



MUNICIPALITY OF

North Perth

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A Community of Character

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January 29, 2018

Township of Perth East
25 Mill St E
PO Box 455
Milverton, ON
N0K 1M0

Attention: Wes Kuepfer, Manager of Public Works and Parks

Re: Milverton Drinking Water System – 2017 Annual and Summary Reports

Dear Wes,

Please find attached the 2017 Annual Water Report for the Milverton Drinking Water System, in accordance with Section 11(1) of O. Reg. 170/03. This report covers the period from January 1 to December 31 and meets the requirement of being prepared by February 28 of this year.

Please ensure that a copy of this report is given, without charge, to every person who requests a copy. In addition, please make certain that effective steps are taken to advise residents that copies of the report are available, and of how a copy can be obtained.

Finally, as per Schedule 22 of O. Reg 170/03, please ensure that a copy of the report is given to the members of municipal council no later than March 31, 2018.

If you have any questions or concerns regarding this report, please do not hesitate to contact myself.

Regards,

Mark Hackett
Manager of Environmental Services
Municipality of North Perth

cc. W. Kuepfer & B. Wilson, Township of Perth East

Part III Form 2
Section 11. ANNUAL REPORT.

Drinking-Water System Number:	220000503
Drinking-Water System Name:	Milverton Drinking Water System
Drinking-Water System Owner:	Township of Perth East
Drinking-Water System Category:	Municipal Large Residential
Period being reported:	Jan 1, 2017 to Dec 31, 2017

<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 [X] No []</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;"> <p>Township of Perth East 25 Mill St PO Box 455 Milverton, ON N0K 1M0</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <div style="border: 1px solid black; width: 100px; text-align: center; padding: 2px;">0</div></p> <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: <div style="border: 1px solid black; width: 100px; text-align: center; padding: 2px;">0</div></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>
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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	

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.

- [X] Public access/notice via the web**
- [X] Public access/notice via Government Office**
- [X] 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 Milverton Drinking Water System serves the community of Milverton, located in the Township of Perth East. The population served is 1,750. The water system consists of the following:

- 2 cast in place in ground reservoirs with a total storage capacity of 1150m³;
- A control building with 2 vertical turbine pumps each rated for 16.5L/s;
- 2 vertical turbine fire pumps each rated at 94.7L/s;
- 2 Sodium Hypochlorite pumps rated at 1.7L/h each and 1-200 L storage tank.

There are 2 production wells. #4 is located at 35 Whaley Avenue, (1) 48.0m deep well equipped with a submersible pump, rated at 7.4L/s

Well #6 is located at lot 7 concession 4 Milverton, Township of Perth East, with one (1) 66.7m deep well, equipped with a 10 hp submersible pump rated at 16.5L/sec.

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

- New well pump installed for well #6 - \$10,000
- New chemical board installed at well house - \$6,000

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

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

Well #4

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Range of HPC Results (min #)-(max #)	Range of Background Results (min #)-(max #)
Raw	52	0-0	0-0	N/A	0-0

Well #6

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Range of HPC Results (min #)-(max #)	Range of Background Results (min #)-(max #)
Raw	52	0-0	0-0	N/A	0-0

Treated

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Range of HPC Results (min #)-(max #)	Range of Background Results (min #)-(max #)
Treated	52	0-0	0-0	0-1	0-0

Milverton Distribution System

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Range of HPC Results (min #)-(max #)	Range of Background Results (min #)-(max #)
Arena	52	0-0	0-0	0-1	0-4
Blow off #3	52	0-0	0-0	0-0	0-0
Municipal Building	52	0-0	0-0	0-2	0-7

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

Well #4

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity	12	0.37-0.83 NTU
Fluoride (If the DWS provides fluoridation)	N/A	

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

Well #6

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity	12	0.18-0.59 NTU
Fluoride (If the DWS provides fluoridation)	N/A	

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

Reservoir – Treated Water

	Number of Grab Samples	Range of Results (min #)-(max #)
Chlorine	8760	0 – 3.48
Fluoride (If the DWS provides fluoridation)	N/A	

