

OPTIONAL ANNUAL REPORT TEMPLATE

Drinking-Water System Number:	220009158
Drinking-Water System Name:	Grafton Drinking Water System
Drinking-Water System Owner:	Corporation of the Township of Alnwick/Haldimand
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2016 to December 31, 2016

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [] No [X]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [] No [X]</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> <ul style="list-style-type: none"> - Township of Alnwick/Haldimand Office 10836 County Rd. 2, Grafton Ontario - Township of Alnwick/Haldimand Satellite Office 9059 County Rd. No. 45, Roseneath Ontario - Lakefront Utility Services Inc. Office 207 Division Street, Cobourg Ontario - www.alnwickhaldimand.ca </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 10px;"></div> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to:</p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
---	---

Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

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

Drinking Water System Name	Drinking Water System Number
N/A	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

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 _____

Describe your Drinking-Water System

The Hamlet of Grafton Communal Water System supplies water to approximately 1000 residents.

Water is taken from 2 wells located at the water plant on Edwardson Road. The water is disinfected with sodium hypochlorite and sodium silicate is added to sequester the iron as the water enters the plant. After the appropriate contact time, water is pumped to the distribution system with variable speed pumps, which modulate to maintain the distribution system pressure.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite
Sodium Silicate

Were any significant expenses incurred to?

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

Please provide a brief description and a breakdown of monetary expenses incurred

-DWQMS and Licensing: \$ 2,100.00 -SCADA Spare Parts: \$ 1,816.00 -Chlorine Analyzer: \$ 7,500.00 -High Lift Pump Overhaul: \$18,490.00 -Pressure Reducing Valve Refurbishment: \$8,590.00
--

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
March 21, 2016	Other Observations – Improperly Disinfected Water Directed to Water Users, etc. Hydrant opened in system which initiated fire pump and caused loss of flow to chlorine analyzer. No actual chlorine residual drop.	Reportable	N/A	Contacted MOECC and MOH. Restored normal system flow.	March 21, 2016
April 12, 2016	Other Observations – Improperly Disinfected Water Directed to Water Users, etc. Loss of system pressure during Fire Dept. pumper flow test. PRV in WTP failed.	Reportable	N/A	Contacted MOECC and MOH. PRV isolated. Boil water advisory issued for affected area. Watermain flushed and tested. Final chlorine residual-1.27 F and 1.36T Sampled as per MOH instruction. BWA rescinded.	April 14, 2016

Oct 18, 2016	Other Observations – Improperly Disinfected Water Directed to Water Users, etc. Section of watermain shut down for distribution system PRV replacement.	Reportable	N/A	Contacted MOECC and MOH prior to project startup. Samples taken in affected area. Bleeder line run for duration of BWA to ensure water flow was maintained. BWA rescinded.	Oct 20, 2016
--------------	---	------------	-----	--	--------------

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	104	0 – 0	0 – 1	N/A	N/A
Treated	52	0 – 0	0 – 0	52	0 – 1
Distribution	156	0 – 0	0 – 0	104	0 – 500

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity (Raw)	12	0.08 – 0.59 (NTU)
Turbidity (Treated)	12	0.25 – 0.59 (NTU)
Chlorine (mg/L)	8760	0.00 – 2.00
Fluoride (If the DWS provides fluoridation)	N/A	

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

Note: System is programmed to shut down when chlorine residual reaches .60 mg/l. The numbers shown in the range represent instantaneous events in the system caused by power flickers, calibrations, and other operational anomalies. These numbers are not representative of normal operating conditions.

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, order or other legal instrument.

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
N/A				

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

NOTE: Grafton Water System only requires Inorganic Parameters to be tested once every three years. Sodium and Fluoride are sampled once every 5 years.

Parameter	Result Value	Standard (MAC)	Unit of Measure	Sample Date	Exceedance
Antimony	6	6	ug/l	Jan. 5/16	no
Arsenic	25	25	ug/l	Jan. 5/16	no
Barium	1000	1000	ug/l	Jan. 5/16	no
Boron	5000	5000	ug/l	Jan. 5/16	no
Cadmium	5	5	ug/l	Jan. 5/16	no
Chromium	50	50	ug/l	Jan. 5/16	no
Mercury	1	1	ug/l	Jan. 5/16	no
Selenium	10	10	ug/l	Jan. 5/16	no
Uranium	20	20	ug/l	Jan. 5/16	no
*Lead	0.00017	10	ug/l	Oct. 5/16	no
Nitrite	0.003 <MDL	1	mg/l	Oct. 11/16	no
Nitrate	0.019	10	mg/l	Oct. 11/16	no
Fluoride	0.20	1.5	mg/L	Jan 26/15	no
Sodium	19.1	20	mg/l	Jan 26/15	no

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems.

