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Ontario

February 11, 2025

The Corporation of the City of Trent Hills
66 Front St, P.O. Box Delivery 1030,
Campbellford, ON, K0L 1L0

Attention: Lynn Phillips, Chief Administrative Officer

**RE: Hastings Drinking Water System (210000470)**
**Drinking Water Inspection Report 1-377597834**
**File: SI NO TH FR 540 (2024-2025)**

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Please find attached the Ministry of the Environment, Conservation and Parks inspection report for the above facility. The report details the findings of the inspection that began on January 8, 2025.

The Appendix section of the inspection includes the Stakeholder Appendix A with links to key reference and guidance materials available on the Ministry of the Environment, Conservation and Parks (MECP) website.

In the inspection report, any *"Actions Required"* are linked to incidents of non-compliance with regulatory requirements contained within the 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 availability of information to consumers, and conformance with existing and emerging industrial standards. Please note that items which appear as recommended actions do not, in themselves, constitute violations.

If you have any questions or concerns, please contact me at 705-768-8593.

Yours truly,

Neil Hamilton
Provincial Officer Badge # 1359 | Peterborough District | Drinking Water Environmental Compliance Division
Ministry of the Environment, Conservation and Parks
1.800.558.0595 / 705.768.8593 / email: neil.hamilton2@ontario.ca



c:

Scott Campbell, Water Operations Senior Operator, Municipality of Trent Hills

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

Rhonda Bateman, CAO/Treasurer, Lower Trent Conservation Authority

Brad Jackson, Water Supervisor, Ministry of Environment, Conservation & Parks, Peterborough

Ontario

HASTINGS DRINKING WATER SYSTEM
Physical Address: 188 FRONT ST W, , TRENT HILLS, ON M5V 3G5

# INSPECTION REPORT

| | |
|---|---|
| Entity: | THE MUNICIPALITY OF TRENT HILLS |
| Inspection Start Date: | January 06, 2025 |
| Site Inspection Date: | January 08, 2025 |
| Inspection End Date: | January 22, 2025 |
| Inspected By: | Neil Hamilton |
| Badge #: | 1359 |

Neil H

_____
(signature)

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## INTRODUCTION

### Purpose

This announced, focused inspection was conducted to confirm compliance with Ministry of the Environment, Conservation and Parks' (MECP) legislation and conformance with ministry drinking water policies and guidelines.

### Scope

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 and the operation of the system.

The inspection of the drinking water system included both the physical inspection of the component parts of the system listed in section 4 "Systems Components" of the report and the review of data and documents associated with the operation of the drinking water system during the review 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 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.

### Facility Contacts and Dates

The drinking water system is owned by The Corporation Of The Municipality Of Trent Hills and operated by The Corporation Of The Municipality Of Trent Hills.

The system serves an estimated population of 1,573 and is categorized as a Large Municipal Residential System. Information reviewed for this inspection covered the time period of September 22, 2023 to January 8, 2025.

The water inspector met with Scott Campbell, ORO and Troy Stephens, back up ORO as part of the inspection process.

### Systems/Components

All locations associated with primary disinfection were visited as part of this inspection. The

following sites were visited as part of the inspection of the drinking water system:

- Hastings DWS
- Hastings Standpipe

**Permissions/Approvals**

This drinking water system was subject to specific conditions contained within the following permissions and/or approvals (please note this list is not exhaustive) at the time of the inspection in addition to the requirements of the SDWA and its regulations:

Drinking Water Works Permit - 150-203 Issue no. 3
Municipal Drinking Water License - 150-103 Issue No. 3
Permit to Take Water - 4330-AA4KGX

**NON-COMPLIANCE**

This should not be construed as a confirmation of full compliance with all potential applicable legal requirements. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## RECOMMENDATIONS

This should not be construed as a confirmation of full conformance with all potential applicable BMPs. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

## INSPECTION DETAILS

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

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

| **Question ID** | DWMR1012001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | 31 | (1);

**Question:**
Did the owner have a harmful algal bloom monitoring plan in place that met the requirements of the Municipal Drinking Water Licence?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
The owner had a harmful algal bloom monitoring plan in place which met the requirements.

