Monitoring	0 / 35
TOTAL	22 / 181

Inspection Risk Rating	12.15%
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FINAL INSPECTION RATING:	87.85%
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Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2017-2018)

DWS Name: LAURENTIAN VALLEY DISTRIBUTION SYSTEM
DWS Number: 260007465
DWS Owner: Laurentian Valley, The Township Of
Municipal Location: Laurentian Valley
Regulation: O.REG 170/03
Category: Large Municipal Residential System
Type Of Inspection: Adhoc
Inspection Date: November 8, 2017
Ministry Office: Ottawa District

Non-compliant Question(s)	Question Rating
Logbooks	
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 suffices the requirements of O. Reg. 170/03 7-5?	14
Water Quality Monitoring	
Are all haloacetic acid water quality monitoring requirements prescribed by legislation conducted within the required frequency and at the required location?	8
TOTAL QUESTION RATING	22

Maximum Question Rating: 181

Inspection Risk Rating	12.15%
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FINAL INSPECTION RATING:	87.85%
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APPENDIX C

INSPECTION RATING RECORD METHODOLOGY

APPLICATION OF THE RISK METHODOLOGY USED FOR MEASURING MUNICIPAL RESIDENTIAL DRINKING WATER SYSTEM INSPECTION RESULTS



The Ministry of the Environment (MOE) has a rigorous and comprehensive inspection program for municipal residential drinking water systems (MRDWS). Its objective is to determine the compliance of MRDWS with requirements under the Safe Drinking Water Act and associated regulations. It is the responsibility of the municipal residential drinking water system owner to ensure their drinking water systems are in compliance with all applicable legal requirements.

This document describes the risk rating methodology, which has been applied to the findings of the Ministry's MRDWS inspection

results since fiscal year 2008-09. The primary goals of this assessment are to encourage ongoing improvement of these systems and to establish a way to measure this progress.

MOE reviews the risk rating methodology every three years.

The Ministry's Municipal Residential Drinking Water Inspection Protocol contains 15 inspection modules consisting of approximately 100 regulatory questions. Those protocol questions are also linked to definitive guidance that ministry inspectors use when conducting MRDWS inspections.

ontario.ca/drinkingwater

The questions address a wide range of regulatory issues, from administrative procedures to drinking water quality monitoring. The inspection protocol also contains a number of non-regulatory questions.

A team of drinking water specialists in the ministry assessed each of the inspection protocol regulatory questions to determine the risk (not complying with the regulation) to the delivery of safe drinking water. This assessment was based on established provincial risk assessment principles, with each question receiving a risk rating referred to as the Question Risk Rating. Based on the number of areas where a system is deemed to be non-compliant during the inspection, and the significance of these areas to administrative, environmental, and health consequences, a risk-based inspection rating is calculated by the ministry for each drinking water system.

It is important to be aware that an inspection rating less than 100 per cent does not mean the drinking water from the system is unsafe. It shows areas where a system’s operation can improve. The ministry works with owners and operators of systems to make sure they know what they need to do to achieve full compliance.

The inspection rating reflects the inspection results of the specific drinking water system for the reporting year. Since the methodology is applied consistently over a period of years, it serves as a comparative measure both provincially and in relation to the individual system. Both the drinking water system and the public are able to track the performance over time, which encourages continuous improvement and allows systems to identify specific areas requiring attention.

The ministry’s annual inspection program is an important aspect of our drinking water safety net. The ministry and its partners share a common commitment to excellence and we continue to work toward the goal of 100 per cent regulatory compliance.

Determining Potential to Compromise the Delivery of Safe Water

The risk management approach used for MRDWS is aligned with the Government of Ontario’s Risk Management Framework. Risk management is a systematic approach to identifying potential hazards, understanding the likelihood and consequences of the hazards, and taking steps to reduce their risk if necessary and as appropriate.

The Risk Management Framework provides a formula to be used in the determination of risk:

$$\text{RISK} = \text{LIKELIHOOD} \times \text{CONSEQUENCE}$$

(of the consequence)

Every regulatory question in the inspection protocol possesses a likelihood value (L) for an assigned consequence value (C) as described in **Table 1** and **Table 2**.

