

Point of Entry Treatment Option Information for Owners and Operators of Residential Drinking-Water Systems Under O. Reg. 170/03

Introduction

The Ministry of the Environment is committed to a regulatory framework that will safeguard public health and maintain confidence in Ontario's drinking water.

This fact sheet provides information on Point of Entry (POE) treatment to help you, as the owner or operating authority of a residential drinking water system, comply with the Drinking-Water Systems Regulation (O. Reg. 170/03) made under the *Safe Drinking Water Act, 2002 (SDWA)*.

Under the *SDWA*, owners and operators of drinking water systems that supply drinking water to the public have responsibilities to ensure the water is safe to drink.

This fact sheet only addresses the minimum requirements related to the use of the POE treatment of the **following three residential drinking water system** categories noted below, which are now permitted to have this treatment option under Schedule 3 of the recently amended O. Reg. 170/03.

Schedule 3 requirements related to the use of POE treatment by **non-residential** systems (subject to O. Reg. 170/03) are different from those applicable to residential systems. The owners of such systems must consult the regulation.

Which residential drinking water systems can now use Point of Entry Treatment?

Schedule 3 of the regulation sets out the requirements and restrictions regarding the use of POE treatment by the following residential drinking-water systems:

- small municipal residential systems
- non-municipal year-round residential systems (e.g. private subdivisions, year-round communal cottage developments, mobile home parks) serving 100 or fewer private residences
- non-municipal seasonal residential systems (e.g. seasonally operated cottage developments, trailer parks) with 100 or fewer service connections that are subject to O. Reg. 170/03 because they also serve a designated facility (a facility that serves a population that may be vulnerable to drinking water of poor quality e.g., school, day nursery or health care facility).

NOTE: Where a non-municipal residential system owner has direct access (i.e. does not require consent to gain access) to the location(s) of plumbing where all treatment equipment is installed (e.g. for many systems serving apartment, condominium, or townhouse buildings), the owner may qualify for exemptions from the requirement to provide

secondary disinfection (i.e., provision and maintenance of chlorine residual throughout the distribution system) without needing to follow Schedule 3. Owners of these systems can disregard this fact sheet if they have installed treatment equipment that is in compliance with the regulation, and all parts of the system and plumbing downstream of the equipment are enclosed in a building or other protective structure.

What is Point of Entry Treatment?

POE treatment is water treatment provided by individual POE treatment units. A POE treatment unit is defined in O. Reg. 170/03 as equipment that:

- is designed to provide primary disinfection (i.e., primary disinfection only or other treatment **and** primary disinfection)
- is installed in a drinking water system at or near where water from the system enters a building or other structure
- is connected to the plumbing associated with the building or other structure.

The most commonly used POE treatment is ultraviolet (UV) disinfection. Another disinfection process that is appropriate for POE application is ozonation although it is much less common since it requires on-site generation of ozone for the disinfection process. For systems that are required to provide filtration ahead of disinfection, filtration may be provided centrally (before water enters

the distribution system) or by individual filtration equipment installed on the plumbing ahead of the disinfection equipment in each POE treatment unit.

Where treatment other than filtration and disinfection is necessary to ensure that the produced drinking water meets the Ontario Drinking Water Quality Standards (O. Reg. 169/03), additional treatment may be provided centrally or by individual specialized equipment installed on the plumbing ahead of the disinfection equipment in each POE treatment unit. Such specialized treatment equipment that may be used as part of the POE treatment unit may include aeration equipment (removal of volatile organics), activated alumina packed columns (removal of arsenic, fluoride or uranium), granular activated carbon filters (removal of synthetic organics and volatile organics), various ion exchange columns (removal of arsenic, lead, fluoride, nitrate, radium, uranium), and reverse osmosis units (removal of most chemical contaminants found in water other than volatile organics).

For residential systems that are permitted by the regulation and choose to use the POE treatment option, a POE treatment unit must be connected to the plumbing of every building served by the system that is:

- a part of a “private residence” (or a building that has a private residence within it) served by the system; or
- a part of a “designated facility” (e.g., school, day nursery or health care facility) served by the system; or
- a part of a “public facility” that serves drinking water to the public (e.g., a recreational facility, food service establishment, hotel/motel, or a building with a public washroom or a drinking water fountain or shower such as community centre or library).

Remember, this fact sheet is only a summary

To be clear about your specific legal requirements, you must refer to the text of the Drinking-Water Systems Regulation (O. Reg 170/03) and the *Safe Drinking Water Act, 2002*. You can access these at www.e-laws.gov.on.ca or by calling our Public Information Centre at: 1-800-565-4923.

