Ministry of the Environment, Conservation and Parks

Eastern Region
Cornwall Area Office
113 Amelia Street
Cornwall ON K6H 3P1
Phone: 613.933.7402
or 1.800.860.2760
Fax: 613.933.6402

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Région de l'Est
Bureau de Cornwall
113, rue Amelia, rez-de-chaussee
Cornwall (Ontario) K6H 3P1
Tél: 613 933-7402
ou 1 800 860-2760
Téléc : 613 933-6402

Ontario

December 20, 2024

The Corporation of the Township of Alrfed-Plantagenet
205 Old Hwy 17 P.O. Box 350
Plantagenet, ON K0B 1L0

Dear: Mr. Michel Potvin
Chief Administrative Officer

Re: 2024-2025 Lefaivre Drinking Water System Inspection Report

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Please find enclosed a copy of the final inspection report for the Lefaivre Drinking Water System.

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 on the Ontario website at https://www.ontario.ca/page/taking-care-your-drinking-water-guide-members-municipal-councils

The format of the enclosed report has been updated, and you will note that the non-compliance and/or non-conformance items are now detailed at the beginning of the report and if found, will cite due dates for the submission of information, procedures or plans to my attention. All questions that were assessed are included in the Inspection Details Section.

The IRR is a summarized quantitative measure of the drinking water system's annual inspection and is published in the Ministry's Chief Drinking Water Inspector's Annual Report. The Risk Methodology document describes the risk rating methodology which has been applied to the findings of the Ministry's municipal residential drinking water system inspection results. Please find attached the corresponding Inspection Rating Report (IRR) and Risk Methodology document.

If you have any questions or concerns regarding the rating, please contact Shannon Hamitlon-Browne , Water Compliance Supervisor, at (613) 808-4255.

Thank you for the assistance during the inspection. Please do not hesitate to contact me if you have any questions or concerns about the attached report.

Sincerely,

Jean-François Durocher
Bilingual Water Inspector
Drinking Water and Environmental Compliance Division
Ministry of the Environment, Conservation and Parks (MECP)
Cornwall Area Office
Phone: 613-363-05149
E-mail: jean-francois.durocher@ontario.ca

Ec:

Stéphane Barbarie, Ontario Clean Water Agency (OCWA) – Senior Operations Manager
Véronique Vandergoten, Ontario Clean Water Agency (OCWA) – Process and Compliance Technician
Jonathan Gendron, Township of Alfred-Plantagenet – Municipal Engineer
Rami Basha, Eastern Ontario Health Unit (EOHU) – Program Manager (Prescott Russell Cluster)
Sandra Mancini, South Nation Conservation Authority – Team Lead Engineer
Shannon Hamiton-Browne, Ministry of Environment, Conservation and Parks (MECP) –Water Inspections Programs (Acting) Supervisor, Cornwall/Ottawa SDWB

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APPENDICES

LEFAIVRE AND PLANTAGENT DRINKING WATER SYSTEM
Physical Address: 2015 LAJOIE ST, , ALFRED AND PLANTAGENET, ON K0B 1J0

INSPECTION REPORT

System Number:	220002841
Entity:	THE CORPORATION OF THE TOWNSHIP OF ALFRED AND PLANTAGENET ONTARIO CLEAN WATER AGENCY
Inspection Start Date:	October 25, 2024
Site Inspection Date:	October 25, 2024
Inspection End Date:	December 06, 2024
Inspected By:	Jean-Francois Durocher
Badge #:	1440

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(signature)

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 81of 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 Township of Alfred and Plantagenet and operated by Ontario Clean Water Agency.

The system serves an estimated population of 3,500 and is categorized as a Large Municipal Residential System. Information reviewed for this inspection covered the time period of October 1, 2023, to September 30, 2024.

Water Compliance Officer - J-F Durocher was accompanied by Process Compliance Technician – Véronique Vandergoten, and Senior Operations Manager/Overall Responsible Operator – Stéphane Barbarie who are both employees of Ontario Clean Water Agency (OCWA).

Paperwork and logbooks associated to DWS operations were reviewed for the period between October 1, 2023, to September 30, 2024. The inspector observed, analyzed, and photographed each part of the treatment/disinfection process from the raw water source (Ottawa River) to the fully disinfected treated water.

Systems/Components

All locations associated with primary disinfection were visited as part of this inspection. Please see the attached Appendix B "Component Report" for additional details about the treatment facility. The following sites were visited as part of the inspection of the drinking water system:

- Lefaivre Water Treatment Plant

An outstation is a component of a drinking water system that is not located at either a water treatment plant or a well supply and is generally not associated with primary treatment, for example reservoirs, booster stations, and re-chlorination facilities located within the distribution system. Outstations may be visited on a rotational basis as part of a ministry inspection. This inspection included the inspection of:

- Alfred Water Tower
- Plantagenet 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 No. 169-201 Issue No. 3
Municipal Drinking Water Licence No. 169-101 Issue No. 4
Permit To Take Water No. 4354-AK4NJ9

Background and Compliance

N/A

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 Municipal Drinking Water Licence (MDWL) No. 169-101 issue number 4 which was issued on June 25, 2021, requires the owner to implement a Harmful Algal Bloom monitoring plan.

The owners have a standard operating procedure in place for harmful algal blooms which meets the set requirements of the MDWL.

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.

