

**Ministry of the Environment,
Conservation and Parks**

Drinking Water and Environmental
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**Ministère de l'Environnement, de la Protection de
la nature et des Parcs**

Division de la conformité en matière d'eau potable
et d'environnement, Direction régionale du Nord
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Tél. : 705 942-6354
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April 28th, 2021

Lynne Duguay
Clerk Administrator
The Corporation of the Township of Macdonald,
Meredith & Aberdeen Additional
208 Church Street, Echo Bay
Ontario, P0S 1C0

RE: Echo Bay Drinking Water System Inspection Report # 1-OEWSC

Dear Ms. Duguay,

Please find attached the Ministry of the Environment, Conservation and Parks (MECP) final report for the 2020-2021 inspection of the Echo Bay Drinking Water System (#220009121). The purpose of this inspection was to confirm compliance with MECP legislation and control documents, as well as conformance with Ministry drinking water related policies and guidelines during the inspection review period. The inspection found no issues of non-compliance which require action. Please be advised that there is a recommendation regarding the implementation of a back-flow prevention program.

In addition, the Inspection Rating Record (IRR) for this drinking water system is included in the appendices. Please ensure that the information contained in the inspection report and IRR are shared with municipal council. Please further note that a copy of this report has been provided to Algoma Public Health.

I would like to thank the OCWA representatives and operators who assisted me during the inspection.

Please contact me if you have any questions regarding this inspection report.

Sincerely,



Kristy Mitchell
Environmental Officer – Badge #1193
Sault- Sudbury District Office

cc: Chris Spooner, Jon Bouma, Algoma Public Health (APH)
Erin Nixon, Ministry of Natural Resources and Forestry (MNRF)
Sarah Beaulieu, OCWA



Ministry of the Environment, Conservation and Parks

**ECHO BAY DRINKING WATER SYSTEM
Inspection Report**

| | |
|----------------------------|-----------------|
| Site Number: | 220009121 |
| Inspection Number: | 1-OEWSC |
| Date of Inspection: | Nov 26, 2020 |
| Inspected By: | Kristy Mitchell |

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OWNER INFORMATION:

| | | | |
|-----------------------|---|-------------------------|---------|
| Company Name: | MACDONALD, MEREDITH & ABERDEEN ADDITIONAL, THE CORPORATION OF THE TOWNSHIP OF | | |
| Street Number: | 208 | Unit Identifier: | |
| Street Name: | CHURCH STREET St | | |
| City: | ECHO BAY | | |
| Province: | ON | Postal Code: | P0S 1C0 |

CONTACT INFORMATION

INSPECTION DETAILS:

| | |
|-------------------------------------|---|
| Site Name: | ECHO BAY DRINKING WATER SYSTEM |
| Site Address: | 137 HIGHWAY 17 EAST Highway ECHO BAY ON P0S 1C0 |
| County/District: | MACDONALD MEREDITH & ABERDEEN ADDITIONAL |
| MECP District/Area Office: | Sault Ste. Marie Area Office |
| Health Unit: | ALGOMA PUBLIC HEALTH |
| Conservation Authority: | |
| MNR Office: | |
| Category: | Large Municipal Residential |
| Site Number: | 220009121 |
| Inspection Type: | Announced |
| Inspection Number: | 1-OEWSC |
| Date of Inspection: | Nov 26, 2020 |
| Date of Previous Inspection: | Feb 20, 2020 |

COMPONENTS DESCRIPTION

| | | |
|---------------------|-------------------|------------------|
| Site (Name): | MOE DWS Mapping | Sub Type: |
| Type: | DWS Mapping Point | |

| | | |
|---------------------|----------------|------------------|
| Site (Name): | Classification | Sub Type: |
| Type: | Other | |

Comments:
The Echo Bay Water Treatment System was commissioned in 1998 and serves a connected population of approximately 500. It is rated as Class 2 Water Treatment and Class 1 Water Distribution, and categorized as a Large Municipal Residential System under O.Reg. 170/03. The system is owned by the Corporation of the Township of Macdonald, Meredith and Aberdeen Additional.

| | | |
|---------------------|-----------|------------------|
| Site (Name): | RAW WATER | Sub Type: |
| Type: | Source | |

Comments:
Raw water for the treatment plant is drawn from Lake George which is part of the St. Marys River system. Although the water in Lake George is of good quality, it has been identified under the St. Marys River Remedial Action Plan as an area of concern due to contaminated sediments. Seasonal variations in raw water turbidity are experienced, but otherwise the water quality has been consistent. There is a chlorination system on site for zebra mussel control,

however the system is not currently operational and incrustations are not currently an issue. The intake for the treatment plant is located approximately 1.1 KM upstream of the sewage treatment plant discharge. The intake location was chosen following mapping of the Lake George current patterns during the design stage of the plant.

Site (Name): TREATED WATER

Type: Treated Water POE

Sub Type:

Comments:

The plant provides full chemically assisted filtration with the use of two Napier Reid package plants. Chemical treatment utilizes sodium hypochlorite for pre-chlorination and primary/secondary disinfection, sodium hydroxide for pH adjustment, aluminum sulphate for coagulation. A polymer (a coagulation/flocculation aid) addition system is on site, but is not currently in use. Filtration is carried out with two dual media filter beds followed by activated carbon for taste and odour reduction. The water treatment plant was constructed on the same site as the sewage treatment plant in order to take advantage of common infrastructure requirements such as the standby diesel generator. The two plant buildings are physically separated by a service corridor.

Site (Name): DISTRIBUTION (WATER INSPECTION)

Type: Other

Sub Type:

Comments:

The discharge header from the treatment plant is connected to a 250 mm trunk water main, which extends to the elevated storage tower. The tower has a capacity of 682 cubic meters, and is used for supply equalization and distribution storage. The high lift pumps are able to feed the distribution system directly in the event of a tower failure or low water level. There are approximately 200 connections in the system servicing a population of approximately 500. The system is comprised entirely of PVC piping, and aside from maintenance and repairs, has not been altered or added to since the plant was commissioned in 1998.

INSPECTION SUMMARY:

Introduction

- The primary focus of this inspection is to confirm compliance with Ministry of the Environment, Conservation and Parks (MECP) legislation as well as evaluating conformance with ministry drinking water policies and guidelines during the inspection period. The ministry utilizes a comprehensive, multi-barrier approach in the inspection of water systems that focuses on the source, treatment, and distribution components as well as management practices.

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

This inspection report does not suggest that all applicable legislation and regulations were evaluated. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

This inspection report refers to the review period from February 21st, 2020 to November 26th, 2020. The inspection involved a file review, a site visit accompanied by Sarah Beaulieu and Charles O'Kane from the Ontario Clean Water Agency (OWCA), herein identified as the Operating Authority, and a review of requested documents and data.

The Drinking Water Works Permit (DWWP) for the Echo Bay Water Treatment Plant, No. 278-201, Issue No. 2 was issued on June 30th, 2016. The Municipal Drinking Water Licence (MDWL) No. 278-101 was amended on October 22nd, 2018 (Issue No. 3) to change the operating authority to OCWA along with Operational Plan No. 278-401 (most recently revised in 2014). The MDWL is set to expire on June 6th, 2021. An application for renewal was submitted to MECP and the Municipality is awaiting a renewal or extension.

Source

- Trends in source water quality were being monitored.

Since the supply consists of surface water, the operating authority is monitoring raw water for turbidity. As noted later in this report, the operating authority is also monitoring for potential blue-green algae.

- The owner had a harmful algal bloom monitoring plan in place.

The water treatment plant has a site specific monitoring Standard Operating Plan (SOP) for Harmful Algal Blooms (HAB). The SOP is applicable for June 1st to October 31st annually and involves weekly inspections, documentation in logbooks and notification of a suspected HAB to MECP (SAC). It further includes ensuring that actions are taken in consultation with MECP and the local Health Unit during a suspected HAB including sampling procedures. The Operator confirmed that visual inspections of the raw water source at a nearby bridge for Highway 17B along Lake George (the location identified in the SOP) are conducted.

Permit To Take Water

- The owner was in compliance with all conditions of the PTTW.

The permit allows for water taking at a rate of 985 litres per minute, 24 hours a day. The daily limit is 1,418,000 litres. No exceedances were noted during the time period reviewed for the inspection. The maximum daily record taking was reported as 474,900 litres in October 2020.

Capacity Assessment

- **There was sufficient monitoring of flow as required by the Municipal Drinking Water Licence or Drinking Water Works Permit issued under Part V of the SDWA.**

Schedule C Condition 2.1 of Municipal Drinking Water Licence (#278-101 Issue No. 2) requires flow measurement of raw and treated water. The monitoring devices were observed during the site visit.

- **The flow measuring devices were calibrated or verified in accordance with the requirements of the MDWL issued under Part V of the SDWA.**

Records of flow monitoring device calibration were provided as part of the inspection process.

- **The owner was in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the Municipal Drinking Water Licence issued under Part V of the SDWA.**

The maximum rated capacity in the Municipal Drinking Water Licence is listed as 1,416 cubic metres per day. The maximum treated flow rate (capacity) for the inspected period was 347.9 cubic metres (347,900 litres) per day.

- **Appropriate records of flows and any capacity exceedances were made in accordance with the Municipal Drinking Water Licence issued under Part V of the SDWA.**

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.**

- **The owner/operating authority was in compliance with the requirement to prepare Form 2 documents as required by their Drinking Water Works Permit during the inspection period.**

A copy of a Form 2 signed on 2020-11-24 by Operator C. O'Kane was provided. The form was created for the installation of a new backwash pump (WP11) into clearwell No. 2.

- **Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a Drinking Water Works Permit and/or Municipal Drinking Water Licence issued under Part V of the SDWA at all times that water was being supplied to consumers.**

The drinking water system achieves primary disinfection through the use of chemically assisted filtration and chlorination. The source is surface water; therefore the plant is required to provide 2 log removal of cryptosporidium, 3 log removal of giardia and 4 log removal of viruses. A minimum of 0.5 log removal of giardia must be achieved through chemical disinfection. Chlorination also provides 2 log removal of viruses.

Log removal credits for this system are as follows:

| | Crypto | Giardia | Viruses |
|--------------|--------|---------|---------|
| Filtration | 2.0 | 2.5 | 2.0 |
| Chlorination | 0 | 0.5 | 2.0 |
| Totals | 2.0 | 3.0 | 4.0 |
| Required | 2.0 | 3.0 | 4.0 |

The operating authority is ensuring treatment in order to achieve log removal/inactivation credits as required in Schedule E of Municipal Drinking Water Licence 278-101 Issue No. 2 (June, 7th, 2016) as well as the requirements of the Disinfection Procedure for Drinking Water in Ontario. A chemical coagulant (alum) is used at all times when the plant is in operation and chemical doses are monitored and adjusted as necessary. The filtrate turbidity is also continuously monitored. Filter efficiency records were provided that demonstrated an efficiency of 99.9 percent or higher for the review period (February 2020 to November 2020). Backwash-to-waste cycles are automatically initiated based on filter run time. In addition, filtered water turbidity was less than or equal to 0.3 NTU in 95 percent

Treatment Processes

of the measurements each month (as indicated by the PDM report submitted by OCWA). Testing of free chlorine residual is carried out by continuous monitoring in a location where contact time has been completed. A standard operating procedure has been created for determining CT for the contact chamber, which includes a baffle factor.

