EGANVILLE DRINKING WATER SYSTEM

2016 ANNUAL SUMMARY REPORT

Township of Bonnechere Valley
Water and Sewage Department
February 2017

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Executive Summary

The water delivered to the customers of the Eganville Drinking Water System continues to be safe and meet all water quality standards. There were no adverse water quality incidents in 2016. The Inorganic and Organic parameters tested for in 2016 were well within Maximum Acceptable Concentrations as listed in the Ontario Drinking Water Quality Standards.

All reports required by applicable acts, regulations, permits and licences have been prepared and submitted in accordance with the legislation.

All sampling required by applicable acts, regulations, permits and licences has been conducted in accordance with the legislation.

The volume of water treated and distributed to the Village of Eganville customers averaged 486 m^3/day which is 23% of the rated capacity of the Eganville Water Treatment Plant.

The maximum daily flow of 813 m^3 occurred in November due to water service repair work on Bonnechere St. W., which is approximately 39% of the rated capacity of the Eganville Water Treatment Plant.

Introduction

The treatment and delivery of potable water in Ontario is regulated by the Ministry of the Environment and Climate Change (MOECC) under the Safe Drinking Water Act. On June 1, 2003 O. Reg. 170/03 came into effect which prescribes requirements for owners and operators of municipal drinking water systems.

O. Reg. 170/03 requires the owner to produce an Annual Report, under Section 11. The Report must include the following:

- A description of the drinking water system including a list of the water treatment chemicals used;
- A summary of any adverse water quality reports and corrective actions;
- A summary of all required testing results;
- A description of any mayor expenses incurred to install, repair or replace equipment.

Every time an Annual Report is prepared the owner of the system shall ensure that effective steps are taken to advise users of water from the system that copies of the report are available, without charge, and how a copy may be obtained.

The Regulation also requires the owner to produce a Summary Report as indicated in Schedule 22.

- The report must list the requirements of the Act, its Regulations, the system's Drinking Water Works Permit, Municipal Drinking Water Licence and any orders the system failed to meet during the reporting period. The report must also specify the duration of the failure, and for each failure referred to, describe the measures that were taken to correct the failure.
- To enable the Owner to assess the rated capacity of their system to meet existing and future planned water uses, the following information is also required in the report.
    - A summary of the quantities and flow rates of water supplied during the reporting period, including the monthly average and maximum daily flows;
    - A comparison of the summary to the rated capacity and flow rates approved in the system's Permit To Take Water, Drinking Water Works Permit and Municipal Drinking Water Licence

Report Availability

A copy of this report shall be given, without charge, to every person who requests a copy from the Township of Bonnechere Valley Municipal Office at 49 Bonnechere St. E., Eganville, Ontario.

Users of the system in the Village of Eganville shall be advised of the availability of the report by providing an insert into their monthly water bill.

The report shall also be available on the Township of Bonnechere Valley website at www.bonnecherevalleytwp.com

Eganville Drinking Water System

The Eganville Water System is owned and operated by the Township of Bonnechere Valley and provides a potable water supply to the residents and business of the Village of Eganville. The system generally consists of a Water Treatment Plant (WTP), a distribution system and a water standpipe.

The WTP, built in 1990, treats water from the Bonnechere River with two Graver Monoplant Package Units, which have a combined capacity of 2,070 m^3/day. The distribution system, originally constructed in the mid 1970's consists of approximately 13 km of piping ranging in diameter from 150 mm to 250 mm with a 300,000 Imperial gallon (1,363 m^3) capacity steel standpipe for pressure equalization and supply.

The water treatment process within the two Graver Monoplant Package Units uses Sodium Hypochlorite for pre-disinfection and Pre Hydroxylated Aluminum Sulphate with Polyelectrolyte for coagulation. The treated and filtered water is then disinfected with Sodium Hypochlorite prior to being pumped out to the distribution system.