Condition 2.1 of Municipal Drinking Water Licence (MDWL) No. 169-101 Issue No. 4 which was issued on June 25, 2021, requires that continuous flow measurement and recording shall be undertaken for:

2.1.1 The flow rate and daily volume of treated water that flows from the treatment subsystem to the distribution system.
2.1.2 The flow rate and daily volume of water that flows into the treatment subsystem.
This condition was met through the use of a raw water flow meter monitoring the water flowing on the low lift discharge header and a treated water flow meter monitoring the treated water as it enters the distribution system.

Raw water flow data was reviewed for the period between October 1, 2023, to September 30, 2024, and found to be in order, averaging ~ 1,537.39 m³/day (26% of rated capacity 6,000 m³/day limit). The highest raw water flow was in March 12, 2024 with a flow rate of 2,657 m³/day. The average raw water flows in the previous inspection was ~ 1,456 m³/day.

The allowable limit is defined by PTTW No. 4354-AK4NJ9 issued on March 8, 2017, which is 6,277,000 L/day or 6,277 m³/day from the Ottawa River. The PTTW expires on February 28, 2027.

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.

Condition 1.1 of Schedule C of MDWL No. 169-101 Issue No. 4 requires the owner to ensure the system is operated such that the maximum daily volume of water that flows from the treatment subsystem to the distribution system is not to exceed the rated capacity of 6,000 m³/day.

The Lefaivre WTP is averaging 23% of its total daily maximum production. During the inspection review period the average volume of water that was disinfected from the WTP to the distribution system was 1,402 m³/day. The highest volume of water produced was on December 22, 2023, with a flow rate of 1,850 m³/day. During the previous inspection review period the DWS was averaging 1,327 m³/day of treated water to distribution systems.

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.

At the time of the inspection, Ontario Clean Water Agency (OCWA) was operating the Drinking Water System (DWS) under Drinking Water Works Permit (DWWP) No. 169-201 Issue No. 3 that was issued on June 25, 2021.

The equipment as identified on the above noted certificate was reviewed at the time of the inspection and found to be present.

NOTE: Some minor discrepancies were identified during this physical walkthrough portion of the inspection. The operating authority have properly tracked those discrepancies relating to the quantity of chemical storage tanks and volumes of said tanks. The operating authority will be ensuring that these amendments are captured in the next version of the DWWP. Director Notifications have been submitted for these modifications by the operating authority.

Question ID	DWMR1025001	**Question Type**	Legislative

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

Question:
Were all parts of the drinking water system that came in contact with drinking water disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All parts of the drinking water system were disinfected as required.

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.

Subsection 1-2(2) of Schedule 1 of Ontario Regulation 170/03 requires that the owner of a drinking water system and the operating authority for the system ensure the following:
1. The water treatment equipment is in operation whenever water is being supplied;
2. The water treatment equipment is operated in accordance with the Ministry's Procedure for Disinfection of Drinking Water in Ontario; and that
3. The water treatment equipment required by section 1-3 or 1-4 is operated in a manner that achieves the design capabilities it is required to have under that section.

The Lefaivre WTP is a Conventional Filtration System for which DWWP No. 169-201 Issue No. 3 and MDWL No. 169-101 Issue No. 4 were issued on June 25, 2021.

The Lefaivre WTP is designed so that credits for 2-log removal/inactivation of Cryptosporidium oocysts, 3-log removal/inactivation of Giardia cysts and 4-log removal/inactivation of viruses are achieved through the use of chlorine disinfection.

If the chlorine disinfection system becomes nonoperational, the Lefaivre WTP can operate solely on ultraviolet (UV) and meet disinfection requirements. *

By assessing disinfection trend reports and other disinfection information reports (chlorine residuals, flows), it indicates that the Lefaivre WTP is operating in accordance with log-removal requirements.

Subsection 1-4(a)[ii] of Schedule 1 of Ontario Regulation 170/03 requires that water treatment equipment is designed to be capable of achieving, at all times, primary disinfection in accordance with the Ministry's Procedure for Disinfection of Drinking Water in Ontario, including at least 99 per cent (2 log) removal or inactivation of Cryptosporidium oocysts, at least 99.9 per cent (3 log) removal or inactivation of Giardia cysts and at least 99.99 per cent (4 log) removal or inactivation of viruses.

To receive these removal credits the conventional filtration system must meet the following operating criteria:
-chemical coagulant must be used at all times when the treatment plant is operational,
-chemical dosage must be monitored and adjusted in response to variations in raw water quality,
-effective backwash procedures must be maintained,
-the turbidity from each filter must be continuously monitored, and
-the turbidity of each filter effluent stream must be measured to be less than or equal to 0.3 NTU in 95% of the measurements each month.

The available information indicates that the Lefaivre WTP is operating in accordance with these requirements.

A review of the filter effluent turbidity data provided by OCWA staff (dated October 2023 to September 2024), indicates that the filter effluent met the performance measure of 0.3 NTU or less 95% of the time for each individual month.

To ensure CT is achieved, the plant is operated to achieve a minimum free chlorine residual of 1.2 mg/L to 2.9 mg/L for water entering the clear well. This is based on the engineering evaluation of the water quality during the designing of the plant. A review of the available data indicated that the minimum free chlorine residual recorded for primary disinfection ranged from 0.58 mg/L to 5.31 mg/L. Even though the chlorine residual was below the target, the flow was maintained at well below 6,000 m^3/day limit.

The inspector also conducted a CT calculation using the available data (i.e. minimum chlorine residual, maximum flow, low temperature, and maximum pH) and demonstrated that the water treatment plant met CT. The calculation confirmed that the plant was capable of achieving the required CT in all operating conditions reported since the last inspection.

