



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

FOREMAN
DRINKING WATER SYSTEM

Small Municipal Residential

SECTION 11
ANNUAL REPORT

For the period of
JANUARY 1, 2016 TO DECEMBER 31, 2016

Prepared by the Ontario Clean Water Agency
For The Town of South Bruce Peninsula

Drinking Water System Number:	220007711
Drinking Water System Name:	Foreman Drinking Water System
Drinking Water System Owner:	Town of South Bruce Peninsula
Drinking Water System Category:	Small Municipal Residential
Reporting Period:	January 1, 2016 to December 31, 2016

Does the Drinking Water System serve more than 10,000 people?

No.

Is your annual report available to the public at no charge on a web site on the Internet?

Yes.

Location where the Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection:

Town of South Bruce Peninsula
 315 George Street
 Wiarton, Ontario
 N0H 2T0
 519-534-1400

Drinking-Water Systems (if any), which receive all of their drinking water from your system:

n/a.

Did you provide a copy of the annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

n/a.

How system users are notified that the annual report is available, and is free of charge:

- Public access/notice via the web
- Public access/notice via Government Office
- Public access/notice via a newspaper
- Public access/notice via Public Request
- Public access/notice via a Public Library
- Public access/notice via other method: _____

Description of Drinking Water System:

The Foreman Drinking Water System is a Class II Water Treatment and Class I Water Distribution System.

The Foreman Water Works Drinking-Water System is supplied by a deep drilled GUDI well. The well pumphouse houses the treatment and control facilities which include:

- Iron/Manganese Removal (potassium permanganate system/greensand filters)
- Cartridge Filter System (to assist with UV disinfection)
- Ultraviolet Disinfection System
- Chlorination System (sodium hypochlorite, pre-chlorination and post chlorination)
- Clearwell/Storage Tank (for achieving CT, the water is also used to backwash the greensand filters)
- Filter Backwash Tank (clarified supernatant discharged by gravity to an existing ditch)
- Hydro pneumatic Tanks (to maintain pressure for highlift discharge and for the greensand filters)
- Diesel generator set

Programmable logic controller and associated SCADA system (for control of the water treatment plant)

List of water treatment chemicals used during the reporting period:

<ul style="list-style-type: none"> Sodium Hypochlorite 12% Potassium Permanganate

Significant expenses were incurred to:

<input type="checkbox"/>	Install required equipment
<input type="checkbox"/>	Repair required equipment
<input checked="" type="checkbox"/>	Replace required equipment
<input type="checkbox"/>	No significant expenses were incurred

Description of expenses:

<ul style="list-style-type: none"> Replaced water pump on genset Replaced chemical dosing pump.

Details on the notices submitted in accordance with subsection 18 (1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre:

Date of Incident	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
n/a	n/a	n/a	n/a	n/a	n/a

Table 1. Microbiological testing done under Schedule 10, 11 or 12 of Regulation 170/03 during this reporting Period

Location	Number of Samples	Range of E.coli Results		Range of Total Coliforms Results		Number of HPC Samples	Range of HPC Samples	
		Minimum	Maximum	Minimum	Maximum		Minimum	Maximum
Well WLP8 (RW)	12	0	0	0	0	n/a	n/a	n/a
Distribution (DW)	52	0	0	0	0	52	0	1

Table 2. Operational testing done under Schedule 7, 8 or 9 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results	
		Minimum	Maximum
Turbidity, On-Line (NTU) - Filter	8760	0	0.63
Free Chlorine Residual, On-Line (mg/L) - TW	8760	0.38	2
Free Chlorine Residual, In-House (mg/L) - DW	104	0.69	1.76

NOTE: Record the unit of measure if it is not milligrams per litre.

NOTE: For continuous monitors use 8760 as the number of samples

Table 3. Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Date of Order of MDWL	Parameter	Date Sampled	Result	MDWL Allowable Annual Average Concentration
March 19, 2015 094-104 (Issue 2)	Total Suspended Solids (Filter backwash)	2016 (Quarterly)	2.11 mg/L	25 mg/L

Table 4. Summary of Inorganic parameters tested during this reporting period or most recent sample results

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Exceedance
Antimony: Sb (ug/L) - TW	2016/01/10	<MDL 0.02	No
Arsenic: As (ug/L) - TW	2016/01/10	<MDL 0.2	No
Barium: Ba (ug/L) - TW	2016/01/10	14.2	No
Boron: B (ug/L) - TW	2016/01/10	89.3	No
Cadmium: Cd (ug/L) - TW	2016/01/10	<MDL 0.003	No
Chromium: Cr (ug/L) - TW	2016/01/10	0.38	No
Mercury: Hg (ug/L) - TW	2016/01/10	<MDL 0.01	No
Selenium: Se (ug/L) - TW	2016/01/10	<MDL 0.04	No
Uranium: U (ug/L) - TW	2016/01/10	0.093	No
Fluoride (mg/L) - TW	2016/03/07	1.26	No
Nitrite (mg/L) - TW	2016/01/11	<MDL 0.003	No
Nitrite (mg/L) - TW	2016/04/11	<MDL 0.003	No
Nitrite (mg/L) - TW	2016/07/11	<MDL 0.003	No
Nitrite (mg/L) - TW	2016/10/17	<MDL 0.003	No
Nitrate (mg/L) - TW	2016/01/11	0.007	No
Nitrate (mg/L) - TW	2016/04/11	0.006	No
Nitrate (mg/L) - TW	2016/07/11	0.006	No
Nitrate (mg/L) - TW	2016/10/17	0.007	No
Sodium: Na (mg/L) - TW	2012/01/06	10.8	No

NOTE: There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

NOTE: Schedule 23, Schedule 24, Sodium and Fluoride are scheduled to be taken every 60 months. The most current Schedule 23 was sampled in January 2016, the next Schedule 23 is scheduled for January 2021. The most current Sodium was sampled in January 2012, the next scheduled Sodium will be in January 2017. The most current reportable sample for Fluoride was sampled January 2012, the next Fluoride is scheduled to be sampled in January 2017, and additional sample was taken in March 2016 for monitoring purposes.

