



**Tiverton Drinking Water System**  
**2017 Annual Water Summary Report**

## 1. INTRODUCTION AND BACKGROUND

The municipality owns and operates drinking water systems to provide residents with safe, potable water. These municipal drinking water systems are regulated under various legislation and legal documents including the Safe Drinking Water Act and Ontario Regulation 170/03 Drinking Water Systems. O. Reg. 170 requires that the municipality complete an annual water report (Section 11) and an annual summary report (Schedule 22). Previously two separate reports were completed, but for the 2017 reporting period, they have been combined into this one report.

The reports are available free of charge on the municipal website at [www.kincardine.net](http://www.kincardine.net) or by contacting the Water Services Department at [waterservice@kincardine.net](mailto:waterservice@kincardine.net).

### 1.1. System Description

<b>Drinking-Water System Number:</b>	220002609
<b>Drinking-Water System Name:</b>	Tiverton Drinking Water System
<b>Drinking-Water System Owner:</b>	Municipality of Kincardine
<b>Drinking-Water System Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	Year 2017

The Tiverton Drinking Water System (DWS) is a non-GUDI groundwater supply (which means that it is a secure well and not under the influence of surface water) consisting of 3 active wells, Briar Hill Well #1, Briar Hill Well #2 and Dent Well #2. The newest well, Briar Hill Well #2, went on-line August 2007 and is a 220 diameter 93 m deep drilled well with a maximum water taking of 8.3 L/s or 720 m<sup>3</sup>/d. Briar Hill Well #1 is a 150 mm diameter 93 m deep groundwater well rated at 6.1 L/s or 524.16 m<sup>3</sup>/d. The third active well is Dent Well #2. This well was put in service on July 15, 2005 and replaced the original Dent Well. Dent Well #2 is an approximately 87 m deep drilled well with a 200 mm diameter steel casing. The flow rate is restricted to a maximum of 4.6 L/s and a maximum taking of 250.5 m<sup>3</sup>/d. Both pumphouses are equipped with raw and treated flow meters, a disinfection system consisting of 2 sodium hypochlorite metering pumps with auto switchover capabilities and interlocked well shutdown, and a polyphosphate (Carus 1200) iron sequestering system. The sodium hypochlorite and Carus 1200 are NSF certified chemicals. Additional contact time is provided at both pumphouses by 600 mm diameter feeder watermain immediately leaving the pumphouse and prior to the first consumer. The water system is equipped with a 1500 m<sup>3</sup> standpipe. The both pumphouses are equipped with a standby generator.

### 1.2. Major Expenses

The system required replacements as follows:

Chlorine analyzer replacement (\$4,000.00)

## 2. WATER QUALITY MONITORING

Each municipal drinking water system is required to do testing to ensure that the water supplied to consumers is safe for consumption. Some of these tests such as chlorine residuals are done on site while others, like microbiological testing, must be performed by a licenced laboratory.

### 2.1. Microbiological Testing

O. Reg. 170 Schedule 10, requires the Tiverton DWS to take a minimum of one sample per week of raw and treated water from each well. A minimum of one sample must be taken every week of distribution water with a total of eight required every month. All raw, treated and distribution samples must be tested for Escherichia coli (E. coli) and total coliforms. All the treated samples and twenty five percent of the distribution samples must also be tested for heterotrophic plate count (HPC). Our internal sampling schedule exceeds the minimum requirements by having operations staff collect three raw, three treated and two distribution sample every week and have them tested for E. coli, total coliform and HPC.

Any E. coli or total coliform results above 0 in treated or distribution water must be reported to the Ministry of Environment and Climate Change (MOECC) and Medical Officer of Health (MOH).

Heterotrophic plate count is a colony count of general bacteria population. There is no adverse limit for HPC samples. Results over 500 colonies per 1 mL may indicate a change in water quality but it is not considered an indicator of unsafe water.

The results from the 2017 sampling program are shown in the table below.

Water Source	Number of EC/TC Samples	Range of Total Coliform Results (#-#)	Range of E. coli Results (#-#)	Number of HPC Samples	Range of HPC Results (#-#)
Raw	156	0 – 0	0 – 0	153	0 – 720
Treated	156	0 – 1	0 – 0	156	0 – 27
Distribution	104	0 – 0	0 – 0	103	0 – 340

### 2.2. Chemical Testing

The Safe Drinking Water Act Reg 170 Schedule 13 requires periodic testing of the water for chemical parameters. The Tiverton DWS is required to test for nitrite/nitrate, trihalomethane and Haloacetic Acid on a quarterly basis. The tables below outline these as well as other inorganic and organic parameters that are required to be tested for every three years and include the date and result of the most recent test. Any result displayed as less than (<) are below the method detection limit of the lab.