Large Residential Drinking Water System	
Name	Eganville Drinking Water System
Owner	Township of Bonnechere Valley
Number	210000675
Municipal Drinking Water Licence	171-101 (Issue #2)
Drinking Water Works Permit	171-201 (Issue #2)
Permit To Take Water	2101-8W4LN3
Financial Plan (2016 to 2022)	171-301
QMS Operational Plan	171-401

Summary of Adverse Test Results and Other Issues

There were no adverse test results or other regulatory issues in 2016.

Summary of Test Results

Microbiological Testing

Source	Number of Samples	Range of E. Coli Results (CFU/100ml) (min #-max #)	Range of Total Coliform Results (CFU/100ml) (min #-max #)	ODWQS*
Raw	52	1-29	1-220	N/A
Treated	52	0	0	0
Distribution	176	0	0	0

* ODWQS – Ontario Drinking Water Quality Standard, Ont. Reg. 169/03

Source	Number of HPC* Samples	Range of HPC Results (CFU/mL) (min#-max#)	ODWQS
Raw	0	N/A	N/A
Treated	52	<2-12	500
Distribution	176	<2-10	500

*HPC - Heterotrophic Plate Count

Operational Testing

Parameter	Number of Samples	Range of Results (min #)-(max #)	ODWQS
Turbidity - results from continuous turbidity monitors on 4 dual media filters & 2 GAC filters, and weekly grab samples from treated water leaving plant	8760 per filter 52 weekly grab	All results were ≤ 0.3 NTU > 95% of the time & <1.0 NTU 100% of the time **	1.0 NTU*
Free Chlorine Residual - continuous monitor on treated water leaving plant	8760	1.34 – 2.60 mg/L	0.05 - 4.0 mg/L
Total Chlorine Residual - continuous monitor on treated water leaving plant	8760	1.74 – 3.06 mg/L	N/A
Free Chlorine Residual - grab samples in distribution system	541	0.60 – 2.20 mg/L	0.05 - 4.0 mg/L
Total Chlorine Residual - grab samples in distribution system	541	1.04 – 2.53 mg/L	N/A

*NTU – Nephelometric Turbidity Unit **Summary of SCADA & WTP Lab Turbidity results presented in "2016 Monitoring Summary Report"

Summary of Schedule 15.1 Lead Testing

Sample Period	Sample Date	Location	Sample Results		
			Lead* mg/L	Alkalinity mg/L	pH
December 2014 to April 2015	April 1, 2015	Hydrant #41 5 Foran St.	N/A**	31	7.20
December 2014 to April 2015	April 1, 2015	Hydrant #24 98 Hartwig St.	N/A**	29	7.17
June to October 2015	Sept. 8, 2015	Hydrant #7 46 Bonnechere St.	0.00002	24	7.25
June to October 2015	Sept. 8, 2015	Hydrant #43 68 Queen St.	0.00009	25	7.33
December 2015 to April 2016	April 5,2016	Hydrant #15 Mill St.	0.00014	34	7.24
December 2015 to April 2016	April 5,2016	Hydrant #41 5 Foran St.	0.00010	37	7.48
June to October 2016	Oct 12, 2016	Hydrant #65 Wellington St. South	N/A**	28	7.25
June to October 2016	Oct 12, 2016	Hydrant #1 Wallace St.	N/A**	29	7.30

*ODWQS standard for lead in drinking water is 0.01 mg/L

** Schedule 15.1 allows for lead sampling every 3rd year with Alkalinity and pH each sampling period.

Summary of Schedule 23 Inorganic Parameters

The treated water was sampled on January 27, 2015 for the following inorganic parameters. No exceedance of the ODWQS was noted.

Inorganic Parameter	Results (mg/L)	ODWQS (mg/L)
Antimony	<0.0001	0.006
Arsenic	0.0001	0.025
Barium	0.024	1.0
Boron	<0.005	5.0
Cadmium	<0.00002	0.005
Chromium	<0.002	0.05
Mercury	<0.00002	0.00.
Selenium	<0.001	0.01
Uranium	<0.00005	0.02
Other Parameters		
Sodium	7.2	200
Fluoride	<0.1	1.5
Nitrite	<0.1	1.0
Nitrate	0.1	10.0

Summary of Schedule 24 Organic Parameters

The treated water was sampled on January 27, 2015 for the following organic parameters. No exceedance of the ODWQS was noted.