*The scenario to run solely on UV is very unlikely and would require third-party programming technicians to perform the re-programming of the UV and SCADA.

Question ID	DWMR1026001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 1-6 | (2);

Question:
If primary disinfection equipment did not use chlorination or chloramination, was the equipment equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 1-6 of O. Reg. 170/03?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Primary disinfection equipment was equipped with alarms or shutoff mechanisms that satisfied the standards.

Section 1-6 of Schedule 1 of Ontario Regulation 170/03 requires that, in the event the UV disinfection equipment loses power, malfunctions or ceases to provide the appropriate level of disinfection, the system must have a feature that either ensures that no water is directed to users or that causes an alarm to sound at the following locations:
1. The building or structure where the disinfection equipment is installed
2. To a location where a person is present, if a person is not always present at the building or structure where the disinfection equipment is installed.
Under the above circumstances if a certified operator is not already at the location where the equipment is installed, one must be promptly dispatched to attend the location of the equipment and must arrive as soon as possible to take appropriate action to remedy the situation before water is again directed to users of water treated by the equipment.
The two Trojan UV reactors at the Lefaivre WTP are operated in a manner such that the standby reactor will be brought into service in the event that the duty reactor malfunctions, loses power, or fails to provide the required UV dosage of 40 mJ/cm^2. If such an instance were to arise:
- the (failed) duty UV reactor's water inlet valve would close via electronic valve actuator
- an alarm would be generated and sent through the emergency call-out system to alert operators of the duty reactor's failure (the operator is expected to respond to the alarm as soon as possible)
- the start-up sequence for the standby reactor would be initiated and water production would resume once the appropriate level of disinfection has been reached.

NOTE: SCADA continuously records and trends performance of the two UV reactors, measured as UV intensity (Watts/m^2). Additionally, to be able to receive the Log Removal/Inactivation Credits WTP staff need to ensure that the following assignment criteria is properly practiced as per Schedule C of DWWP No. 169-201 Issue No. 3.
Duty UV Sensor Checks and Calibration
1. Duty UV sensors shall be checked on at least a monthly basis against a reference UV sensor; or at a frequency as otherwise recommended by the UV equipment manufacturer;

2. When comparing a duty UV sensor to a reference UV sensor, the calibration ratio (intensity measured with the duty UV sensor/intensity measured with the reference UV sensor) shall be less than or equal to 1.2;
3. If the calibration ratio is greater than 1.2, the duty UV sensor shall be replaced with a calibrated UV sensor or a UV sensor correction factor shall be applied while the problem with the UV sensor is being resolved;
4. Reference UV sensors shall be checked against a Master Reference Assembly at a minimum frequency of once every three years or on a more frequent basis depending upon the recommendations of the equipment manufacturer;
Operational Requirements
5. Ultraviolet light disinfection equipment shall have a feature that ensures that no water is directed to users of water treated by the equipment or that causes an alarm to sound in the event that the equipment malfunctions, loses power or ceases to provide the appropriate level of disinfection;
6. Water shall not flow through a UV reactor when the reactor's UV lights are off or not fully energized;
7. UV lamp status shall indicate whether each UV lamp is on or off;
8. All UV sensors shall operate within their calibration range or corrective measures shall be taken; and
9. Installed or replaced UV equipment components shall be equal or better than the components used during validation testing unless the UV equipment was revalidated.

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.

Section 1-2(2)4 of Schedule 1 of Ontario Regulation 170/03 states that if the drinking water system's water treatment equipment provides chlorination or chloramination for secondary disinfection, the equipment is operated so that, at all times and at all locations within the distribution system,
i. The free chlorine residual is never less than 0.05 mg/L, if the drinking water system provides chlorination and does not provide chloramination, or
ii. The combined chlorine residual is never less than 0.25 mg/L, if the drinking water system provides chloramination.

The maintenance of a disinfectant residual in the distribution system (secondary disinfection) is intended to maintain (or introduce and maintain) a persistent disinfectant residual to protect the water from microbiological recontamination, reduce bacterial re-growth, control biofilm

formation, and serve as an indicator of distribution system integrity (loss of disinfectant residual indicating that the system integrity has been compromised). Only chlorine, chlorine dioxide and monochloramine provide a persistent disinfectant residual and can be used for the maintenance of a residual in the distribution system.

The recommended optimum target for combined chlorine residual for systems designed to operate with chloramination is 1.0 mg/L at all locations within the distribution system to suppress bacterial activity that converts ammonia to nitrite and nitrate.

Rapid decay of a disinfectant residual may occur because of a number of other causes such as heavy encrustation or sediment accumulation and biofilm activity and may require investigation and specific corrective action such as engineered flow velocity increases and swabbing or pigging/lining and/or main replacement.

Records provided by OCWA were reviewed for the inspection period and found to be in order:

The lowest free chlorine residual was measured in the Lefaivre distribution on June 7, 2024, with a result of 0.37 mg/L, and the highest residual was 3.07 mg/L which was recorded on June 8, 2024. – The treated water exiting the Lefaivre WTP intended for Lefaivre distribution is not injected with ammonia therefore not creating chloramines therefore operators only sample for free residual in Lefaivre distribution.

In the Plantagenet distribution, the lowest combined chlorine residual was measured on September 25, 2024, with a result of 0.29 mg/L and the highest residual of 2.92 mg/L was recorded on October 26, 2023.

In the Alfred distribution, the lowest combined chlorine residual was measured on July 8, 2024, with a result of 0.79 mg/L and the highest residual of 2.9 mg/L was recorded on September 27, 2024.

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.