Sodium and fluoride levels exceed the Ontario Drinking Water Quality Standards, but they are naturally occurring in the groundwater and do not need to be tested more frequently than every five years.

In 2016, the MOECC removed some parameters and added others to the lists of those required to be tested for. The new parameters have been added to the tables below and for now the old parameters have still been included as well.

If the concentration of a parameter is above half of the Maximum Acceptable Concentration (MAC) under the Ontario Drinking Water Quality Standards, an increased testing frequency of once every three months is required by the Regulation. There were no parameters above the half MAC that were required to be tested for quarterly in 2017.

Briar Hill Well #1

Inorganic Parameter	Sample Date	Result Value	Unit of Measure	Exceedence
<b>Antimony</b>	July 13/15	< 0.2	ug/L	No
<b>Arsenic</b>	July 13/15	2.1	ug/L	No
<b>Barium</b>	July 13/15	10.8	ug/L	No
<b>Boron</b>	July 13/15	160	ug/L	No
<b>Cadmium</b>	July 13/15	0.021	ug/L	No
<b>Chromium</b>	July 13/15	< 0.03	ug/L	No
<b>Mercury</b>	July 13/15	< 0.01	ug/L	No
<b>Selenium</b>	July 13/15	< 0.04	ug/L	No
<b>Sodium</b>	Oct 16/17	45.8	mg/L	Yes
	Oct 25/17	35.2		
<b>Uranium</b>	July 13/15	0.572	ug/L	No
<b>Fluoride</b>	April 8/13	1.98	mg/L	Yes
	April 16/13	1.98		
<b>Nitrite</b>	Jan 9/17	< 0.003	mg/L	No
	Apr 10/17	0.047		
	July 17/17	< 0.003		
	Oct 16/17	< 0.003		
<b>Nitrate</b>	Jan 9/17	0.007	mg/L	No
	Apr 10/17	0.008		
	July 17/17	< 0.006		
	Oct 16/17	< 0.006		

Briar Hill Well #2

<b>Inorganic Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedence</b>
<b>Antimony</b>	July 11/16	<0.02	ug/L	No
<b>Arsenic</b>	July 11/16	2.6	ug/L	No
<b>Barium</b>	July 11/16	11	ug/L	No
<b>Boron</b>	July 11/16	196	ug/L	No
<b>Cadmium</b>	July 11/16	0.006	ug/L	No
<b>Chromium</b>	July 11/16	0.33	ug/L	No
<b>Mercury</b>	July 11/16	<0.01	ug/L	No
<b>Selenium</b>	July 11/16	< 0.04	ug/L	No
<b>Sodium</b>	Oct 16/17 Oct 25/17	44.4 34.4	mg/L	Yes
<b>Uranium</b>	July 11/16	0.483	ug/L	No
<b>Fluoride</b>	April 8/13 April 16/13	1.95 1.99	mg/L	Yes
<b>Nitrite</b>	Jan 9/17 Apr 10/17 July 17/17 Oct 16/17	< 0.003 < 0.003 < 0.003 < 0.003	mg/L	No
<b>Nitrate</b>	Jan 9/17 Apr 10/17 July 17/17 Oct 16/17	< 0.006 0.007 0.007 0.007	mg/L	No

Dent Well #2

Inorganic Parameter	Sample Date	Result Value	Unit of Measure	Exceedence
<b>Antimony</b>	July 17/17	<0.02	ug/L	No
<b>Arsenic</b>	July 17/17	6.4	ug/L	No
<b>Barium</b>	July 17/17	10.1	ug/L	No
<b>Boron</b>	July 17/17	191	ug/L	No
<b>Cadmium</b>	July 17/17	0.012	ug/L	No
<b>Chromium</b>	July 17/17	0.66	ug/L	No
<b>Mercury</b>	July 17/17	<0.01	ug/L	No
<b>Selenium</b>	July 17/17	0.05	ug/L	No
<b>Sodium</b>	Oct 16/17 Oct 25/17	46.2 36.8	mg/L	Yes
<b>Uranium</b>	July 17/17	0.814	ug/L	No
<b>Fluoride</b>	April 8/13 April 16/13	2.11 2.05	mg/L	Yes
<b>Nitrite</b>	Jan 9/17 Apr 10/17 July 17/17 Oct 16/17	< 0.003 < 0.003 < 0.003 < 0.003	mg/L	No
<b>Nitrate</b>	Jan 9/17 Apr 10/17 July 17/17 Oct 16/17	< 0.006 < 0.006 < 0.006 < 0.006	mg/L	No

