



**Ontario Clean Water Agency  
Agence Ontarienne Des Eaux**

**FOREMAN  
WATER TREATMENT PLANT**

**Small Municipal Residential Drinking Water System**

**SCHEDULE 22  
SUMMARY REPORT**

**For the period of  
JANUARY 1, 2010 TO DECEMBER 31, 2010**

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

## **SUMMARY**

This report is a summary of water quality and quantity information submitted in accordance with Schedule 22 of Ontario's Drinking Water System Regulation for the reporting period of January 1, 2010 to December 31, 2010 for the Foreman Water Treatment Plant located in the Town of South Bruce Peninsula.

The summary includes:

1. Any requirements of the Act and Regulation, Orders or System Approval (s) that the system failed to meet during the reporting period and the measures taken to correct each failure.
2. A summary of the quantities and flow rates of water supplied during the reporting period, including monthly averages and maximum daily flows.
3. A comparison of the average and monthly maximum daily flows to the approved capacity specified in the System Approval.

## **ISSUES OF NON-COMPLIANCE**

The following table lists the requirements of the Act, Regulations, System Approval(s) and any Order that the system failed to meet during the reporting period and the measures taken to correct each failure:

MOE Inspection commenced 26/05/10 – Routine Unannounced – Inspection Rating 97.5%

1. The continuous chlorine analyzer was verified against the handheld chlorine analyzer daily, and on 22 occasions the readings were out more than 5%. The owner/operating authority failed to recalibrate the online analyzer when the variance between the two analyzers was greater than 5%.

### **Action(s) Required:**

The owner/operating authority is required to submit a plan to recalibrate the online analyzer when the variance between the portable analyzer and the online analyzer is greater than 5% when the reading is greater than 1.0 mg/L or when the if the variance is greater than 0.05 mg/L when the reading is less than 1.0 mg/L by July 31, 2010.

**Completed 30/07/10**

**ASSESSMENT OF FLOW RATES AND QUANTITIES OF WATER SUPPLIED**

The following table lists the quantities and flow rates of the water supplied during the reporting period covered by this report, including monthly average and maximum daily flows and a comparison to the rated capacity and flow rates specified in the system approval:

<b>Foreman Water Treatment Plant</b>	<b>January 1 to December 31</b>
Average Day Flow (m <sup>3</sup> /day)	5.6
Maximum Day Flow (m <sup>3</sup> /day)	112.29
*Average Flow Rate (L/sec)	0.065
*Maximum Flow Rate (L/sec)	1.90
Design Capacity (m <sup>3</sup> /day)	165
Approved Flow Rate (L/sec)	1.91
% (Average Day/Design Capacity)	3.40
% (Maximum Day/Design Capacity)	68.1
% (Average Flow Rate/Approved Flow Rate)	3.40
% (Maximum Flow Rate/Approved Flow Rate)	99.5

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<b>Drinking-Water System Number:</b>	220007711
<b>Drinking-Water System Name:</b>	Foreman Water Works
<b>Drinking-Water System Owner:</b>	Town of South Bruce Peninsula
<b>Drinking-Water System Category:</b>	Small Municipal Residential
<b>Period being reported:</b>	January 1, 2010 to December 31, 2010

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></p> <p><b>Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [X]</b></p> <p><b>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No [ ]</b></p> <p><b>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</b></p> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;">             Town of South Bruce Peninsula              315 George Street              Wiarton, Ontario              N0H 2T0              519-534-1400         </div>	<p><b><u>Complete for all other Categories.</u></b></p> <p><b>Number of Designated Facilities served:</b></p> <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div> <p><b>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [ ]</b></p> <p><b>Number of Interested Authorities you report to:</b></p> <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div> <p><b>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [ ]</b></p>
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**List Drinking-Water Systems, which receive all of their drinking water from your system:**

N/A

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

Yes [ ] No [ ] N/A [X]

**Indicate how you notified system users that your 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 \_\_\_\_\_

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## Describe your Drinking-Water System

Class II

Water Treatment

Class 1 Water Distribution

The Foreman Water Works Drinking-Water System has a 125 mm diameter, 73 meter deep drilled well equipped with a submersible deep well pump, with a nominal rating at 1.9 L/s. The Well Pump house houses the treatment and control facilities including:

- 1 Iron/Manganese Removal
- 2 Cartridge Filter System
- 3 Ultraviolet Disinfection System
- 4 Chlorination System
- 5 Clearwell/Storage Tank
- 6 Filter Backwash Tank
- 7 Hydro pneumatic Tanks

The Iron/Manganese Removal consists of a potassium permanganate system with chemical feed pumps, storage tanks, spill containment and all necessary controls and alarms.