- **Records confirmed that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/l free or 0.25 mg/l combined.**

Records provided by the operating authority for this inspection period were reviewed and indicate that the chlorine residual in the distribution system was maintained above the legislative threshold of 0.05 mg/L. The CT is calculated and set to ensure the residual is maintained within the distribution system.

The lowest residual sample recorded was 0.71 mg/L on October 13th.

- **Where an activity has occurred that could introduce contamination, all parts of the drinking water system were disinfected in accordance with Schedule B, Condition 2.3 of the Drinking Water Works Permit.**

The operating authority representatives confirmed that all disinfection measures in accordance with the Drinking Water Works Permit were undertaken for activities that could introduce contamination to the water.

- **The owner had evidence indicating that all chemicals and materials that come in contact with water within the drinking water system met the AWWA and ANSI standards in accordance with the Municipal Drinking Water Licence and Drinking Water Works Permit issued under Part V of the SDWA.**

The operating authority representatives confirmed and demonstrated that all chemicals which may come into contact with drinking water meet NSF standards.

- **Up-to-date plans for the drinking water system were kept in a place, or made available in such a manner, that they could be readily viewed by all persons responsible for all or part of the operation of the drinking water system in accordance with the DWWP and MDWL issued under Part V of the SDWA.**

During the inspection, drinking water system electronic SCADA systems as well as large schematic diagrams of equipment and processes were observed to be readily available for operators.

- **Where a potential bypass of primary or secondary treatment equipment existed, measures were taken to ensure that raw or partially treated water was not directed to the distribution system.**

Although the water treatment plant was originally intended to allow for a by-pass of the filters, this option has not been installed.

Treatment Process Monitoring

- **Primary disinfection chlorine monitoring was conducted at a location approved by Municipal Drinking Water Licence and/or Drinking Water Works Permit issued under Part V of the SDWA, or at/near a location where the intended CT has just been achieved.**

The primary disinfection chlorine residual is monitored at the point between the clear well and the distribution system.

- **Operators were aware of the operational criteria necessary to achieve primary disinfection within the drinking water system.**

The operator demonstrated a thorough knowledge of the operational criteria necessary to achieve primary disinfection including the operation of the dual media filters and post chlorination. The operator also discussed the ability to calculate CT using software present at the site as well methods for manual calculations. A copy of a CT Calculation SOP was provided.

- **Continuous monitoring of each filter effluent line was being performed for turbidity.**

Treatment Process Monitoring

The plant is equipped with two dual media filtration units composed of sand and anthracite, followed by two separate GAC (Granular Activated Carbon) filters. Effluent from each filter is continuously monitored by on-line turbidimeters.

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

The drinking water system conducts manual sampling for distribution chlorine residual. Seven samples are required weekly and the operators collect four samples on one day and three on a second day during the week, with a minimum of 48 hours apart. Records were reviewed as part of the inspection process.

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

The Operator confirmed during the inspection that shifts are scheduled to ensure that continuous monitoring data is reviewed within 72 hours. A copy of the November 2020 Echo Bay Data Collection (Round Sheet) was provided as an example.

- **Samples for chlorine residual analysis were tested using an acceptable portable device.**

Secondary disinfection (chlorine residual) analysis for the distribution system is conducted using an acceptable portable device (observed during the inspection).

- **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.**

Alarms are in place for the continuous monitoring equipment such as high and low chlorine (1.85 mg/L and 0.95 mg/L respectively), dual chlorine pump failure (lead unit and standby) and high turbidity (0.15 NTU).

- **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.**

It was confirmed during the inspection that chlorine analyzers and turbidity meters are analyzing continuously, thereby meeting the 5 minute and 15 minute respective requirements in Regulation 170.

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

Process Wastewater

- **The process wastewater and residual solids/sludges were treated, handled and disposed of in accordance with the design requirements approved under the Drinking Water Works Permit and the Municipal Drinking Water Licence.**

As indicated in Condition 1.5 of Schedule C of the Municipal Drinking Water License, there are no requirements for backwash effluent sampling. Rather, backwashing effluent is directed to an on-site clarifier for settling and the supernatant is sent to a septic system. Sludge from the filters is removed periodically.

Distribution System

- **There is no backflow prevention program, policy and/or bylaw in place.**

At the time of the inspection completion, there was no indication that the municipality had a by-law in place. The municipality advised that the use of backflow prevention devices is recommended to users of the system.

- **The owner had a program or maintained a schedule for routine cleanout, inspection and maintenance of**

Distribution System

reservoirs and elevated storage tanks within the distribution system.

- **The owner had implemented a program for the flushing of watermain as per industry standards.**

As discussed during the site visit, the operating authority provides a watermain flushing program.

- **Records confirmed that disinfectant residuals were routinely checked at the extremities and "dead ends" of the distribution system.**

Sampling is normally conducted at one of four locations in the distribution system, including the storage tower. As a result of COVID-19, residuals are being taken at locations that are accessible to the operating authority. During the inspection, the Operator advised that any alterations (such as not attending a residence for seniors), would still represent the farther points in the distribution system.

- **A program was in place for inspecting and exercising valves.**
- **There was a program in place for inspecting and operating hydrants.**
Copies of hydrant inspection and maintenance reports were provided as part of the inspection.
- **There was a by-law or policy in place limiting access to hydrants.**
The Municipality advised that water can only be taken from one hydrant (in front of the Fire Hall). The Fire Chief and Road Supervisor oversee the use of this hydrant.
- **The owner was able to maintain proper pressures in the distribution system and pressure was monitored to alert the operator of conditions which may lead to loss of pressure below the value under which the system is designed to operate.**

Pressure in the distribution system is maintained by the storage tower levels and is monitored by the operator via SCADA.

Operations Manuals

- **Operators and maintenance personnel had ready access to operations and maintenance manuals.**
These manuals were observed during the site visit.
- **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.**

Logbooks

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

Both water treatment plant and distribution system logbooks were observed briefly during the site visit. A more thorough review of the logbooks was intended for a second site visit following review of data and requested documents. However, due to COVID-19 precautions and restrictions in January 2021, a second on-site review did not occur. As a result, a sample of logbooks were requested based on maintenance records, a call out log and summary reports.

- **Records or other record keeping mechanisms confirmed that operational testing not performed by**

Logbooks

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.

The method of recording data such as flow rates, raw and treated water continuous monitoring for various parameters and chemical dosage on a monthly document entitled, Echo Bay Data Collection (Round Sheet), was observed at the time of the site visit.

- **For every required operational test and every required sample, a record was made of the date, time, location, name of the person conducting the test and result of the test.**
- **The operator-in-charge ensured that records were maintained of all adjustments made to the processes within his or her responsibility.**
- **Logs or other record keeping mechanisms were available for at least five (5) years.**

Contingency/Emergency Planning

- **Spill containment was provided for process chemicals and/or standby power generator fuel.**

Spill containment for process chemicals was observed during the site visit. The generator is stored indoors.

- **Clean-up equipment and materials were in place for the clean up of spills.**

A spill kit is available on-site and clean-up procedures were discussed during the inspection. In addition, OCWA has a SOP for spill response and reporting.

- **Standby power generators were tested under normal load conditions.**

The generator is tested once monthly and serviced annually by an outside service provider.

Security

- **All storage facilities were completely covered and secure.**
- **The owner had provided security measures to protect components of the drinking water system.**

Consumer Relations

- **The owner and/or operating authority undertook efforts to promote water conservation and reduce water losses in their system.**

The distribution system was installed in 1996 and 1997. With newer piping, the issue of system loss is reduced. In addition, the municipality has advised that all users of the system are metered for water use and pay an additional fee if their water consumption is over the allotted 15 cubic meters per month.

Certification and Training

- **The overall responsible operator had been designated for each subsystem.**
- **Operators-in-charge had been designated for all subsystems which comprised the drinking water system.**
- **All operators possessed the required certification.**

Certification and Training

- Only certified operators made adjustments to the treatment equipment.
- An adequately licenced operator was designated to act in place of the overall responsible operator when the overall responsible operator was unable to act

Water Quality Monitoring

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

A review of sampling data indicates that raw water is sampled weekly, as required by Schedule 10-4 of Regulation 170.

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

The number of distribution samples (EC and TC) to be collected required by Schedule 10-2, if the system serves 100,000 people or less, is at least eight distribution samples every month, with at least one of the samples being taken in each week. As required, one quarter of the samples include testing for general bacterial population expressed as colony counts on a heterotrophic plate count (HPC).

A review of the sample information by the operating authority found that samples were collected as required.

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

A review of sampling data indicated that the treated water is sampled once a week for Escherichia coli, Total coliforms and general bacteria population expressed a colony counts on a heterotrophic plate count as per Schedule 10-3.

- All inorganic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.

The most recent sampling was completed January 22nd, 2020. There were no exceedances of the Ontario Drinking Water Standards.

- All organic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.

The most recent sampling was completed January 22nd, 2020. There were no exceedances of the Ontario Drinking Water Standards.

- All haloacetic acid water quality monitoring requirements prescribed by legislation are being conducted within the required frequency and at the required location.

Haloacetic acid (HAAs) monitoring was conducted quarterly as required. The running average as of November 2020 was 14.5 ug/L. This is well below the threshold of 80 ug/L.

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

THMs have been sampled quarterly as required by the Regulation. The running average as of November 2020 was 25.31 ug/L, below the threshold of 100 ug/L

- All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the required frequency for the DWS.

Nitrate/nitrite sampling has been conducted every 3 months. Results were below the 10 mg/L and 1 mg/L limits set out in Regulation 169.

Water Quality Monitoring

- **All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**
Sampling and testing is required once every 60 months and was last completed on September 10, 2018
- **All fluoride water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**
Sampling was conducted in accordance with the Schedule 13-9 of O. Reg. 170/03. The most recent sampling occurred March 23, 2017.
- **The owner ensured that water samples were taken at the prescribed location.**
- **All sampling requirements for lead prescribed by schedule 15.1 of O. Reg. 170/03 were being met.**
The most recent lead sampling occurred in 2018. Prior results indicate lead levels consistently below 5 ug/L. This allows for sampling relief under Section 15.1-4.
Sampling is conducted bi-annually for alkalinity (and pH) in order to comply with Section 15.1
- **Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.**
The Operator confirmed (and records support) that the chlorine residual tests are conducted at the same time and location.
- **The owner indicated that the required records are kept and will be kept for the required time period.**

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).**
There were no exceedances for the parameters sampled in January 2020.

