



Scott Point Drinking Water System

2018 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). The information required for each of these reports has been combined into this one report.

The reports are available free of charge on the municipal website at www.kincardine.ca or by contacting the Water Services Department at waterservice@kincardine.ca. Requests will also be received in person or by telephone at the Municipal Administration Centre (1475 Concession 5, 519-396-3468) or the Water Services Office (155 Durham Street, Kincardine, 519-396-4660).

1.1. System Description

Drinking-Water System Number:	220007043
Drinking-Water System Name:	Scott Point Drinking Water System
Drinking-Water System Owner:	Municipality of Kincardine
Drinking-Water System Category:	Small Municipal Residential
Period being reported:	Year 2018

The Scott Point Drinking Water System (DWS) is a non-GUDI well system (which means that it is a secure well and not under the influence of surface water) consisting of one well, with a capacity of 0.9 L/s. The treatment works consists of a raw water flow meter, sodium hypochlorite (NSF approved) for disinfection, an oxidation tank and two multi-media pressure filters for iron removal, a 45 m³ baffled reservoir and a treated water flow meter. There is on-line monitoring of treated water for free chlorine residual. Pressure for the distribution system is supplied by pressure storage tanks. Two high lift pumps supply water to the pressure tanks and distribution system as well as the backwash filters. The backwash wastewater is directed to a two-stage tank buried on the plant property. The water system serves less than 40 households. There is a backup generator on-site.

1.2. Major Expenses

The system incurred expenses necessary to install, repair or replace required equipment as follows:

Treatment Equipment (\$1,181.94)

New Distribution Infrastructure (\$5,770.96)

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 11, requires the Scott Point DWS to take a minimum of one sample per month of raw water from the well, and one sample every two weeks of distribution water and have them tested for Escherichia coli (E. coli) and total coliforms. 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 one treated and one 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 the Environment, Conservation and Parks (MECP) 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 2018 sampling program are shown in the table below.

Water Source	Number of TC/EC Samples	Range of Total Coliform Results (#-#)	Range of E. coli Results (#-#)	Number of HPC Samples	Range of HPC Results (#-#)
Raw	12	0 – 0	0 – 0	12	0 – 0
Treated	52	0 – 0	0 – 0	52	0 – 2
Distribution	52	0 – 0	0 – 0	52	0 – 12

2.2. Chemical Testing

The Safe Drinking Water Act Reg 170 Schedule 13 requires periodic testing of the water for chemical parameters. The Scott Point DWS is required to test for nitrite/nitrate and Haloacetic Acid on a quarterly basis. Until recently, trihalomethanes were tested for quarterly but due to the low levels, they are now only required to be tested on a quarterly basis every third year. The tables below outline other inorganic and organic parameters that are required to be tested every five 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.

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 O. Regulation 170. There were no parameters above the half MAC that were required to be tested for quarterly in 2018.

Inorganic Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	July 16/18	<0.02	ug/L	No
Arsenic	July 16/18	<0.02	ug/L	No
Barium	July 16/18	8.34	ug/L	No
Boron	July 16/18	249	ug/L	No
Cadmium	July 16/18	0.009	ug/L	No
Chromium	July 16/18	0.41	ug/L	No
Mercury	July 16/18	0.03	ug/L	No
Selenium	July 16/18	< 0.04	ug/L	No
Sodium	Oct 16/17 Oct 25/17	41.4 33.2	mg/L	Yes
Uranium	July 16/18	0.157	ug/L	No
Fluoride	April 9/18 April 17/18	1.77 1.77	mg/L	Yes
Nitrite	Jan 8/18 Apr 9/18 July 16/18 Oct 15/18	< 0.003 < 0.003 < 0.003 < 0.003	mg/L	No
Nitrate	Jan 8/18 Apr 9/18 July 16/18 Oct 15/18	0.009 0.008 < 0.006 0.007	mg/L	No

Organic Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	July 16/18	< 0.02	ug/L	No
Atrazine + N-dealkylated metabolites	July 16/18	< 0.01	ug/L	No
Azinphos-methyl	July 16/18	< 0.05	ug/L	No
Benzene	July 16/18	< 0.32	ug/L	No
Benzo(a)pyrene	July 16/18	< 0.004	ug/L	No
Bromoxynil	July 16/18	< 0.33	ug/L	No
Carbaryl	July 16/18	< 0.05	ug/L	No
Carbofuran	July 16/18	< 0.01	ug/L	No
Carbon Tetrachloride	July 16/18	< 0.16	ug/L	No
Chlorpyrifos	July 16/18	< 0.02	ug/L	No
Diazinon	July 16/18	< 0.02	ug/L	No
Dicamba	July 16/18	< 0.20	ug/L	No
1,4-Dichlorobenzene	July 16/18	< 0.36	ug/L	No
1,2-Dichlorobenzene	July 16/18	< 0.41	ug/L	No
1,2-Dichloroethane	July 16/18	< 0.35	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	July 16/18	< 0.33	ug/L	No