The Cartridge Filter system is a cartridge filter unit located downstream of the greensand filters and rated at 3.15 L/s

The Ultraviolet Disinfection system consists of two UV disinfection reactors (one duty, one standby) located after the cartridge filter unit. Both are capable of providing a minimum dose of 40 mJ/cm<sup>2</sup> at the end of lamp life and each rated at 1.9 L/s

The Chlorination System is a sodium hypochlorite pre-chlorination disinfection system capable of injecting sodium hypochlorite before filtration or after the UV disinfection system. It consists of one duty and one standby metering pump with auto switchover, complete with a storage tank with spill containment. A post-chlorination sodium hypochlorite disinfection system with injection point is located at the high lift header. It consists of one duty metering pump which is complete with a storage tank with spill containment.

The Clearwell/Storage Tank is an 86 m<sup>3</sup> below the ground clearwell that is complete with all associated piping and controls. There are two submersible pumps (one duty, one standby) located in the clearwell each rated at 6.4 L/s at 31 m TDH. They are used to backwash the greensand filters. There are also two high lift submersible pumps each rated at 4.94 L/s at 50.6 m TDH.

The Filter Backwash Tank is a backwash waste holding tank which is approximately 2.6 m by 4.9 m by 2.3 m deep with clarified supernatant discharged by gravity to an existing ditch.

The Hydro pneumatic Tanks consists of two 454 L hydro pneumatic tanks located on the high lift discharge header and one 100 L hydro pneumatic tank for greensand filters.

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There is a 30 kW diesel generator set, 240/120 Volts, with 450 L double walled sub-base fuel tank with level gauge, low level float switch and leak sensor, housed in a weatherproof enclosure.

There is also:

- One programmable logic controller and associated SCADA system for control of plant operations
- One colour analyzer on the downstream piping of the filters.
- One chlorine residual analyzer complete with alarm
- One treated water turbidity analyzer

**List all water treatment chemicals used over this reporting period**

- Sodium Hypochlorite 12%
- Potassium Permanganate

**Were any significant expenses incurred to?**

- Install required equipment
- Repair required equipment
- Replace required equipment

**Describe**

**Provide 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**

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
NA					

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

Location	Number of Samples	Range of E. Coll or Fecal Results (min #) - (max #)	Range of Total Coliform Results (min #) - (max #)	Number of HPC Samples	Range of HPC Results (min #) - (max #)
Raw - RW	12	0 - 0	0 - 19		
Distribution - DW	52	0 - 0	0 - 0	52	0 - 16

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

	Number of Grab Samples	Range of Results (#-#)
Filter Turbidity	8760	0.0-0.99
Chlorine	8760	0.42-2.00
Chlorine Residual Distribution System	104	0.86-1.62

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

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

**Summary of additional testing and sampling carried out in accordance with the requirement of an approval or order.**

Date of order or C of A	Parameter	Date Sampled	Result	C of A Limit	Unit of Measure
C of A 9049-6VURYU	Suspended Solids (composite)	Monthly	Annual Average 2.83	25	mg/L

**Summary of Inorganic parameters tested during this reporting period or most recent**

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Lead	01/12/09	0.22	ug/L	No
Sodium	02/20/07	14.2	mg/L	No
Fluoride	02/20/07	1.28	mg/L	No
Nitrite	01/11/10	<0.005	mg/L	No
	04/06/10	<0.005	mg/L	No
	07/05/10	<0.005	mg/L	No
	10/04/10	<0.005	mg/L	No
Nitrate	01/11/10	<0.013	mg/L	No
	04/06/10	<0.013	mg/L	No
	07/05/10	<0.013	mg/L	No
	10/04/10	<0.013	mg/L	No

**Summary of Organic parameters sampled during this reporting period or most recent**

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
***THM	2010 average	7.85	ug/L	No

\*\*\* Annual average

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### Summary of Inorganic parameters tested during this reporting period or most recent