Briar Hill Well #1

Organic Parameter	Sample Date	Result Value	Unit of Measure	Exceedence
Alachlor	July 13/15	< 0.02	ug/L	No
Aldicarb	July 13/15	< 0.01	ug/L	No
Aldrin + Dieldrin	July 13/15	< 0.01	ug/L	No
Atrazine + N-dealkylated metabolites	July 13/15	< 0.01	ug/L	No
Azinphos-methyl	July 13/15	< 0.05	ug/L	No
Bendiocarb	July 13/15	< 0.01	ug/L	No
Benzene	July 13/15	< 0.32	ug/L	No
Benzo(a)pyrene	July 13/15	< 0.004	ug/L	No
Bromoxynil	July 13/15	< 0.33	ug/L	No
Carbaryl	July 13/15	< 0.05	ug/L	No
Carbofuran	July 13/15	< 0.01	ug/L	No
Carbon Tetrachloride	July 13/15	< 0.16	ug/L	No
Chlordane (Total)	July 13/15	< 0.01	ug/L	No
Chlorpyrifos	July 13/15	< 0.02	ug/L	No
Cyanazine	July 13/15	< 0.03	ug/L	No
Diazinon	July 13/15	< 0.02	ug/L	No
Dicamba	July 13/15	< 0.20	ug/L	No
1,2-Dichlorobenzene	July 13/15	< 0.41	ug/L	No
1,4-Dichlorobenzene	July 13/15	< 0.36	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	July 13/15	< 0.01	ug/L	No
1,2-Dichloroethane	July 13/15	< 0.35	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	July 13/15	< 0.33	ug/L	No
Dichloromethane	July 13/15	< 0.35	ug/L	No
2-4 Dichlorophenol	July 13/15	< 0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	July 13/15	< 0.19	ug/L	No
Diclofop-methyl	July 13/15	< 0.40	ug/L	No
Dimethoate	July 13/15	< 0.03	ug/L	No
Dinoseb	July 13/15	< 0.36	ug/L	No
Diquat	July 13/15	< 1	ug/L	No
Diuron	July 13/15	< 0.03	ug/L	No
Glyphosate	July 13/15	< 1	ug/L	No
Heptachlor + Heptachlor Epoxide	July 13/15	< 0.01	ug/L	No
Lindane (Total)	July 13/15	< 0.01	ug/L	No
Malathion	July 13/15	< 0.02	ug/L	No
Methoxychlor	July 13/15	< 0.01	ug/L	No
Metolachlor	July 13/15	< 0.01	ug/L	No
Metribuzin	July 13/15	< 0.02	ug/L	No
Monochlorobenzene	July 13/15	< 0.30	ug/L	No
Paraquat	July 13/15	< 1	ug/L	No
Parathion	July 13/15	< 0.02	ug/L	No
Pentachlorophenol	July 13/15	< 0.15	ug/L	No
Phorate	July 13/15	< 0.01	ug/L	No

<b>Organic Parameter (Briar Hill #1 continued)</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedence</b>
<b>Picloram</b>	July 13/15	< 0.04	ug/L	No
<b>Prometryne</b>	July 13/15	< 0.03	ug/L	No
<b>Simazine</b>	July 13/15	< 0.01	ug/L	No
<b>Temephos</b>	July 13/15	< 0.01	ug/L	No
<b>Terbufos</b>	July 13/15	< 0.01	ug/L	No
<b>Tetrachloroethylene</b>	July 13/15	< 0.35	ug/L	No
<b>2,3,4,6-Tetrachlorophenol</b>	July 13/15	< 0.20	ug/L	No
<b>Triallate</b>	July 13/15	< 0.01	ug/L	No
<b>Trichloroethylene</b>	July 13/15	< 0.44	ug/L	No
<b>2,4,6-Trichlorophenol</b>	July 13/15	< 0.25	ug/L	No
<b>2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)</b>	July 13/15	< 0.22	ug/L	No
<b>Trifluralin</b>	July 13/15	< 0.02	ug/L	No
<b>Vinyl Chloride</b>	July 13/15	< 0.17	ug/L	No