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.**
A call-out summary which documents response to various alarms (continuous monitoring) was provided to the undersigned for the period of review.
The operator also has the ability to review continuous monitoring SCADA data remotely.
- **The Annual Report containing the required information was prepared by February 28th of the following year.**
- **Summary Reports for municipal council were completed on time, included the required content, and were distributed in accordance with the regulatory requirements.**

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.

1. **There is no backflow prevention program, policy and/or bylaw in place.**

Recommendation:

As per previous inspections, the municipality is recommended to create and implement a formal backflow prevention program, policy or by-law that address cross-connections and connections to potential hazards.

SIGNATURES

Inspected By:

Kristy Mitchell

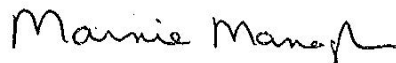
Signature: (Provincial Officer)



Reviewed & Approved By:

Marnie Managhan

Signature: (Supervisor)



Review & Approval Date:

April 27, 2021

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

Appendix I

Municipal Drinking Water License

Drinking Water Works Permit



MUNICIPAL DRINKING WATER LICENCE

Licence Number: 278-101

Issue Number: 3

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, this municipal drinking water licence is issued under Part V of the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 to:

**The Corporation of the Township of Macdonald, Meredith & Aberdeen
Additional**

**208 Church St.
Echo Bay
ON P0F 1C0**

For the following municipal residential drinking water system:

Echo Bay Drinking Water System

This municipal drinking water licence includes the following:

| Schedule | Description |
|-----------------|--|
| Schedule A | Drinking Water System Information |
| Schedule B | General Conditions |
| Schedule C | System-Specific Conditions |
| Schedule D | Conditions for Relief from Regulatory Requirements |
| Schedule E | Pathogen Log Removal/Inactivation Credits |

DATED at TORONTO this 22th day of October, 2018

Signature

A handwritten signature in black ink that reads "A. Ahmed". The signature is written in a cursive style with a horizontal line underneath.

Aziz Ahmed, P.Eng.
Director

Schedule A: Drinking Water System Information

| | |
|----------------------------|---|
| System Owner | The Corporation of the Township of Macdonald, Meredith & Aberdeen Additional |
| Licence Number | 278-101 |
| Drinking Water System Name | Echo Bay Drinking Water System |
| Schedule A Issue Date | October 22th, 2018 |

The following information is applicable to the above drinking water system and forms part of this licence:

Licence

| | |
|--------------------------------------|---------------------------------|
| Licence Issue Date | October 22th, 2018 |
| Licence Expiry Date | June 6 th , 2021 |
| Application for Licence Renewal Date | December 6 th , 2020 |

Drinking Water Works Permit

| Drinking Water System Name | Permit Number | Issue Date |
|--------------------------------|---------------|------------------------------|
| Echo Bay Drinking Water System | 278-201 | June 30 th , 2016 |

Permits to Take Water

| Water Taking Location | Permit Number | Issue Date |
|--------------------------------|---------------|-------------------|
| Lake George (St. Mary's River) | 0256-A4JQAR | November 24, 2015 |

Financial Plans

| | |
|--|----------|
| The Financial Plan Number for the Financial Plan required to be developed for this drinking water system in accordance with O. Reg. 453/07 shall be: | 278-301 |
| Alternately, if one Financial Plan is developed for all drinking water systems owned by the owner, the Financial Plan Number shall be: | 278-301A |

Accredited Operating Authority

| Drinking Water System or Operational Subsystems | Accredited Operating Authority | Operational Plan No. | Operating Authority No. |
|---|--------------------------------|----------------------|-------------------------|
| Echo Bay Drinking Water System | Ontario Clean Water Agency | 278-401 | 278-OA2 |

Schedule B: General Conditions

| | |
|----------------------------|--|
| System Owner | The Corporation of the Township of Macdonald, Meredith & Aberdeen Additional |
| Licence Number | 278-101 |
| Drinking Water System Name | Echo Bay Drinking Water System |
| Schedule B Issue Date | October 22th, 2018 |

1.0 Definitions

1.1 Words and phrases not defined in this licence and the associated drinking water works permit shall be given the same meaning as those set out in the SDWA and any regulations made in accordance with that act, unless the context requires otherwise.

1.2 In this licence and the associated drinking water works permit:

“**adverse effect**”, “**contaminant**” and “**natural environment**” shall have the same meanings as in the EPA;

“**alteration**” may include the following in respect of this drinking water system:

- (a) An addition to the system,
- (b) A modification of the system,
- (c) A replacement of part of the system, and
- (d) An extension of the system;

“**compound of concern**” means a contaminant that, based on generally available information, may be emitted from a component of the drinking water system to the atmosphere in a quantity that is significant either in comparison to the relevant point of impingement limit or if a point of impingement limit is not available for the compound, then based on generally available toxicological information, the compound has the potential to cause an adverse effect as defined by the EPA at a point of impingement;

“**Director**” means a Director appointed pursuant to section 6 of the SDWA for the purposes of Part V of the SDWA;

“**drinking water works permit**” means the drinking water works permit for the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

“**emission summary table**” means the table that was prepared by a Professional Engineer in accordance with O. Reg. 419/05 and the procedure document listing the appropriate point of impingement concentrations of each compound of concern emitted from a component of the drinking water system and providing comparison to the corresponding point of impingement limit;

“**EPA**” means the *Environmental Protection Act*, R.S.O. 1990, c. E.19;

“financial plan” means the financial plan required by O. Reg. 453/07;

“licence” means this municipal drinking water licence for the municipal drinking water system identified in Schedule A of this licence;

“operational plan” means an operational plan developed in accordance with the Director’s Directions – Minimum Requirements for Operational Plans made under the authority of subsection 15(1) of the SDWA;

“owner” means the owner of the drinking water system as identified in Schedule A of this licence;

“permit to take water” means the permit to take water that is associated with the taking of water for purposes of the operation of the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

“point of impingement” means any point in the natural environment that is not on the same property as the source of the contaminant and as defined by section 2 of O. Reg. 419/05;

“point of impingement limit” means the appropriate standard from Schedule 1, 2 or 3 of O. Reg. 419/05 and if a standard is not provided for a compound of concern, the appropriate criteria listed in the Ministry of the Environment, Conservation and Parks publication titled “Summary of Standards and Guidelines to support Ontario Regulation 419: Air Pollution – Local Air Quality (including Schedule 6 of O. Reg. 419 on Upper Risk Thresholds)”, dated February 2008, as amended;

“procedure document” means the Ministry of the Environment, Conservation and Parks procedure titled “Procedure for Preparing an Emission Summary and Dispersion Modelling Report” dated July 2005, as amended;

“Professional Engineer” means a Professional Engineer who has been licenced to practice in the Province of Ontario;

“provincial officer” means a provincial officer appointed pursuant to section 8 of the SDWA;

“publication NPC-300” means the Ministry of the Environment, Conservation and Parks publication titled “Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning” dated August 2013, as amended;

“SDWA” means the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32;

“sensitive populations” means any one or a combination of the following locations where the health effects of nitrogen oxides emissions from emergency generators shall be considered using the point of impingement limit instead of the Ministry of the Environment, Conservation and Parks screening level for emergency generators:

- (a) health care units (e.g., hospitals and nursing homes),
- (b) primary/junior public schools,
- (c) day-care facilities, and
- (d) playgrounds;

“**subsystem**” has the same meaning as in Ontario Regulation 128/04 (Certification of Drinking Water System Operators and Water Quality Analysts);

“**surface water**” means water bodies (lakes, wetlands, ponds - including dug-outs), water courses (rivers, streams, water-filled drainage ditches), infiltration trenches, and areas of seasonal wetlands;

2.0 Applicability

- 2.1 In addition to any other requirements, the drinking water system identified above shall be established, altered and operated in accordance with the conditions of the drinking water works permit and this licence.

3.0 Licence Expiry

- 3.1 This licence expires on the date identified as the licence expiry date in Schedule A of this licence.

4.0 Licence Renewal

- 4.1 Any application to renew this licence shall be made on or before the date identified as the application for licence renewal date set out in Schedule A of this licence.

5.0 Compliance

- 5.1 The owner and operating authority shall ensure that any person authorized to carry out work on or to operate any aspect of the drinking water system has been informed of the SDWA, all applicable regulations made in accordance with that act, the drinking water works permit and this licence and shall take all reasonable measures to ensure any such person complies with the same.

6.0 Licence and Drinking Water Works Permit Availability

- 6.1 At least one copy of this licence and the drinking water works permit shall be stored in such a manner that they are readily viewable by all persons involved in the operation of the drinking water system.

7.0 Permit to Take Water and Drinking Water Works Permit

- 7.1 A permit to take water identified in Schedule A of this licence is the applicable permit on the date identified as the Schedule A Issue Date.
- 7.2 A drinking water works permit identified in Schedule A of this licence is the applicable permit on the date identified as the Schedule A Issue Date.

8.0 Financial Plan

- 8.1 For every financial plan prepared in accordance with subsections 2(1) and 3(1) of O. Reg. 453/07, the owner of the drinking water system shall:

- 8.1.1 Ensure that the financial plan contains on the front page of the financial plan, the appropriate financial plan number as set out in Schedule A of this licence; and
- 8.1.2 Submit a copy of the financial plan to the Ministry of Municipal Affairs and Housing within three (3) months of receiving approval by a resolution of municipal council or the governing body of the owner.

9.0 Interpretation

- 9.1 Where there is a conflict between the provisions of this licence and any other document, the following hierarchy shall be used to determine the provision that takes precedence:
 - 9.1.1 The SDWA;
 - 9.1.2 A condition imposed in this licence that explicitly overrides a prescribed regulatory requirement;
 - 9.1.3 A condition imposed in the drinking water works permit that explicitly overrides a prescribed regulatory requirement;
 - 9.1.4 Any regulation made under the SDWA;
 - 9.1.5 Any provision of this licence that does not explicitly override a prescribed regulatory requirement;
 - 9.1.6 Any provision of the drinking water works permit that does not explicitly override a prescribed regulatory requirement;
 - 9.1.7 Any application documents listed in this licence, or the drinking water works permit from the most recent to the earliest; and
 - 9.1.8 All other documents listed in this licence, or the drinking water works permit from the most recent to the earliest.
- 9.2 If any requirement of this licence or the drinking water works permit is found to be invalid by a court of competent jurisdiction, the remaining requirements of this licence and the drinking water works permit shall continue to apply.
- 9.3 The issuance of and compliance with the conditions of this licence and the drinking water works permit does not:
 - 9.3.1 Relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including the *Environmental Assessment Act*, R.S.O. 1990, c. E.18; and
 - 9.3.2 Limit in any way the authority of the appointed Directors and provincial officers of the Ministry of the Environment, Conservation and Parks to require certain steps be taken or to require the owner to furnish any further information related to compliance with the conditions of this licence or the drinking water works permit.

