



Ministry of the Environment

Safe Drinking Water Branch

Sarnia/Windsor District
1094 London Rd
Sarnia, ON
N7S 1P1

Ministère de l'Environnement

Direction du contrôle de la qualité de l'eau
potable

District de Sarnia et de Windsor
1094, chemin London
Sarnia (Ontario) N7S 1P1

August 28, 2017

Village of Oil Springs
4591 Oil Springs Line, P.O. Box 22
Oil Springs, ON N0N 1P0

Attention: Jennifer Turk, Clerk-Treasurer

Re: Oil Springs Distribution System (DWS#260046761) Inspection Report

Enclosed is a copy of the inspection report prepared for the Oil Springs Distribution System under the Ministry's focused inspection protocol. The report is based on conditions encountered at the time of the inspection and subsequent follow-up.

Section 19 of the Safe Drinking Water Act (Standard of Care) creates a number of obligations for individuals who exercise decision-making authority over municipal drinking water systems. Please be aware that the Ministry has encouraged such individuals, particularly municipal councillors, to take steps to be better informed about the drinking water systems over which they have decision-making authority. These steps could include asking for a copy of this inspection report and a review of its findings. Further information about Section 19 can be found in "Taking Care of Your Drinking Water: A guide for members of municipal council" found under "Resources" on the Drinking Water Ontario website at www.ontario.ca/drinkingwater.

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 Summary Rating Record (IRR), included as Appendix B of the inspection report, provides the Ministry, the system owner and the local Public Health Units with a summarized quantitative measure of the drinking water system's annual inspection and regulated water quality testing performance.

Please note the attached IRR methodology memo describing how the risk rating model has improved to better reflect the health related and administrative non-compliance found in an inspection report. IRR ratings are published (for the previous inspection year) in the Ministry's Chief Drinking Water Inspector's Annual Report. If you have any questions or concerns regarding the rating, please contact Marc Bechard, Water Compliance Supervisor, at (519) 383-3778.

Regards,

Peder Garberg

Provincial Officer – Water Inspector
Drinking Water Inspection Program
Ministry of the Environment and Climate Change

cc: Cathy Culnan, Water Operator, ORO, CH2MOMI; Duncan McTavish, Administrator Clerk/Treasurer, Township of Enniskillen;

County of Lambton Community Health Services: *Dr. Sudit Ranade, Medical Officer of Health, Chad Ikert, Manager, Health Protection; Lori Lucas, Supervisor, Health Protection; Theresa Warren, Public Health Inspector*



Ministry of the Environment and Climate Change

**OIL SPRINGS WATER DISTRIBUTION SYSTEM
Inspection Report**

Site Number:	260046761
Inspection Number:	1-F9F8T
Date of Inspection:	Jul 20, 2017
Inspected By:	Peder Garberg

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OWNER INFORMATION:

Company Name: Oil Springs, The Corporation of the Village of
Street Number: 4591 **Unit Identifier:**
Street Name: OIL SPRINGS Line
City: OIL SPRINGS
Province: ON **Postal Code:** N0N 1P0

CONTACT INFORMATION**INSPECTION DETAILS:**

Site Name: OIL SPRINGS WATER DISTRIBUTION SYSTEM
Site Address: 4591 OIL SPRINGS LINE OIL SPRINGS N0N 1P0
County/District: Oil Springs
MOECC District/Area Office: Sarnia District
Health Unit: LAMBTON HEALTH UNIT
Conservation Authority:
MNR Office:
Category: Large Municipal Residential
Site Number: 260046761
Inspection Type: Announced
Inspection Number: 1-F9F8T
Date of Inspection: Jul 20, 2017
Date of Previous Inspection:

COMPONENTS DESCRIPTION

Site (Name): Oil Springs Water Distribution System
Type: **Sub Type:**
Comments:

The Village of Oil Springs Water Distribution System consists of 50 to 300 mm diameter mains that receive water from the Township of Enniskillen Water Distribution System through two metered connections at the northwest and eastern extremities of the community. The system directly supplies approximately 704 Oil Springs residents.