Condition 6 of Schedule C of the MDWL requires that the owner develops and keeps up to date a Harmful Algal Bloom monitoring, reporting and sampling plan, and implement the plan when a potential harmful algal bloom is suspected or present. The owner must have the plan in place on or before December 14, 2021. 'Hastings Water Treatment Plant Harmful Algal Bloom Monitoring Plan' was developed by the operating authority in May 2021. The plan describes how to identify, monitor, report and sample harmful algal blooms.

| **Question ID** | DWMR1014001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | 31 | (1);

**Question:**
Was flow monitoring performed as required by the Municipal Drinking Water Licence or Drinking Water Works Permit?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Flow monitoring was performed as required.

During the physical inspection there were two raw water flow meters located before clarifiers #1&2. There were two filtered water flow meters located after the 2 GAC filters and a treated flow meter and a backwash flow meter. All flow meter displays are centrally located near clarifier #1.

| **Question ID** | DWMR1016001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | 31 | (1);

**Question:**
Was the owner in compliance with the conditions associated with maximum flow rate or the rated/operational capacity in the Municipal Drinking Water Licence?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
The owner was in compliance with the conditions associated with maximum flow rate and/or the rated/operational capacity conditions.

Part 1.0 of Schedule C of the current MDWL limits the maximum daily volume of treated water that directed to the distribution system to 1961 $m^3$/day.

The SCADA summary data was reviewed for the inspection period.
The rated capacity for the flow into the distribution system has not been exceeded during inspection period. The maximum daily treated water volume of 940 $m^3$/day entering the distribution system was recorded on May 22, 2024.

| **Question ID** | DWMR1018001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | 31 | (1);

**Question:**
Did the owner ensure that equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
The owner ensured that equipment was installed as required.

During the physical inspection it was observed that Sodium Silicate is no longer being used and has been replaced with a zinc polyorthophosphate. See Question ID DWMR1021001.

Recommended Action:

The ministry recommends that Schedule A of the Drinking Water Works Permit (DWWP) be updated at the next renewal date to reflect the change and update any drawings maintained for the drinking water system as per Schedule B section 4.8 of the DWWP.

| **Question ID** | DWMR1021001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | 31 | (1);

**Question:**
Were Form 2 documents prepared as required?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Form 2 documents were prepared as required.

A form 2 was prepared on September 13, 2023 in regard to the existing corrosion inhibitor,

Sodium Silicate BW 46, was replaced with Environor Canada product ENV 24P10 which is a zinc polyorthophosphate.

A form 2 was prepared on November 30, 2023 in regard to replacing 3 existing Wallace & Tiernan gas chlorinators with new Evoqua V 10K gas chlorinators in the chlorine room.

| **Question ID** | DWMR1023001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 1-2 | (2);

**Question:**
Did records indicate that the treatment equipment was operated in a manner that achieved the design capabilities prescribed by O. Reg. 170/03, Drinking Water Works Permit and/or Municipal Drinking Water Licence at all times that water was being supplied to consumers?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities prescribed.

The Hastings DWS obtains water from a surface water source (Trent River). The treatment system must be capable of achieving an overall performance that provides, at a minimum, 5-log removal or inactivation of viruses, 4-log removal or inactivation of Giardia cysts and 2-log removal or inactivation of Cryptosporidium oocysts.

The treatment system at the Hastings DWS consists of chemically assisted filtration followed by disinfection using chlorination. The chemically assisted filtration is credited to provide 2-log Cryptosporidium oocysts, 2.5-log Giardia cysts and 2-log viruses removal or inactivation. Chlorine disinfection is required to provide, at a minimum, 1.5-log removal or inactivation of Giardia cysts.

The primary disinfection free chlorine residual and log-inactivation are continuously measured and recorded on the SCADA system.

The minimum chlorine residual required to achieve primary disinfection at 0oC, 10oC and 20oC, using full chorine contact tank (based on pH of 8.15) is 1.08 mg/L, 0.50 mg/L and 0.22 mg/L, respectively, according to the 'Pre/Post Chlorination' procedure included in the Hastings Operations Manual.

