

27 February 2017

Township of Mulmur
RR #2
Lisle, ON
L0M 1M0

Attn: John Wimetts, Director of Public Works

Re: Mansfield Water System – Annual Summary Report for 2016

Dear Terry:

Attached is the 2016 Summary Report for the Mansfield Water System. This report was prepared by Dufferin Water Co. Ltd on behalf of the Township of Mulmur in accordance with Schedule 22 of O. Reg 170/03 filed under the Safe Drinking Water Act (SDWA).

The summary report is required to be prepared, not later than March 31 of each year for the preceding calendar year and given to the members of the municipal council; please ensure this distribution.

Also attached to this letter is a copy of the 2016 Annual Report for the Mansfield Water Supply System. This report should be made available to the public at the Municipal office and if possible on the township website.

If you have any questions regarding either report please call.

Regards,

Joe Miedema P. Eng.
General Manager

Part III Form 2

Section 11. ANNUAL REPORT.

Drinking-Water System Number:	260063661
Drinking-Water System Name:	Mansfield Well Supply
Drinking-Water System Owner:	Township of Mulmur
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 01, 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 [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; min-height: 100px;"> <p>Report is available for inspection at the municipal office in Terra Nova</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 5px auto;">N/A</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> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 5px auto;">N/A</div> <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 [] – N/A

Drinking-Water Systems Regulation O. Reg. 170/03

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: Notices are posted at the Post Office and the Municipal Office

Describe your Drinking-Water System

The Mansfield Water System is classified as a Large Municipal Residential Water System that currently serves approximately 140 homes. The system is owned by the Township of Mulmur and operated by Dufferin Water Co. Ltd. Water is supplied via three municipal wells, a standpipe and a pumphouse. Inspection, maintenance and sampling are conducted on a regular basis in accordance with Ontario Regulation 170/03 to ensure the safety of the water supply

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite (12% solution – NSF Foodgrade)

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

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
Apr 29/16	Sodium	25	Mg/L	Resample	May 06/16

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	156	0	0	0	n.a.
Treated	52	0	0	52	0-1
Distribution	115	0	0	52	0-3

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)	36	0.17 to 0.38
Chlorine – Pumphouse	8760	0.94 to 2.73
Chlorine Distribution Grab	429	0.95 to 2.11
Fluoride (If the DWS provides fluoridation)	N/A	N/A

***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, 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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	Mar 30/15	ND	mg/L	No
Arsenic	Mar 30/15	ND	mg/L	No
Barium	Mar 30/15	0.081	mg/L	No
Boron	Mar 30/15	0.018	mg/L	No
Cadmium	Mar 30/15	ND	mg/L	No
Chromium	Mar 30/15	ND	mg/L	No
Lead	Apr 15/16	ND	mg/L	No
Mercury	Mar 30/15	ND	mg/L	No
Selenium	Mar 30/15	ND	mg/L	No
Sodium	May 06/16	20	mg/L	No

Uranium	Mar 30/15	0.0006	mg/L	No
Fluoride	Mar 08/13	ND	mg/L	No
Nitrite	Dec 02/16	ND	mg/L	No
Nitrate	Dec 02/16	ND	mg/L	No