The Oil Springs Water Distribution System does not include any treatment, storage or pumping components, and the Enniskillen reservoir and pumping station at 2868 Oil Heritage Road in Enniskillen maintains secondary chlorination and pressure.

The Township of Enniskillen Water Distribution System receives treated surface water from the Town of Petrolia Water Treatment Plant at 2701 Old Lakeshore Road in Sarnia. Besides the water treatment plant, the Town of Petrolia water system includes a reservoir and booster station at 3517 Confederation Line in Plympton-Wyoming, and an elevated water tank at 345 Centre Street in Petrolia.

As of October 2016, CH2M OMI has taken over as the Operating Authority for the Village of Oil Springs. Oil Springs personnel do not operate their water distribution system; however, they monitor water consumption and system pressure and assist the Operating Authority with maintenance and/or repairs when required. A private contractor is utilized for the routine collection of water distribution samples within the Village of Oil Springs for microbiological and chemical testing. In January 2017, CH2M OMI will be conducting all of the distribution sampling for the Village of Oil

Springs.

Site (Name): MOE DWS Mapping
Type: DWS Mapping Point

Sub Type:

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 of time between December 1, 2016 and June 30, 2017. On July 20, 2017, an announced inspection of the Oil Springs Water Distribution System was conducted. Documentation was collected for later assessment, or was reviewed with staff at the Village of Oil Springs town office located at 4591 Oil Springs Line.

Documents and records reviewed in preparation of this report included, but were not limited to:

- Oil Springs Water Distribution System Drinking Water Information System (DWIS) profile.
- Drinking Water Works Permit 251-201.
- Municipal Drinking Water Licence 251-101.
- Village of Oil Springs Operations and Maintenance Manual for the Oil Springs Distribution System.
- Drinking water system operational and maintenance documents and records maintained by the owner/operating authority from the time period of December 1, 2016 to June 30, 2017.

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.

Treatment Process Monitoring

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

Schedule 7, subsections 7-2 (3) & (4) of O.Reg.170/03, requires the owners and operating authorities of a large

Treatment Process Monitoring

municipal residential system that provides chlorination for secondary disinfection to ensure that at least seven distribution samples are taken each week and are tested immediately for free chlorine residual using grab samples. As per, Schedule 6 subsection 6-4 (2) of O. Reg. 170/03 the owner and operating authority may instead install and utilize continuous monitoring devices within the distribution system to measure secondary disinfection residuals instead of taking grab samples.

At the time of inspection the secondary disinfection chlorine residual was being continuously monitored in the distribution system at the Village of Oil Springs town office using a Hach Cl17 continuous chlorine analyzer, sampling at intervals of less than one hour.

- **Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.**

Review of continuous monitoring test results is indicated within the operator logbook located at the town office. To ensure that data is reviewed within the 72-hour window, the operating authority has created a schedule which requires data to be reviewed every Monday, Wednesday and Friday (as indicated in the "2017 Oil Springs Sampling Schedule" provided by the operating authority). Operators review data Friday afternoons at approximately 3:30pm, and first thing Monday mornings at approximately 7:00am, including holidays.

- **All continuous monitoring equipment utilized for sampling and testing required by O. Reg.170/03, or Municipal Drinking Water Licence or Drinking Water Works Permit or order, were equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6.**

As per Schedule 6, Subsection 6-5 (1)5 ,the continuous monitoring equipment must be designed and operated in accordance with the standards described in subsection (1.1), or, i. the continuous monitoring equipment must have a feature that ensures that no water is directed to users of water sampled by the equipment in the event that the equipment malfunctions or loses power or a test result for a parameter is above the maximum alarm standard or below the minimum alarm standard specified in this section for the parameter. The continuous monitoring equipment must cause an alarm to signal immediately at the following locations if the equipment malfunctions or loses power or a test result for a parameter is above the maximum alarm standard or below the minimum alarm standard specified in this section for the parameter: i. The location where the equipment conducts tests. ii. A location where a person is present, if a person is not always present at the location where the equipment conducts tests. iii. Every designated facility served by the drinking water system, unless the system is a large municipal residential system or a small municipal residential system.