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	01/11/06	<0.6	ug/L	No
Arsenic	01/11/06	<2	ug/L	No
Barium	01/11/06	19	ug/L	No
Boron	01/11/06	77	ug/L	No
Cadmium	01/11/06	<0.1	ug/L	No
Chromium	01/11/06	<3	ug/L	No
Lead	01/11/06	0.3	ug/L	No
Mercury	01/11/06	<0.02	ug/L	No
Selenium	01/11/06	<3	ug/L	No
Uranium	01/11/06	<0.05	ug/L	No

### Summary of Organic parameters sampled during this reporting period or most recent

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	01/11/06	<0.11	ug/L	No
Aldicarb	01/11/06	<0.30	ug/L	No
Aldrin + Dieldrin	01/11/06	<0.067	ug/L	No
Atrazine + N-dealkylated metabolites	01/11/06	<0.12	ug/L	No
Azinphos-methyl	01/11/06	<0.21	ug/L	No
Bendiocarb	01/11/06	<0.13	ug/L	No
Benzene	01/11/06	<0.36	ug/L	No
Benzo(a)pyrene	01/11/06	<0.004	ug/L	No
Bromoxynil	01/11/06	<0.094	ug/L	No
Carbaryl	01/11/06	<0.16	ug/L	No
Carbofuran	01/11/06	<0.37	ug/L	No
Carbon Tetrachloride	01/11/06	<0.34	ug/L	No
Chlordane (Total)	01/11/06	<0.11	ug/L	No
Chlorpyrifos	01/11/06	<0.18	ug/L	No
Cyanazine	01/11/06	<0.18	ug/L	No
Diazinon	01/11/06	<0.081	ug/L	No
Dicamba	01/11/06	<0.17	ug/L	No
1,2-Dichlorobenzene	01/11/06	<0.56	ug/L	No
1,4-Dichlorobenzene	01/11/06	<0.25	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	01/11/06	<0.14	ug/L	No
1,2-Dichloroethane	01/11/06	<0.32	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	01/11/06	<0.41	ug/L	No
Dichloromethane	01/11/06	<1.17	ug/L	No
2-4 Dichlorophenol	01/11/06	<0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	01/11/06	<0.19	ug/L	No
Diclofop-methyl	01/11/06	<0.13	ug/L	No
Dimethoate	01/11/06	<0.12	ug/L	No
Dinoseb	01/11/06	<0.084	ug/L	No
Diquat	01/11/06	<1	ug/L	No



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Diuron	01/11/06	<0.087	ug/L	No
Glyphosate	01/11/06	<6	ug/L	No
Heptachlor + Heptachlor Epoxide	01/11/06	<0.11	ug/L	No
Linadane (Total)	01/11/06	<0.056	ug/L	No
Malathion	01/11/06	<0.091	ug/L	No
Methoxychlor	01/11/06	<0.14	ug/L	No
Metolachlor	01/11/06	<0.092	ug/L	No
Metribuzin	01/11/06	<0.12	ug/L	No
Monochlorobenzene	01/11/06	<0.46	ug/L	No
Paraquat	01/11/06	<1	ug/L	No
Parathion	01/11/06	<0.18	ug/L	No
Pentachlorophenol	01/11/06	<0.15	ug/L	No
Phorate	01/11/06	<0.11	ug/L	No
Picloram	01/11/06	<0.20	ug/L	No
Polychlorinated Biphenyls(PCB)	01/11/06	<0.04	ug/L	No
Prometryne	01/11/06	<0.23	ug/L	No
Simazine	01/11/06	<0.15	ug/L	No
Temephos	01/11/06	<0.31	ug/L	No
Terbufos	01/11/06	<0.12	ug/L	No
Tetrachloroethylene	01/11/06	<0.48	ug/L	No
2,3,4,6-Tetrachlorophenol	01/11/06	<0.14	ug/L	No
Triallate	01/11/06	<0.10	ug/L	No
Trichloroethylene	01/11/06	<0.54	ug/L	No
2,4,6-Trichlorophenol	01/11/06	<0.25	ug/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	01/11/06	<0.14	ug/L	No
Trifluralin	01/11/06	<0.12	ug/L	No
Vinyl Chloride	01/11/06	<0.08	ug/L	No

\*\*\* Annual average

**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	1.28	mg/L	02/20/07

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, small municipal non residential, large non municipal non residential)

**Summary of lead testing under Schedule 15.1 during this reporting period**

(applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Number of Exceedances
Plumbing	NA	NA	0
Distribution	NA	NA	0

\*\*\*Relief has been granted C of A PB220007711RR-01