Why use Point of Entry Treatment?

By using POE treatment for your system as set out in O. Reg. 170/03, you do not have to provide secondary disinfection (i.e., provision and maintenance of chlorine residual throughout the distribution system).

It may also be more cost-effective to use POE treatment instead of a central treatment design when the drinking water system serves a small number of residences or facilities. Costs will vary on a case-to-case basis, depending on factors specific to the system and the chemical/radiological and microbiological characteristics of the available water supply.

What are the installation requirements?

As the owner or operating authority of a drinking water system, if you choose to use POE treatment for your residential drinking water system, you must comply with all of the following installation requirements and restrictions:

- all POE treatment units must be owned or leased by the drinking water system owner as the system owner is responsible for the testing of the drinking water and the maintenance of the POE treatment units (**as the system owner, you cannot pass these responsibilities on to the individual homeowners**)
- every building containing single or multiple private residences, **every** building or structure associated with a public facility, or a designated facility served by the system must have a POE treatment unit connected to the building's or structure's internal plumbing (buildings and other structures on the system that do not contain private residences and are not associated with a public or designated facility are not required to have POE treatment units installed)
- each POE treatment unit must have an automatic shut-off interrupting the flow of water to users should the equipment malfunction, lose power or cease to provide the appropriate level of disinfection (should this occur, the person responsible to carry out adjustments to the treatment equipment must take appropriate action at the location where the equipment is installed before water is again directed to the users)
- none of the POE treatment units may use chlorination or chloramination.

When and how are drinking water system users to be notified?

As the owner of a residential drinking water system that uses POE treatment, you must provide the occupants of every private residence and the operators of every designated facility and public facility served by the drinking water system with a description of the location and appearance of the POE treatment unit located in their residence or facility so that they can identify the unit. You must also inform the same people that:

- the water supplied to the private residence, designated facility or public facility, is treated by equipment known as a POE treatment unit, the purpose of which is to ensure the safety of the water
- the POE treatment unit is owned or leased by the owner of the drinking water system and does not belong to the owner or occupants of the property where the unit is installed
- no person should damage or tamper with the POE treatment unit
- the POE treatment unit has an automatic shut-off to ensure that no water is directed to users of the water treated by the equipment should the equipment malfunction, lose power or cease to provide the appropriate level of disinfection
- you or the operating authority of the system will from time to time require access to the property where the POE treatment unit is installed to sample water and maintain the unit
- you or the operating authority of the system should be contacted if the water supply is interrupted, if there is reason to believe that the POE treatment unit requires repairs, or if there are any questions about the POE treatment unit
- you or the operating authority of the system can be reached at the contact information specified which must be provided.

The information listed above must be communicated to the above-noted persons in the following manner:

- by a written statement, and
- verbally in person or by telephone conversation with an apparently adult occupant of the residence or operator of the facility; or
- by a written statement to the owner of the private residence, designated facility or public facility if the owner is not an occupant of the private residence or the operator of the facility.

When and how is the Ministry of the Environment to be notified?

Once all of the occupants of every private residence and operators of every designated facility and public facility served by the system have been informed about the POE treatment units, you must give the ministry a written notice certifying that all required information (as listed above) regarding the POE treatment system has been provided to and discussed with the above noted persons in the manner specified.

The required written notice is to be given to the Ministry of the Environment by the owner or operator by submitting a completed *Notice of Point of Entry Disclosure for Your Drinking Water Users* form (available online at www.ene.gov.on.ca/envision/water/sdwa/forms.htm).

What are the Point of Entry Treatment unit record keeping requirements?

As the owner or operating authority of a drinking water system using POE treatment, you must have a record that:

- sets out the location of each POE treatment unit
- states the date it was installed
- for municipal residential systems which are subject to the Ministry of the Environment approval requirements, contains a confirmation by the owner of the system that each POE treatment unit was installed in accordance with the approval granted under the *SDWA*.

A record must be made each time you are unable to obtain access to a property where a POE treatment unit is installed as per the regulation.

What if new buildings or structures are served by the drinking water system?

If additional private residences, designated facilities or public facilities begin to be served by a drinking water system using POE treatment in the future, POE treatment units must be installed in those buildings and facilities. All information must be provided promptly to the new residents/owners/operators as described above, under the heading “**When and how are drinking water system users to be notified?**”

What if there are new occupants or operators?

If the occupants of a private residence or the operator of a designated facility or public facility served by the system has changed, then you must provide all the information laid out above to the new occupants or the new operator in writing and verbally, as described above.