The continuous chlorine analyzer located at the Village of Oil Springs town office, has both high and low chlorine residual alarms associated with it. The alarm set points, provided by the operating authority at the time of the inspection were as follows;

Free Chlorine Low: 0.40 mg/L
Free Chlorine High: 2.5 mg/L

The operating authority indicated that In the event of an alarm the on-call operator is paged twice. This ensures that the operator receives the alarm notification in the event that they are preoccupied during the first page.

- **Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format.**

Regulation 170 subsection 6-5(1), requires the continuous monitoring equipment to record the date, time, sampling location and result of every test for free chlorine residual in a distribution system sample, with at least the minimum frequency of one hour as prescribed by the regulation.

Treatment Process Monitoring

With the exception of one event during the inspection period, the operating authority was in compliance with the regulatory requirements for continuous monitoring. This event occurred between Friday, December 16, 2016 to Monday, December 19, 2016 following the previous inspection on December 7, 2016. The ORO reported that the computer for the continuous analyzer froze, and as such no data was recorded during this time.

It was recommended at the time of the incident that the continuous analyzer be repaired or replaced to reduce the chances of this occurring again. The operating authority complied with this recommendation and a new continuous analyzer (Hach CI17) was installed on March 30, 2017. Following the installation of the new analyzer there have been no gaps in continuous monitoring data.

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

It was indicated at the time of the inspection that all continuous analyzers are calibrated, maintained, and operated in accordance with the manufacturer's instructions or the Regulation during this inspection review period. This was confirmed by reviewing calibration and maintenance documentation provided by the operating authority in the form of logbooks and calibration sheets. The documentation review indicated that the operating authority is verifying the continuous chlorine analyzer by comparing it to a portable handheld device and calibrating the analyzer if the readings differ by 2% or more of the full scale reading (0.1 mg/L).

It should be noted that in March 30, 2017, the Village of Oil Springs replaced the old chlorine analyzer (a Depolox 3 Plus) with a Hach CI17 continuous chlorine analyzer. The manufacturer's manual states that the instrument does not require recalibration unless specified by a regulatory agency for compliance. However proper verification is recommended following each change of analyzer reagents, as per Hach Instruction Sheet 5449089 (CI17 Free and Total Chlorine Calibration/Verification). A review of chlorine residual and log book records indicated that the Hach CI17 analyzer only needed calibration once since being installed (calibrated on June 5, 2017).

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).**

Condition 2.3 of Schedule B, of DWWP No. 251-201, requires that all parts of the drinking water system in contact with drinking water which are added, modified, replaced, extended or taken out of service for inspection, repair or other activities that may lead to contamination, shall be disinfected before being put into service in accordance with a procedure approved by the Director or in accordance with the applicable provisions of the following documents:

- a) The ministry's Watermain Disinfection Procedure, effective March 24, 2017;
- b) AWWA C652 – Standard for Disinfection of Water-Storage Facilities;
- c) AWWA C653 – Standard for Disinfection of Water Treatment Plants; and
- d) AWWA C654 – Standard for Disinfection of Wells.

Based on the recommendations made by the previous inspection (December 7, 2016), the operating authority has implemented a number of changes to system documentation. The Village of Oil Springs Watermain Repair procedure has been updated in accordance with the ministry's Watermain Disinfection Procedure. References to AWWA standards have been updated to include the newest standard (C651-14). As well, a copy of AWWA standard C651-14 has been included for reference within the Village of Oil Springs O&M Manual.

Operations Manuals

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.**

Section 16.2 of Schedule B of Municipal Drinking Water Licence 251-201 Issue No. 2 requires 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 A description of the processes used to maintain secondary disinfection within the drinking water system.
- 16.2.4 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;
- 16.2.5 Procedures for the operation and maintenance of monitoring equipment;
- 16.2.6 Contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset conditions and equipment breakdown;
- 16.2.7 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

A review of the O&M manual during the inspection indicated that it contained all of the above noted information, as required by the MDWL.