- 9.4** For greater certainty, nothing in this licence or the drinking water works permit shall be read to provide relief from regulatory requirements in accordance with section 46 of the SDWA, except as expressly provided in the licence or the drinking water works permit.

10.0 Adverse Effects

- 10.1** Nothing in this licence or the drinking water works permit shall be read as to permit:
- 10.1.1 The discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect; or
 - 10.1.2 The discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters.
- 10.2** All reasonable steps shall be taken to minimize and ameliorate any adverse effect on the natural environment or impairment of the quality of water of any waters resulting from the operation of the drinking water system including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.
- 10.3** Fulfillment of one or more conditions imposed by this licence or the drinking water works permit does not eliminate the requirement to fulfill any other condition of this licence or the drinking water works permit.

11.0 Change of Owner or Operating Authority

- 11.1** This licence is not transferable without the prior written consent of the Director.
- 11.2** The owner shall notify the Director in writing at least 30 days prior to a change of any operating authority identified in Schedule A of this licence.
- 11.2.1 Where the change of operating authority is the result of an emergency situation, the owner shall notify the Director in writing of the change as soon as practicable.

12.0 Information to be Provided

- 12.1** Any information requested by a Director or a provincial officer concerning the drinking water system and its operation, including but not limited to any records required to be kept by this licence or the drinking water works permit, shall be provided upon request.

13.0 Records Retention

- 13.1** Except as otherwise required in this licence or the drinking water works permit, any records required by or created in accordance with this licence or the drinking water works permit, other than the records specifically referenced in section 12 of O. Reg. 170/03, shall be retained for at least 5 years and made available for inspection by a provincial officer, upon request.

14.0 Chemicals and Materials

- 14.1** All chemicals and materials used in the alteration or operation of the drinking water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60, NSF/61 and NSF/372.
- 14.1.1 In the event that the standards are updated, the owner may request authorization from the Director to use any on hand chemicals and materials that previously met the applicable standards.
- 14.1.2 The requirement for the owner to comply with NSF/372 shall come into force no later than August 21, 2018.
- 14.2** The most current chemical and material product registration documentation from a testing institution accredited by either the Standards Council of Canada or by the American National Standards Institution ("ANSI") shall be available at all times for each chemical and material used in the operation of the drinking water system that comes into contact with water within the system.
- 14.3** Conditions 14.1 and 14.2 do not apply in the case of the following:
- 14.3.1 Water pipe and pipe fittings meeting AWWA specifications made from ductile iron, cast iron, PVC, fibre and/or steel wire reinforced cement pipe or high density polyethylene (HDPE);
- 14.3.2 Articles made from stainless steel, glass, HDPE or Teflon®;
- 14.3.3 Cement mortar for watermain lining and for water contacting surfaces of concrete structures made from washed aggregates and Portland cement;
- 14.3.4 Gaskets that are made from NSF approved materials;
- 14.3.5 Food grade oils and lubricants, food grade anti-freeze, and other food grade chemicals and materials that are compatible for drinking water use; or
- 14.3.6 Any particular chemical or material where the owner has written documentation signed by the Director that indicates that the Ministry of the Environment, Conservation and Parks is satisfied that the chemical or material is acceptable for use within the drinking water system and the chemical or material is only used as permitted by the documentation.

15.0 Drawings

- 15.1** All drawings and diagrams in the possession of the owner that show any treatment subsystem as constructed shall be retained by the owner unless the drawings and diagrams are replaced by a revised or updated version showing the subsystem as constructed subsequent to the alteration.

- 15.2** Any alteration to any treatment subsystem shall be incorporated into process flow diagrams, process and instrumentation diagrams, and record drawings and diagrams within one year of the substantial completion of the alteration.
- 15.3** Process flow diagrams and process and instrumentation diagrams for any treatment subsystem shall be kept in a place, or made available in such a manner, that they may be readily viewed by all persons responsible for all or part of the operation of the drinking water system.

16.0 Operations and Maintenance Manual

- 16.1** An up-to-date operations and maintenance manual or manuals shall be maintained and applicable parts of the manual or manuals shall be made available for reference by all persons responsible for all or part of the operation or maintenance of the drinking water system.
- 16.2** 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 achieve primary and secondary disinfection within the drinking water system, including where applicable:
 - a) A copy of the CT calculations that were used as the basis for primary disinfection under worst case operating conditions; and
 - b) The validated operating conditions for UV disinfection equipment, including a copy of the validation certificate;
 - 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;
- 16.3** Procedures necessary for the operation and maintenance of any alterations to the drinking water system shall be incorporated into the operations and maintenance manual or manuals prior to those alterations coming into operation.
- 16.4** The requirement for the owner to comply with condition 16.2.3 shall come into force on February 21, 2017.

Schedule C: System-Specific Conditions

| | |
|----------------------------|--|
| System Owner | The Corporation of the Township of Macdonald, Meredith & Aberdeen Additional |
| Licence Number | 278-101 |
| Drinking Water System Name | Echo Bay Drinking Water System |
| Schedule C Issue Date | October 22th, 2018 |

1.0 System Performance

Rated Capacity

- 1.1** For each treatment subsystem listed in column 1 of Table 1, the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed the value identified as the rated capacity in column 2 of the same row.

| Table 1: Rated Capacity | |
|--|--|
| Column 1 Treatment Subsystem Name | Column 2 Rated Capacity (m ³ /day) |
| Package Plant No. 1 | 708 |
| Package Plant No. 2 | 708 |
| Echo Bay Water Treatment Plant (Package Plant No. 1 and Package Plant No. 2) | 1,416 |

Maximum Flow Rates

- 1.2** For each treatment subsystem listed in column 1 of Table 2, the maximum flow rate of water that flows into a treatment subsystem component listed in column 2 shall not exceed the value listed in column 3 of the same row.

| Table 2: Maximum Flow Rates | | |
|--------------------------------------|---|-------------------------------------|
| Column 1 Treatment Subsystem Name | Column 2 Treatment Subsystem Component | Column 3 Maximum Flow Rate (L/s) |
| Not Applicable | Not Applicable | Not Applicable |

- 1.3** Despite conditions 1.1 and 1.2, a treatment subsystem may be operated temporarily at a maximum daily volume and/or a maximum flow rate above the values set out in column 2 of Table 1 and column 3 of Table 2 respectively for the purposes of fighting a large fire or for the maintenance of the drinking water system.
- 1.4** Condition 1.3 does not authorize the discharge into the distribution system of any water that does not meet all of the requirements of this licence and all other regulatory requirements, including compliance with the Ontario Drinking Water Quality Standards.

Residue Management

- 1.5** In respect of an effluent discharged into the natural environment from a treatment subsystem or treatment subsystem component listed in column 1 of Table 3:
- 1.5.1 The annual average concentration of a test parameter identified in column 2 shall not exceed the value in column 3 of the same row; and
- 1.5.2 The maximum concentration of a test parameter identified in column 2 shall not exceed the value in column 4 of the same row.

| Table 3: Residue Management | | | |
|---|------------------------------------|---|--|
| Column 1 Treatment Subsystem or Treatment Subsystem Component Name | Column 2 Test Parameter | Column 3 Annual Average Concentration (mg/L) | Column 4 Maximum Concentration (mg/L) |
| Not Applicable | Not Applicable | Not Applicable | Not Applicable |

UV Disinfection Equipment Performance

- 1.6** For each treatment subsystem or treatment subsystem component listed in column 1 of Table 4, and while directing water to the distribution system:
- 1.6.1 The UV disinfection equipment shall be operated such that a continuous pass-through UV dose is maintained throughout the life time of the UV lamp(s) that is at least the minimum continuous pass-through UV dose set out in column 2 of the same row at the maximum design flow rate for the equipment;
- 1.6.2 In addition to any other sampling, analysis and recording that may be required, the ultraviolet light disinfection equipment shall test for the test parameters set out in column 4 of the same row at a testing frequency of once every five (5) minutes or less and record the test data at a recording frequency of once every four (4) hours or less;
- 1.6.3 If there is a UV disinfection equipment alarm, the test parameters set out in column 4 of the same row shall be recorded at a recording frequency of once every five minutes or less until the alarm condition has been corrected;
- 1.6.4 A monthly summary report shall be prepared at the end of each calendar month which sets out the time, date and duration of each UV equipment alarm, the volume of water treated during each alarm period and the actions taken by the operating authority to correct the alarm situation;

| Table 4: UV Disinfection Equipment | | | |
|---|---|------------------------------|----------------------------|
| Column 1 Treatment Subsystem or Treatment Subsystem Component Name | Column 2 Minimum Continuous Pass-Through UV Dose (mJ/cm ²) | Column 3 Control Strategy | Column 4 Test Parameter |
| Not Applicable | Not Applicable | Not Applicable | Not Applicable |

2.0 Flow Measurement and Recording Requirements

2.1 For each treatment subsystem identified in column 1 of Table 1 and in addition to any other flow measurement and recording that may be required, 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.

2.2 For each treatment subsystem component identified in column 2 of Table 2 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for the flow rate and daily volume of water that flows into the treatment subsystem component.

2.3 Where a rated capacity from Table 1 or a maximum flow rate from Table 2 is exceeded, the following shall be recorded:

2.3.1 The difference between the measured amount and the applicable rated capacity or maximum flow rate specified in Table 1 or Table 2;

2.3.2 The time and date of the measurement;

2.3.3 The reason for the exceedance; and

2.3.4 The duration of time that lapses between the applicable rated capacity or maximum flow rate first being exceeded and the next measurement where the applicable rated capacity or maximum flow rate is no longer exceeded.

3.0 Calibration of Flow Measuring Devices

3.1 All flow measuring devices that are required by regulation, by a condition in the Drinking Water Works Permit, or by a condition otherwise imposed by the Ministry of the Environment, Conservation and Parks, shall be checked and calibrated in accordance with the manufacturer's instructions.

3.2 If the manufacturer's instructions do not indicate how often to check and calibrate a flow measuring device, the equipment shall be checked and calibrated at least once every 12 months during which the drinking water system is in operation.

3.2.1 For greater certainty, if condition 3.2 applies, the equipment shall be checked and calibrated not more than 30 days after the first anniversary of the day the equipment was checked and calibrated in the previous 12-month period.

