



Established 1868

1045 West Shore Road, Pelee Island, Ontario, Canada N0R 1M0
Telephone: 519-724-2931 \ Toll Free: 1-866-889-5203 \ Fax: 519-724-2470
Email: info@pelee.ca \ Website: www.pelee.org

Annual Performance Report

Pelee West Shore Water System

Drinking Water System # 220008177

2018

Prepared for the Municipality of Pelee Island

By the Ontario Clean Water Agency

April 23, 2019

The Corporation of the Township of Pelee is required to provide an **Annual Report** for its **Ministry of the Environment Regulated Drinking Water System (DWS)** under *Drinking Water Systems Regulation O. Reg. 170/03* in accordance with the *Safe Drinking Water Act* (as amended). The purpose of this letter and its attachments is to satisfy this requirement and report the dates from January 1, 2018 until December 31, 2018.

The Township of Pelee owns and operates the **Pelee West Shore Water System**, which is a **Non - Class Water Treatment and Distribution System** serving a **Designated Facility** having a DWS Registration Number 220008177. The **Pelee West Shore Water System** operates under *Ontario Regulation 170/03*. The **Pelee West Shore Water System** supplies one additional drinking water system within the Township; **Pelee East Shore Distribution** receives its water via tanker truck from the **Pelee West Shore Water System**. There were no “Boil Water Advisory’s” issued by the Windsor Essex County Health Unit in 2018. This Report outlines the sampling and direct connections to the **Pelee West Shore Water System**.

The **Pelee West Shore Water System** is designated as a **Small-Municipal, Non-Residential DWS** and serves a population of 7; having 4 residential connections and 1 designated facility. There are 18 total service connections. The **Pelee West Shore Well Supply System** utilizes Ultra-Membrane Filtration, Ultraviolet Light and Sodium Hypochlorite (12% solution) Injection as its methods of treatment. The Treatment System utilizes continuous monitors for Turbidity, Chlorine, Temperature, PH and Ultraviolet Dose to monitor the water entering, being treated, and sent to the Distribution Systems. The **Pelee West Shore Water System** does not include Fluoridation in its process. Since upgraded in 2015 the System utilizes a Winter and Summer Mode of Operations. Summer Operations included the Utilization of the 140m³ Standpipe Storage Tank. While Winter Operation included the Utilizing in Plan Storage only.

Under *Schedule 12* of the *Drinking Water Systems Regulation O. Reg. 170/03* the Township of Pelee is required to complete Microbiological Testing of its Raw Intake, Treatment and Distribution Systems. Table 1 outlines these Analytical Results.

Table 1
Schedule 12 Sampling Completed
January 1, 2018 – December 31, 2018

Sample Type	# of Samples	Range of E. Coli Results min # – max #	Range of Total Coliform Results min # – max #
Raw	12	0 – <10	0 - >2000
Treated	12	0 – 0	0 – 0
Distribution	12	0 – 0	0 – 0

Note – All analysis results in CFU's (Colony Forming Units)

The Township of Pelee is also required to take Treatment and Distribution samples for various Inorganic Parameters under the *Drinking Water Systems Regulation O. Reg. 170/03, Schedule 6-1.1 (4), Schedule 23 and Schedule 24*. The Inorganic Parameter for Nitrate and Nitrite Samples are required to be taken quarterly or not longer than 120 days between sampling. A total of three (3) Nitrate and Nitrite were taken for the purpose of this Report complying with the Sampling Program. Table 2 outlines these Analytical Results.

Table 2
Inorganic Sampling Completed
January 1, 2018 – December 31, 2018

Parameter	Sample Date	Result	Unit of Measure	Exceedance
Nitrate	March 20	0.7	Mg/L	No
	June 19	0.6	Mg/L	No
	September 18	0.2	Mg/L	No
	December 11	0.6	Mg/L	No
Nitrite	March 20	<0.1	Mg/L	No
	June 19	<0.1	Mg/L	No
	September 18	<0.1	Mg/L	No
	December 11	<0.1	Mg/L	No
Nitrate + Nitrite	March 20	0.7	Mg/L	No
	June 19	0.6	Mg/L	No
	September 18	0.2	Mg/L	No
	December 11	0.6	Mg/L	No

Mg/L – milligrams per litre
 Ug/L – micrograms per litre

Under *Schedule 9* of the *Drinking Water Systems Regulation O. Reg. 170/03*, the Township of Pelee is required to detail the Distribution Grab Samples and Treatment Operation Continuous Samples in this Annual Report. Elevated Finished Water Turbidity from continuous monitoring was recorded during maintenance and flushing activities within the Plant. These results are listed below in Table 3.

Table 3
Schedule 23 Sampling Results
January 1, 2018 – December 31, 2018

Analysis	Distribution (grab sample)		Treated (Continuous Sample)	
	# taken	Min – Max	# taken	Min – Max
Free Chlorine (mg/L)	103	0.32 – 2.09	Every 2 min	0.0 – 5.00
Turbidity (NTU)	NP	NP	Every 2 min	0.0 – 1.00

Mg/L – milligrams per litre
 NTU – Nephelometric Turbidity Units
 NP – Not Performed
 Note – Continuous Samples taken from SCADA monitoring data

The **SCADA** System began monitoring and recording Filter Turbidity Effluent that could be interpreted in June 2016. Under the document, *Procedures for Disinfection of Drinking Water in Ontario*, the Ultra-Membrane Filters Utilized at the **WTP** must operate within specified Turbidity Effluent Criteria to be considered for disinfection. The filters must produce water with a Turbidity not exceeding 0.10 at least 99% of their run time. In Table 4 the Monthly Average Turbidity Effluent has been tabulated.

Table 4
Ultra-Membrane Filter Effluent Turbidity
Monthly Averages
January – December 2018

Month	Average (NTU)	Annual Average
January	0.059	0.042
February	0.063	
March	0.036	
April	0.022	
May	0.026	
June	0.029	
July	0.034	
August	0.041	
September	0.047	
October	0.051	
November	0.058	
December	0.045	

NTU – Nephelometric Turbidity Units