Briar Hill Well #2

Organic Parameter	Sample Date	Result Value	Unit of Measure	Exceedence
Alachlor	July 11/16	< 0.02	ug/L	No
Aldicarb	July 8/13	< 0.01	ug/L	No
Aldrin + Dieldrin	July 8/13	< 0.01	ug/L	No
Atrazine + N-dealkylated metabolites	July 11/16	< 0.01	ug/L	No
Azinphos-methyl	July 11/16	< 0.05	ug/L	No
Bendiocarb	July 8/13	< 0.01	ug/L	No
Benzene	July 11/16	< 0.32	ug/L	No
Benzo(a)pyrene	July 11/16	< 0.004	ug/L	No
Bromoxynil	July 11/16	< 0.33	ug/L	No
Carbaryl	July 11/16	< 0.05	ug/L	No
Carbofuran	July 11/16	< 0.01	ug/L	No
Carbon Tetrachloride	July 11/16	< 0.16	ug/L	No
Chlordane (Total)	July 8/13	< 0.01	ug/L	No
Chlorpyrifos	July 11/16	< 0.02	ug/L	No
Cyanazine	July 8/13	< 0.03	ug/L	No
Diazinon	July 11/16	< 0.02	ug/L	No
Dicamba	July 11/16	< 0.20	ug/L	No
1,2-Dichlorobenzene	July 11/16	< 0.41	ug/L	No
1,4-Dichlorobenzene	July 11/16	< 0.36	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	July 8/13	< 0.01	ug/L	No
1,2-Dichloroethane	July 11/16	< 0.35	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	July 11/16	< 0.33	ug/L	No
Dichloromethane	July 11/16	< 0.35	ug/L	No
2-4 Dichlorophenol	July 11/16	< 0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	July 11/16	< 0.19	ug/L	No
Diclofop-methyl	July 11/16	< 0.40	ug/L	No
Dimethoate	July 11/16	< 0.03	ug/L	No
Dinoseb	July 8/13	< 0.36	ug/L	No
Diquat	July 11/16	< 1	ug/L	No
Diuron	July 11/16	< 0.03	ug/L	No
Glyphosate	July 11/16	< 1	ug/L	No
Heptachlor + Heptachlor Epoxide	July 8/13	< 0.01	ug/L	No
Lindane (Total)	July 8/13	< 0.01	ug/L	No
Malathion	July 11/16	< 0.02	ug/L	No
Methoxychlor	July 8/13	< 0.01	ug/L	No
2 methyl-4-chlorophenoxyacetic acid (MCPA)	July 11/16	< 0.00012	mg/L	No
Metolachlor	July 11/16	< 0.01	ug/L	No
Metribuzin	July 11/16	< 0.02	ug/L	No
Monochlorobenzene	July 11/16	< 0.3	ug/L	No
Paraquat	July 11/16	< 1	ug/L	No
Parathion	July 8/13	< 0.02	ug/L	No

<b>Organic Parameter (Briar Hill #2 continued)</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedence</b>
<b>Pentachlorophenol</b>	July 11/16	< 0.01	ug/L	No
<b>Picloram</b>	July 11/16	< 1	ug/L	No
<b>Polychlorinated Biphenyls (PCB)</b>	July 11/16	< 0.04	ug/L	No
<b>Prometryne</b>	July 11/16	< 0.03	ug/L	No
<b>Simazine</b>	July 11/16	< 0.01	ug/L	No
<b>Temephos</b>	July 8/13	< 0.01	ug/L	No
<b>Terbufos</b>	July 11/16	< 0.01	ug/L	No
<b>Tetrachloroethylene</b>	July 11/16	< 0.35	ug/L	No
<b>2,3,4,6-Tetrachlorophenol</b>	July 11/16	< 0.20	ug/L	No
<b>Triallate</b>	July 11/16	< 0.01	ug/L	No
<b>Trichloroethylene</b>	July 11/16	< 0.44	ug/L	No
<b>2,4,6-Trichlorophenol</b>	July 11/16	< 0.25	ug/L	No
<b>2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)</b>	July 8/13	< 0.22	ug/L	No
<b>Trifluralin</b>	July 11/16	< 0.02	ug/L	No
<b>Vinyl Chloride</b>	July 11/16	< 0.17	ug/L	No