4.0 Additional Sampling, Testing and Monitoring

Drinking Water Health and Non-Health Related Parameters

4.1 For each treatment subsystem or treatment subsystem component identified in column 1 of Tables 5 and 6 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 at the sampling frequency listed in column 3 and at the monitoring location listed in column 4 of the same row.

| Table 5: Drinking Water Health Related Parameters | | | |
|---|----------------------------|--------------------------------|---------------------------------|
| Column 1 Treatment Subsystem or Treatment Subsystem Component Name | Column 2 Test Parameter | Column 3 Sampling Frequency | Column 4 Monitoring Location |
| Not Applicable | Not Applicable | Not Applicable | Not Applicable |

| Table 6: Drinking Water Non-Health Related Parameters | | | |
|---|----------------------------|--------------------------------|---------------------------------|
| Column 1 Treatment Subsystem or Treatment Subsystem Component Name | Column 2 Test Parameter | Column 3 Sampling Frequency | Column 4 Monitoring Location |
| Not Applicable | Not Applicable | Not Applicable | Not Applicable |

Environmental Discharge Parameters

4.2 For each treatment subsystem or treatment subsystem component identified in column 1 of Table 7 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 using the sample type identified in column 3 at the sampling frequency listed in column 4 and at the monitoring location listed in column 5 of the same row.

4.3 For the purposes of Table 7:

4.3.1 Manual Composite means the mean of at least three grab samples taken during a discharge event, with one sample being taken immediately following the

commencement of the discharge event, one sample being taken approximately at the mid-point of the discharge event and one sample being taken immediately before the end of the discharge event; and

4.3.2 Automated Composite means samples must be taken during a discharge event by an automated sampler at a minimum sampling frequency of once per hour.

4.4 Any sampling, testing and monitoring for the test parameter Total Suspended Solids shall be performed in accordance with the requirements set out in the publication "Standard Methods for the Examination of Water and Wastewater", 21st Edition, 2005, or as amended from time to time by more recently published editions.

Table 7: Environmental Discharge Parameters

| Column 1 Treatment Subsystem or Treatment Subsystem Component Name | Column 2 Test Parameter | Column 3 Sample Type | Column 4 Sampling Frequency | Column 5 Monitoring Location |
|---|----------------------------|-------------------------|-----------------------------------|---------------------------------|
| Not Applicable | Not Applicable | Not Applicable | Not Applicable | Not Applicable |

4.5 Pursuant to Condition 10 of Schedule B of this licence, the owner may undertake the following environmental discharges associated with the maintenance and/or repair of the drinking water system:

4.5.1 The discharge of potable water from a watermain to a road or storm sewer;

4.5.2 The discharge of potable water from a water storage facility or pumping station:

4.5.2.1 To a road or storm sewer; or

4.5.2.2 To a watercourse where the discharge has been dechlorinated and if necessary, sediment and erosion control measures have been implemented.

4.5.3 The discharge of dechlorinated non-potable water from a watermain, water storage facility or pumping station to a road or storm sewer;

4.5.4 The discharge of raw water from a groundwater well to the environment where if necessary, sediment and erosion control measures have been implemented; and

4.5.5 The discharge of raw water, potable water or non-potable water from a treatment subsystem to the environment where if necessary, the discharge has been dechlorinated and sediment and erosion control measures have been implemented.

5.0 Studies Required

5.1 Not Applicable

6.0 Source Protection

6.1 Not Applicable

Schedule D: Conditions for Relief from Regulatory Requirements

| | |
|----------------------------|---|
| System Owner | The Corporation of the Township of Macdonald, Meredith & Aberdeen Additional |
| Licence Number | 278-101 |
| Drinking Water System Name | Echo Bay Drinking Water System |
| Schedule D Issue Date | October 22th, 2018 |

1.0 Lead Regulatory Relief

- 1.1** Any relief from regulatory requirements previously authorized by the Director in respect of the drinking water system under section 38 of the SDWA in relation to the sampling, testing or monitoring requirements contained in Schedule 15.1 of O. Reg. 170/03 shall remain in force until such time as Schedule 15.1 of O. Reg. 170/03 is amended after June 1, 2009.

2.0 Other Regulatory Relief

- 2.1** Not Applicable

Schedule E: Pathogen Log Removal/Inactivation Credits

| | |
|----------------------------|--|
| System Owner | The Corporation of the Township of Macdonald, Meredith & Aberdeen Additional |
| Licence Number | 278-101 |
| Drinking Water System Name | Echo Bay Drinking Water System |
| Schedule E Issue Date | October 22th, 2018 |

1.0 Primary Disinfection Pathogen Log Removal/Inactivation Credits

Echo Bay Water Treatment Plant

Lake George [SURFACE WATER]

| Minimum Log Removal/ Inactivation Required | Cryptosporidium Oocysts | Giardia Cysts ^a | Viruses ^b |
|---|-------------------------|----------------------------|----------------------|
| Echo Bay Water Treatment Plant | 2 | 3 | 4 |

^a At least 0.5 log inactivation of Giardia shall be achieved by the disinfection portion of the overall water treatment process.

^b At least 2 log inactivation of viruses shall be achieved by disinfection.

| Log Removal/Inactivation Credits Assigned ^c | Cryptosporidium Oocysts | Giardia Cysts | Viruses |
|---|-------------------------|---------------|---------|
| Conventional Filtration | 2 | 2.5 | 2 |
| Chlorination [CT:Clearwell] | - | 0.5+ | 2+ |

^c Log removal/inactivation credit assignment is based on each treatment process being fully operational and the applicable log removal/inactivation credit assignment criteria being met.

| Treatment Component | Log Removal/Inactivation Credit Assignment Criteria |
|----------------------------|---|
| Conventional Filtration | <ol style="list-style-type: none"> 1. A chemical coagulant shall be used at all times when the treatment plant is in operation; 2. Chemical dosages shall be monitored and adjusted in response to variations in raw water quality; 3. Effective backwash procedures shall be maintained including filter-to-waste or an equivalent procedure during filter ripening to ensure that effluent turbidity requirements are met at all times; 4. Filtrate turbidity shall be continuously monitored from each filter; and 5. Performance criterion for filtered water turbidity of less than or equal to 0.3 NTU in 95% of the measurements each month shall be met for each filter. |
| Chlorination | <ol style="list-style-type: none"> 1. Sampling and testing for free chlorine residual shall be carried out by continuous monitoring equipment in the treatment process at or near a location where the intended contact time has just been completed in accordance with the Ministry's Procedure for Disinfection of Drinking Water in Ontario; and 2. At all times, CT provided shall be greater than or equal to the CT required to achieve the log removal credits assigned. |
| Primary Disinfection Notes | |



MUNICIPAL DRINKING WATER LICENCE

Licence Number: 278-101

Issue Number: 3

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, this municipal drinking water licence is issued under Part V of the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 to:

**The Corporation of the Township of Macdonald, Meredith & Aberdeen
Additional**

**208 Church St.
Echo Bay
ON P0F 1C0**

For the following municipal residential drinking water system:

Echo Bay Drinking Water System

This municipal drinking water licence includes the following:

| Schedule | Description |
|-----------------|--|
| Schedule A | Drinking Water System Information |
| Schedule B | General Conditions |
| Schedule C | System-Specific Conditions |
| Schedule D | Conditions for Relief from Regulatory Requirements |
| Schedule E | Pathogen Log Removal/Inactivation Credits |

DATED at TORONTO this 22th day of October, 2018

Signature

A handwritten signature in black ink that reads "A. Ahmed". The signature is written in a cursive style with a horizontal line underneath the name.

Aziz Ahmed, P.Eng.
Director

Schedule A: Drinking Water System Information

| | |
|----------------------------|---|
| System Owner | The Corporation of the Township of Macdonald, Meredith & Aberdeen Additional |
| Licence Number | 278-101 |
| Drinking Water System Name | Echo Bay Drinking Water System |
| Schedule A Issue Date | October 22th, 2018 |

The following information is applicable to the above drinking water system and forms part of this licence:

Licence

| | |
|--------------------------------------|---------------------------------|
| Licence Issue Date | October 22th, 2018 |
| Licence Expiry Date | June 6 th , 2021 |
| Application for Licence Renewal Date | December 6 th , 2020 |

Drinking Water Works Permit

| Drinking Water System Name | Permit Number | Issue Date |
|--------------------------------|---------------|------------------------------|
| Echo Bay Drinking Water System | 278-201 | June 30 th , 2016 |

Permits to Take Water

| Water Taking Location | Permit Number | Issue Date |
|--------------------------------|---------------|-------------------|
| Lake George (St. Mary's River) | 0256-A4JQAR | November 24, 2015 |

Financial Plans

| | |
|--|----------|
| The Financial Plan Number for the Financial Plan required to be developed for this drinking water system in accordance with O. Reg. 453/07 shall be: | 278-301 |
| Alternately, if one Financial Plan is developed for all drinking water systems owned by the owner, the Financial Plan Number shall be: | 278-301A |

Accredited Operating Authority

| Drinking Water System or Operational Subsystems | Accredited Operating Authority | Operational Plan No. | Operating Authority No. |
|---|--------------------------------|----------------------|-------------------------|
| Echo Bay Drinking Water System | Ontario Clean Water Agency | 278-401 | 278-OA2 |

Schedule B: General Conditions

| | |
|----------------------------|--|
| System Owner | The Corporation of the Township of Macdonald, Meredith & Aberdeen Additional |
| Licence Number | 278-101 |
| Drinking Water System Name | Echo Bay Drinking Water System |
| Schedule B Issue Date | October 22th, 2018 |

1.0 Definitions

1.1 Words and phrases not defined in this licence and the associated drinking water works permit shall be given the same meaning as those set out in the SDWA and any regulations made in accordance with that act, unless the context requires otherwise.