Subsection 7-2 (3) of Schedule 7 of Ontario Regulation 170/03 requires that the owner of a large municipal residential system that provides secondary disinfection and the operating authority for the system shall ensure that at least seven distribution samples are taken each week and are tested immediately for, free chlorine residual, or combined chlorine residual, if the system provides chloramination.

The required sampling had been conducted in accordance with the rules prescribed by Subsection 7-2(4) of Schedule 7 of Ontario Regulation 170/03. The rules stipulate the following:
- At least four of the samples must be taken on one day of the week, at least 48 hours after the last sample was taken in the previous week.
- At least three of the samples must be taken on a second day of the week, at least 48 hours after the last sample was taken on the day noted above.
- When more than one sample is taken on the same day of the week under paragraph noted above, each sample must be taken from a different location.

The operating authority monitors secondary disinfectant residual in the distribution system by following the directions given in subsection 7-2(4) of Schedule 7 of Ontario Regulation 170/03. The operating authority also monitors distribution chlorine residual continuously via an analyzer located at the Lefaivre firehall and in the Alfred/Plantagenet booster station. No concerns were identified.

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.

Chlorine monitoring was being conducted at or near the location where the intended CT has just been achieved, directly downstream of clearwell but prior to the high lift pumping gallery. Primary disinfection is being monitored by approved chlorine monitoring instrument (Hach CL17).

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.

Filter effluent turbidity was continuously monitored on each filter. A review of the monthly "Turbidity Analysis" summaries was also performed. The "Turbidity Analysis" document

summarizes the date and times the filters were operating/filtering water that was above 0.3 Nephelometric Turbidity Unit (NTU). Then for each month all times that water was above 0.3 NTU are summed up to be expressed as a percentage for each month.

During the inspection period, the Lefaivre WTP met the required <0.3 NTU more than 95% of each month.

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.

The Table in Schedule 6 of O.Reg 170/03 states that free chlorine residual required to achieve primary disinfection be recorded at a minimum every five minutes and that a minimum alarm set point be 0.1 milligrams per litre less than the concentration of free chlorine residual that is required to achieve primary disinfection.

The Table in Schedule 6 does not state a maximum alarm standard for chlorine residual to achieve primary disinfection.

The SCADA system records total and free chlorine residual continuously and the alarm for low free chlorine residual is set at 1.2 mg/L.

The Table in Schedule 6 of O.Reg 170/03 states that turbidity be tested and recorded at a minimum frequency of every 15 minutes and that a maximum alarm point of 1.0 NTU be set.

The Table in Schedule 6 does not state a minimum alarm standard for turbidity.

The SCADA system records turbidity continuously and there is a high turbidity alarm set point of 0.3 NTU at the Lefaivre WTP. No concerns were identified.

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 continuous monitoring equipment required by Ontario Regulation 170/03 was equipped with the following alarm set points:

-the combined chlorine residual analyzer monitoring water leaving the WTP has a low-level alarm of 1.2 mg/L, and a high-level alarm of 2.8 mg/L.

- All six (6) of the filters are outfitted with effluent turbidimeters which have a high level alarms set at 0.3 Nephelometric Turbidity Units (NTU) which will dial-out an operator and the plant will immediately shut-down. The SCADA has the option for a high-high alarm, but with the plant locking out at 0.3 NTU, that value is locked which cannot be changed or disabled by an operator.

A low alarm is also installed to help with any loss of power or connectivity with SCADA. The turbidimeters will not be able to read zero without an alarm being triggered; the low alarms will act as a fault alarm.

There is an operator on site five-days a week (Mon-Fri), and the OIC (Operator In Charge) is notified immediately in the event of a high or low level alarm.

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.

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 and according to Schedule 6-5 of Ontario Regulation 170/03.

Calibration records and work order summaries were provided by operators and found to be in order. Calibrations are performed in house on a monthly basis and the owners hire a certified technician to calibrate the following analyzers on yearly schedule.

- The continuous flow meter equipment was calibrated on September 25, 2024.
- The continuous monitoring equipment that monitors chlorine was last calibrated/tested on July 11, 2024.
- The continuous monitoring equipment that monitors turbidity was last calibrated on July 11, 2024. No concerns were identified.

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.

Question ID	DWMR1039001	**Question Type**	Legislative

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

Question:
If primary disinfection equipment that does not use chlorination or chloramination was used, did the owner and operating authority ensure the equipment had a recording device that continuously recorded the performance of the disinfection equipment?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner and operating authority ensured that the primary disinfection equipment had a recording device that continuously recorded the performance of the disinfection equipment.

Question ID	DWMR1109001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 1-6 | (1); SDWA | O. Reg. 170/03 | 1-6 | (2);

Question:
If the system used equipment for primary disinfection other than chlorination or chloramination and the equipment malfunctioned, lost power, or ceased to provide the appropriate level of disinfection, causing an alarm or an automatic shut-off, did a certified operator respond as required and take appropriate actions?

Compliance Response(s)/Corrective Action(s)/Observation(s):
A certified operator responded as required and took appropriate actions.

Section 6-5 of Schedule 6 of Ontario Regulation 170/03 requires that continuous monitoring equipment be designed and operated in accordance with the standards described in subsection (1.1). If the continuous monitoring equipment does not have a feature that ensures that no water is directed to users in the event of a prescribed alarm, then in the event of an alarm a qualified person must be promptly dispatched to the plant and must arrive as soon as possible.
The demonstrated response time for triggered alarms is acceptable.