Logbooks

- **Logbooks were properly maintained and contained the required information.**

Ontario Regulation 128/04, Section 27 (5) states that an operator-in-charge, or a person authorized by an operator-in-charge, shall record the following information in the logbooks or other record-keeping mechanisms in respect of each operating shift:

1. The date, the time of day the shift began and ended and the number or designation of the shift.
2. The names of all operators on duty during the shift.
3. Any departures from normal operating procedures that occurred during the shift and the time they occurred.
4. Any special instructions that were given during the shift to depart from normal operating procedures and the person who gave the instructions.
5. Any unusual or abnormal conditions that were observed in the subsystem during the shift, any action that was taken and any conclusions drawn from the observations.
6. Any equipment that was taken out of service or ceased to operate during the shift and any action taken to maintain or repair equipment during the shift.

A review of the logbooks during the inspection indicated that the logbooks included relevant shift details, as required by the above mentioned regulation. It should be noted however that recommendations were made to help improve the logbooks going forward. It is recommended that the operators making entry into the logbooks identify the ORO for the shift, identify themselves as OIC when acting, or if they hold an OIT certification to identify the OIC, and include a shift start time and end time when performing duties in the system. It is also recommended that further minor changes be made including; initialing after logbook entries for ease of identification, reducing blank space between entries, and crossing out any remaining blank space on the page once entries for that day are

Logbooks

complete (at the start of the next shift) to ensure no entries are made retroactively.

- **Records or other record keeping mechanisms confirmed that operational testing not performed by continuous monitoring equipment was being done by a certified operator, water quality analyst, or person who suffices the requirements of O. Reg. 170/03 7-5.**

Security

- **The owner had provided security measures to protect components of the drinking water system.**

Certification and Training

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

The Overall Responsible Operator (ORO) for the Oil Springs Water Distribution System is Cathy Culnan who has a Class 2 Water Distribution and Supply Subsystem Certificate. The Oil Springs Distribution SOP provided by the operating authority indicated that Randy Clendenning is the backup ORO, for times when Cathy Culnan is unavailable. Randy currently possesses a Class 3 Water Distribution and Supply Subsystem Certificate.

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

As the Oil Springs Distribution System currently has an OIT on staff, it is recommended that the OIC for each shift be indicated in the logbook.

- **Only certified operators made adjustments to the treatment equipment.**

Water Quality Monitoring

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

The owner of a large municipal residential drinking water system shall ensure that if the system serves a population of 100,000 or less, at least 8 distribution samples plus one for every thousand people served by the system are taken every month. At least one of the samples must be taken each week. These samples are required to be tested for E.Coli. and total coliform; and at least 25 percent of the samples are required to be tested for general bacteria populations expressed as colony counts on a heterotrophic plate count (HPC).

During the inspection review period (December 1, 2016 to June 30, 2017) all microbiological water monitoring requirements for distribution water samples were performed.

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

Section 13-6 of Schedule 13, O.Reg.170/03 requires the owner/operating authority to ensure that at least one distribution sample is taken every calendar quarter from a point in the drinking water system's distribution system, or in plumbing that is connected to the drinking water system, that is likely to have an elevated potential for the formation of Trihalomethanes (THMs), and tested for THMs. Section 6-1.1 of Schedule 6, O.Reg.170/03 requires that these samples be taken at least 60 days, and not more than 120 days, after a sample was taken for that purpose in the previous calendar quarter. Within the review period THMs were sampled and tested on:

April 10, 2017 (34.0 ug/L).
January 23, 2017 (53.0 ug/L)
October 11, 2016 (38.0 ug/L)
July 4, 2016 (46.0 ug/L)

Water Quality Monitoring

The standard for THMs in O.Reg 169/03 is expressed as a running annual average (RAA). The RAA for the Oil Springs Distribution System during the inspection period was 42.75 ug/L, which is below the standard of 100 ug/L.

Based on the recommendations of the previous inspection report (December 7, 2016), the operating authority has begun taking THM samples from a sample location known as 'hydrant #38', which represents the farthest point in the distribution system. All THM monitoring requirements prescribed by the legislation were met.

- **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).**

Reporting & Corrective Actions

- **Where required continuous monitoring equipment used for the monitoring of chlorine residual and/or turbidity triggered an alarm or an automatic shut-off, a qualified person responded in a timely manner and took appropriate actions.**
- **All changes to the system registration information were provided within ten (10) days of the change.**

Other Inspection Findings

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.