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

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

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

Reservoir – Treated Water

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	Aug 8/17	None Detected	ug/L	No
Arsenic	Aug 8/17	9.1	ug/L	No
Barium	Aug 8/17	104	ug/L	No
Boron	Aug 8/17	69	ug/L	No
Cadmium	Aug 8/17	None Detected	ug/L	No
Chromium	Aug 8/17	2.12	ug/L	No
Mercury	Aug 8/17	None Detected	mg/L	No
Selenium	Aug 8/17	None Detected	ug/L	No
Sodium	Feb 11/15	27000	ug/L	YES
Uranium	Jan 29/14	0.20	ug/L	No
Fluoride	Feb 11/15	1.1	mg/L	No
Nitrite	Feb 8/17	None Detected	mg/L	No
Nitrite	May 10/17	None Detected	mg/L	No
Nitrite	Aug8/17	None Detected	mg/L	No
Nitrite	Nov 6/17	None Detected	mg/L	No
Nitrate	Feb 8/17	None Detected	mg/L	No
Nitrate	May 10/17	None Detected	mg/L	No
Nitrate	Aug8/17	None Detected	mg/L	No
Nitrate	Nov 6/17	None Detected	mg/L	No

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	N/A		
Distribution	4	ND – 0.77 ug/L	0

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

Reservoir – Treated Water

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	Aug 8/17	None Detected	ug/L	No
Atrazine + N-dealkylated metabolites	Aug 8/17	None Detected	ug/L	No
Azinphos-methyl	Aug 8/17	None Detected	ug/L	No
Benzene	Aug 8/17	None Detected	ug/L	No
Benzo(a)pyrene	Aug 8/17	None Detected	ug/L	No

Bromoxynil	Aug 8/17	None Detected	ug/L	No
Carbaryl	Aug 8/17	None Detected	ug/L	No
Carbofuran	Aug 8/17	None Detected	ug/L	No
Carbon Tetrachloride	Aug 8/17	None Detected	ug/L	No
Chlorpyrifos	Aug 8/17	None Detected	ug/L	No
Diazinon	Aug 8/17	None Detected	ug/L	No
Dicamba	Aug 8/17	None Detected	ug/L	No
1,2-Dichlorobenzene	Aug 8/17	None Detected	ug/L	No
1,4-Dichlorobenzene	Aug 8/17	None Detected	ug/L	No
1,2-Dichloroethane	Aug 8/17	None Detected	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	Aug 8/17	None Detected	ug/L	No
Dichloromethane	Aug 8/17	None Detected	ug/L	No
2-4 Dichlorophenol	Aug 8/17	None Detected	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Aug 8/17	None Detected	ug/L	No
Diclofop-methyl	Aug 8/17	None Detected	ug/L	No
Dimethoate	Aug 8/17	None Detected	ug/L	No
Diquat	Aug 8/17	None Detected	ug/L	No
Diuron	Aug 8/17	None Detected	ug/L	No
Glyphosate	Aug 8/17	None Detected	ug/L	No
HAA's (Running Annual Average)	Aug 8/17	11.25	ug/L	No
Malathion	Aug 8/17	None Detected	ug/L	No
Metolachlor	Aug 8/17	None Detected	ug/L	No
Metribuzin	Aug 8/17	None Detected	ug/L	No
Monochlorobenzene	Aug 8/17	None Detected	ug/L	No
Paraquat	Aug 8/17	None Detected	ug/L	No
Pentachlorophenol	Aug 8/17	None Detected	ug/L	No
Phorate	Aug 8/17	None Detected	ug/L	No
Picloram	Aug 8/17	None Detected	ug/L	No
Polychlorinated Biphenyls(PCB)	Aug 8/17	None Detected	ug/L	No
Prometryne	Aug 8/17	None Detected	ug/L	No
Simazine	Aug 8/17	None Detected	ug/L	No
THM (Running Annual Average)	2017	24.5	ug/L	No
Terbufos	Aug 8/17	None Detected	ug/L	No
Tetrachloroethylene	Aug 8/17	None Detected	ug/L	No
2,3,4,6-Tetrachlorophenol	Aug 8/17	None Detected	ug/L	No
Triallate	Aug 8/17	None Detected	ug/L	No
Trichloroethylene	Aug 8/17	None Detected	ug/L	No
2,4,6-Trichlorophenol	Aug 8/17	None Detected	ug/L	No
Trifluralin	Aug 8/17	None Detected	ug/L	No
Vinyl Chloride	Aug 8/17	None Detected	ug/L	No
2 methyl-4-chlorophenoxyacetic acid (MCPA)	Aug 8/17	None Detected	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
Fluoride	1.1	Mg/l	Feb 11/15

