

# 2017 Section 11 Annual Report

## Nakina Drinking-Water System

February 2018

Prepared by the



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



**Section 11 ANNUAL REPORT**

<b>Drinking-Water System Number:</b>	220000200
<b>Drinking-Water System Name:</b>	Nakina Well Supply
<b>Drinking-Water System Owner:</b>	The Corporation of the Municipality of Greenstone
<b>Drinking-Water System Category:</b>	Large Municipal Residential Drinking Water-System
<b>Period being reported:</b>	January 1 – December 31, 2017

<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;"> <p>Geraldton Ward Office (Administration) 1800 Main Street Geraldton, ON POT 1M0 Nakina Ward Office 200 Centre Avenue Nakina, ON POT 2H0</p> </div>	<p><b><u>Complete for all other Categories.</u></b></p> <p><b>Number of Designated Facilities served:</b>  <div style="border: 1px solid black; padding: 2px; display: inline-block;">N/A</div> </p> <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>  <div style="border: 1px solid black; padding: 2px; display: inline-block;">N/A</div> </p> <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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**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 (Municipal)
- 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 Nakina Water Supply System is supplied by two (2) groundwater wells. The water supply aquifer utilized by the Corporation of the Municipality of Greenstone – Nakina Ward lies within an esker complex (significant sand and gravel deposit). These deposits are common throughout the area and the most extensive of these features trend southwesterly through the Township. Composed primarily of gravelly sand, this broad belt stretches approximately 4 km in width and 60 km in length. The two wells are located approximately 72 m from the southeastern shore of Rounds Lake.

The wells are housed within the same building, and a common header delivers water to the reservoir beneath the high lift pumping station. The water is chlorinated using sodium hypochlorite at the entry point to the reservoir. The high lift and fire pumps draw water from the reservoir for the delivery to the system.

Wells #1 & #2 are each capable of supplying 18.9 L/s, and were designed to be operated simultaneously for a total of 37.9 L/s. Fire flow and emergency storage is supplied from the reservoir. The facility presently serves a population of approximately 700 persons and was designed with the anticipation of growth within the community.

A 60 kW diesel generator provides standby power for the well pumps and a 150 kW diesel generator provides power for the chemical feed system and the high lift and fire pumps.

In a hydro geological study conducted by KGS Group, the wells were identified as not under the direct influence of surface water.

**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

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

Install	Repair	Replace	Description	Expense
		x	Well house generator replacement	\$75,000 (in progress)
		x	Submersible pump	\$11,067
		x	Chlorine pump replacement	\$7,500
		x	Total chlorine sensor, free chlorine sensor, spare membrane caps	\$4,894

**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
N/A	N/A	N/A	N/A	N/A	N/A

**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 #)
<b>Raw</b>					
Well 1	52	<1	<1	N/A	N/A
Well 2	52	<1	<1	N/A	N/A
<b>Treated</b>	52	0	0	51	0 - 37
<b>Distribution</b>	104	0	0	24	0 - 29

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 #)
<b>Turbidity*</b>		
Raw Well #1	94	0.004 – 7.27 NTU
Raw Well #2	156	0.15 – 0.59 NTU
Treated	8760	0 – 9.921 NTU
<b>Chlorine*</b>		
Treated	8760	0 – 4.999
Distribution	363	0.4 – 0.94
<b>Fluoride (If the DWS provides fluoridation)</b>	N/A	N/A

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

*\* Turbidity & chlorine Min/Max (lows/highs) are due to planned maintenance and not plant upset.*

**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	N/A	N/A	N/A	N/A

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	8-Jan-2015	<0.6	µg/L	No
Arsenic	8-Jan-2015	<1.0	µg/L	No
Barium	8-Jan-2015	13	µg/L	No
Boron	8-Jan-2015	<50.0	µg/L	No
Cadmium	8-Jan-2015	<0.1	µg/L	No
Chromium	8-Jan-2015	<1.0	µg/L	No
*Lead	Refer to Summary Table Below			
Mercury	8-Jan-2015	<0.1	µg/L	No
Selenium	8-Jan-2015	<1.0	µg/L	No
Sodium	20-Oct-2014	39.9	mg/L	Yes
Uranium	8-Jan-2015	<2.0	µg/L	No
Fluoride	6-Oct-2014	0.046	mg/L	No