At the time of the inspection, the minimum chlorine residual alarm set at the chlorine analyzer monitoring primary disinfection was 0.6 mg/L. The minimum chlorine alarm triggers an automatic system shutdown.

The monthly SCADA summaries and continuous readings were reviewed for the inspection period.

The minimum primary disinfection chlorine residual outside of maintenance activities was

0.79 mg/L and was recorded in May of 2023.

To claim 2.5 log Giardia cysts removal and 2.0 log Cryptosporidium oocyst removal credit, the chemically assisted filtration process at the Hastings DWS must meet the monthly performance criterion for filtered water turbidity of less or equal to 0.3 NTU in 95% of the measurements each
month.

The continuous filter effluent turbidity readings are recorded on the SCADA system.

The review of the monthly data summaries and continuous readings confirmed that filter effluent turbidities were maintained below 0.3 NTU in at least 99% of the time during the inspection period.

| **Question ID** | DWMR1024001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 1-2 | (2);

**Question:**
Did records confirm that the water treatment equipment which provides chlorination or chloramination for secondary disinfection was operated as required?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Records confirmed that the water treatment equipment which provides chlorination or chloramination for secondary disinfection was operated as required.

Distribution chlorine residual records, both the monthly summaries of the on-line data and grab sample test results, were reviewed for the inspection period.

Since the last inspection, the minimum distribution free chlorine residual of 0.49 mg/L was measured and recorded on July 29, 2024 at 134 Cedar Dr.

| **Question ID** | DWMR1033001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 7-2 | (3); SDWA | O. Reg. 170/03 | 7-2 | (4);

**Question:**
Was secondary disinfectant residual tested as required for the large municipal residential distribution system?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Secondary disinfectant residual was tested as required.

Distribution system free chlorine residuals were continuously measured at the Hastings standpipe by an on-line chorine analyzer. Chlorine residuals were recorded on the SCADA system.

In addition, distribution chlorine residuals were measured during bacteriological sampling using a hand-held colourimetric unit.

| Question ID | DWMR1030001 | Question Type | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 7-2 | (1); SDWA | O. Reg. 170/03 | 7-2 | (2);

**Question:**
Was primary disinfection chlorine monitoring being conducted at a location approved by Municipal Drinking Water Licence and/or Drinking Water Works Permit or at/near a location where the intended CT had just been achieved?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Primary disinfection chlorine monitoring was conducted as required.

The primary disinfection free chlorine residual is measured at the discharge from chlorine contact tank.

| Question ID | DWMR1032001 | Question Type | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 7-3 | (2);

**Question:**
If the drinking water system obtained water from a surface water source and provided filtration, was continuous monitoring of each filter effluent line performed for turbidity?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Continuous monitoring of each filter effluent line was performed for turbidity.

On-line turbidity analyzers are located at the discharge lines from filter #1 and #2. Filter effluent turbidities are continuously measured and recorded on the SCADA system.

| Question ID | DWMR1035001 | Question Type | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 6-5 | (1)1-4;

**Question:**
Were operators examining continuous monitoring test results and did they examine the results within 72 hours of the test?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Operators were examining continuous monitoring test results as required.

| Question ID | DWMR1038001 | Question Type | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 6-5 | (1)1-4;

**Question:**
Was continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements performing tests for the parameters with at least the minimum frequency and recording data with the prescribed format?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
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 and recording data with the prescribed format.

| Question ID | DWMR1037001 | Question Type | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 6-5 | (1)5-10; SDWA | O. Reg. 170/03 | 6-5 | (1.1);

**Question:**
Were 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, equipped with alarms or shut-off mechanisms that satisfied the standards described in Schedule 6?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
All required continuous monitoring equipment utilized for sampling and testing were equipped with alarms or shut-off mechanisms that satisfied the standards

The minimum chlorine residual required to achieve primary disinfection at 0oC, 10oC and 20oC, using full chorine contact tank (based on pH of 8.15) is 1.08 mg/L, 0.50 mg/L and 0.22 mg/L, respectively, according to the 'Pre/Post Chlorination' procedure included in the Hastings Operations Manual.

