

Sherkston Community Centre Cistern System Annual Drinking Water Quality Report

Prepared on February 2, 2018
in accordance with O.Reg. 170/03
January 1, 2017 to December 31, 2017

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Drinking Water System number: 260092963
Drinking Water System category: Small Municipal Non-Residential
Owned and operated by: The Corporation of the City of Port Colborne

Sherkston Community Centre Cistern System Annual Drinking Water Quality Report

Introduction

The City of Port Colborne is required, under O.Reg.170/03 - *Drinking Water Systems*, to prepare an annual report detailing the operation of the Sherkston Community Centre Cistern System (SCCCS). The regulation specifies in Section 11 what the report must contain, and sets a February 28 deadline for having the report prepared and made available to the public.

Therefore, to ensure compliance with the regulation, this report is prepared in accordance with Section 11, and is available to the public on the City's website at www.portcolborne.ca, under the Water Quality link

Water Supply and Distribution

The Corporation of the City of Port Colborne (City) is the Owner of the Sherkston Community Centre Cistern System, which is the drinking water system for the City-owned Sherkston Community Centre (SCC). Previously, a designated facility was serviced by this system; however, the designated facility left the building on June 30, 2013. The City maintains the Small Municipal Non-Residential System registration as it provides the Centre the flexibility to facilitate a variety of children/youth based leisure/recreation programs without restriction. This enhances the Centre's opportunity to bring more activities in to the Centre and increase the revenue potential.

The SCCC system consists of the following:

- One (1) Wilkinson Heavy PreCast Ltd. 9.7 m³ (3,500 USG) pre-cast concrete potable water cistern with stainless steel locking access hatch complete with perimeter gasket to provide positive seal against infiltration; a sufficient quantity of risers to provide positive assurance of protection from 100 year flood elevation; 1 ¼" 100 psi CSA Poly Pipe (ANSI/NSF 61) water supply line from the cistern to the building; 1 ½" PVC electrical conduit from the electrical panel to the cistern;
- One (1) NSF certified ultraviolet (UV) disinfectant system (Trojan UVMaxPro10 with "cool touch fan" with optional solenoid valve), complete with an ANSI/NSF certified 5-micron sediment and grit removal filter to protect the quartz sleeve from abrasion and to ensure high transmissivity of the water. System includes: continuous UV intensity monitor; fail-safe solenoid valve (emergency shut-off

valve) (alarm condition); thermal protection to prevent nuisance alarms and overheated water supply and; local display indicating status with audible alarm;

- One (1) submersible pump, ¾ HP, 10 gpm, 8 stage, 230 volt complete with cradle and with pressure switch suitable for use with hydro pneumatic pressure tanks for pump operational control;
- One (1) 35 gallon capacity hydro pneumatic pressure tank
- One (1) electrical powered autodialler that monitors the water level in the cistern, the UV system status, power supply etc. and automatically dials key City contacts in the event of an alarm.

Water Quality Monitoring

The City of Port Colborne is required to supply safe drinking water that meets the requirements of the Safe Drinking Water Act and associated regulations. To ensure the City meet these requirements, the City has assigned the following individuals as responsible persons for the SCCCS:

Table 1: Sherkston Community Centre Cistern System Responsible Persons

Position	Name	Phone number
Director of Engineering and Operations	Chris Lee	905-835-2900 ext. 222
Utilities Supervisor	Doug Cressey	905-835-2900 ext. 255
Environmental Compliance Supervisor	Darlene Suddard	905-835-2900 ext. 256

The City has identified the Engineering and Operations Department as being responsible for the operation and maintenance of the Sherkston Community Centre Cistern System (SCCCS). The Public Works, Water Department operates under the Engineering and Operations Department, and is specifically responsible for the daily operation of the SCCCS. As such, the Water Department is responsible for assigning Certified Water Operators or MOE Trained Persons to conduct both the routine water quality sampling and testing and to conduct non-routine sampling (i.e., responding to adverse water quality incidents (AWQI)). These activities ensure the water quality meets the Ontario Drinking Water Quality Standards (O.Reg. 169/03) at all times and under all conditions. The Water Department also ensures that the Operational Checks, Sampling and Testing requirements specified in the Drinking Water Systems Regulation (O.Reg. 170/03) are conducted and recorded. If it is determined that the water quality or an operational parameter does not meet the regulated requirements or exceeds the regulated limits, Certified Operators or MOE Trained Persons immediately implement corrective action to

ensure the continued supply of safe drinking water. The operational checks, sampling and testing requirements, which the City must conduct, are outlined in Table 3.

Water Quality Test Results

As per the sampling and testing requirements detailed in Table 3, the City conducted the following sampling in the period of January 1, 2017 to December 31, 2017:

Microbiological Analysis

In 2017, a total of 28 samples were collected and analyzed for the presence of *E.coli* and Total Coliforms. Laboratory results indicated that *E.coli* was non-detectable in any of the treated water samples, and Total Coliforms were detected on one (1) occasion (*Table 5*). Details about the adverse result are discussed below.