Dent Well #2

Organic Parameter	Sample Date	Result Value	Unit of Measure	Exceedence
Alachlor	July 17/17	< 0.02	ug/L	No
Aldicarb	Oct 6/14	< 0.01	ug/L	No
Aldrin + Dieldrin	Oct 6/14	< 0.01	ug/L	No
Atrazine + N-dealkylated metabolites	July 17/17	< 0.01	ug/L	No
Azinphos-methyl	July 17/17	< 0.05	ug/L	No
Bendiocarb	Oct 6/14	< 0.01	ug/L	No
Benzene	July 17/17	< 0.32	ug/L	No
Benzo(a)pyrene	July 17/17	< 0.004	ug/L	No
Bromoxynil	July 17/17	< 0.33	ug/L	No
Carbaryl	July 17/17	< 0.05	ug/L	No
Carbofuran	July 17/17	< 0.01	ug/L	No
Carbon Tetrachloride	July 17/17	< 0.16	ug/L	No
Chlordane (Total)	Oct 6/14	< 0.01	ug/L	No
Chlorpyrifos	July 17/17	< 0.02	ug/L	No
Cyanazine	Oct 6/14	< 0.03	ug/L	No
Diazinon	July 17/17	< 0.02	ug/L	No
Dicamba	July 17/17	< 0.20	ug/L	No
1,2-Dichlorobenzene	July 17/17	< 0.41	ug/L	No
1,4-Dichlorobenzene	July 17/17	< 0.36	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	Oct 6/14	< 0.01	ug/L	No
1,2-Dichloroethane	July 17/17	< 0.35	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	July 17/17	< 0.33	ug/L	No
Dichloromethane	July 17/17	< 0.35	ug/L	No
2-4 Dichlorophenol	July 17/17	< 0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	July 17/17	< 0.19	ug/L	No
Diclofop-methyl	July 17/17	< 0.40	ug/L	No
Dimethoate	July 17/17	< 0.03	ug/L	No
Dinoseb	Oct 6/14	< 0.36	ug/L	No
Diquat	July 17/17	< 1	ug/L	No
Diuron	July 17/17	< 0.03	ug/L	No
Glyphosate	July 17/17	< 1	ug/L	No
Heptachlor + Heptachlor Epoxide	Oct 6/14	< 0.01	ug/L	No
Lindane (Total)	Oct 6/14	< 0.01	ug/L	No
Malathion	July 17/17	<0.02	ug/L	No
Methoxychlor	Oct 6/14	< 0.01	ug/L	No
2 methyl-4-chlorophenoxyacetic acid (MCPA)	July 17/17	< 0.00012	mg/L	No
Metolachlor	July 17/17	< 0.01	ug/L	No
Metribuzin	July 17/17	< 0.02	ug/L	No
Monochlorobenzene	July 17/17	< 0.3	ug/L	No
Paraquat	July 17/17	< 1	ug/L	No
Parathion	Oct 6/14	< 0.02	ug/L	No

Organic Parameter (Dent Well #2 continued)	Sample Date	Result Value	Unit of Measure	Exceedence
Pentachlorophenol	July 17/17	< 0.01	ug/L	No
Picloram	July 17/17	< 1	ug/L	No
Polychlorinated Biphenyls (PCB)	July 17/17	< 0.04	ug/L	No
Prometryne	July 17/17	< 0.03	ug/L	No
Simazine	July 17/17	< 0.01	ug/L	No
Temephos	Oct 6/14	< 0.01	ug/L	No
Terbufos	July 17/17	< 0.01	ug/L	No
Tetrachloroethylene	July 17/17	< 0.35	ug/L	No
2,3,4,6-Tetrachlorophenol	July 17/17	< 0.20	ug/L	No
Triallate	July 17/17	< 0.01	ug/L	No
Trichloroethylene	July 17/17	< 0.44	ug/L	No
2,4,6-Trichlorophenol	July 17/17	< 0.25	ug/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Oct 6/14	< 0.22	ug/L	No
Trifluralin	July 17/17	< 0.02	ug/L	No
Vinyl Chloride	July 17/17	< 0.17	ug/L	No

Trihalomethane (THM) distribution sampling is required quarterly and must also be expressed as a running annual average. The limit as set in the Ontario Drinking Water Quality Standards is 100 ug/L. THMs are a by-product of the disinfection process.