It was reported during the inspection that, currently, the minimum chlorine alarm at the continuous chlorine analyzer monitoring primary disinfection is set at 0.6 mg/L. The minimum chlorine alarm will trigger an automatic plant shutdown.

At the time of the inspection, the maximum (high-high) filter effluent turbidity alarm and an automatic filter shutdown system was set at 0.3 NTU.

The alarms will trigger an immediate notification to the operator.

| Question ID | DWMR1040001 | Question Type | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 6-5 | (1)1-4; SDWA | O. Reg. 170/03 | 6-5 | (1)5-10;

**Question:**
Were all continuous analysers calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
All continuous analysers were calibrated, maintained, and operated as required.

All on-line turbidity and chlorine residual analyzers were calibrated by operation staff on a quarterly basis and documented in work order forms.

| **Question ID** | DWMR1108001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 6-5 | (1)5-10; SDWA | O. Reg. 170/03 | 6-5 | (1.1);

**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, Municipal Drinking Water Licence, Drinking Water Works Permit, or order triggered an alarm or an automatic shut-off, did a qualified person respond as required and take appropriate actions?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
A qualified person responded as required and took appropriate actions.

Since the last compliance inspection, readings below the minimum chlorine residual alarm and above the maximum filter effluent turbidities were caused by routine maintenance activities. All incidents were documented in the logbooks and abnormal occurrence log.

| **Question ID** | DWMR1099001 | **Question Type** | Information |
|---|---|---|---|

**Legislative Requirement(s):**
Not Applicable

**Question:**
Do records show that water provided by the drinking water system met the Ontario Drinking Water Quality Standards?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Records showed that all water sample results met the Ontario Drinking Water Quality Standards.

| **Question ID** | DWMR1083001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 10-3;

**Question:**
Were treated microbiological sampling requirements prescribed by Schedule 10-3 of O. Reg. 170/03 for large municipal residential systems met?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Treated microbiological sampling requirements were met.

As per schedule 10-3 of O.Reg 170/03 The owner of a drinking water system and the operating authority for the system shall ensure that a water sample is taken at least once every week and tested for,

(a) Escherichia coli (EC);

(b) total coliforms (TC); and

(c) general bacteria population expressed as colony counts on a heterotrophic plate count (HPC).

A review of data throughout the inspection period demonstrated samples were collected at least once a week and tested for TC, EC and HPC.

| **Question ID** | DWMR1081001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 10-2 | (1); SDWA | O. Reg. 170/03 | 10-2 | (2); SDWA | O. Reg. 170/03 | 10-2 | (3);

**Question:**
Were distribution microbiological sampling requirements prescribed by Schedule 10-2 of O. Reg. 170/03 for large municipal residential systems met?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Distribution microbiological sampling requirements were met.

As per schedule 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.

A review of data throughout the inspection period demonstrated that samples for TC & EC were collected 3 times a week and were also tested for HPC.

| **Question ID** | DWMR1096001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 6-3 | (1);

**Question:**
Did records confirm that chlorine residual tests were conducted at the same time and location as microbiological samples?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Records confirmed that chlorine residual tests were conducted as required.

| **Question ID** | DWMR1084001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 13-2;

**Question:**
Were inorganic parameter sampling requirements prescribed by Schedule 13-2 of O. Reg. 170/03 met?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Inorganic parameter sampling requirements were met.

As per schedule 13-2 of O. Reg 170/03 The owner of a large municipal residential system and the operating authority for the system shall ensure that, at least one water sample is taken every 12 months, if the system obtains water from a raw water supply that is surface water; and is tested for every parameter set out in Schedule 23.

A review of data throughout the inspection period demonstrated that inorganic sampling was last conducted on January 7, 2025.

| **Question ID** | DWMR1085001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 13-4 | (1); SDWA | O. Reg. 170/03 | 13-4 | (2); SDWA | O. Reg. 170/03 | 13-4 | (3);

**Question:**
Were organic parameter sampling requirements prescribed by Schedule 13-4 of O. Reg. 170/03 met?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Organic parameter sampling requirements were met.