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 #) mg/L	Standard (MAC) mg/L	Number of Exceedances
Plumbing	0			
Distribution	3	0.00011-0.00017	0.01	0

Summary of Organic parameters sampled during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Standard (MAC)	Unit of Measure	Exceedance
Benzene [ug/L]	Jan. 5/16	0.32 <MDL	5	ug/l	No
Carbon tetrachloride [ug/L]	Jan. 5/16	0.16 <MDL	5	ug/l	No
2-Dichlorobenzene [ug/L]	Jan. 5/16	0.41 <MDL	200	ug/l	No
4-Dichlorobenzene [ug/L]	Jan. 5/16	0.36 <MDL	5	ug/l	No
1-Dichloroethylene (vinylidene chloride) [ug/L]	Jan. 5/16	0.33 <MDL	14	ug/l	No
2-Dichloroethane [ug/L]	Jan. 5/16	0.35 <MDL	5	ug/l	No
Dichloromethane [ug/L]	Jan. 5/16	0.35 <MDL	50	ug/l	No
Monochlorobenzene [ug/L]	Jan. 5/16	0.3 <MDL	80	ug/l	No
Tetrachloroethylene (perchloroethylene) [ug/L]	Jan. 5/16	0.35 <MDL	30	ug/l	No
Trichloroethylene [ug/L]	Jan. 5/16	0.44 <MDL	5	ug/l	No
Vinyl Chloride [ug/L]	Jan. 5/16	0.17 <MDL	2	ug/l	No
Diquat [ug/L]	Jan. 5/16	1 <MDL	70	ug/l	No
Paraquat [ug/L]	Jan. 5/16	1 <MDL	10	ug/l	No
Glyphosate [ug/L]	Jan. 5/16	1 <MDL	280	ug/l	No
Polychlorinated Biphenyls (PCBs) - Total [ug/L]	Jan. 5/16	0.04 <MDL	3	ug/l	No
Benzo(a)pyrene [ug/L]	Jan. 5/16	0.004 <MDL	0.01	ug/l	No
Alachlor [ug/L]	Jan. 5/16	0.02 <MDL	5	ug/l	No
Atrazine + N-dealkylated metabolites [ug/L]	Jan. 5/16	0.01 <MDL	5	ug/l	No
Atrazine [ug/L]	Jan. 5/16	0.01 <MDL	-	ug/l	No
Desethyl atrazine [ug/L]	Jan. 5/16	0.01 <MDL	-	ug/l	No
Azinphos-methyl [ug/L]	Jan. 5/16	0.05 <MDL	20	ug/l	No
Carbaryl [ug/L]	Jan. 5/16	0.05 <MDL	90	ug/l	No
Carbofuran [ug/L]	Jan. 5/16	0.01 <MDL	90	ug/l	No
Chlorpyrifos [ug/L]	Jan. 5/16	0.02 <MDL	90	ug/l	No
Diazinon [ug/L]	Jan. 5/16	0.02 <MDL	20	ug/l	No
Dimethoate [ug/L]	Jan. 5/16	0.03 <MDL	20	ug/l	No
Diuron [ug/L]	Jan. 5/16	0.03 <MDL	150	ug/l	No
Malathion [ug/L]	Jan. 5/16	0.02 <MDL	190	ug/l	No
Metolachlor [ug/L]	Jan. 5/16	0.01 <MDL	50	ug/l	No
Metribuzin [ug/L]	Jan. 5/16	0.02 <MDL	80	ug/l	No
Phorate [ug/L]	Jan. 5/16	0.01 <MDL	2	ug/l	No
Prometryne [ug/L]	Jan. 5/16	0.03 <MDL	1	ug/l	No
Simazine [ug/L]	Jan. 5/16	0.01 <MDL	10	ug/l	No
Terbufos [ug/L]	Jan. 5/16	0.01 <MDL	1	ug/l	No
Triallate [ug/L]	Jan. 5/16	0.01 <MDL	230	ug/l	No
Trifluralin [ug/L]	Jan. 5/16	0.02 <MDL	45	ug/l	No
4-dichlorophenoxyacetic acid (24-D) [ug/L]	Jan. 5/16	0.19 <MDL	100	ug/l	No
Bromoxynil [ug/L]	Jan. 5/16	0.33 <MDL	5	ug/l	No
Dicamba [ug/L]	Jan. 5/16	0.20 <MDL	120	ug/l	No
Diclofop-methyl [ug/L]	Jan. 5/16	0.40 <MDL	9	ug/l	No

MCPA [mg/L]	Jan. 5/16	0.00012 <MDL	-	mg/l	No
Picloram [ug/L]	Jan. 5/16	1 <MDL	190	ug/l	No
4-dichlorophenol [ug/L]	Jan. 5/16	0.15 <MDL	900	ug/l	No
6-trichlorophenol [ug/L]	Jan. 5/16	0.25 <MDL	5	ug/l	No
6-tetrachlorophenol [ug/L]	Jan. 5/16	0.20 <MDL	100	ug/l	No
Pentachlorophenol [ug/L]	Jan. 5/16	0.15 <MDL	60	ug/l	No
THM: Annual Average	Oct. 11/16	27.50	100	ug/l	No

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
Sodium	19.1	mg/L	January 26, 2015