To verify that the UV system was functioning properly, untreated water samples were collected from the pre filter tap on two occasions and were analyzed for Heterotrophic Plate Count (HPC) (*Table 5*). HPCs were detected in both occasions, at levels >500 CFU/mL. The results from the treated water samples collected at the same time indicated that the UV system was operating effectively, as the samples showed that *E.coli* and Total Coliforms were non-detectable

Operational Checks

On a twice-weekly basis, the City performed a site visit to monitor the system and ensure there were no issues. The cistern hatch was checked to ensure it was secure, the UV system was checked and UV statistics (lamp hours etc.) was recorded, the system pressure was recorded and the pump status (idle vs. running) was noted.

Lead Testing (Schedule 15.2) Results

Prior to June 2013, all lead testing activities were conducted by the District School Board of Niagara, under O.Reg. 243/07. The City, under O.Reg. 170/03, is required to collect one sample every 36 months from the plumbing and analyze for lead. Sampling was last completed in May 2016 and the next sampling event will be completed by May 26, 2019.

Regulatory Non-Compliances

There was one instance of regulatory non-compliance in 2017.

Table 2: Summary of Adverse Test Results - 2017

Sample Date	Date Adverse Reported to City	Parameter	Result	Correction Action Date	Corrective Action
July 31, 2017	Aug 1, 2017	Total Coliforms	2 cfu/100mL	Aug 2, 2017	Immediately flush and resample from three locations. Total coliforms were absent from the resamples.

It is important to note that although an adverse microbiological result was observed in 2017, the immediate action by the City's certified Operators ensured that the adverse incident was addressed in a timely manner. This timely response ensured that the safety of the drinking water was maintained, as indicated by the results of special follow up sampling and evaluation, which found the water to be microbiologically safe.

Water System Upgrades

There were no upgrades or significant expenditures made during 2017, as the system was less than 6 years old.

Where to Obtain Additional Information

Copies of this annual report and all laboratory test results are available, free of charge, at the Engineering and Operations Centre, located at 1 Killaly Street West. The annual report can be downloaded from the internet at www.portcolborne.ca, under the "Water Quality" link. Copies of the report and/or test results may also be obtained by contacting the City numbers listed in Table 3 below.

Table 3: Contact Information for the City

Organization	Department	Phone Number
City of Port Colborne	Engineering and Operations Department	905-835-2900
	Public Works	905-835-5079

Table 4: Sherkston Community Centre Cistern System- Water Quality Sampling and Testing Requirements

Parameter	Sampling and Analysis	Water Quality Standards	Comments
Microbiological	<p>As this system is supplied by transported water, that is stored in a sealed cistern, there is no regulatory requirement to collect samples for microbiological analysis. However, the City continues to collect a minimum of 2 samples of treated water (after the UV system) each month and test for total coliforms and/or <i>E.coli</i>.</p> <p>Samples collected before the UV system (raw water) are analyzed for heterotrophic plate counts periodically to assist with determining if the cistern requires cleaning prior to scheduled annual frequency.</p>	<ul style="list-style-type: none"> • <i>E.coli</i> – NONE detected • Total Coliforms – NONE detected • Heterotrophic plate count <500 cfu/mL (not a regulatory limit, guidance only) 	<ul style="list-style-type: none"> • An average of 2 samples per month • Samples sent to an accredited laboratory for analysis • Adverse results are immediately reported by the lab to the City • Not a regulated parameter. Changes in HPC levels may indicate cistern cleaning is required
Lead	<p>Under Schedule 15.2 of O.Reg. 170/03 required to collect one sample every 36 months from the plumbing and analyze for lead</p>	<ul style="list-style-type: none"> • 0.010 mg/L maximum acceptable concentration 	<ul style="list-style-type: none"> • Next sample to be collected by May 26, 2019

Table 5: Sherkston Community Centre Cistern System - Water Quality Sampling and Testing Results
January 1, 2017 – December 31, 2017

Parameter	Requirement	Number of samples	Results			Comments
			Range	Unit	Exceedances	
Microbiological Analysis – Treated Water						
<i>E. coli</i>	ND	28	ND	cfu/ 100 mL	0	Presence of <i>E.coli</i> indicates presence of fecal matter
Total Coliforms	ND	28	2	cfu/ 100 mL	1	Presence of Total Coliforms indicates possible presence of pathogenic bacteria
Microbiological Analysis – Raw Water						
<i>E. coli</i>	N/A	1	ND	cfu/ 100 mL	0	Presence of <i>E.coli</i> indicates presence of fecal matter
Total Coliforms	N/A	1	ND	cfu/ 100 mL	0	Presence of Total Coliforms indicates possible presence of pathogenic bacteria
Heterotrophic Plate Count	<500	2	>500	cfu/mL	N/A	Presence of HPC indicates water quality deterioration

ND = non-detectable NDOGN = No Data-Total Coliform/ *E.coli* Plate Overgrown with Non-Target Bacteria (Adverse) N/A = Not applicable