As per schedule 13-4 of O. Reg 170/03 The owner of a large municipal residential system and the operating authority for the system shall ensure that, at least one water sample is taken every 12 months, if the system obtains water from a raw water supply that is surface water; and is tested for every parameter set out in Schedule 24.

A review of data throughout the inspection period demonstrated that organic sampling was last conducted on January 7, 2025.

| **Question ID** | DWMR1086001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
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);

**Question:**
Were haloacetic acid sampling requirements prescribed by Schedule 13-6 of O. Reg. 170/03 met?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Haloacetic acid sampling requirements were met.

As per schedule 13-6.1 of O.Reg 170/03 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 system's 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.

A review of data throughout the inspection period demonstrated that samples were collected on November 18, 2024, August 19, 2024, May 13, 2024, February 13, 2024 and November 21, 2023.

Results were respectively 27.6 ug/L, 38.4 ug/L, 40.1 ug/L, 27.0 ug/L, 40.1 ug/L.

The current running annual average for HAA's is  33.28 ug/L.

| **Question ID** | DWMR1087001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
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);

**Question:**
Were trihalomethane sampling requirements prescribed by Schedule 13-6 of O. Reg. 170/03 met?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Trihalomethane sampling requirements were met.

As per schedule 13-6 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 system's distribution system, or plumbing that is connected to the drinking water system, that is likely to have an elevated potential for the formation of trihalomethanes.

A review of data throughout the inspection period demonstrated that samples were collected on November 18, 2024, August 19, 2024, May 13, 2024, February 13, 2024 and November 21, 2023.

Results were respectively 85 ug/L, 100 ug/L, 91 ug/L, 57 ug/L, 94 ug/L.

The current running annual average for THM's is  83.25 ug/L.

| **Question ID** | DWMR1088001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 13-7;

**Question:**
Were nitrate/nitrite sampling requirements prescribed by Schedule 13-7 of O. Reg. 170/03 met?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Nitrate/nitrite sampling requirements were met.

As per schedule 13-7 of O.Reg 170/03 The owner of a drinking water system and the operating authority for the system shall ensure that at least one water sample is taken every three months and tested for nitrate and nitrite.

A review of data throughout the inspection period demonstrated that samples were collected on November 18, 2024, August 19, 2024, May 13, 2024, February 13, 2024, November 21, 2023.

Results for Nitrate ranged from 0.038 mg/L - 0.251 mg/L and results for Nitrite remained steady at 0.003 mg/L.

| Question ID | DWMR1089001 | Question Type | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 13-8;

**Question:**
Were sodium sampling requirements prescribed by Schedule 13-8 of O. Reg. 170/03 met?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Sodium sampling requirements were met.

As per schedule 13-8 The owner of a drinking water system and the operating authority for the system shall ensure that at least one water sample is taken every 60 months and tested for sodium.

A review of data throughout the inspection period demonstrated that samples were collected on January 7, 2025 with a result of 10.9 Mg/L.

| Question ID | DWMR1090001 | Question Type | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 13-9;

**Question:**
Where fluoridation is not practiced, were fluoride sampling requirements prescribed by Schedule 13-9 of O. Reg. 170/03 met?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Fluoride sampling requirements were met.

As per schedule 13-9 of O.Reg 170/03 If a drinking water system does not provide fluoridation, the owner of the system and the operating authority for the system shall ensure that a water sample is taken at least once every 60 months and tested for fluoride.

A review of data throughout the inspection period demonstrated that samples were collected on January 7, 2025 with a result of 0.06 Mg/L.

| Question ID | DWMR1094001 | Question Type | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | 31 | (1);

**Question:**
Were water quality sampling requirements imposed by the Municipal Drinking Water Licence and Drinking Water Works Permit met?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Water quality sampling requirements were met.

Section 5.2 of the Schedule C of the current Municipal Drinking Water License requires

collection of a monthly manual composite sample for total suspended solids (TSS) analysis and a monthly grab sample for total chlorine residual analysis in the wastewater supernatant discharged to Trent River.