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	Mar 30/15	ND	ug/L	No
Aldicarb	Mar 30/15	ND	ug/L	No
Aldrin + Dieldrin	Mar 30/15	ND	ug/L	No
Atrazine + N-dealkylated metabolites	Mar 30/15	ND	ug/L	No
Azinphos-methyl	Mar 30/15	ND	ug/L	No
Bendiocarb	Mar 30/15	ND	ug/L	No
Benzene	Mar 30/15	ND	ug/L	No
Benzo(a)pyrene	Mar 30/15	ND	ug/L	No
Bromoxynil	Mar 30/15	ND	ug/L	No
Carbaryl	Mar 30/15	ND	ug/L	No
Carbofuran	Mar 30/15	ND	ug/L	No
Carbon Tetrachloride	Mar 30/15	ND	ug/L	No
Chlordane (Total)	Mar 30/15	ND	ug/L	No
Chlorpyrifos	Mar 30/15	ND	ug/L	No
Cyanazine	Mar 30/15	ND	ug/L	No
Diazinon	Mar 30/15	ND	ug/L	No
Dicamba	Mar 30/15	ND	ug/L	No
1,2-Dichlorobenzene	Mar 30/15	ND	ug/L	No
1,4-Dichlorobenzene	Mar 30/15	ND	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	Mar 30/15	ND	ug/L	No
1,2-Dichloroethane	Mar 30/15	ND	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	Mar 30/15	ND	ug/L	No
Dichloromethane	Mar 30/15	ND	ug/L	No
2-4 Dichlorophenol	Mar 30/15	ND	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Mar 30/15	ND	ug/L	No
Diclofop-methyl	Mar 30/15	ND	ug/L	No
Dimethoate	Mar 30/15	ND	ug/L	No
Dinoseb	Mar 30/15	ND	ug/L	No
Diquat	Mar 30/15	ND	ug/L	No
Diuron	Mar 30/15	ND	ug/L	No
Glyphosate	Mar 30/15	ND	ug/L	No
Heptachlor + Heptachlor Epoxide	Mar 30/15	ND	ug/L	No
Lindane (Total)	Mar 30/15	ND	ug/L	No
Malathion	Mar 30/15	ND	ug/L	No

Methoxychlor	Mar 30/15	ND	ug/L	No
Metolachlor	Mar 30/15	ND	ug/L	No
Metribuzin	Mar 30/15	ND	ug/L	No
Monochlorobenzene	Mar 30/15	ND	ug/L	No
Paraquat	Mar 30/15	ND	ug/L	No
Parathion	Mar 30/15	ND	ug/L	No
Pentachlorophenol	Mar 30/15	ND	ug/L	No
Phorate	Mar 30/15	ND	ug/L	No
Picloram	Mar 30/15	ND	ug/L	No
Polychlorinated Biphenyls(PCB)	Mar 30/15	ND	ug/L	No
Prometryne	Mar 30/15	ND	ug/L	No
Simazine	Mar 30/15	ND	ug/L	No
THM (NOTE: show latest annual average)	2016	1.85	ug/L	No
Temephos	Mar 30/15	ND	ug/L	No
Terbufos	Mar 30/15	ND	ug/L	No
Tetrachloroethylene	Mar 30/15	ND	ug/L	No
2,3,4,6-Tetrachlorophenol	Mar 30/15	ND	ug/L	No
Triallate	Mar 30/15	ND	ug/L	No
Trichloroethylene	Mar 30/15	ND	ug/L	No
2,4,6-Trichlorophenol	Mar 30/15	ND	ug/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Mar 30/15	ND	ug/L	No
Trifluralin	Mar 30/15	ND	ug/L	No
Vinyl Chloride	Mar 30/15	ND	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	20	Mg/L	May 06/16

Medical Officer of Health is aware of concentrations and notifies family doctors accordingly.

(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)

Mansfield Water System

Large Municipal Residential Drinking Water System

Schedule 22

Summary Report

For the Period:

January 01, 2016 to December 31, 2016

Prepared for the Township of Mulmur
By Dufferin Water Co. Ltd

Introduction

Schedule 22 of O. Reg 170/03 requires the preparation by the water system owner of a "Summary Report for Municipalities." This requirement only applies to large and small municipal residential systems. The Mansfield Water System is classified as a Large Municipal Residential Drinking Water System.

The Summary Report for the preceding year is to be issued by March 31 of the following year. This report was prepared by Dufferin Water Co. Ltd on behalf of the Township of Mulmur.

Distribution of the Summary Report is the responsibility of the owner. For a municipality that owns the water supply, all members of council are to receive the report. If the water system is owned by a municipal service board established under Section 195 of the Municipal Act, 2001 then all members of that board are to receive the report. Finally, if a water supply provides water to another municipality under contract, then the water supply owner shall, give by March 31 a copy of the Summary Report to the Municipality being supplied.

