



**Glen Robertson Well
Supply System
2016 Annual Report**

Waterworks



Township of North Glengarry

90 Main Street P.O. Box 700
Alexandria ON K0C 1A0
www.northglengarry.ca

Phone: 613 525-1110

Fax: 613 525-1649

Email: waterworks@northglengarry.ca

Drinking-Water System Number:	220008408
Drinking-Water System Name:	Glen Robertson Well Supply System
Drinking-Water System Owner:	Township of North Glengarry
Drinking-Water System Category:	Small Municipal
Period being reported:	January 01, 2016- 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 <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Location where Report required under O. Reg. 170/03 Schedule 22 will be available for inspection at: Township of North Glengarry Public Works Office 63 Kenyon St. West Alexandria, Ontario K0C 1A0</p>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/></p> <p>Number of Interested Authorities you report to: 2</p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
--	--

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

Drinking Water System Name	Drinking Water System Number
Hamlet of Glen Robertson	220008408

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

Indicate how system users are notified that annual and summary reports are available, and 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**Well No. 1**

Well No. 1 is located at UTM Easting: 538506 UTM Northing: 5022689 (NAD 83, Accuracy +/- 10m). The well is a drilled 300 mm diameter groundwater well located at 3342 Irwin St. Glen Robertson, Ontario. It is equipped with a submersible well pump, rated at 5.1 L/s (67 IGPM), with a 50 mm diameter discharge.

Pumping Station

The actual pumping station building is an approximately 17.4 m², (4.7m x 3.7m), single story building which houses the treatment and control facilities including:

- 3 ultra violet light units, preceded by 2 in-line filters, rated at 5 micron and 1 micron, per unit.
- The chlorination system utilizes two diaphragm sodium hypochlorite metering pumps with rated capacities of 0.4 L/h which discharge into the well discharge. There are 2 sodium hypochlorite storage tanks with capacities of 20 L. The tanks are also contained within secondary containment. The pumps have automatic switch over should the duty pump develop a problem during operation.
- One diaphragm sodium silicate metering pumps with rated capacity of 0.4 L/h at 680 kPa.
- The control system consists of an on-line treated water turbidity meter, one chlorine residual analyzer for measurement after injection, one chlorine residual analyzer for measurement of treated water as it enters the distribution, and an online flow meter. The turbidity, chlorine monitors, and flow meter record on 7-day recording charts. All monitoring equipment is remotely monitored and is also connected to an automatic dialer should problems be detected.
- There are five (5) 400 L pneumatic pressure tanks operating between 275 to 400 kPa.
- Piping, valves, controls and appurtenances along with associated mechanical and electrical equipment.

Contact Chamber

Located outside but on the property is a chlorine contact chamber consisting of 52 m of 300 mm piping located under ground complete with a treated water sample line which feeds the online chlorine residual and turbidity meters.

Emergency power

A 17 kW natural gas auto start generator capable of operating the pump house at full capacity is housed outside of the Water Treatment Plant.

Monitoring Wells

2 drilled monitoring wells are located on the property where treatment plant is located. One being located northeast of building and one is located southwest of building

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite

Were any significant expenses incurred to?

- Install required equipment
- Repair required equipment
- Replace required equipment
- None during reporting period

Briefly describe incident and expenses incurred

No.	Project Name	Description

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 Center:

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

List microbiological testing done under Schedule 10, 11, 12 of Regulation 170/03, during this reporting period:

	Number of Samples	Range of E. Coli or Fecal Results (#-#)	Range of Total Coliform Results (#-#)	Number of HPC Samples	Range of HPC Results (#-#)
Raw	52	0 - 2	0 - 20	0	
Treated	52	0 - 0	0 - 0	52	<2 - 14
Distribution	108	0 - 0	0 - 0	102	<2 - 90

List 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 (#-#)	Unit of Measurement
Turbidity	259	0.17 - 2.09	ntu
Chlorine	358	0.27 - 2.20	mg/L
Fluoride (If the DWS provides fluoridation)	n/a		