The MDWL sets the annual running average limits for TSS at 25 mg/L, and a limit of 0.02 mg/L for total chlorine residual.

The document review confirmed that wastewater samples were collected monthly and analyzed for total suspended solids. The average of TSS of samples collected since the last compliance inspection was 3 mg/L.

A grab sample of wastewater supernatant was collected each month and tested for total chlorine residual. The test results were documented in the facility logbook. The data review for the inspection period confirmed that the running annual average of the last 12 months was 0.01 mg/L.

| **Question ID** | DWMR1113001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 10.1 | (3);

**Question:**
Were changes to the system registration information provided to the ministry within ten (10) days of the change?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Changes to the system registration information were provided as required.

| **Question ID** | DWMR1114001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | 31 | (1);

**Question:**
Did the owner have evidence that, when required, all legal owners associated with the drinking water system were notified of the requirements of the Municipal Drinking Water Licence and Drinking Water Works Permit?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
The owner had evidence that the required notifications were made.

| **Question ID** | DWMR1045001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | 31 | (1);

**Question:**
Did the owner update the document describing the distribution components within 12 months of completion of alterations to the system in accordance with the Drinking Water Works Permit?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
The owner had up-to-date documents describing the distribution components.

| Question ID | DWMR1060001 | Question Type | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | 31 | (1);

**Question:**
Did the operations and maintenance manual(s) meet the requirements of the Municipal Drinking Water Licence?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
The operations and maintenance manual(s) met the requirements of the Municipal Drinking Water Licence.

| Question ID | DWMR1062001 | Question Type | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 7-5;

**Question:**
Did records or other record keeping mechanisms confirm that operational testing not performed by continuous monitoring equipment was done by a certified operator, water quality analyst, or person who met the requirements of Schedule 7-5 of O. Reg. 170/03?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Records or other record keeping mechanisms confirmed that operational testing not performed by continuous monitoring equipment was done by a certified operator, water quality analyst, or person who met the requirements of Schedule 7-5 of O. Reg. 170/03.

| Question ID | DWMR1071001 | Question Type | BMP |
|---|---|---|---|

**Legislative Requirement(s):**
Not Applicable

**Question:**
Did the owner provide security measures to protect components of the drinking water system?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
The owner provided security measures to protect components of the drinking water system.

The properties around the Hastings water treatment facility and distribution system standpipe are fenced. The buildings' access doors are locked and the water treatment facility is equipped with Trent security alarm system.

| **Question ID** | DWMR1073001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 128/04 | 23 | (1);

**Question:**
Was an overall responsible operator designated for all subsystems which comprise the drinking water system?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
An overall responsible operator was designated for all subsystem.

The Hastings DWS is classified as a Class 3 Water Treatment Subsystem and a Class 1 Water Distribution Subsystem.

During the inspection period, Scott Campbell, the Senior Operator, was designated as the Overall Responsible Operator (ORO). Mr. Campbell holds a valid Class 3 Water Treatment Subsystem and a Class 2 Water Distribution and Supply Subsystem certificates.

In his absence Troy Stephens, Water Distribution/Treatment Head Operator, would assume the role of the alternate ORO. Troy Stephens holds a valid Class 2 Water Treatment and a Class 3 Water Distribution and Supply certificates.

The ORO designation is documented in the logbook.

As a note Scott Campbell is set to retire this April 2025. It is reported that this vacancy will be filled by someone with a Class 3 Water Treatment Subsystem Certificate and that they will be hire by the end of February.

Troy Stephens is reported to have completed his Class 3 exam and will be eligible for the Class 3 certificate after one year of operating experience.

| **Question ID** | DWMR1074001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 128/04 | 25 | (1);

**Question:**
Were operators-in-charge designated for all subsystems which comprise the drinking water system?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Operators-in-charge were designated for all subsystems.