TABLE 1:	
Likelihood of Consequence Occurring	Likelihood Value
0% - 0.99% (Possible but Highly Unlikely)	L = 0
1 – 10% (Unlikely)	L = 1
11 – 49% (Possible)	L = 2
50 – 89% (Likely)	L = 3
90 – 100% (Almost Certain)	L = 4

TABLE 2:	
Consequence	Consequence Value
Medium Administrative Consequence	C = 1
Major Administrative Consequence	C = 2
Minor Environmental Consequence	C = 3
Minor Health Consequence	C = 4
Medium Environmental Consequence	C = 5
Major Environmental Consequence	C = 6
Medium Health Consequence	C = 7
Major Health Consequence	C = 8

The consequence values (0 through 8) are selected to align with other risk-based programs and projects currently under development or in use within the ministry as outlined in **Table 2**.

The Question Risk Rating for each regulatory inspection question is derived from an evaluation of every identified consequence and its corresponding likelihood of occurrence:

- All levels of consequence are evaluated for their potential to occur
- Greatest of all the combinations is selected.

The Question Risk Rating quantifies the risk of non-compliance of each question relative to the others. Questions with higher values are those with a potentially more significant impact on drinking water safety and a higher likelihood of occurrence. The highest possible value would be 32 (4×8) and the lowest would be 0 (0×1).

Table 3 presents a sample question showing the risk rating determination process.

TABLE 3:							
Does the Operator in Charge ensure that the equipment and processes are monitored, inspected and evaluated?							
Risk = Likelihood × Consequence							
C=1	C=2	C=3	C=4	C=5	C=6	C=7	C=8
Medium Administrative Consequence	Major Administrative Consequence	Minor Environmental Consequence	Minor Health Consequence	Medium Environmental Consequence	Major Environmental Consequence	Medium Health Consequence	Major Health Consequence
L=4 (Almost Certain)	L=1 (Unlikely)	L=2 (Possible)	L=3 (Likely)	L=3 (Likely)	L=1 (Unlikely)	L=3 (Likely)	L=2 (Possible)
R=4	R=2	R=6	R=12	R=15	R=6	R=21	R=16

Application of the Methodology to Inspection Results

Based on the results of a MRDWS inspection, an overall inspection risk rating is calculated. During an inspection, inspectors answer the questions related to regulatory compliance and input their “yes”, “no” or “not applicable” responses into the Ministry’s Laboratory and Waterworks Inspection System (LWIS) database. A “no” response indicates non-compliance. The maximum number of regulatory questions asked by an inspector varies by: system (i.e., distribution, stand-alone); type of inspection (i.e., focused, detailed); and source type (i.e., groundwater, surface water).