Point of Entry Treatment unit maintenance checks

For small municipal residential systems using POE treatment, as the system owner or operator, you must ensure that each POE treatment unit is checked at least once every 12 months to confirm the unit is functioning properly. You must also ensure that a record is made of the date and time of every check performed, along with the name of the person who performed the check and the results of the check.

For all other systems using POE treatment, you must:

- ensure that the POE treatment units are checked as set out in the maintenance schedule included in the Engineering Evaluation Report for your system (you are required to have the Engineering Evaluation Report prepared by a Professional Engineer within 30 days after the installation of all the POE treatment equipment is installed)
- ensure that a record is made of the date and time of every maintenance related action taken; and
- ensure that the name of the person who took the action and the results of the action are recorded.

Taking distribution samples for microbiological testing when using Point of Entry Treatment

Distribution samples (drinking water taken from distribution or plumbing fixtures such as taps) for the required microbiological testing in systems using POE treatment must be taken from plumbing fixtures downstream of the POE treatment units, as detailed in the chart on the following page.

Microbiological Testing Requirements

System	Frequency
Small municipal residential	At least one sample every two weeks if the system provides treatment equipment in accordance with Schedule 1 or 2 of O. Reg. 170/03, collected on a rotating basis so that a sample is taken from a location downstream of each POE treatment unit installed within the system at least once every 24 months.
Non-municipal year-round residential	At least one sample every two weeks if the system provides treatment equipment in accordance with Schedule 1 or 2 of O. Reg. 170/03, collected on a rotating basis so that a sample is taken from a location downstream of each POE treatment unit installed within the system at least once every 24 months.
Non-municipal seasonal residential (serving a designated facility) that: <ul style="list-style-type: none"> • does not supply water seasonally to a major residential development • supplies water seasonally to a trailer park or campground (six or more service connections) 	At least one sample every month if the system provides all treatment required by Schedule 2 of O. Reg. 170/03, collected on a rotating basis so that after a sample is taken from a location downstream of a particular POE treatment unit, another sample is not taken from a location downstream of that POE unit until samples have been taken from locations downstream of all other POE treatment units installed within the system.
Non-municipal seasonal residential (serving a designated facility) that: <ul style="list-style-type: none"> • does supply water seasonally to a major residential development (six or more homes or cottages) 	At least one sample every month if the system provides all treatment required by Schedule 2 of O. Reg. 170/03, collected on a rotating basis so that a sample is taken from a location downstream of each POE treatment unit installed within the system at least once every 24 months.

The frequencies outlined above are set in the regulation as minimum requirements only. If you, as the owner or operating authority have reason to believe that testing should occur more frequently due to external reasons (e.g. work has recently been done in the infrastructure bringing the water to the POE treatment units or if there was an unusual odor/color change) you may do so.

Taking distribution samples for chemical testing when using Point of Entry Treatment

In general, water samples for the required chemical testing (other than samples for the testing for lead) must be taken from the point where water enters the distribution system or plumbing. However, in the case of systems using POE treatment units, the samples may be taken from the point where the system's water intake or well pumping station (or the system's filtration plant, if central filtration is used) discharges water into the system's distribution system. Water samples for the testing for lead must be taken from a point within the distribution system or plumbing that is likely to have an elevated concentration of lead.

These samples must be taken at frequencies specific to the system category, as set out in the chart below.

The frequencies outlined in the chart are set in the regulation as minimum requirements only. If you as the owner or operating authority have reason to believe that testing should occur more frequently due to external reasons (e.g. work has recently been done in the infrastructure bringing the water to the POE treatment units or if there was an unusual odour/colour change) you may do so.

Chemical Testing Requirements

System	Frequency
Small municipal residential	<ul style="list-style-type: none"> • at least one sample every three months for nitrate and nitrite • at least one sample every 12 months for lead • at least one sample every 60 months for all other required chemical parameters
Non-municipal year-round residential	<ul style="list-style-type: none"> • at least one sample every three months for nitrate and nitrite • at least one sample every 12 months for lead • at least one sample every 60 months for all other required chemical parameters
Non-municipal seasonal residential (serving a designated facility)	<ul style="list-style-type: none"> • at least one sample every three months for nitrate and nitrite • at least one sample every 60 months for all other required chemical parameters (including lead)

For More Information

If you would like other guides and fact sheets related to drinking water, please contact the Ministry of the Environment's Public Information Centre at: 1-800-565-4923 or visit the Ministry of the Environment's website at www.ene.gov.on.ca.

To sign up for drinking water updates, please send an email to drinking.water@ene.gov.on.ca.