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	Unit of Measure

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

(1ppm = 1 mg/L)

Parameter	Sample Date	Standard (maximum concentration)	Result Value	Unit of Measure	Exceedance
Antimony	July 11, 2016	0.006 mg/L	< 0.0001	mg/L	No
Arsenic	July 11, 2016	0.025 mg/L	0.0005	mg/L	No
Barium	July 11, 2016	1.0 mg/L	0.138	mg/L	No
Boron	July 11, 2016	5.0 mg/L	0.025	mg/L	No
Cadmium	July 11, 2016	0.005 mg/L	< 0.00002	mg/L	No
Chromium	July 11, 2016	0.05 mg/L	< 0.002	mg/L	No
Mercury	July 11, 2016	0.001mg/L	< 0.00002	mg/L	No
Selenium	July 11, 2016	0.01 mg/L	0.001	mg/L	No
Uranium	July 11, 2016	0.02 mg/L	0.00063	mg/L	No
Fluoride	July 09, 2012	1.5 mg/L	0.2	mg/L	No
Nitrite	October 11, 2016	1.0 mg/L	< 0.1	mg/L	No
Nitrate	October 11, 2016	10.0 mg/L	0.6	mg/L	No

Summary of Lead testing results under Schedule 15.1 during this reporting period

Location/ Type	Number of Samples	Range of Lead Results (#-#)	Unit of Measure	Range of Alkalinity Results (#-#)	Unit of Measure	pH	Number of Exceedances
Residential Plumbing							
Non-Residential Plumbing							
Distribution	2			346 - 354	mg/L	7.0	0

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

(1ppm = 1 mg/L = 1000 ug/L)

Parameter	Sample Date	Standard (maximum concentration)	Result Value	Unit of Measure	Exceedance
Alachlor	July 11, 2016	0.005 mg/L	< 0.3	ug/L	No
Atrazine + N-dealkylated metabolites	July 11, 2016	0.005 mg/L	< 0.5	ug/L	No
Azinphos-methyl	July 11, 2016	0.02 mg/L	< 1	ug/L	No
Benzene	July 11, 2016	0.005 mg/L	< 0.5	ug/L	No
Benzo(a)pyrene	July 11, 2016	0.00001 mg/L	< 0.005	ug/L	No
Bromoxynil	July 11, 2016	0.005 mg/L	< 0.3	ug/L	No
Carbaryl	July 11, 2016	0.09 mg/L	< 3	ug/L	No
Carbofuran	July 11, 2016	0.09 mg/L	< 1	ug/L	No
Carbon Tetrachloride	July 11, 2016	0.005 mg/L	< 0.2	ug/L	No
Chlorpyrifos	July 11, 2016	0.09 mg/L	< 0.5	ug/L	No