1.2 In this licence and the associated drinking water works permit:

“adverse effect”, “contaminant” and “natural environment” shall have the same meanings as in the EPA;

“alteration” may include the following in respect of this drinking water system:

- (a) An addition to the system,
- (b) A modification of the system,
- (c) A replacement of part of the system, and
- (d) An extension of the system;

“compound of concern” means a contaminant that, based on generally available information, may be emitted from a component of the drinking water system to the atmosphere in a quantity that is significant either in comparison to the relevant point of impingement limit or if a point of impingement limit is not available for the compound, then based on generally available toxicological information, the compound has the potential to cause an adverse effect as defined by the EPA at a point of impingement;

“Director” means a Director appointed pursuant to section 6 of the SDWA for the purposes of Part V of the SDWA;

“drinking water works permit” means the drinking water works permit for the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

“emission summary table” means the table that was prepared by a Professional Engineer in accordance with O. Reg. 419/05 and the procedure document listing the appropriate point of impingement concentrations of each compound of concern emitted from a component of the drinking water system and providing comparison to the corresponding point of impingement limit;

“EPA” means the *Environmental Protection Act*, R.S.O. 1990, c. E.19;

“financial plan” means the financial plan required by O. Reg. 453/07;

“licence” means this municipal drinking water licence for the municipal drinking water system identified in Schedule A of this licence;

“operational plan” means an operational plan developed in accordance with the Director’s Directions – Minimum Requirements for Operational Plans made under the authority of subsection 15(1) of the SDWA;

“owner” means the owner of the drinking water system as identified in Schedule A of this licence;

“permit to take water” means the permit to take water that is associated with the taking of water for purposes of the operation of the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

“point of impingement” means any point in the natural environment that is not on the same property as the source of the contaminant and as defined by section 2 of O. Reg. 419/05;

“point of impingement limit” means the appropriate standard from Schedule 1, 2 or 3 of O. Reg. 419/05 and if a standard is not provided for a compound of concern, the appropriate criteria listed in the Ministry of the Environment, Conservation and Parks publication titled “Summary of Standards and Guidelines to support Ontario Regulation 419: Air Pollution – Local Air Quality (including Schedule 6 of O. Reg. 419 on Upper Risk Thresholds)”, dated February 2008, as amended;

“procedure document” means the Ministry of the Environment, Conservation and Parks procedure titled “Procedure for Preparing an Emission Summary and Dispersion Modelling Report” dated July 2005, as amended;

“Professional Engineer” means a Professional Engineer who has been licenced to practice in the Province of Ontario;

“provincial officer” means a provincial officer appointed pursuant to section 8 of the SDWA;

“publication NPC-300” means the Ministry of the Environment, Conservation and Parks publication titled “Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning” dated August 2013, as amended;

“SDWA” means the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32;

“sensitive populations” means any one or a combination of the following locations where the health effects of nitrogen oxides emissions from emergency generators shall be considered using the point of impingement limit instead of the Ministry of the Environment, Conservation and Parks screening level for emergency generators:

- (a) health care units (e.g., hospitals and nursing homes),
- (b) primary/junior public schools,
- (c) day-care facilities, and
- (d) playgrounds;

“**subsystem**” has the same meaning as in Ontario Regulation 128/04 (Certification of Drinking Water System Operators and Water Quality Analysts);

“**surface water**” means water bodies (lakes, wetlands, ponds - including dug-outs), water courses (rivers, streams, water-filled drainage ditches), infiltration trenches, and areas of seasonal wetlands;

2.0 Applicability

- 2.1 In addition to any other requirements, the drinking water system identified above shall be established, altered and operated in accordance with the conditions of the drinking water works permit and this licence.

3.0 Licence Expiry

- 3.1 This licence expires on the date identified as the licence expiry date in Schedule A of this licence.

4.0 Licence Renewal

- 4.1 Any application to renew this licence shall be made on or before the date identified as the application for licence renewal date set out in Schedule A of this licence.

5.0 Compliance

- 5.1 The owner and operating authority shall ensure that any person authorized to carry out work on or to operate any aspect of the drinking water system has been informed of the SDWA, all applicable regulations made in accordance with that act, the drinking water works permit and this licence and shall take all reasonable measures to ensure any such person complies with the same.

6.0 Licence and Drinking Water Works Permit Availability

- 6.1 At least one copy of this licence and the drinking water works permit shall be stored in such a manner that they are readily viewable by all persons involved in the operation of the drinking water system.

7.0 Permit to Take Water and Drinking Water Works Permit

- 7.1 A permit to take water identified in Schedule A of this licence is the applicable permit on the date identified as the Schedule A Issue Date.
- 7.2 A drinking water works permit identified in Schedule A of this licence is the applicable permit on the date identified as the Schedule A Issue Date.

8.0 Financial Plan

- 8.1 For every financial plan prepared in accordance with subsections 2(1) and 3(1) of O. Reg. 453/07, the owner of the drinking water system shall:

- 8.1.1 Ensure that the financial plan contains on the front page of the financial plan, the appropriate financial plan number as set out in Schedule A of this licence; and
- 8.1.2 Submit a copy of the financial plan to the Ministry of Municipal Affairs and Housing within three (3) months of receiving approval by a resolution of municipal council or the governing body of the owner.

9.0 Interpretation

- 9.1 Where there is a conflict between the provisions of this licence and any other document, the following hierarchy shall be used to determine the provision that takes precedence:
 - 9.1.1 The SDWA;
 - 9.1.2 A condition imposed in this licence that explicitly overrides a prescribed regulatory requirement;
 - 9.1.3 A condition imposed in the drinking water works permit that explicitly overrides a prescribed regulatory requirement;
 - 9.1.4 Any regulation made under the SDWA;
 - 9.1.5 Any provision of this licence that does not explicitly override a prescribed regulatory requirement;
 - 9.1.6 Any provision of the drinking water works permit that does not explicitly override a prescribed regulatory requirement;
 - 9.1.7 Any application documents listed in this licence, or the drinking water works permit from the most recent to the earliest; and
 - 9.1.8 All other documents listed in this licence, or the drinking water works permit from the most recent to the earliest.
- 9.2 If any requirement of this licence or the drinking water works permit is found to be invalid by a court of competent jurisdiction, the remaining requirements of this licence and the drinking water works permit shall continue to apply.
- 9.3 The issuance of and compliance with the conditions of this licence and the drinking water works permit does not:
 - 9.3.1 Relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including the *Environmental Assessment Act*, R.S.O. 1990, c. E.18; and
 - 9.3.2 Limit in any way the authority of the appointed Directors and provincial officers of the Ministry of the Environment, Conservation and Parks to require certain steps be taken or to require the owner to furnish any further information related to compliance with the conditions of this licence or the drinking water works permit.

- 9.4 For greater certainty, nothing in this licence or the drinking water works permit shall be read to provide relief from regulatory requirements in accordance with section 46 of the SDWA, except as expressly provided in the licence or the drinking water works permit.

10.0 Adverse Effects

- 10.1 Nothing in this licence or the drinking water works permit shall be read as to permit:
- 10.1.1 The discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect; or
- 10.1.2 The discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters.
- 10.2 All reasonable steps shall be taken to minimize and ameliorate any adverse effect on the natural environment or impairment of the quality of water of any waters resulting from the operation of the drinking water system including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.
- 10.3 Fulfillment of one or more conditions imposed by this licence or the drinking water works permit does not eliminate the requirement to fulfill any other condition of this licence or the drinking water works permit.

11.0 Change of Owner or Operating Authority

- 11.1 This licence is not transferable without the prior written consent of the Director.
- 11.2 The owner shall notify the Director in writing at least 30 days prior to a change of any operating authority identified in Schedule A of this licence.
- 11.2.1 Where the change of operating authority is the result of an emergency situation, the owner shall notify the Director in writing of the change as soon as practicable.

12.0 Information to be Provided

- 12.1 Any information requested by a Director or a provincial officer concerning the drinking water system and its operation, including but not limited to any records required to be kept by this licence or the drinking water works permit, shall be provided upon request.

13.0 Records Retention

- 13.1 Except as otherwise required in this licence or the drinking water works permit, any records required by or created in accordance with this licence or the drinking water works permit, other than the records specifically referenced in section 12 of O. Reg. 170/03, shall be retained for at least 5 years and made available for inspection by a provincial officer, upon request.

14.0 Chemicals and Materials

- 14.1** All chemicals and materials used in the alteration or operation of the drinking water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60, NSF/61 and NSF/372.
- 14.1.1 In the event that the standards are updated, the owner may request authorization from the Director to use any on hand chemicals and materials that previously met the applicable standards.
- 14.1.2 The requirement for the owner to comply with NSF/372 shall come into force no later than August 21, 2018.
- 14.2** The most current chemical and material product registration documentation from a testing institution accredited by either the Standards Council of Canada or by the American National Standards Institution ("ANSI") shall be available at all times for each chemical and material used in the operation of the drinking water system that comes into contact with water within the system.
- 14.3** Conditions 14.1 and 14.2 do not apply in the case of the following:
- 14.3.1 Water pipe and pipe fittings meeting AWWA specifications made from ductile iron, cast iron, PVC, fibre and/or steel wire reinforced cement pipe or high density polyethylene (HDPE);
- 14.3.2 Articles made from stainless steel, glass, HDPE or Teflon®;
- 14.3.3 Cement mortar for watermain lining and for water contacting surfaces of concrete structures made from washed aggregates and Portland cement;
- 14.3.4 Gaskets that are made from NSF approved materials;
- 14.3.5 Food grade oils and lubricants, food grade anti-freeze, and other food grade chemicals and materials that are compatible for drinking water use; or
- 14.3.6 Any particular chemical or material where the owner has written documentation signed by the Director that indicates that the Ministry of the Environment, Conservation and Parks is satisfied that the chemical or material is acceptable for use within the drinking water system and the chemical or material is only used as permitted by the documentation.

15.0 Drawings

- 15.1** All drawings and diagrams in the possession of the owner that show any treatment subsystem as constructed shall be retained by the owner unless the drawings and diagrams are replaced by a revised or updated version showing the subsystem as constructed subsequent to the alteration.

- 15.2 Any alteration to any treatment subsystem shall be incorporated into process flow diagrams, process and instrumentation diagrams, and record drawings and diagrams within one year of the substantial completion of the alteration.
- 15.3 Process flow diagrams and process and instrumentation diagrams for any treatment subsystem shall be kept in a place, or made available in such a manner, that they may be readily viewed by all persons responsible for all or part of the operation of the drinking water system.

16.0 Operations and Maintenance Manual

- 16.1 An up-to-date operations and maintenance manual or manuals shall be maintained and applicable parts of the manual or manuals shall be made available for reference by all persons responsible for all or part of the operation or maintenance of the drinking water system.
- 16.2 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 achieve primary and secondary disinfection within the drinking water system, including where applicable:
 - a) A copy of the CT calculations that were used as the basis for primary disinfection under worst case operating conditions; and
 - b) The validated operating conditions for UV disinfection equipment, including a copy of the validation certificate;
 - 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;
- 16.3 Procedures necessary for the operation and maintenance of any alterations to the drinking water system shall be incorporated into the operations and maintenance manual or manuals prior to those alterations coming into operation.
- 16.4 The requirement for the owner to comply with condition 16.2.3 shall come into force on February 21, 2017.