The following operators were designated as OIC and were credited OIC experience for every working hour:

- Gerry Brownson (WTS Class 2, WDS Class 2)
- Paul Kelly (WTS Class 3, WD&SS Class 2)
- Todd Kerr (WTS Class 2, WD&SS Class 2)
- Jody Trottman (WTS Class 3, WDS Class 2)
- Rachel Parr (WTS Class 1, WDS Class 2)

| **Question ID** | DWMR1075001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 128/04 | 22;

**Question:**
Were all operators certified as required?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
All operators were certified as required.

| **Question ID** | DWMR1076001 | **Question Type** | Legislative |
|---|---|---|---|

**Legislative Requirement(s):**
SDWA | O. Reg. 170/03 | 1-2 | (2);

**Question:**
Were adjustments to the treatment equipment only made by certified operators?

**Compliance Response(s)/Corrective Action(s)/Observation(s):**
Adjustments to the treatment equipment were only made by certified operators.

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# 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 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:**<br>Drinking Water System Profile Information<br>Laboratory Services Notification<br>Adverse Test Result Notification | <br>012-2149E<br>012-2148E<br>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 |



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



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# 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 up to 14 inspection modules and consists of approximately 120 regulatory questions. Those protocol questions are also linked to definitive guidance that ministry inspectors use when conducting MRDWS inspections. The questions address a wide range of regulatory issues, from administrative procedures



PIBS 6797e

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to drinking water quality monitoring. Additionally, the inspection protocol contains a number of non-regulatory questions.

A team of drinking water specialists in the ministry have 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 that is less than 100 per cent does not mean that the drinking water from the system is unsafe. It shows areas where a system's operation can improve. To that end, 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:

**RISK = LIKELIHOOD × 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 that relate to regulatory compliance and input their responses as "yes", "no" or "not applicable" 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).

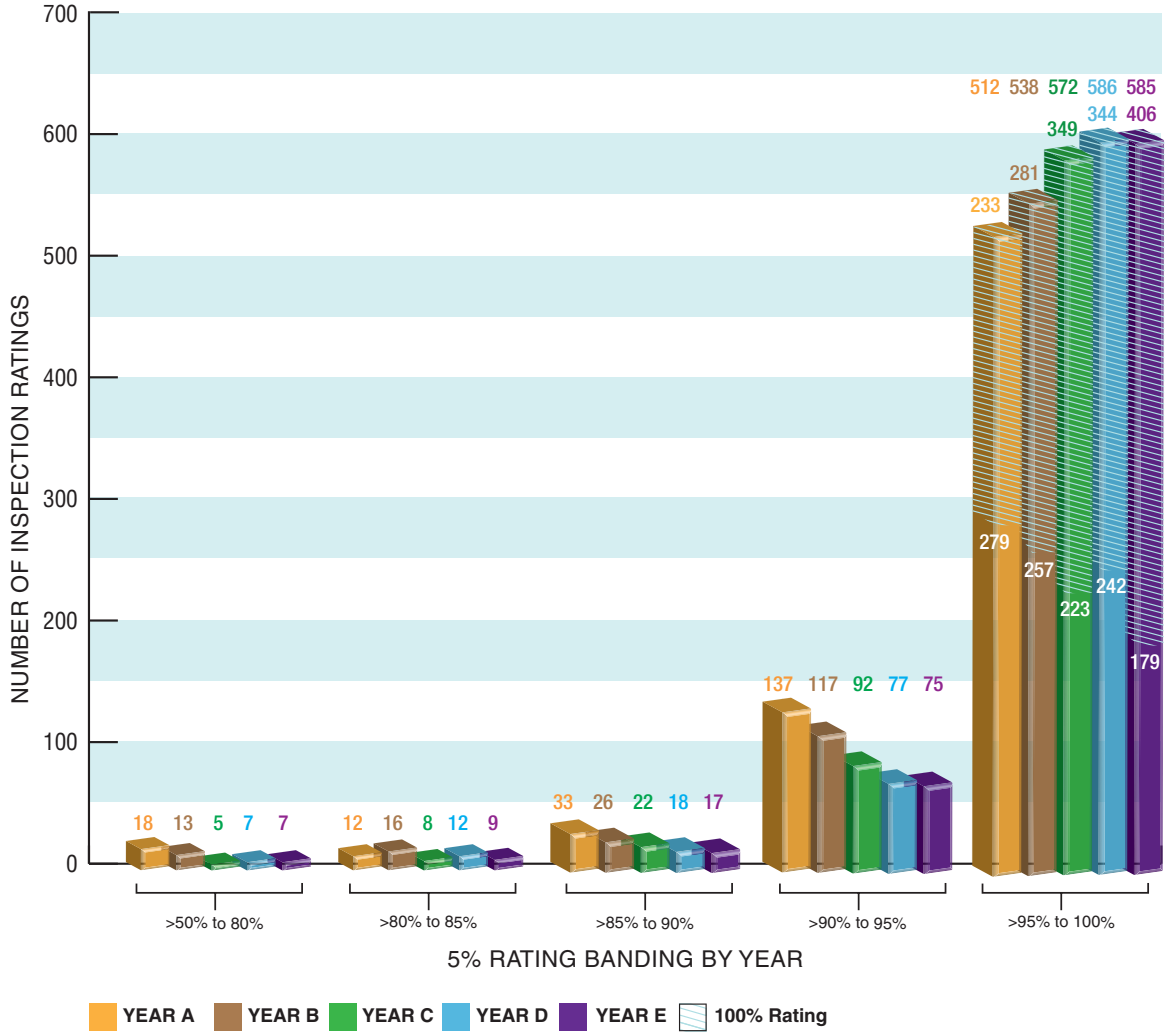
The risk ratings of all non-compliant answers are summed and divided by the sum of the risk ratings of all questions asked (maximum question rating). The resulting inspection risk rating (as a percentage) is subtracted from 100 per cent to arrive at the final inspection rating.