Question ID	DWMR1042001	Question Type	Legislative

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

Question:
If UV disinfection was used, were duty sensors and reference UV sensors checked and calibrated as per the requirements of Schedule E of the Municipal Drinking Water Licence or at a frequency as otherwise recommended by the UV equipment manufacturer?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All UV sensors were checked and calibrated as required.

It was indicated at the time of the inspection that the UV's duty sensors and reference sensor checks are performed to Trojan's recommendations. Trojan recommends that the frequency be as recommended by the US EPA Ultraviolet Disinfection Guidance Manual (UGDGM) which is that calibration of UV sensors be verified with a reference UV sensor at least monthly".

The owner is properly performing the monthly calibrations of the UV sensors, furthermore if the monthly check/calibration runs late the UV is equipped with an alarm to notify operators.

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.

All required sample results were reviewed for the period between October 1, 2023, to September 30, 2024, and found to be in order. All sampling results adhered to the limits set in Ontario Regulation 169/03.

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.

Section 10-3 of Schedule 10 of Ontario Regulation 170/03 requires that a treated water sample be taken at least once a week and tested for the required microbiological parameters. A review of the water quality monitoring data for the period in question, confirmed that all microbiological monitoring requirements for treated water were consistently being met.

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.

Section 10-2(1)(a) of Schedule 10 of Ontario Regulation 170/03 requires that the owners of a drinking water system and the operating authority for the system shall ensure that, 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.

According to information provided at the time of the inspection, the total permanent residential population served by the Lefaivre DWS is approximately 3,500. Based on the population of

3,500, the total number of distribution samples required per month is at least eleven (11).

A review of the water quality data for the period in question, confirmed that the microbiological monitoring requirements for the distribution system were consistently being met. The distribution samples ranged from 35 to 42 samples per month with at least 25% of the sample being tested for Heterotrophic Plate Count (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.

A review of the microbiological water quality monitoring data for the period in question, confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained. No concerns were identified.

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.

Section 13-2 of Schedule 13, Ontario Regulation 170/03 requires that at least one sample be taken every 12 months and tested for the required inorganic parameters identified under Schedule 23.

A review of the inorganic water quality monitoring data for the period in question, confirmed that the required samples were collected on July 16, 2024, and that the monitoring requirements prescribed by the legislation were met. The sample was collected within the +/- 30-day window. The previous Schedule 23 samples were collected on August 9, 2023, no concerns identified.

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.

Section 13-4 of Schedule 13, Ontario Regulation 170/03 requires that at least one sample be taken every 12 months and tested for the required organic parameters identified under Schedule 24.

A review of the organic water quality monitoring data for the period in question, confirmed that the required samples were collected on July 16, 2024, and that the monitoring requirements prescribed by the legislation were met. The sample was collected within the +/- 30-day window. The previous Schedule 24 samples were collected on August 9, 2023, no concerns identified.

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.

A review of the water quality monitoring data for the period in question, confirmed that haloacetic acids samples were collected in accordance with the monitoring requirements prescribed by the legislation. Since the previous inspection HAA samples were collected on October 10, 2023, (25.6 µg/L), January 17, 2024, (16 µg/L), April 9, 2024, (38.35 µg/L) and July 11, 2024, (48 µg/L).

The running average, based on the results of the four most recent samples is 30.9 µg/L which is below the Ontario Drinking Water Quality Standard (ODWQS) limit of 80 µg/L (running average).

The operating authority properly collected samples within the required timeframe during the inspection review period, never exceeding the 120-day limit for HAA samples.

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.

A review of the water quality monitoring data for the period in question, confirmed that trihalomethanes samples were collected in accordance with the monitoring requirements prescribed by the legislation.

Since the previous inspection THM samples were collected on October 10, 2023, (42 µg/L), January 17, 2024, (44 µg/L), April 9, 2024, (70 µg/L) and July 11, 2024, (91 µg/L).

The running average, based on the results of the four most recent samples is 61.75 µg/L (73.75 µg/L during previous inspection period) which is below the Ontario Drinking Water Quality Standard (ODWQS) limit of 100 µg/L (running average).

The operating authority properly collected samples within the required timeframe during the inspection review period, never exceeding the 120-day limit for THM samples.

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.

A review of the water quality monitoring data for the period in question confirmed that the nitrate/nitrite samples were collected in accordance with monitoring requirements prescribed by the legislation. Since the previous inspection nitrate/nitrite samples were collected on October 10, 2023, January 17, 2024, April 9, 2024, and July 11, 2024.

The nitrate/nitrite sample results ranged from, 0.05 mg/L to 0.71 mg/L.

The operating authority properly collected samples within the required timeframe during the inspection review period, never exceeding the 120-day limit for nitrate/nitrite samples.

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.

Section 13-8 of Schedule 13 of Ontario Regulation 170/03 requires that at least one sample be taken every 60 months and tested for sodium.

A review of the water quality monitoring data for the period in question, confirmed that the sodium samples were collected in accordance with monitoring requirements prescribed by the legislation.

Sodium was last sampled on January 13, 2020 and the result 22.1 mg/L, which is above the Ontario Drinking Water Quality Standard (ODWQS) guideline of 20 mg/L. Proper notification and corrective actions completed by owners, no concerns identified.

Lefaivre DWS will not be required to collect samples for sodium before January 13, 2025 (+/- 90 days).

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.

Section 13-9 of Schedule 13 of Ontario Regulation 170/03 requires that at least one sample be taken every 60 months and tested for fluoride.

A review of the water quality monitoring data for the period in question, confirmed that the fluoride samples were collected in accordance with monitoring requirements prescribed by the legislation.