Organic Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Dichloromethane	July 16/18	< 0.35	ug/L	No
2-4 Dichlorophenol	July 16/18	< 0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	July 16/18	< 0.19	ug/L	No
Diclofop-methyl	July 16/18	< 0.40	ug/L	No
Dimethoate	July 16/18	< 0.03	ug/L	No
Diquat	July 16/18	< 1	ug/L	No
Diuron	July 16/18	< 0.03	ug/L	No
Glyphosate	July 16/18	< 1	ug/L	No
Malathion	July 16/18	< 0.02	ug/L	No
2 methyl-4-chlorophenoxyacetic acid (MCPA)	July 16/18	<0.00012	mg/L	No
Metolachlor	July 16/18	< 0.01	ug/L	No
Metribuzin	July 16/18	< 0.02	ug/L	No
Monochlorobenzene	July 16/18	< 0.3	ug/L	No
Paraquat	July 16/18	< 1	ug/L	No
Pentachlorophenol	July 16/18	< 0.15	ug/L	No
Phorate	July 16/18	< 0.01	ug/L	No
Picloram	July 16/18	< 1	ug/L	No
Polychlorinated Biphenyls (PCB)	July 16/18	0.04	ug/L	No
Prometryne	July 16/18	< 0.03	ug/L	No
Simazine	July 16/18	< 0.01	ug/L	No
Terbufos	July 16/18	< 0.01	ug/L	No
Tetrachloroethylene	July 16/18	< 0.35	ug/L	No
2,3,4,6-Tetrachlorophenol	July 16/18	< 0.20	ug/L	No
Triallate	July 16/18	< 0.01	ug/L	No
Trichloroethylene	July 16/18	< 0.44	ug/L	No
2,4,6-Trichlorophenol	July 16/18	< 0.25	ug/L	No
Trifluralin	July 16/18	< 0.02	ug/L	No
Vinyl Chloride	July 16/18	< 0.17	ug/L	No

Trihalomethane (THM) distribution quarterly sampling was required in 2018 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 8/18	15	14.5	No
April 9/18	15	15.0	No
July 16/18	15	15.3	No
October 15/18	16	15.3	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 8/18	<5.3	5.3	No
April 9/18	<5.3	5.3	No
July 16/18	<5.3	5.3	No
October 15/18	<5.3	5.3	No

The Scott Point 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 required to be sampled in 2018.

Parameter	Location Type	Number of Samples	Range of Results
Lead (ug/L)	Distribution	2	0.15 – 1.09
pH	Distribution	2	7.59 – 7.74
Alkalinity (mg/L)	Distribution	2	94 – 98

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 must be checked a minimum of twice per week in the distribution system.

As a target, the free chlorine residual should be above 0.20 mg/L. A distribution free chlorine level lower than 0.05 mg/L must be reported and corrective action taken.

Free Chlorine Residual	Number of Grab Samples	Range of Results (#-#)
Treated Water	Continuous monitoring	0.44 – 5.00
Distribution Water	365	0.55 – 1.38

O. Reg 170 Schedule 7 requires that turbidity in the raw water is tested at least once every month. Consistent turbidity results greater than 5 NTU could indicate surface water influence on the well.

Raw Water	Number of Grab Samples	Range of Results (#-#)
Turbidity	40	0.03 – 0.89

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. The rated capacity of the treatment system is 77.76 m³/day. There is no maximum flow rate specified for water supplied to the distribution system.

Month	Average Daily Flow (m³/day)	% Average Day/Rated Capacity (m³/day)	Maximum Daily Flow (m³/day)	% Maximum Day/Rated Capacity (m³/day)
January	18	23%	22	28%
February	16	21%	20	26%
March	17	21%	21	27%
April	18	23%	27	34%
May	21	28%	28	36%
June	28	36%	47	60%
July	22	28%	46	60%
August	25	32%	33	43%
September	31	39%	40	51%
October	31	40%	35	45%
November	25	32%	34	43%
December	15	20%	20	26%
Annual	22	29%	47	60%

Month	Average Daily Flow Rate (L/s)	Maximum Daily Flow Rate (L/s)
January	0.20	1.97
February	0.19	2.24
March	0.19	1.97
April	0.21	2.58
May	0.25	1.93
June	0.32	2.56
July	0.25	2.05
August	0.29	2.29
September	0.35	2.09
October	0.36	1.85
November	0.28	2.57
December	0.18	1.67
Annual	0.26	2.58

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 Ministry of the Environment, Conservation and Parks and the Medical Officer of Health (MOH). All adverse conditions are responded to immediately and corrective actions taken. For fluoride, a result above 1.5 mg/L must be reported. The municipality notifies residents of the elevated fluoride annually in the first water bill each year.

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
April 11, 2018 AWQI #139070	Fluoride	1.77	mg/L	Resample	April 17, 2018

The annual Ministry of the Environment, Conservation and Parks Inspection took place on June 19, 2018. The inspection report did not identify any non-compliance issues and the system received a final inspection rating of 100%.

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. All requirements were met in 2018.

Drinking Water Legislation	Requirements the System Failed to Meet	Duration	Corrective Actions