Schedule C: System-Specific Conditions

| | |
|----------------------------|--|
| System Owner | The Corporation of the Township of Macdonald, Meredith & Aberdeen Additional |
| Licence Number | 278-101 |
| Drinking Water System Name | Echo Bay Drinking Water System |
| Schedule C Issue Date | October 22th, 2018 |

1.0 System Performance

Rated Capacity

- 1.1** For each treatment subsystem listed in column 1 of Table 1, the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed the value identified as the rated capacity in column 2 of the same row.

| Table 1: Rated Capacity | |
|--|--|
| Column 1 Treatment Subsystem Name | Column 2 Rated Capacity (m ³ /day) |
| Package Plant No. 1 | 708 |
| Package Plant No. 2 | 708 |
| Echo Bay Water Treatment Plant (Package Plant No. 1 and Package Plant No. 2) | 1,416 |

Maximum Flow Rates

- 1.2** For each treatment subsystem listed in column 1 of Table 2, the maximum flow rate of water that flows into a treatment subsystem component listed in column 2 shall not exceed the value listed in column 3 of the same row.

| Table 2: Maximum Flow Rates | | |
|--------------------------------------|---|-------------------------------------|
| Column 1 Treatment Subsystem Name | Column 2 Treatment Subsystem Component | Column 3 Maximum Flow Rate (L/s) |
| Not Applicable | Not Applicable | Not Applicable |

- 1.3** Despite conditions 1.1 and 1.2, a treatment subsystem may be operated temporarily at a maximum daily volume and/or a maximum flow rate above the values set out in column 2 of Table 1 and column 3 of Table 2 respectively for the purposes of fighting a large fire or for the maintenance of the drinking water system.
- 1.4** Condition 1.3 does not authorize the discharge into the distribution system of any water that does not meet all of the requirements of this licence and all other regulatory requirements, including compliance with the Ontario Drinking Water Quality Standards.

Residue Management

- 1.5** In respect of an effluent discharged into the natural environment from a treatment subsystem or treatment subsystem component listed in column 1 of Table 3:
- 1.5.1 The annual average concentration of a test parameter identified in column 2 shall not exceed the value in column 3 of the same row; and
- 1.5.2 The maximum concentration of a test parameter identified in column 2 shall not exceed the value in column 4 of the same row.

| Table 3: Residue Management | | | |
|---|------------------------------------|---|--|
| Column 1 Treatment Subsystem or Treatment Subsystem Component Name | Column 2 Test Parameter | Column 3 Annual Average Concentration (mg/L) | Column 4 Maximum Concentration (mg/L) |
| Not Applicable | Not Applicable | Not Applicable | Not Applicable |

UV Disinfection Equipment Performance

- 1.6** For each treatment subsystem or treatment subsystem component listed in column 1 of Table 4, and while directing water to the distribution system:
- 1.6.1 The UV disinfection equipment shall be operated such that a continuous pass-through UV dose is maintained throughout the life time of the UV lamp(s) that is at least the minimum continuous pass-through UV dose set out in column 2 of the same row at the maximum design flow rate for the equipment;
- 1.6.2 In addition to any other sampling, analysis and recording that may be required, the ultraviolet light disinfection equipment shall test for the test parameters set out in column 4 of the same row at a testing frequency of once every five (5) minutes or less and record the test data at a recording frequency of once every four (4) hours or less;
- 1.6.3 If there is a UV disinfection equipment alarm, the test parameters set out in column 4 of the same row shall be recorded at a recording frequency of once every five minutes or less until the alarm condition has been corrected;
- 1.6.4 A monthly summary report shall be prepared at the end of each calendar month which sets out the time, date and duration of each UV equipment alarm, the volume of water treated during each alarm period and the actions taken by the operating authority to correct the alarm situation;

| Table 4: UV Disinfection Equipment | | | |
|---|---|------------------------------|----------------------------|
| Column 1 Treatment Subsystem or Treatment Subsystem Component Name | Column 2 Minimum Continuous Pass-Through UV Dose (mJ/cm ²) | Column 3 Control Strategy | Column 4 Test Parameter |
| Not Applicable | Not Applicable | Not Applicable | Not Applicable |

2.0 Flow Measurement and Recording Requirements

2.1 For each treatment subsystem identified in column 1 of Table 1 and in addition to any other flow measurement and recording that may be required, 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.

2.2 For each treatment subsystem component identified in column 2 of Table 2 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for the flow rate and daily volume of water that flows into the treatment subsystem component.

2.3 Where a rated capacity from Table 1 or a maximum flow rate from Table 2 is exceeded, the following shall be recorded:

2.3.1 The difference between the measured amount and the applicable rated capacity or maximum flow rate specified in Table 1 or Table 2;

2.3.2 The time and date of the measurement;

2.3.3 The reason for the exceedance; and

2.3.4 The duration of time that lapses between the applicable rated capacity or maximum flow rate first being exceeded and the next measurement where the applicable rated capacity or maximum flow rate is no longer exceeded.

3.0 Calibration of Flow Measuring Devices

3.1 All flow measuring devices that are required by regulation, by a condition in the Drinking Water Works Permit, or by a condition otherwise imposed by the Ministry of the Environment, Conservation and Parks, shall be checked and calibrated in accordance with the manufacturer's instructions.

3.2 If the manufacturer's instructions do not indicate how often to check and calibrate a flow measuring device, the equipment shall be checked and calibrated at least once every 12 months during which the drinking water system is in operation.

3.2.1 For greater certainty, if condition 3.2 applies, the equipment shall be checked and calibrated not more than 30 days after the first anniversary of the day the equipment was checked and calibrated in the previous 12-month period.

4.0 Additional Sampling, Testing and Monitoring

Drinking Water Health and Non-Health Related Parameters

4.1 For each treatment subsystem or treatment subsystem component identified in column 1 of Tables 5 and 6 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 at the sampling frequency listed in column 3 and at the monitoring location listed in column 4 of the same row.

| Table 5: Drinking Water Health Related Parameters | | | |
|---|----------------------------|--------------------------------|---------------------------------|
| Column 1 Treatment Subsystem or Treatment Subsystem Component Name | Column 2 Test Parameter | Column 3 Sampling Frequency | Column 4 Monitoring Location |
| Not Applicable | Not Applicable | Not Applicable | Not Applicable |

| Table 6: Drinking Water Non-Health Related Parameters | | | |
|---|----------------------------|--------------------------------|---------------------------------|
| Column 1 Treatment Subsystem or Treatment Subsystem Component Name | Column 2 Test Parameter | Column 3 Sampling Frequency | Column 4 Monitoring Location |
| Not Applicable | Not Applicable | Not Applicable | Not Applicable |

Environmental Discharge Parameters

4.2 For each treatment subsystem or treatment subsystem component identified in column 1 of Table 7 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 using the sample type identified in column 3 at the sampling frequency listed in column 4 and at the monitoring location listed in column 5 of the same row.

4.3 For the purposes of Table 7:

4.3.1 Manual Composite means the mean of at least three grab samples taken during a discharge event, with one sample being taken immediately following the

commencement of the discharge event, one sample being taken approximately at the mid-point of the discharge event and one sample being taken immediately before the end of the discharge event; and

4.3.2 Automated Composite means samples must be taken during a discharge event by an automated sampler at a minimum sampling frequency of once per hour.

4.4 Any sampling, testing and monitoring for the test parameter Total Suspended Solids shall be performed in accordance with the requirements set out in the publication "Standard Methods for the Examination of Water and Wastewater", 21st Edition, 2005, or as amended from time to time by more recently published editions.

Table 7: Environmental Discharge Parameters

| Column 1 Treatment Subsystem or Treatment Subsystem Component Name | Column 2 Test Parameter | Column 3 Sample Type | Column 4 Sampling Frequency | Column 5 Monitoring Location |
|---|----------------------------|-------------------------|-----------------------------------|---------------------------------|
| Not Applicable | Not Applicable | Not Applicable | Not Applicable | Not Applicable |

4.5 Pursuant to Condition 10 of Schedule B of this licence, the owner may undertake the following environmental discharges associated with the maintenance and/or repair of the drinking water system:

4.5.1 The discharge of potable water from a watermain to a road or storm sewer;

4.5.2 The discharge of potable water from a water storage facility or pumping station:

4.5.2.1 To a road or storm sewer; or

4.5.2.2 To a watercourse where the discharge has been dechlorinated and if necessary, sediment and erosion control measures have been implemented.

4.5.3 The discharge of dechlorinated non-potable water from a watermain, water storage facility or pumping station to a road or storm sewer;

4.5.4 The discharge of raw water from a groundwater well to the environment where if necessary, sediment and erosion control measures have been implemented; and

4.5.5 The discharge of raw water, potable water or non-potable water from a treatment subsystem to the environment where if necessary, the discharge has been dechlorinated and sediment and erosion control measures have been implemented.

5.0 Studies Required

5.1 Not Applicable

6.0 Source Protection

6.1 Not Applicable

Schedule D: Conditions for Relief from Regulatory Requirements

| | |
|----------------------------|---|
| System Owner | The Corporation of the Township of Macdonald, Meredith & Aberdeen Additional |
| Licence Number | 278-101 |
| Drinking Water System Name | Echo Bay Drinking Water System |
| Schedule D Issue Date | October 22th, 2018 |

1.0 Lead Regulatory Relief

- 1.1** Any relief from regulatory requirements previously authorized by the Director in respect of the drinking water system under section 38 of the SDWA in relation to the sampling, testing or monitoring requirements contained in Schedule 15.1 of O. Reg. 170/03 shall remain in force until such time as Schedule 15.1 of O. Reg. 170/03 is amended after June 1, 2009.

2.0 Other Regulatory Relief

- 2.1** Not Applicable

Schedule E: Pathogen Log Removal/Inactivation Credits

| | |
|----------------------------|--|
| System Owner | The Corporation of the Township of Macdonald, Meredith & Aberdeen Additional |
| Licence Number | 278-101 |
| Drinking Water System Name | Echo Bay Drinking Water System |
| Schedule E Issue Date | October 22th, 2018 |

1.0 Primary Disinfection Pathogen Log Removal/Inactivation Credits

Echo Bay Water Treatment Plant

Lake George [SURFACE WATER]

| Minimum Log Removal/ Inactivation Required | Cryptosporidium Oocysts | Giardia Cysts ^a | Viruses ^b |
|---|-------------------------|----------------------------|----------------------|
| Echo Bay Water Treatment Plant | 2 | 3 | 4 |

^a At least 0.5 log inactivation of Giardia shall be achieved by the disinfection portion of the overall water treatment process.