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

Part Two – SUMMARY REPORT (as required by O. Reg. 170/03, Schedule 22)

System Description

The Milverton Drinking Water System serves the community of Milverton, located in the Township of Perth East. The population served is 1,750. The water system consists of the following:

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There are 2 production wells. Well # 4 is located at 35 Whaley Avenue, (1) 48.0m deep well equipped with a submersible pump, and rated at 7.4L /s. Well #6 is located at lot 7 concession 4 Milverton, Township of Perth East, with one (1) 66.7m deep well, equipped with a 10hp submersible pump rated at 16.5L/sec.

Non-Compliance with Legislations, Regulations, Approvals & Orders

During this period, the Facility was operated in full compliance with the Act, the regulations and the Facility’s Municipal Drinking Water License, Drinking Water Works Permit and Permit to Take Water, save and except for the following:

Requirement	Duration of Failure	Measures to Correct the Failure
All inorganic water quality monitoring requirements prescribed by legislation were not conducted within the required frequency	Reporting Period	Inorganic parameters were moved to the third quarter sampling and will be sampled on annual basis in the third quarter
All organic water quality monitoring requirements prescribed by legislation were not conducted within the required frequency	Reporting Period	Organic parameters were moved to the third quarter sampling and will be sampled on annual basis in the third quarter

System Capability - Comparison of Flow Rates

Well #4

Month	Average Flow (m ³ /d)	Maximum Flow (m ³ /d)	Total Monthly Flow (m ³)	Maximum Flow Rate (L/min)	System Capacity	Approved Flow Rate
January	7.61	13	236	388.89	2143.886 m ³ /day	Well 4: 500 L/min Well 6: 990 L/min
February	8.18	16	229	388.89		
March	8.16	16	253	388.89		
April	7.93	15	238	416.67		
May	49.68	428	1540	444.44		
June	9.97	19	299	416.67		
July	9.48	21	294	388.89		
August	9.06	17	281	388.89		
September	9.73	19	292	444.44		
October	9.45	17	293	444.44		
November	9.07	21	272	388.89		
December	8.84	14	274	416.67		
Average	12.26		4501	409.72		
Maximum		428	1540	444.44		
% of Capacity	5.7	16.67				

Well #6

Month	Average Flow (m ³ /d)	Maximum Flow (m ³ /d)	Total Monthly Flow (m ³)	Maximum Flow Rate (L/min)	System Capacity	Approved Flow Rate
January	324.4	465	10613	651.4	2143.886 m ³ /day	Well 4: 500 L/min Well 6: 990 L/min
February	341.0	446	9547	660.9		
March	338.5	475	10493	676.9		
April	325.5	520	9764	680.0		
May	351.1	729	10883	843.4		
June	365.7	487	10972	747.2		
July	355.3	538	11014	754.4		
August	333.3	481	10331	698.7		
September	350.2	492	10505	698.1		
October	385.9	611	11962	692.0		
November	359.2	587	10776	693.0		
December	345.9	511	10724	690.0		
Average	348.0		10632	707.2		
Maximum		729	11962	843.4		
% of Capacity	16.2	34.0				

All Wells Combined

Month	Average Flow (m ³ /d)	Maximum Flow (m ³ /d)	Total Monthly Flow (m ³)	System Capacity	Approved Flow Rate
January	349.97	472	10849	2143.886 m ³ /day	Well 4: 500 L/min Well 6: 990 L/min
February	349.14	460	9776		
March	338.48	482	10746		
April	333.40	525	10002		
May	400.74	745	12423		
June	375.70	501	11271		
July	364.77	552	11308		
August	342.32	495	10612		
September	360.00	506	10797		
October	395.32	625	12255		
November	368.27	594	11048		
December	354.77	525	10998		
Average	361.07		11007		
Maximum		745	12423		
% of Capacity	16.84	34.0			