Not Applicable

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:

Peder Garberg

Signature: (Provincial Officer)



Reviewed & Approved By:

Marc Bechard

Signature: (Supervisor)

Review & Approval Date:

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.



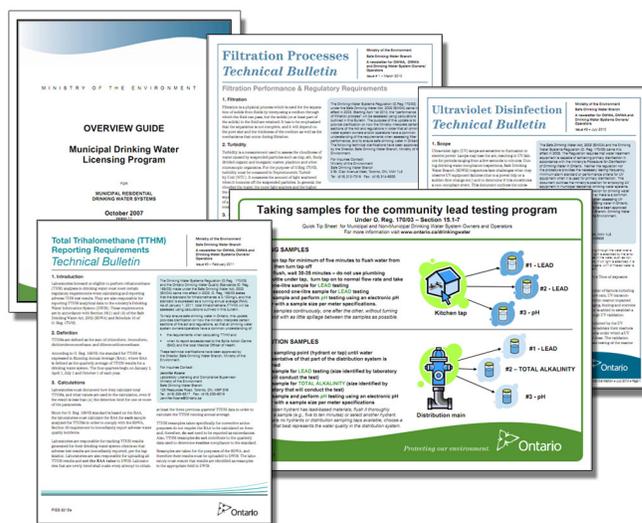
Stakeholder Appendix

Key Reference and Guidance Material for Municipal Residential Drinking Water Systems

Many useful materials are posted on the Ministry of the Environment's **Drinking Water Ontario** website at www.ontario.ca/drinkingwater to help in the operation of your drinking water system.

Below is a list of key materials frequently used by owners and operators of municipal drinking water systems. To read or download these materials, go to **Drinking Water Ontario** and search in the **Resources** section by **Publication Number**.

Visit **Drinking Water Ontario** for more useful materials. 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.



PUBLICATION NUMBER	PUBLICATION TITLE
4448e01	Procedure for Disinfection of Drinking Water in Ontario
7152e	Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids
7467	Filtration Processes Technical Bulletin
7685	Ultraviolet Disinfection Technical Bulletin
8215	Total Trihalomethane (TTHM) Reporting Requirements Technical Bulletin (February 2011)
2601e	Overview Guide: Municipal Drinking Water Licensing Program
0000	Municipal Drinking Water Licensing Program Bulletin, Issue 1, January 2011
0000	Certification Guide for Operators and Water Quality Analysts
6560e	Taking Samples for the Community Lead Testing Program
7423e	Community Sampling and Testing for Lead: Standard and Reduced Sampling and Eligibility for Exemption
7128e	Drinking Water System Contact List
4449e01	Technical Support Document for Ontario Drinking Water Quality Standards



Inspection Rating Record

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

DWS Name:	OIL SPRINGS WATER DISTRIBUTION SYSTEM
DWS Number:	260046761
DWS Owner:	Oil Springs, The Corporation Of The Village Of
Municipal Location:	Oil Springs

Regulation: O.REG 170/03
Category: Large Municipal Residential System
Type Of Inspection: Adhoc
Inspection Date: July 20, 2017
Ministry Office: Sarnia District

Maximum Question Rating: 268

Inspection Module	Non-Compliance Rating
Treatment Processes	0 / 14
Distribution System	0 / 21
Operations Manuals	0 / 28
Logbooks	0 / 18
Certification and Training	0 / 28
Water Quality Monitoring	0 / 43
Reporting & Corrective Actions	0 / 25
Treatment Process Monitoring	0 / 91
TOTAL	0 / 268

Inspection Risk Rating	0.00%
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FINAL INSPECTION RATING:	100.00%
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Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2017-2018)

DWS Name: OIL SPRINGS WATER DISTRIBUTION SYSTEM
DWS Number: 260046761
DWS Owner: Oil Springs, The Corporation Of The Village Of
Municipal Location: Oil Springs

Regulation: O.REG 170/03
Category: Large Municipal Residential System
Type Of Inspection: Adhoc
Inspection Date: July 20, 2017
Ministry Office: Sarnia District

Maximum Question Rating: 268

Inspection Risk Rating | 0.00%

FINAL INSPECTION RATING: | 100.00%