^b At least 2 log inactivation of viruses shall be achieved by disinfection.

| Log Removal/Inactivation Credits Assigned ^c | Cryptosporidium Oocysts | Giardia Cysts | Viruses |
|---|-------------------------|---------------|---------|
| Conventional Filtration | 2 | 2.5 | 2 |
| Chlorination [CT:Clearwell] | - | 0.5+ | 2+ |

^c Log removal/inactivation credit assignment is based on each treatment process being fully operational and the applicable log removal/inactivation credit assignment criteria being met.

| Treatment Component | Log Removal/Inactivation Credit Assignment Criteria |
|----------------------------|---|
| Conventional Filtration | <ol style="list-style-type: none"> 1. A chemical coagulant shall be used at all times when the treatment plant is in operation; 2. Chemical dosages shall be monitored and adjusted in response to variations in raw water quality; 3. Effective backwash procedures shall be maintained including filter-to-waste or an equivalent procedure during filter ripening to ensure that effluent turbidity requirements are met at all times; 4. Filtrate turbidity shall be continuously monitored from each filter; and 5. Performance criterion for filtered water turbidity of less than or equal to 0.3 NTU in 95% of the measurements each month shall be met for each filter. |
| Chlorination | <ol style="list-style-type: none"> 1. Sampling and testing for free chlorine residual shall be carried out by continuous monitoring equipment in the treatment process at or near a location where the intended contact time has just been completed in accordance with the Ministry's Procedure for Disinfection of Drinking Water in Ontario; and 2. At all times, CT provided shall be greater than or equal to the CT required to achieve the log removal credits assigned. |
| Primary Disinfection Notes | |

Appendix II

Permit To Take Water



Ministry of the
Environment
Ministère de
l'Environnement

PERMIT TO TAKE WATER
Surface Water
NUMBER 6566-6FSPFS

Pursuant to Section 34 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:

The Corporation of the Township of Macdonald, Meredith and Aberdeen
Additional
208 Church Street
Echo Bay, Ontario, P0F 1C0
Canada

For the water taking from: Lake George (St. Mary's River)

Located at: 137 Highway 17 East
Macdonald, Meredith and Aberdeen Additional, District of Algoma

For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:

DEFINITIONS

- (a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34, OWRA.
- (b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.
- (c) "Ministry" means Ontario Ministry of the Environment.
- (d) "District Office" means the Sault Ste. Marie District Office.
- (e) "Permit" means this Permit to Take Water No. 6566-6FSPFS including its Schedules, if any, issued in accordance with Section 34 of the OWRA.
- (f) "Permit Holder" means The Corporation of the Township of Macdonald, Meredith and Aberdeen Additional.
- (g) "OWRA " means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended.

You are hereby notified that this Permit is issued subject to the terms and conditions outlined

below:

TERMS AND CONDITIONS

1. Compliance with Permit

- 1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated March 30, 2005 and signed by Keith Stringer, and all Schedules included in this Permit.
- 1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.
- 1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.
- 1.4 This Permit is not transferable to another person.
- 1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.
- 1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.
- 1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

2. General Conditions and Interpretation

- 2.1 Inspections
The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act*, R.S.O. 1990, the *Pesticides Act*, R.S.O. 1990, or the *Safe Drinking Water Act*, S. O. 2002.
- 2.2 Other Approvals
The issuance of, and compliance with this Permit, does not:
 - (a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act*, and the *Environmental Protection Act*, and any regulations made thereunder; or

(b) limit in any way the authority of the Director or a Provincial Officer to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

2.2.1 Prior to the taking of any water under the authorization of the Permit to Take Water, the Permit Holder shall ensure full compliance with the *Safe Drinking Water Act*, 2002 and its regulations. At no time does this permit authorize the taking of water when out of compliance with the *Safe Drinking Water Act*, 2002 and its regulations.

2.3 Information

The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

(a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or

(b) acceptance by the Ministry of the information's completeness or accuracy.

2.4 Rights of Action

The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

2.5 Severability

The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.

2.6 Conflicts

Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

3. Water Takings Authorized by This Permit

3.1 Expiry

This Permit expires on **November 15, 2015**. No water shall be taken under authority of this Permit after the expiry date.

3.2 Amounts of Taking Permitted

The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

Table A

| | Source Name / Description: | Source: Type: | Taking Specific Purpose: | Taking Major Category: | Max. Taken per Minute (litres): | Max. Num. of Hrs Taken per Day: | Max. Taken per Day (litres): | Max. Num. of Days Taken per Year: | Zone/ Easting/ Northing: |
|----|--------------------------------|---------------|--------------------------|------------------------|---------------------------------|---------------------------------|------------------------------|-----------------------------------|--------------------------|
| 1. | Lake George (St. Mary's River) | Lake | Municipal | Water Supply | 985.00 | 24.00 | 1418000.00 | 365.00 | 16 724243 5152442 |
| | | | | | | Total Taking: | 1418000.00 | | |

3.3 Water may only be taken under the authorization of this Permit to Take Water upon the expiry of Permit to Take Water 95-P-6070 on November 15, 2005.

4. Monitoring

4.1 The Permit Holder shall maintain a record of all water takings. This record shall include the dates and times of water takings, and the total measured amounts of water pumped per day for each day that water is taken under the authorization of this Permit. A separate record shall be maintained for each source. The Permit Holder shall keep all required records up to date and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request.

5. Impacts of the Water Taking

5.1 Notification

The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.

5.2 For Surface-Water Takings

The taking of water (including the taking of water into storage and the subsequent or simultaneous withdrawal from storage) shall be carried out in such a manner that streamflow is not stopped and is not reduced to a rate that will cause interference with downstream uses of water or with the natural functions of the stream.

6. Director May Amend Permit

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water*

Resources Act , Section 100 (3).

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.
2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.
3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, as amended, provides that the Notice requiring the hearing shall state:

1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

In addition to these legal requirements, the Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Permit to Take Water number;
6. The date of the Permit to Take Water;
7. The name of the Director;
8. The municipality within which the works are located;

And the Notice should be signed and dated by the appellant.

This notice must be served upon:

*The Secretary
Environmental Review Tribunal
2300 Yonge Street, 12th Floor
Toronto, Ontario M4P 1E4*

AND

*The Director, Section 34
Ontario Water Resources Act, RSO 1990,
Ministry of Environment
331-435 James St S
Thunder Bay ON P7E 6S7
Fax: (807)475-1754*

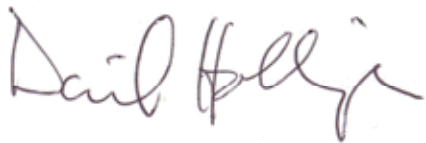
Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:

by telephone at (416) 314-4600

by fax at (416) 314-4506

by e-mail at www.ert.gov.on.ca

Dated at Thunder Bay this 24th day of October, 2005.



Dave Hollinger
Director, Section 34
Ontario Water Resources Act , R.S.O. 1990

Schedule A

This Schedule "A" forms part of Permit To Take Water 6566-6FSPFS, dated October 24, 2005.

Permit to Take Water 95-P-6070 issued to the Corporation of the Township of McDonald, Meredith and Aberdeen Additional on November 15, 1995.

Appendix III

Inspection Rating Record

Ministry of the Environment - Inspection Summary Rating Record (Reporting Year - 2020-2021)

DWS Name: ECHO BAY DRINKING WATER SYSTEM
DWS Number: 220009121
DWS Owner: Macdonald, Meredith & Aberdeen Additional, The Corporation Of The Township Of
Municipal Location: Macdonald Meredith & Aberdeen Additional

Regulation: O.REG 170/03

Category: Large Municipal Residential System

Type Of Inspection: Detailed

Inspection Date: November 26, 2020

Ministry Office: Sault Ste. Marie Area Office

Maximum Question Rating: 584

| Inspection Module | Non-Compliance Rating |
|--------------------------------|-----------------------|
| Permit To Take Water | 0 / 12 |
| Capacity Assessment | 0 / 42 |
| Treatment Processes | 0 / 93 |
| Process Wastewater | 0 / 10 |
| Operations Manuals | 0 / 42 |
| Logbooks | 0 / 30 |
| Certification and Training | 0 / 49 |
| Water Quality Monitoring | 0 / 136 |
| Reporting & Corrective Actions | 0 / 29 |
| Treatment Process Monitoring | 0 / 141 |
| TOTAL | 0 / 584 |

| | |
|-------------------------------|--------------|
| Inspection Risk Rating | 0.00% |
|-------------------------------|--------------|

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

Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2020-2021)

DWS Name: ECHO BAY DRINKING WATER SYSTEM
DWS Number: 220009121
DWS Owner: Macdonald, Meredith & Aberdeen Additional, The Corporation Of The Township Of
Municipal Location: Macdonald Meredith & Aberdeen Additional

Regulation: O.REG 170/03

Category: Large Municipal Residential System

Type Of Inspection: Detailed

Inspection Date: November 26, 2020

Ministry Office: Sault Ste. Marie Area Office

Maximum Question Rating: 584

Inspection Risk Rating 0.00%

FINAL INSPECTION RATING: 100.00%

Appendix IV

Key Reference and Guidance Material

Key Reference and Guidance Material for Municipal Residential Drinking Water Systems

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

To access these materials online click on their titles in the table below or use your web browser to search for their titles. Contact the Ministry if you need assistance or have questions at 1-866-793-2588 or waterforms@ontario.ca.

For more information on Ontario's drinking water visit www.ontario.ca/drinkingwater



| PUBLICATION TITLE | PUBLICATION NUMBER |
|--|-------------------------------------|
| FORMS: Drinking Water System Profile Information Laboratory Services Notification Adverse Test Result Notification | 012-2149E 012-2148E 012-4444E |
| Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils | Website |
| Procedure for Disinfection of Drinking Water in Ontario | Website |
| Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids | Website |
| Filtration Processes Technical Bulletin | Website |
| Ultraviolet Disinfection Technical Bulletin | Website |
| Guide for Applying for Drinking Water Works Permit Amendments, & License Amendments | Website |
| Certification Guide for Operators and Water Quality Analysts | Website |
| Guide to Drinking Water Operator Training Requirements | 9802E |
| Community Sampling and Testing for Lead: Standard and Reduced Sampling and Eligibility for Exemption | Website |
| Drinking Water System Contact List | 7128E01 |
| Ontario's Drinking Water Quality Management Standard - Pocket Guide | Website |
| Watermain Disinfection Procedure | Website |
| List of Licensed Laboratories | Website |

Principaux guides et documents de référence sur les réseaux résidentiels municipaux d'eau potable

De nombreux documents utiles peuvent vous aider à exploiter votre réseau d'eau potable. Vous trouverez ci-après une liste de documents que les propriétaires et exploitants de réseaux résidentiels municipaux d'eau potable utilisent fréquemment. Pour accéder à ces documents en ligne, cliquez sur leur titre dans le tableau ci-dessous ou faites une recherche à l'aide de votre navigateur Web. Communiquez avec le ministère au 1-866-793-2588, ou encore à waterforms@ontario.ca si vous avez des questions ou besoin d'aide.



Pour plus de renseignements sur l'eau potable en Ontario, consultez le site www.ontario.ca/eaupotable

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