Date Sampled	THM Result Value (ug/L)	Running Annual Average (ug/L)	Exceedance
January 9/17	9.8	13.5	No
April 10/17	25.0	17.2	No
July 17/17	66.0	26.7	No
October 16/17	33	33.5	No

Sampling and testing for Haloacetic Acid (HAA) in the distribution system is a new requirement in 2017. The limit as set in the Ontario Drinking Water Quality Standards is 80 ug/L and starting in 2020 must also be expressed as a running annual average. HAAs are a by-product of the disinfection process.

Date Sampled	HAA Result Value (ug/L)	Running Annual Average (ug/L)	Exceedance
January 9/17	5.3	5.3	No
April 10/17	< 5.3	5.3	No
July 17/17	< 5.3	5.3	No
Oct 16/17	< 5.3	5.3	No

The Tiverton DWS does not have significant levels of lead and so is currently under a reduced-sampling program. Under this sampling program, O. Reg 170 Schedule 15.1 requires sampling for lead every three years and lead-related parameters every year. Lead was last sampled in 2015 and was therefore not required to be sampled in 2017.

Parameter	Location Type	Number of Samples	Range of Results
Lead	Distribution	None	--
pH	Distribution	4	7.51 – 7.67
Alkalinity (mg/L)	Distribution	4	89 – 100

### 2.3. Operational Monitoring

Sodium hypochlorite is used for primary and secondary disinfection. The free chlorine residual is monitored continuously on the treated water and at least seven samples must be taken each week in the distribution system. The MOECC *Procedure for Disinfection of Drinking Water in Ontario* outlines the minimum chlorine residual for adequate treatment.

Free Chlorine Residual	Number of Grab Samples	Range of Results (#-#)
Briar Hill Well #1 & #2 Treated Water	Continuous Monitoring	0.08 – 7.73
Dent Well #2 Treated Water	Continuous Monitoring	0.14 – 3.13
Distribution Water	365	0.15 – 1.72

O. Reg 170 Schedule 7 requires that turbidity in the raw water is tested at least once every month. Consistent turbidity results greater than 1 NTU could indicate surface water influence on the well.

Raw Water Turbidity	Number of Grab Samples	Range of Results (#-#)
Briar Hill Well #1	50	0.16 – 1.28
Briar Hill Well #2	46	0.10 – 0.36
Dent Well #2	48	0.12 – 0.66

### 3. WATER QUANTITY

The following tables list the quantities and flow rates of the water supplied to the distribution system during the reporting period covered by this report, including monthly average and maximum daily flows and a comparison to the rated capacity specified in the system Municipal Drinking Water Licence.

Briar Hill Wells #1 and #2

The rated capacity from the Briar Hill Pumphouse is 717.12 m<sup>3</sup>/day. There is no maximum flow rate specified for water supplied to the distribution system.

Month	Average Daily Flow (m <sup>3</sup> /day)	% Average Day Flow/ Rated Capacity	Maximum Daily Flow (m <sup>3</sup> /day)	% Maximum Day Flow/ Rated Capacity
<b>January</b>	106	15%	132	18%
<b>February</b>	127	18%	242	34%
<b>March</b>	136	19%	162	23%
<b>April</b>	127	18%	355	50%
<b>May</b>	114	16%	184	26%
<b>June</b>	142	20%	209	29%
<b>July</b>	141	20%	247	34%
<b>August</b>	114	16%	220	31%
<b>September</b>	122	17%	159	22%
<b>October</b>	133	18%	173	24%
<b>November</b>	115	16%	147	20%
<b>December</b>	89	12%	121	17%
<b>Annual</b>	122	17%	355	50%

Month	Average Daily Flow Rate (L/s)	Maximum Daily Flow Rate (L/s)
<b>January</b>	1.23	6.29
<b>February</b>	1.47	5.81
<b>March</b>	1.58	5.91
<b>April</b>	1.47	5.78
<b>May</b>	1.32	5.78
<b>June</b>	1.60	5.75
<b>July</b>	1.6	5.7
<b>August</b>	1.30	5.80
<b>September</b>	1.41	5.88
<b>October</b>	1.53	5.85
<b>November</b>	1.33	5.85
<b>December</b>	1.03	6.00
<b>Annual</b>	1.41	6.29

Dent Well #2

The rated capacity from the Dent Pumphouse is 397.44 m<sup>3</sup>/day. There is no maximum flow rate specified for water supplied to the distribution system. (It should be noted that the Permit to Take Water limit for water taking from the Dent Well is 250.5 m<sup>3</sup>/d.)