Nitrite	10-Jan-2017	<0.01	mg/L	No
	4-Apr-2017	<0.01	mg/L	No
	4-Jul-2017	<0.01	mg/L	No
	3-Oct-2017	<0.01	mg/L	No
Nitrate	10-Jan-2017	0.174	mg/L	No
	4-Apr-2017	0.224	mg/L	No
	4-Jul-2017	<0.02	mg/L	No
	3-Oct-2017	0.116	mg/L	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 #)	Number of Exceedances
Plumbing	Sampling not required as per Ont. Regulation 170	-	-
Distribution	Sampling not required as per Ont. Regulation 170	-	-

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	8-Jan-2015	<0.1	µg/L	No
Atrazine + N-dealkylated metabolites	8-Jan-2015	<0.1	µg/L	No
Azinphos-methyl	8-Jan-2015	<0.1	µg/L	No
Benzene	8-Jan-2015	<0.5	µg/L	No
Benzo(a)pyrene	8-Jan-2015	<0.01	µg/L	No
Bromoxynil	8-Jan-2015	<0.2	µg/L	No
Carbaryl	8-Jan-2015	<0.2	µg/L	No
Carbofuran	8-Jan-2015	<0.2	µg/L	No
Carbon Tetrachloride	8-Jan-2015	<0.5	µg/L	No
Chlorpyrifos	8-Jan-2015	<0.1	µg/L	No
Diazinon	8-Jan-2015	<0.1	µg/L	No
Dicamba	8-Jan-2015	<0.2	µg/L	No



1,2-Dichlorobenzene	8-Jan-2015	<0.5	µg/L	No
1,4-Dichlorobenzene	8-Jan-2015	<0.5	µg/L	No
1,2-Dichloroethane	8-Jan-2015	<0.5	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	8-Jan-2015	<0.5	µg/L	No
Dichloromethane	8-Jan-2015	<0.5	µg/L	No
2,4 Dichlorophenol	8-Jan-2015	<0.3	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	8-Jan-2015	<0.2	µg/L	No
Diclofop-methyl	8-Jan-2015	<0.2	µg/L	No
Dimethoate	8-Jan-2015	<0.1	µg/L	No
Diquat	8-Jan-2015	<1.0	µg/L	No
Diuron	8-Jan-2015	<1.0	µg/L	No
Glyphosate	8-Jan-2015	<5.0	µg/L	No
Haloacetic acids (HAA)* (NOTE: show latest annual average)	3-Oct-2017 2017 Average	8.5 7.4	µg/L	No
Malathion	8-Jan-2015	<0.1	µg/L	No
Metolachlor	8-Jan-2015	<0.1	µg/L	No
Metribuzin	8-Jan-2015	<0.1	µg/L	No
Monochlorobenzene	8-Jan-2015	<0.5	µg/L	No
Paraquat	8-Jan-2015	<1.0	µg/L	No
Pentachlorophenol	8-Jan-2015	<0.5	µg/L	No
Phorate	8-Jan-2015	<0.1	µg/L	No
Picloram	8-Jan-2015	<0.2	µg/L	No
Polychlorinated Biphenyls(PCB)	8-Jan-2015	<0.035	µg/L	No
Prometryne	8-Jan-2015	<0.1	µg/L	No
Simazine	8-Jan-2015	<0.1	µg/L	No
THM (NOTE: show latest annual average)	3-Oct-2017 2017 Average	16.6 13.7	µg/L µg/L	No No
Terbufos	8-Jan-2015	<0.2	µg/L	No
Tetrachloroethylene	8-Jan-2015	<0.5	µg/L	No
2,3,4,6-Tetrachlorophenol	8-Jan-2015	<0.5	µg/L	No
Triallate	8-Jan-2015	<0.1	µg/L	No
Trichloroethylene	8-Jan-2015	<0.5	µg/L	No
2,4,6-Trichlorophenol	8-Jan-2015	<0.5	µg/L	No
Trifluralin	8-Jan-2015	<0.1	µg/L	No
Vinyl Chloride	8-Jan-2015	<0.2	µg/L	No

\*Parameter exceedance not reportable until 2020

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	39.9	mg/L	20-Oct-2014