The last set of fluoride samples were collected on January 17, 2024, with a result of 0.1 mg/L, which is below the ODWQS limit of 1.5 mg/L.

Lefaivre DWS will not be required to collect samples for fluoride before January 17, 2029 (+/-

90 days).

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.

Condition 1.5 of Schedule C of MDWL No. 169-101 Issue No. 4 states that additional sampling shall be performed of the supernatant of WTP discharge point into the natural environment (Ottawa River).

Table 3 in Schedule C of MDWL No. 169-101 Issue No. 4 provides the specifics of sampling for suspended solids. The additional water quality monitoring requirements were met, no concerns identified.

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	DWMR1054001	Question Type	Information

Legislative Requirement(s):
Not Applicable

Question:
Was an agreement in place that satisfied the requirements prescribed by subsection 5(4) of O. Reg. 170/03?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The agreement in place satisfied the requirements.

The donor has an agreement with a receiver system, and the agreement satisfies the requirements prescribed by subsection 5(4) under O. Reg. 170/03. The Lefaivre WTP is the donor plant to the following distribution systems:
- The Town of Lefaivre
- The Municipality of the Nation (Town of St. Isidore)
- The Town of Plantagenet which feeds into Town of Alfred

The owners have a written agreement with the donor plant and receiving distribution systems. The agreement defines that that secondary disinfection is to be maintained and that water shall be tested for all required parameters (including complying with Schedule 15.1 of O.Reg. 170/03).

Question ID	DWMR1055001	Question Type	Legislative

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

Question:
If there were standalone distribution systems connected to this donor system, was the owner of the donor system in compliance with all agreements made under subsection 5(4) of O. Reg. 170/03?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner of the donor system was in compliance with all agreements.

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.

The Operations and Maintenance Manuals are in order and consistent with conditions 16.0 of Schedule B of MDWL No. 169-101 Issue No. 4. The manuals are kept at the WTP, readily available to all Lefaivre operating authority staff.

The operation and maintenance manuals and the emergency/contingency plans are reviewed on an annual schedule and are updated if needed.

Operations and Maintenance Manual(s) for the Lefaivre WTP were reviewed at the time of the inspection and found to be in order, containing plans, drawings, and process descriptions sufficient for the safe and efficient operation of the system. The manuals are kept at the WTP; and are readily available to all staff. No issues identified.

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.

Facility Logbooks are maintained by OCWA staff for the Lefaivre WTP. These logbooks were reviewed, and it was noted that operators were reviewing the continuous monitoring data, typically within 24 hours of the test. The Lefaivre WTP has an operator on site five-days a week (Mon-Fri). OCWA also reports that only certified operators perform operational testing that is not performed by continuous monitoring equipment.

The logs containing information generated by operational checks and tests did contain the names of the persons performing the work.

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.

All components of the WTP were found to be completely fenced, covered, secure, and under lock and key at all times.

Intrusion alarms are installed at the following locations:
- WTP
- Plantagenet Booster Station
- Plantagenet standpipe
- Alfred water tower.

All booster/pump stations have security lighting, signs and locked door/gates. No vandalism was observed no issues identified.

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.

At the time of the inspection, Mr. Stéphane Barbarie is the overall responsible operator (ORO) for the Lefaivre DWS and possesses the required qualifications. Mr. Mario Éthier is the backup ORO and also possesses the required qualifications.

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 operator designated as the Operator In Charge (OIC) for any given week is also the operator on call for that week. All of the information was recorded and maintained in WTP and in the logbook. The duty operators and the on-call operators for each subsystem are designated to be the OIC. No issues identified.

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.

APPENDIX A

REFERENCE MATERIAL

February 2, 2023

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 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/page/drinking-water

Click on the publication below to access it

- Drinking Water System Profile Information Form - 012-2149E
- Laboratory Services Notification Form – 012-2148E
- Adverse Test Result Notification Form – 012-4444E
- Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils
- Procedure for Disinfection of Drinking Water in Ontario
- Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids
- Filtration Processes Technical Bulletin
- Ultraviolet Disinfection Technical Bulletin
- Guide for Applying for Drinking Water Works Permit Amendments, & License Amendments
- Certification Guide for Operators and Water Quality Analysts
- Training Requirements for Drinking Water Operator
- Community Sampling and Testing for Lead: Standard and Reduced Sampling and Eligibility for Exemption
- Drinking Water System Contact List – 7128E01
- Ontario's Drinking Water Quality Management Standard - Pocket Guide
- 2020 Watermain Disinfection Procedure
- List of Licensed Laboratories

APPENDIX B

COMPONENT INFORMATION REPORT

DWS Component Information Report for 220002841

as of 17-DEC-2024

Drinking Water System Profile Information

DWS #	220002841
MOE Assigned Name	Lefaivre And Plantagent Drinking Water System
Category	LMRS
Regulation	O.REG 170/03
DWS Type	Water Treatment Plant
Source Type	Surface Water
Address	2015 Lajoie Street, Lefaivre, Ontario, K0B 1J0, Canada
Region	Eastern Region
District	Cornwall Area Office
Municipality	Alfred And Plantagenet
Public Health Unit	Eastern Ontario Health Unit