Table 5. Summary of lead testing under Schedule 15.1 during this reporting period.

Location Type	Number of Samples	Range of Lead Results		Number of Exceedances
		Minimum	Maximum	
Plumbing	n/a	n/a	n/a	n/a
Distribution (ug/L)	-	-	-	-

NOTE: The Foreman Drinking Water System qualifies for the plumbing exemption as per Ontario Regulation 170/03 Schedule 15.1-5 (9) (10). Distribution sampling for lead occurs every 36 months. One (1) distribution lead sample is taken during each sampling period (i.e. 2 samples for the sampling year). The most current distribution lead sampling occurred in 2015. The next round of lead sampling is scheduled for 2018.

Table 6. Summary of Organic parameters sampled during this reporting period or most recent sample results.

Parameter	Sample Date	Result Value	Exceedance
Alachlor (ug/L) - TW	2016/01/10	<MDL 0.02	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2016/01/10	<MDL 0.01	No
Azinphos-methyl (ug/L) - TW	2016/01/10	<MDL 0.05	No
Benzene (ug/L) - TW	2016/01/10	<MDL 0.32	No
Benzo(a)pyrene (ug/L) - TW	2016/01/10	<MDL 0.004	No
Bromoxynil (ug/L) - TW	2016/01/10	<MDL 0.33	No
Carbaryl (ug/L) - TW	2016/01/10	<MDL 0.05	No
Carbofuran (ug/L) - TW	2016/01/10	<MDL 0.01	No
Carbon Tetrachloride (ug/L) - TW	2016/01/10	<MDL 0.16	No
Chlorpyrifos (ug/L) - TW	2016/01/10	<MDL 0.02	No
Diazinon (ug/L) - TW	2016/01/10	<MDL 0.02	No
Dicamba (ug/L) - TW	2016/01/10	<MDL 0.2	No
1,2-Dichlorobenzene (ug/L) - TW	2016/01/10	<MDL 0.41	No
1,4-Dichlorobenzene (ug/L) - TW	2016/01/10	<MDL 0.36	No
1,2-Dichloroethane (ug/L) - TW	2016/01/10	<MDL 0.35	No
1,1-Dichloroethylene (ug/L) - TW	2016/01/10	<MDL 0.33	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2016/01/10	<MDL 0.35	No
2,4-Dichlorophenol (ug/L) - TW	2016/01/10	<MDL 0.15	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2016/01/10	<MDL 0.19	No
Diclofop-methyl (ug/L) - TW	2016/01/10	<MDL 0.4	No
Dimethoate (ug/L) - TW	2016/01/10	<MDL 0.03	No
Diquat (ug/L) - TW	2016/01/10	<MDL 1.0	No
Diuron (ug/L) - TW	2016/01/10	<MDL 0.03	No
Glyphosate (ug/L) - TW	2016/01/10	<MDL 1.0	No
Malathion (ug/L) - TW	2016/01/10	<MDL 0.02	No
Metolachlor (ug/L) - TW	2016/01/10	<MDL 0.01	No
Metribuzin (ug/L) - TW	2016/01/10	<MDL 0.02	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2016/01/10	<MDL 0.3	No
Paraquat (ug/L) - TW	2016/01/10	<MDL 1.0	No
PCB (ug/L) - TW	2016/01/10	<MDL 0.04	No
Pentachlorophenol (ug/L) - TW	2016/01/10	<MDL 0.15	No
Phorate (ug/L) - TW	2016/01/10	<MDL 0.01	No
Picloram (ug/L) - TW	2016/01/10	<MDL 1.0	No
Prometryne (ug/L) - TW	2016/01/10	<MDL 0.03	No
Simazine (ug/L) - TW	2016/01/10	<MDL 0.01	No
Terbufos (ug/L) - TW	2016/01/10	<MDL 0.01	No
Tetrachloroethylene (ug/L) - TW	2016/01/10	<MDL 0.35	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2016/01/10	<MDL 0.2	No
Triallate (ug/L) - TW	2016/01/10	<MDL 0.01	No
Trichloroethylene (ug/L) - TW	2016/01/10	<MDL 0.44	No
2,4,6-Trichlorophenol (ug/L) - TW	2016/01/10	<MDL 0.25	No
Trifluralin (ug/L) - TW	2016/01/10	<MDL 0.02	No
Vinyl Chloride (ug/L) - TW	2016/01/10	<MDL 0.17	No
Trihalomethane: Total (ug/L) Annual Average - DW	2016 (Quarterly)	7.9	No

NOTE: Schedule 23, Schedule 24, Sodium and Fluoride are scheduled to be taken every 60 months. The most current Schedule 24 was sampled in January 2016, the next Schedule 24 is scheduled for January 2021.

Table 7. List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample
Fluoride	1.26	mg/L	2016/03/07

NOTE: This is required only if DWS category is large municipal residential, small municipal residential, large municipal non-residential, small municipal non-residential, large non municipal non-residential)