Parameter	Sample Date	Standard (maximum concentration)	Result Value	Unit of Measure	Exceedance
Diazinon	July 11, 2016	0.02 mg/L	< 1	ug/L	No
Dicamba	July 11, 2016	0.12 mg/L	< 5	ug/L	No
1,2-Dichlorobenzene	July 11, 2016	0.2 mg/L	< 0.1	ug/L	No
1,4-Dichlorobenzene	July 11, 2016	0.005 mg/L	< 0.2	ug/L	No
1,2-Dichloroethane	July 11, 2016	0.005 mg/L	< 0.1	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	July 11, 2016	0.014 mg/L	< 0.1	ug/L	No
Dichloromethane	July 11, 2016	0.05 mg/L	< 0.3	ug/L	No
2,4 Dichlorophenol	July 11, 2016	0.9 mg/L	< 0.1	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	July 11, 2016	0.1 mg/L	< 5	ug/L	No
Diclofop-methyl	July 11, 2016	0.009 mg/L	< 0.5	ug/L	No
Dimethoate	July 11, 2016	0.02 mg/L	< 1	ug/L	No
Diquat	July 11, 2016	0.07 mg/L	< 5	ug/L	No
Diuron	July 11, 2016	0.15 mg/L	< 5	ug/L	No
Glyphosate	July 11, 2016	0.28 mg/L	< 25	ug/L	No
Malathion	July 11, 2016	0.19 mg/L	< 5	ug/L	No
2 Methyl-4 Chlorophenoxyacetic (MCPA)	July 11, 2016		< 0.00012	ug/L	No
Metolachlor	July 11, 2016	0.05 mg/L	< 3	ug/L	No
Metribuzin	July 11, 2016	0.08 mg/L	< 3	ug/L	No
Monochlorobenzene	July 11, 2016	0.08 mg/L	< 0.2	ug/L	No
Paraquat	July 11, 2016	0.01 mg/L	< 1	ug/L	No
Pentachlorophenol	July 11, 2016	0.06mg/L	< 0.1	ug/L	No
Phorate	July 11, 2016	0.002 mg/L	< 0.3	ug/L	No
Picloram	July 11, 2016	0.19 mg/L	< 5	ug/L	No
Polychlorinated Biphenyls (PCB)	July 11, 2016	0.003 mg/L	< 0.05	ug/L	No
Prometryne	July 11, 2016	0.001 mg/L	< 0.1	ug/L	No
Simazine	July 11, 2016	0.01 mg/L	< 0.5	ug/L	No
THM (NOTE: show latest quarterly average)	October 11, 2016	0.100 mg/L	11.2	ug/L	No
Terbufos	July 11, 2016	0.001 mg/L	< 0.3	ug/L	No
Tetrachloroethylene	July 11, 2016	0.03 mg/L	< 0.2	ug/L	No
2,3,4,6-Tetrachlorophenol	July 11, 2016	0.1 mg/L	< 0.1	ug/L	No
Triallate	July 11, 2016	0.23 mg/L	< 10	ug/L	No
Trichloroethylene	July 11, 2016	0.005 mg/L	< 0.1	ug/L	No
2,4,6-Trichlorophenol	July 11, 2016	0.005 mg/L	< 0.1	ug/L	No
Trifluralin	July 11, 2016	0.045 mg/L	< 0.5	ug/L	No
Vinyl Chloride	July 11, 2016	0.002 mg/L	< 0.2	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.

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

Parameter	Result Value	Unit of Measure	Date of Sample

Glen Robertson
Water Treatment Plant Performance
2016 Annual Report
Plant Discharge

Date	Monthly Flow	Max Daily Flow	Avg. Daily Flow	Avg. Maximum Instantaneous Daily Flow	Average Free Cl ₂	Average Total Cl ₂	Average Treated Turbidity
	m ³	m ³	m ³	L/s	mg/L	mg/L	NTU
January	1019.2	45.3	32.9	1.17	1.57	1.82	0.14
February	674.8	32.7	23.3	1.14	1.50	1.83	0.14
March	826.1	45.4	26.6	1.09	1.48	1.76	0.18
April	874.1	36.6	29.1	1.16	1.55	1.66	0.22
May	860.4	48.3	27.8	1.24	1.51	1.83	0.13
June	744.1	40.5	24.8	1.19	1.54	1.73	0.16
July	824.0	60.1	26.6	1.17	1.47	1.74	0.15
August	803.3	40.1	25.9	1.23	1.41	1.76	0.13
September	656.6	37.8	21.9	1.12	1.44	1.66	0.22
October	656.3	30.1	21.2	1.08	1.40	1.69	0.15
November	644.7	33.9	21.5	1.14	1.42	1.81	0.11
December	742.7	31.9	24.0	1.38	1.46	1.85	0.08
Average	777.2	40.2	25.5	1.2	1.48	1.76	0.15
Total	9326.3						
Max Day		60.1	32.9	1.38	1.57	1.85	0.22
Criteria		224	225	2.6			1.0