LWIS Component Name	LWIS Component Type	LWIS Component Sub-Type	Component Address	Comments
Lefaivre Wtp Storage	Treated Water Poe	Reservoir	2015 Lajoie Street,	An in-ground two celled clearwell is located under the WTP. Both cells have an inlet valve as well as diffusion pipes to ensure proper free chlorine mixing for primary disinfection. The clearwell overflow has a flat gate check valve to prevent surface water contamination.
The Lefaivre Wtp Plantagenet Booster Station	Treated Water Poe	Booster Station		A Booster Pumping Station (PS) in Plantagenet fed via Alfred, conveys drinking water to the St-Isidore distribution sub-system via a watermain. Two joined reservoirs with two pressure pumps supply flow and pressure to St. Isidore. Two analysers monitor the Total and Free Chlorine residuals and calculate the Combined Chlorine Residual in and out of the PS. A chloramination system in the booster station can re-chloraminate the treated water as required to ensure secondary disinfection for St. Isidore. A pressure reducing valve on the outlet of the PS maintains a pre-set pressure. A magnetic flowmeter on the discharge manifold at the booster station monitor flow to St. Isidore.
Lefaivre Wtp High Lift Pumps	Treated Water Poe	Treatment Facility	2015 Lajoie Street,	Two distinct high lift pumping system exists at the Lefaivre WTP. 1. The Lefaivre Area Pressure System • Two small centrifugal suction pumps and one larger centrifugal suction pump plus a centrifugal suction fire pump supply the Lefaivre Distribution Sub-System • pH and free chlorine residual analyzers draw from the Lefaivre header and displays on the SCADA system. 2. The Alfred-Plantagenet Area Pressure System • Three small centrifugal suction pumps and three high lift centrifugal split casing pumps supply the Alfred and the Plantagenet/St. Isidore Distribution Sub-Systems • pH, free and total chlorine residual analyzers draw from the Alfred header then calculates the combined residual and displays on the SCADA system.

DWS Component Information Report for 220002841

as of 17-DEC-2024

LWIS Component Name	LWIS Component Type	LWIS Component Sub-Type	Component Address	Comments
				Magnetic flow meters are located on each discharge header of the WTP.
Lefaivre Wtp Waste Management	Other	Treatment Facility	2015 Lajoie Street,	Sludge and backwash water from the upflow clarifier are dumped into two equalization tanks one of which is a settling tank and the other a supernatant tank that overflows to the Ottawa River. Backwash water from the Actiflo units is stored in an above ground tank and dumped into the sludge-backwash settling tank to be dewatered along with the upflow clarifier solids. Waste from the settling tank is hauled by pumper truck to the Alfred Lagoon Wastewater System. A septic tank with a bio-filter handles sewage waste from the plant appurtenances.
Lefaivre Wtp Chemical Dosing Systems	Other	Treatment Facility	2015 Lajoie Street,	The following chemicals are used at the Lefaivre WTP: • Polyaluminum Chloride (PAX-XL6) from Kemira as a coagulant for treatment process; • A polymer (LT27AG) from BASF is used as a coagulant aid for treatment process; • Sodium Carbonate (soda ash) for pH control throughout the plant and distribution sub-systems; • Sodium Hypochlorite for zebra mussel control, chlorination and chloramination; and • Ammonium Sulfate 6% for chloramination.
Lefaivre Wtp Scada System	Other	Treatment Facility	2015 Lajoie Street,	The plant operation and processes are monitored and controlled by Programmable Logic Controllers (PLC) supervised by a Supervisory Control and Data Acquisition (SCADA) system.
Lefaivre Wtp Secondary Disinfection Process	Treated Water Poe	Treatment Facility	2015 Lajoie Street,	Two distinct secondary disinfection processes are used at the Lefaivre WTP. 1. Chlorination is used for the Lefaivre Distribution Sub-System 2. Chloramination is used for the Alfred, Plantagenet/St. Isidore Distribution Sub-Systems
Lefaivre Wtp Raw Water Intake & Pumping Station	Source	Pumphouse	2015 Lajoie Street, Lot: 19, Conc.: 1,	The Lefaivre Water Treatment Plant (WTP) draws water from the Ottawa River. A 500 mm dia. 120 meters long intake pipe extends into the river. A flared elbow intake bell is used as the inlet. Zebra mussel control uses a 50 mm dia. polyethylene pipe to carry sodium hypochlorite to the intake.

DWS Component Information Report for 220002841

as of 17-DEC-2024

LWIS Component Name	LWIS Component Type	LWIS Component Sub-Type	Component Address	Comments
				A steel-clad concrete block pump station located north of the WTP houses two removable inlet screens, four vertical turbines. A 200 mm dia. raw water line with pH, hypochlorite solution and coagulant injection points followed by an inline mixer conveys raw water to the two treatment trains in the WTP. A raw water flowmeter measures the flow from the low lift building. A flow control valve is mounted the raw water line downstream of the low lift pumping station raw water magnetic flow meter to split and regulate flow to a solids contact clarifier and an ACTIFLO® unit. Two magnetic flowmeter on each feed lines monitor the flow into the two treatment trains.
Lefaivre Wtp Uv Disinfection	Treated Water Poe	Ultraviolet	2015 Lajoie Street,	Two UV reactors equipped with UV intensity sensors, cleaning system, a display for lamp status/operating hours/dose/intensity/power levels and alarms plus a history of the system parameters disinfects post-filtered water ahead of the clearwell. A flowmeter is located upstream of the UV system.
Lefaivre Wtp Treatment Processes	Other	Treatment Facility	2015 Lajoie Street, Lot: 19, Conc.: 1,	Process train # 1 is an ACTIFLO® water clarification process. After a coagulant is added water is mixed with micro sand and polymer in a Turbomix hydrocyclone. Micro sand enhances floc formation and acts as ballast increasing settling velocity. Flocs form and flows into the maturation tank then overflows and is baffled to enter the settling tank from the bottom. Lamella settling tubes enhance flocs settling and clarified water flows to the filters. Settled sludge is recirculated and the microsand is separated in the hydrocyclone. The recirculated sand is re-injected at the head of the process train. Sludge deposits at the bottom of the clarifier are drawn off to the sludge tank. Process train # 2 is a solids contact clarifier unit using a coagulant added upstream of a flash mixer in the raw water flow then pumped into the mixing cone where coagulant aid is added. The flocculated water already in the mixing cone enhances flocculation. Flocs then sink to the bottom conical hopper and forms sludge. Water rises up the clarifier and overflows to the filters. Sludge deposits at the bottom of the clarifier is drawn off to the sludge tank.
Lefaivre Wtp Filtration	Other	Treatment Facility	2015 Lajoie Street,	Process train # 1 filters receive water from the ACTIFLO® unit. These filters are Dusenflo® Process Package Plant with dual media (anthracite/sand) filter compartment. Underdrains support the media and permit the water to drain to the clear wells. Turbidity analyzers are located on each filter's effluent lines. The underdrain system is equipped with nozzles that use air and water during backwashing. Two blower and two backwash pumps provide air and water for backwashes. Filter to waste piping is installed on the filters.