The contents of the Summary Report for the municipality must include the following:

1. A list of the requirements of the Safe Drinking Water Act and its regulations that the water system failed to meet during the reporting period, including the duration of the failure.
2. A list of the requirements of the water system's Certificate of Approval that the water system failed to meet during the report period, including the duration of the failure.
3. A list of any Orders that the water system failed to meet during the report time frame, including the duration of the failure.
4. For each of the above failures, a description of the measures taken to correct the failure.
5. A summary of the quantities and flow rates of water supplied "including monthly average, maximum daily flows, and daily instantaneous peak flow rates." (*Information is to enable the owner to assess the capability of the water system to meet existing and future demand*).
6. A statement that captures the comparison of the flow information to the rated capacity and flow rates stated in the water supply's 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 at any time during the reporting period and measures taken to correct each failure:

Drinking Water Legislation	Requirements the system failed to meet	Duration	Corrective Action(s)	Status
N/A				

Assessment of System Flows and Rates of Water Taking

The following tables list the quantities and flow rates of the water supplied during this reporting period, including monthly average and maximum daily flows, daily instantaneous peak flow rates and a comparison to the rated capacity and flow rates specified in the system approval:

Well Number One

Approved Daily Volume: 326.88 cubic metres

Approved Flow Rate: 227 litres/minute

Month	Average Daily Volume (m ³)	Percent Of Approved Volume	Maximum Daily Volume (m ³)	Percent Of Approved Volume
January	120	37%	148	45%
February	111	34%	132	40%
March	111	34%	247	76%
April	119	36%	254	78%
May	184	56%	266	81%
June	132	40%	219	67%
July	140	43%	171	52%
August	114	35%	243	74%
September	64	19%	119	36%
October	68	21%	109	33%
November	52	16%	72	22%
December	64	20%	187	57%

Flow control is in the form of a pressure reducing valve that is equipped to open and close when the well pump is energized. The valve limits the flow of water from the well and prevents the pump from exceeding the permitted flow rates. Average flow rate when this well is operating is 204 litres per minute.

Well Number Two

Approved Daily Volume: 262.08 cubic metres

Approved Flow Rate: 182 litres/minute

Month	Average Daily Volume (m ³)	Percent Of Approved Volume	Maximum Daily Volume (m ³)	Percent Of Approved Volume
January	0	0%	3	1%
February	0	0%	2	1%
March	10	4%	159	61%
April	0	0%	1	0%
May	19	7%	139	53%
June	86	33%	130	50%
July	89	34%	151	58%
August	63	24%	105	40%
September	47	18%	83	32%
October	49	19%	162	62%
November	47	18%	74	28%
December	47	18%	93	35%

Flow control is in the form of a pressure reducing valve that is equipped to open and close when the well pump is energized. The valve limits the flow of water from the well and prevents the pump from exceeding the permitted flow rates. Average flow rate when this well is operating is 108 litres per minute

Well Number Three

Approved Daily Volume: 362.88 cubic metres

Approved Flow Rate: 252 litres/minute

Month	Average Daily Volume (m ³)	Percent Of Approved Volume	Maximum Daily Volume (m ³)	Percent Of Approved Volume
January	49	13%	88	24%
February	53	15%	79	22%
March	48	13%	74	20%
April	59	16%	169	47%
May	8	2%	52	14%
June	19	5%	64	18%
July	38	11%	64	18%
August	12	3%	56	15%
September	17	5%	36	10%
October	6	2%	21	6%
November	5	1%	25	7%
December	6	2%	28	8%

Flow control is in the form of a pressure reducing valve that is equipped to open and close when the well pump is energized. The valve limits the flow of water from the well and prevents the pump from exceeding the permitted flow rates. Average flow rate when this well is operating is 246 litres per minute

Distributed Water

Approved Daily Volume: 951.8 cubic metres

Approved Flow Rate: 661 Litres per minute

Month	Average Daily Volume (m ³)	Percent Of Approved Volume	Maximum Daily Volume (m ³)	Percent Of Approved Volume
January	176	18%	206	22%
February	173	18%	200	21%
March	179	19%	265	28%
April	180	19%	260	27%
May	203	21%	319	34%
June	236	25%	364	38%
July	268	28%	356	37%
August	190	20%	309	32%
September	128	13%	210	22%
October	122	13%	233	24%
November	104	11%	129	14%
December	119	13%	259	27%

Flow control is in the form of a pressure reducing valve located on the discharge side of each pressure pump. These valves limit the flow of treated water and prevents the distribution flow rate from exceeding the permitted flow rates. Average flow rate when pumps are operating is 330 litres per minute.