Organic Parameter	Result (ug/L)	ODWQS (ug/L)
Alachlor	<0.3	5
Aldicarb	< 3	9
Aldrin + Dieldrin	<0.02	0.7
Atrazine + N-dealkylated metobolites	<0.5	5
Azinphos-methyl	<1	20
Bendiocarb	<3	40
Benzene	<0.5	5
Benzo(a)pyrene	<0.005	0.01
Bromoxynil	<0.3	5
Carbaryl	<3	90
Carbofuran	<1	90
Carbon Tetrachloride	<0.2	5
Chlordane (Total)	<0.04	7
Chlorpyrifos	<0.5	90

Organic Parameter	Result (ug/L)	ODWQS (ug/L)
Cyanazine	<0.5	10
Diazinon	<1	20
Dicamba	<5	120
1,2-Dichlorobenzene	<0.1	200
1,4-Dichlorobenzene	<0.2	5
Dichlorodiphenyltrichloroethane (DDT) + metabolites	<0.01	30
1,2-Dichloroethane	<0.1	5
1,1-Dichloroethane	<0.1	14
Dichloromethane	<0.3	50
2-4 Dichlorophenol	<0.1	900
2,4-Dichlorophenoxy acetic acid (2,4-D)	<5	100
Diclofop-methyl	<0.5	9
Dimethoate	<1	20
Dinoseb	<0.5	10
Diquat	<5	70
Diuron	<5	150
Glyphosate	<25	280
Heptachlor + Heptachlor Epoxide	<0.1	3
Lindane (Total)	<0.1	4
Malathion	<5	190
Methoxychlor	<0.1	900
Metolachlor	<3	50
Metribuzin	<3	80
Monochlorobenzene	<0.2	80
Paraquat	<1	10
Parathion	<3	50
Pentachlorophenol	<0.1	60
Phorate	<0.3	2
Picloram	<5	190
Polychlorinated Biphenyls(PCB)	<0.05	3
Prometryne	<0.1	1
Simazine	<0.5	10
THM (Oct 25 latest running annual average)	60.0	100
Temephos	<10	280
Terbufos	<0.3	1
Tetrachloroethylene	<0.2	30
2,3,4,6-Tetrachlorophenol	<0.1	100
Triallate	<10	230
Trichloroethylene	<0.1	5
2,4,6-Trichlorophenol	<0.1	5
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	<10	280
Trifluralin	<0.5	45
Vinyl Chloride	<0.2	2

Major Infrastructure Improvements

During 2016 a significant improvement to the Eganville Drinking Water Distribution System infrastructure was undertaken with the Bridge Street Watermain Replacement Project. The Project consisted of the removal of the existing ductile iron watermain and the installation of a new PVC watermain including insulation, pipe supports, joint restraints, thrust blocks and appurtenances.

Water Usage Summary

2016 Month	Average Day m^3	Maximum Day m^3	Monthly Total m^3
January	492	602	15249
February	451	593	13066
March	460	624	14262
April	451	551	13517
May	483	577	14966
June	478	557	14328
July	432	519	13399
August	477	581	14800
September	557	799*	16179
October	552	731	17119
November	549	813**	16463
December	446	538	13825
Total			177173
Average	486	624	14764
Max Day		813	

Note: * Bruce St. Standpipe needed to be refilled after being down for inspection. **higher flows due water service repair work on Bonnechere St. W.

The rated capacity of the Eganville Water Treatment Plant is 2070 m^3/day.

The average day flow during 2016 was 486 m^3 which is only 23% of the rated capacity.

The maximum daily flow recorded during 2016 was 813 m^3 which is only 39% of the rated capacity.

Based on this the Eganville Water Treatment Plant has more than adequate capacity to supply the Village of Eganville with drinking water for the foreseeable future.

Monitoring Summary Report

The 2016 Eganville Drinking Water System Monitoring Summary Report provides additional detail on the results of both the operational and compliance monitoring.