Month	Average Daily Flow (m <sup>3</sup> /day)	% Average Day Flow/ Rated Capacity	Maximum Daily Flow (m <sup>3</sup> /day)	% Maximum Day Flow/ Rated Capacity
<b>January</b>	78	20%	105	26%
<b>February</b>	88	22%	167	42%
<b>March</b>	91	23%	113	28%
<b>April</b>	87	22%	230	58%
<b>May</b>	75	19%	100	25%
<b>June</b>	79	20%	110	28%
<b>July</b>	87	22%	121	30%
<b>August</b>	84	21%	131	33%
<b>September</b>	86	22%	101	25%
<b>October</b>	85	21%	114	29%
<b>November</b>	85	21%	149	37%
<b>December</b>	96	24%	222	56%
<b>Annual</b>	85	21%	230	58%

Month	Average Daily Flow Rate (L/s)	Maximum Daily Flow Rate (L/s)
<b>January</b>	0.91	5.95
<b>February</b>	1.04	5.25
<b>March</b>	1.05	5.06
<b>April</b>	1.00	5.28
<b>May</b>	0.86	7.10
<b>June</b>	0.90	4.96
<b>July</b>	1.0	5.1
<b>August</b>	1.00	4.90
<b>September</b>	0.99	4.92
<b>October</b>	1.00	4.94
<b>November</b>	0.98	10.13
<b>December</b>	1.12	4.93
<b>Annual</b>	0.99	10.13

#### 4. ADVERSE WATER QUALITY INCIDENTS AND NON-COMPLIANCE FINDINGS

Any adverse results from microbiological samples, chemical samples or observations of operational conditions that indicate adverse water quality are reported to the Spills Action Centre (SAC) of the MOECC and the Medical Officer of Health (MOH). All adverse conditions are responded to immediately and corrective actions taken. For sodium, a result above 20 mg/L must be reported. The municipality notifies residents of the elevated sodium annually in the first water bill each year.

Incident Date	Parameter	Result	Corrective Action	Corrective Action Date
October 12, 2017 AWQI #137213	Total Coliform	1 cfu	Resample	October 12, 2017
October 24, 2017 AWQI #137540	Sodium	Briar Hill #1 = 45.8 mg/L Briar Hill #2 = 44.4 mg/L Dent Well #2 = 46.2 mg/L	Resample	October 25, 2017

The annual MOECC Inspection took place on May 10, 2017. The inspection report identified two non-compliance issues. The first non-compliance referred to the loss of chlorine experienced during the June 12, 2016 power outage while the standpipe was off-line for maintenance and which was previously noted in our 2016 Summary report. The second non-compliance identified that our Permit to Take Water had expired and a new Permit from the MOECC had not yet been received due to a change in the MOECC office location and the application being sent to the wrong address. Direction was given by the MOECC to carry on under the expired Permit until the renewal was received. The system received a final inspection rating of 95.73%.

O. Reg 170 Schedule 22 requires the municipality to identify any requirements of the Act, Regulations, Drinking Water Works Permit, Municipal Drinking Water Licence and any Order that the system failed to meet during the reporting period. These are detailed in the following table including the duration and the measures taken to correct each failure.

Drinking Water Legislation	Requirements the System Failed to Meet	Duration	Corrective Actions
O. Reg. 170, Schedule 22, Section 22-2(1)	The Summary Report was not given to Council prior to March 31, 2017	Summary Reports were given to Council on April 5, 2017	A copy of the annual Schedule of Council Meetings has been obtained from the Clerks department to ensure the Summary Reports are submitted prior to the cut-off date to ensure they are on the Consent Agenda prior to March 31 each year.
Drinking Water Works Permit #088-204 Issue #3, Section 2.4	The Director was not notified within 30 days after the standpipe mixer was put into service in 2016. The required Form 2 had been completed in 2016 for this equipment.	Notification was given March 27, 2017	Notification was given March 27, 2017