



Report Date: February 28, 2024

Goderich Drinking Water System – 2023 Compliance Summary

This document is a compliance summary for the Goderich water supply for the year 2023 as per Reg. 170/03 Schedule 22. A full summary of the water system's test results, flows and significant activities can be found in the Annual Report.

Responsibility for Water Supply, Treatment and Storage

Provincial Legislation sets out the responsibility for water supply in the Town of Goderich. Under the *Municipal Act, 2001*, the Town of Goderich is responsible for the treatment and storage of water in the Town of Goderich. Veolia Water has been retained by the Town of Goderich as the Operating Authority for the Goderich Drinking Water System.

System Description

The Goderich water system is characterized as a "surface water" system and is classified as a large municipally owned water system. The plant and the equipment have a daily maximum capacity to deliver 12,000 cubic meters of potable water to the Town of Goderich.

The water source is Lake Huron and the water treatment plant is located at 100 Cove Rd. in Goderich. The water treatment plant is a Supervisory Control and Data Acquisition (SCADA) controlled conventional surface water treatment plant providing chemically assisted filtration and chlorine gas disinfection. The plant is equipped with an intake, coarse prescreening, rapid mixer, flocculation basins, sedimentation basins, rapid sand/anthracite filters, gas chlorinators and a chlorine contact reservoir.

The plant, originally constructed in 1964, was upgraded in 1988 with the chlorine contact facilities being added in 2005. Improvements to the SCADA system were completed in 2007. The new PLC was added to the SCADA in 2020.

The attached distribution system is a combination of PVC, ductile iron and cast iron water mains. Much of the system has been updated since 1989 and the systematic replacement plan began in that year and continues with annual projects scheduled based on necessity.

In addition to the water mains and associated valves and hydrants, the distribution system equipment includes storage facilities which include an in ground reservoir containing 5,000 cubic meters of water and an elevated tank constructed in 1949, containing 941 cubic meters.



Disinfectant

Disinfection is achieved at the Goderich water plant through the use of gaseous chlorine. This chemical can also be used at the intake for zebra mussel control, if needed. Chlorine can be dosed in a dilute form at two points in the system, referred to as (PRE) and (POST) Chlorination.

The PRE-chlorination point is just prior to the filters.

The POST-chlorination point that can be utilized is at the point of entry to the clear well, immediately after the water has passed through the filters.

In 2023, the average chlorine dosages ranged from 2.47 mg/L to 2.99 mg/L depending on the quality of the raw water. The free chlorine residual was monitored at the point of entry to the distribution system. The target residual is between 0.99 mg/L and 1.90 mg/L depending on the water quality. The yearly average chlorine residual for 2023 was 1.73 mg/L.

Additional chlorination is periodically added at the Booster Station in-ground reservoir using 12% sodium hypochlorite as needed. The average chlorine residual for 2023 was 1.03 mg/L at the Booster Station.

Fluoride

The Goderich water plant added supplementary fluoride to the treated water in 2023. This was done using a 23.25% hydrofluosilicic acid solution. The target residual for dosage is between 0.60 mg/L and 0.80 mg/L as recommended by the Huron Public Health (HPPH). The average monthly residuals for fluoride were between 0.47 mg/L and 0.78 mg/L. The MAC for fluoride is 1.50 mg/L.

Carbon

The Goderich water plant has the capability of feeding powdered activated carbon. This chemical is used to prevent taste and odour problems associated with dying algae blooms. It can also be used to remove petroleum products from the water. It was not necessary to feed this chemical in 2023.

Flows

The Goderich water treatment plant has a permit to take water (PTTW), #5204-C5JGSY which allows the transfer of 15,890 cubic metres per day. The PTTW was issued on August 3, 2021 and will expire on August 31, 2031. This was not exceeded in 2023.

The Goderich Drinking Water System Drinking Water Works Permit (#084-201 Issue #5) was issued August 11, 2020. The maximum daily flow in 2023 was 7,223 cubic metres per day or 45.45 % of the PTTW. The daily average of 3,474 cubic metres was 21.86 % of the PTTW.



Consideration should be given to the actual production of deliverable drinking water. Veolia would estimate that the actual production of drinking water would be 10,000 m³ per day. With this in mind, the maximum daily flow is **72.23** % per day and the annual average is **34.74** %.

Complete monthly summaries of the flows are included in the 2023 Annual Report.

The maximum flow is 165 litres per second. The major limiting factor at the water plant is the capacity of the filters. The maximum allowed flow corresponds with the maximum flow at which the filters can efficiently remove sediment and the pathogens contained within the raw water from Lake Huron.

The maximum flow across the filters was 7,223 cubic meters per day in 2023 as recorded by the raw water flow meter.

Adverse Water Quality Incidents (AWQI)

There were no Adverse Water Quality Incidents in 2023.

Precautionary Boil Water Notices

Precautionary Boil Water Notices (PBWN) can be issued by the operating authority as a result of low pressure incidents on limited portions of the distribution system. These are put in place on the advice of the HPPH as acts of due diligence. There were (0) PBWN's issued to residents in 2023.

Boil Water Advisory

There were no Boil Water Advisories issued by the HPPH for the Goderich water system in 2023.

Annual Ontario Ministry of The Environment, Conservation and Parks Inspection

The most recent Ministry of Environment, Conservation and Parks (MECP) Inspection was completed by Ron Burrell on January 12, 2023.

There were no non-compliances noted. The rating was 100%.



Infrastructure Assessment

Regular contact is maintained with the Town of Goderich's representative. The Jobs Plus program is continually updated with preventative and corrective maintenance issues and a complete summary can be forwarded to the client upon their request. There are monthly reports that ensure communication between the operating authority and the client. Through periodic meetings, issues and capital items are discussed. Capital items for 2023 were submitted to the Town's representative in November, 2022.

The Annual Management review was conducted by the operating authority on November 2, 2023 as per the DWQMS requirement in Element 14. The semi-annual meeting between the client and the operating authority took place by May 31 and November 24, 2023 as per Element 15 of the DWQMS.

The Internal Audit was last completed on December 19, 2023 and the last Risk Assessment was last completed April 20, 2022. The Surveillance Audit was completed by SAI and Accreditation May 8, 2023. An Emergency Response Exercise was conducted by the Town of Goderich on September 21, 2023 which Veolia's Compliance Coordinator and Lead Operator attended.

Sarah Telford Compliance Coordinator

Veolia Water Canada, Inc.

100 Cove Road, P.O. Box 185
Goderich, Ontario N7A 3Z2
Tel 519-524-6583 ext 317 - Fax 519-524-9358

sarah.telford@veolia.com
www.veoliawaterna.com