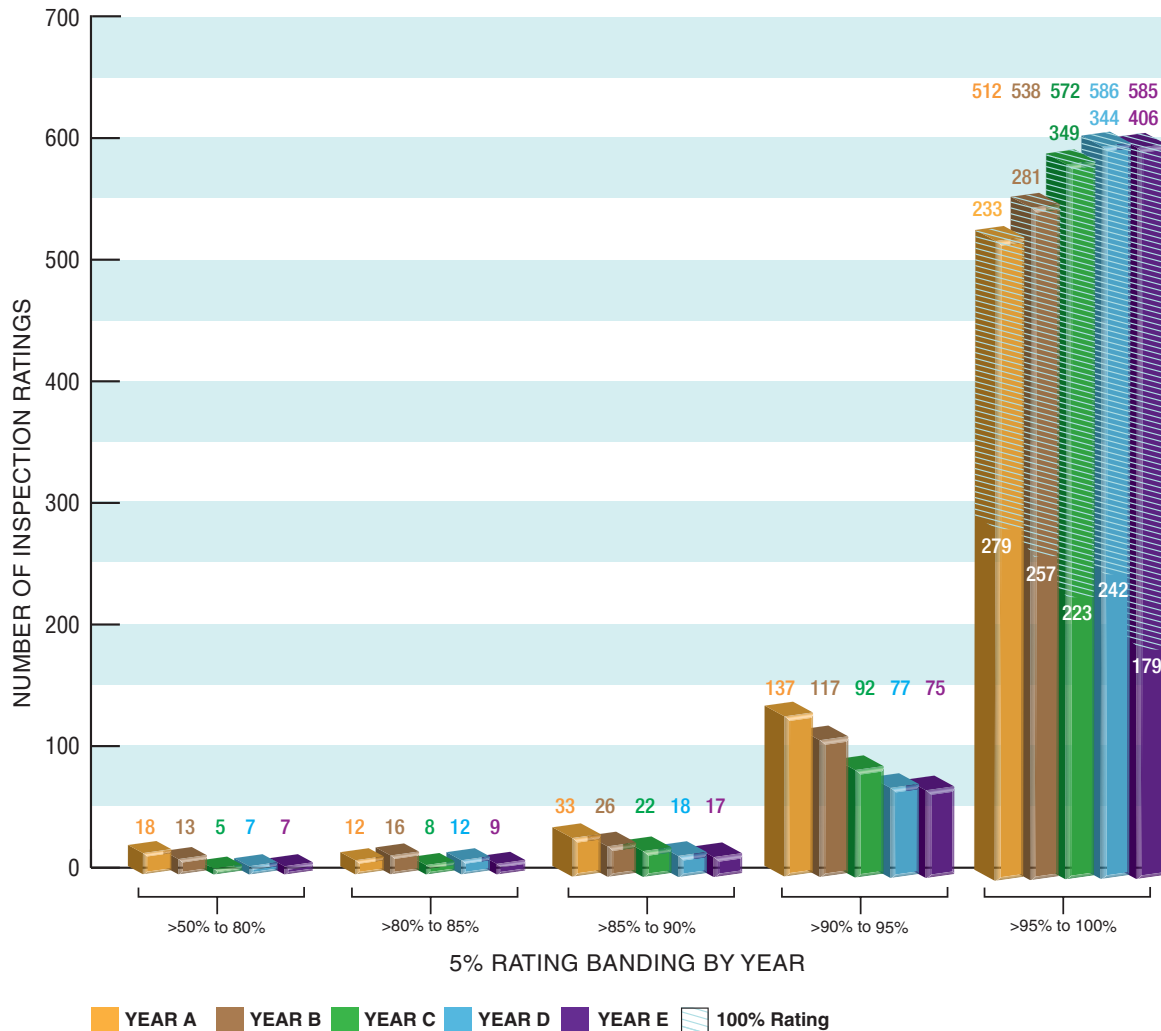
The risk ratings of all non-compliant answers are summed and divided by the sum of the risk ratings of all questions asked (maximum question rating). The resulting inspection risk rating (as a percentage) is subtracted from 100 per cent to arrive at the final inspection rating.

Application of the Methodology for Public Reporting

The individual MRDWS Total Inspection Ratings are published with the ministry's Chief Drinking Water Inspector's Annual Report.

Figure 1 presents the distribution of MRDWS ratings for a sample of annual inspections. Individual drinking water systems can compare against all the other inspected facilities over a period of inspection years.

Figure 1: Year Over Year Distribution of MRDWS Ratings



Reporting Results to MRDWS Owners/Operators

A summary of inspection findings for each system is generated in the form of an Inspection Rating Record (IRR). The findings are grouped into the 15 possible modules of the inspection protocol,

which would provide the system owner/operator with information on the areas where they need to improve. The 15 modules are:

- | | | | |
|-------------------------|---------------------------------|--|--|
| 1. Source | 5. Treatment Process Monitoring | 9. Logbooks | 13. Water Quality Monitoring |
| 2. Permit to Take Water | 6. Process Wastewater | 10. Contingency and Emergency Planning | 14. Reporting, Notification and Corrective Actions |
| 3. Capacity Assessment | 7. Distribution System | 11. Consumer Relations | 15. Other Inspection Findings |
| 4. Treatment Processes | 8. Operations Manuals | 12. Certification and Training | |

For further information, please visit www.ontario.ca/drinkingwater