## 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 14 possible modules of the inspection protocol, which would provide the system owner/operator with information on the areas where they need to improve. The 14 modules are:

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

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

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# APPENDIX B

# INSPECTION RATING RECORD

| | |
|---|---|
| **DWS Name:** | HASTINGS DRINKING WATER SYSTEM |
| **DWS Number:** | 210000470 |
| **DWS Owner:** | THE MUNICIPALITY OF TRENT HILLS |
| **Municipal Location:** | TRENT HILLS |
| **Regulation:** | O.REG. 170/03 |
| **DWS Category:** | DW Municipal Residential |
| **Type of Inspection:** | Focused |
| **Compliance Assessment Start Date:** | Jan-6-2025 |
| **Ministry Office:** | Peterborough District Office |

**Maximum Risk Rating:** 438

| Inspection Module | Non Compliance Risk (X out of Y) |
|---|---|
| Capacity Assessment | 0/30 |
| Certification and Training | 0/42 |
| Distribution System | 0/4 |
| Logbooks | 0/14 |
| Operations Manuals | 0/14 |
| Reporting & Corrective Actions | 0/29 |
| Source | 0/0 |
| Treatment Processes | 0/193 |
| Water Quality Monitoring | 0/112 |
| **Overall - Calculated** | **0/438** |

| | |
|---|---|
| **Inspection Risk Rating:** | **0.00%** |

| | |
|---|---|
| **Final Inspection Rating:** | **100.00%** |

| | |
|---|---|
| **DWS Name:** | HASTINGS DRINKING WATER SYSTEM |
| **DWS Number:** | 210000470 |
| **DWS Owner Name:** | THE MUNICIPALITY OF TRENT HILLS |
| **Municipal Location:** | TRENT HILLS |
| **Regulation:** | O.REG. 170/03 |
| **DWS Category:** | DW Municipal Residential |
| **Type of Inspection:** | Focused |
| **Compliance Assessment Start Date:** | Jan-6-2025 |
| **Ministry Office:** | Peterborough District Office |

***All legislative requirements were met. No detailed rating scores.***

**Maximum Question Rating:** 438

| | |
|---|---|
| **Inspection Risk Rating:** | **0.00%** |

| | |
|---|---|
| **FINAL INSPECTION RATING:** | **100.00%** |