DWS Component Information Report for 220002841

as of 17-DEC-2024

LWIS Component Name	LWIS Component Type	LWIS Component Sub-Type	Component Address	Comments
				Process train # 2 filters receive water from the upflow clarifier. A collection through drops water into a splitter box that supply two double compartment filters. Each of the four compartments contains an anthracite/sand dual media supported by graver filter cup underdrains. The Graver filters use a backwash tank over the filter compartments to backwash the media. A surface air scour is also used. Filter to waste capability has been retrofitted onto the filtration pipe gallery. A turbidity meter is installed on each filter effluent line discharging to the UV units. A clearwell under the ACTIFLO® unit and two vertical turbine pumps are used for filter backwash.
Lefaivre, Alfred-Plantagenet-St. Isidore Villages Distribution Subsystems	Other	Booster Station		The Lefaivre WTP serves three distribution subsystems: 1. The Lefaivre WTP serves a population of 350-400 in Lefaivre. Secondary disinfection is achieved using chlorination. A new watermain extension installed along County Road 24 runs east up to the Prescott Condominiums on Presqu'Ile Road. 2. A watermain links the WTP to Alfred, 1500 population. Secondary chloramination performed at the WTP ensures disinfection in Alfred. A composite-type elevated storage structure provides capacity and pressure in Alfred. A magnetic flowmeter monitors the flow. A pressure transducer relays the tank elevation to the SCADA. The higher elevation of the Alfred elevated storage requires a rate-of-flow control valve to close when the Plantagenet reservoir does not require water. 3. The Village of Alfred WDS supplies the Plantagenet distribution sub-system and booster station via a watermain. The Plantagenet booster station supplies the Village of St. Isidore via a watermain. The Village of St. Isidore is operated by another operating authority so it is not considered in this report. A magnetic flow meter and a pressure transducer at the base of the St-Isidore elevated storage monitor flow and pressure. Pressure is maintained by the head in the elevated storage in St-Isidore. Two analysers monitor the Total and Free Chlorine residuals in and out of the elevated storage.
Lefaivre Wtp Emergency Power	Stand-By Power Generation	Treatment Facility	2015 Lajoie Street,	Standby power is provided by a transfer switch activated diesel gen-set.

APPENDIX C

INSPECTION RISK RATING (IRR)

Ministry of the Environment, Conservation and Parks - Inspection Summary Rating Record (Reporting Year - 2024-25)

DWS Name:	LEFAIVRE AND PLANTAGENT DRINKING WATER SYSTEM
DWS Number:	220002841
DWS Owner:	THE CORPORATION OF THE TOWNSHIP OF ALFRED AND PLANTAGENET
Municipal Location:	ALFRED AND PLANTAGENET
Regulation:	O.REG. 170/03
DWS Category:	DW Municipal Residential
Type of Inspection:	Focused
Compliance Assessment Start Date:	Oct-25-2024
Ministry Office:	Cornwall Area Office

Maximum Risk Rating: 525

Inspection Module	Non Compliance Risk (X out of Y)
Capacity Assessment	0/30
Certification and Training	0/42
Distribution System	0/18
Logbooks	0/14
Operations Manuals	0/14
Reporting & Corrective Actions	0/46
Source	0/0
Treatment Processes	0/249
Water Quality Monitoring	0/112
Overall - Calculated	**0/525**

Inspection Risk Rating:	**0.00%**

Final Inspection Rating:	**100.00%**

Inspection Rating Record Generated On 2024-12-20 (Inspection ID: 1-384813783)

DWS Name:	LEFAIVRE AND PLANTAGENT DRINKING WATER SYSTEM
DWS Number:	220002841
DWS Owner Name:	THE CORPORATION OF THE TOWNSHIP OF ALFRED AND PLANTAGENET
Municipal Location:	ALFRED AND PLANTAGENET
Regulation:	O.REG. 170/03
DWS Category:	DW Municipal Residential
Type of Inspection:	Focused
Compliance Assessment Start Date:	Oct-25-2024
Ministry Office:	Cornwall Area Office

All legislative requirements were met. No detailed rating scores.

Maximum Question Rating: 525

Inspection Risk Rating:	**0.00%**

FINAL INSPECTION RATING:	**100.00%**