

**Document 1 – City of Ottawa Drinking Water Systems 2019 – Regulatory requirements and compliance with Safe Drinking Water Act (2002)**

**Drinking water systems:** Lemieux Island WPP; Britannia WPP and Central Distribution System; Carp Well System; Munster Well System; Kings Park Well System; Richmond West Well System; Shadow Ridge Well System; Vars Well System

**Source Water:** Ottawa River & various groundwater sources for municipal well systems

**Date of report:** March 31<sup>st</sup>, 2020

Description	Legislation	Regulatory Requirement	Britannia WPP	Lemieux Island	Carp Well	Munster Well	Kings Park Well	Richmond West	Shadow Ridge	Vars Well
<b>Water Treatment</b>										
Raw (river/well) water taking	PTTW	Raw water flow must be <PTTW	√	√	√	√	√	√	√	√
Raw (river/well) water taking	PTTW	Daily raw water taking flow rates for previous year must be submitted to MECP by March 31	√	√	√	√	√	√	√	√
Treated water production	MDWL Sch.(C) 1.0	Treated water flow must be <MDWL	√	√	√	√	√	√	√	√
Treatment barriers	O.Reg.170/03 Sch.1.4	Treatment must include chemically assisted filtration	√	√	n/a	n/a	n/a	n/a	n/a	n/a
Well protection	O.Reg.170/03 Sch.1.2	Wells must be constructed and maintained to prevent surface water and contaminants from entering the well	n/a	n/a	√	√	√	√	√	√









Description	Legislation	Regulatory Requirement	Britannia WPP	Lemieux Island	Carp Well	Munster Well	Kings Park Well	Richmond West	Shadow Ridge	Vars Well
Research - laboratory testing of water samples	O.Reg.248/03 Section 5	Provide written notification to MECP for research samples being analyzed in non-licensed laboratories	√	√	√	√	√	√	√	√
<b>Water Distribution</b>										
Repair and disinfection of watermains	DWWP Sch.B 2.3	All watermains or related fixtures that come in contact with drinking water must be disinfected as per the MECP Watermain Disinfection Procedure and/or AWWA Standard C651 before being put into service	√	√	√	√	√	√	√	√
<b>Operator Certification</b>										
Overall Responsible Operator (ORO)	O.Reg.128/04	Overall Responsible Operator must be certified to level of the system: Level-4 (Treatment) & Level-3 (Distribution); can be one level lower for up to 150 days per year	√	√	√	√	√	√	√	√
Treatment & distribution operators	O.Reg.170/03 Sch.1.2; O.Reg.128/04 Sch.22	All adjustments to water treatment and distribution system must be carried out by certified operators	√	√	√	√	√	√	√	√
Water quality testing	O.Reg.170/03 Sch.7.5	All drinking water tests must be performed by a Certified Operator or Water Quality Analyst	√	√	√	√	√	√	√	√
<b>Reports &amp; Record-keeping</b>										

Description	Legislation	Regulatory Requirement	Britannia WPP	Lemieux Island	Carp Well	Munster Well	Kings Park Well	Richmond West	Shadow Ridge	Vars Well
Logbooks and record keeping	O.Reg.128/04	Operators shall ensure that all logbooks are properly maintained and completed for each shift by the operator-in-charge or overall responsible operator	√	no <sup>4</sup>	√	√	√	√	√	√
Summary reports	O.Reg.170/03 Sch.22.2	Prepare and transmit Summary Report for each water system to municipal council by March 31 <sup>st</sup> of the next calendar year	√	√	√	√	√	√	√	√
Annual reports	O.Reg.170/03 Section 11	Prepare Annual Report for each water system and make available to public by February 28 <sup>th</sup> of the next calendar year	√	√	√	√	√	√	√	√
Alterations to the system	DWWP Sch.B 4.0	Any alteration of the treatment system must be documented in Forms 2/3 – Record of Minor Modification, retained on-site for 10 years	√	√	√	√	√	√	√	√
Alterations to the system	DWWP Sch.B 4.0	Any alteration of the water mains must be documented in Form 1 – Record of Water Mains Authorized as a Future Alteration, retained on-site for 10 years	√	√	√	√	√	√	√	√

#### Notes for items of non-compliance:

(1) Loss of filter turbidity data for 10 hours at Lemieux Island WPP – on August 25th, 2019, a failure of the computer control software resulted in the loss of filter turbidity data for approximately 10 hours. During this time, filters operating normally and were controlled by a dedicated PLC device, including alarm settings and operator notifications. There was no interruption of the filtration process and drinking water quality was not affected. However, approximately 10 hours of filter process data was not recovered and could not be reviewed by an operator within 72 hours as required by regulations. The Ministry Inspector was promptly notified of the incident.

- (2) pH in main drain outside target range at Lemieux Island WPP – the continuous pH analyzer on the main drain recorded two events with a measurement slightly below the effluent target of pH=6 for 33 minutes on November 30<sup>th</sup> and 43 minutes on December 30<sup>th</sup>. For both events, the operator adjusted the sodium hydroxide dose to increase the pH, but the process took longer than 30 minutes to respond due to hydraulic changes. In both cases, City staff are seeking to clarify the criteria for effluent discharge since the license requires only 4 grab samples to be taken per year. For the purposes of the report, these occurrences were considered to be non-compliance events.
- (3) Measurement of daily chlorine levels in Vars Well System – due to concern for back-flow protection, two routine sample lines were decommissioned on December 12<sup>th</sup>, 2019 in the Vars well system. As a result, only (4) weekly measurements could be taken instead of the required (7) readings. At the City’s request, the Ministry granted temporary relief to take (4) weekly chlorine measurements until a replacement non-freezing sample system could be installed. It is important to note that the Vars chlorine concentration is continuously monitored by a dedicated process analyzer as water leaves the treatment plant. The alternate sampling system must be installed by May 31<sup>st</sup>, 2020.
- (4) Operator log-book entries for Lemieux Island WPP – during the Lemieux Island WPP inspection it was noted by the inspector that some of the entries in the logbooks did not meet the requirements of the regulation. In some cases, it was unclear who the Overall Responsible Operator (ORO) was for a given shift. Refresher training will be provided to plant operators in April 2020 to review the requirements of the regulation with respect to logbook entries.

### **Regulations, Licenses, & Permits:**

- MDWL – Municipal Drinking Water License
- DWWP – Drinking Water Works Permit
- PTTW – Permit To Take Water
- O.Reg.170/03 – Drinking Water Systems Regulation
- O.Reg.169/03 – Ontario Drinking Water Quality Standards
- O.Reg.248/03 – Drinking Water Testing Services
- O.Reg.128/04 – Certification of Drinking Water Systems Operators
- O.Reg.188/07 – Licensing of Municipal Drinking Water systems
- O.Reg.170/03 (Appendix) – Procedure for Disinfection of Drinking Water in Ontario
- O.Reg.170/03 (Sch. 15.1) – Community Lead Testing Program
- AWWA – American Water Works Association

### **Glossary:**

- NOTE: water quality testing refers to treated\_water samples unless otherwise stated
- ML/d = mega-Litres per day = million Litres per day
  - WPP = Water Purification Plant
  - TC = Total Coliform bacteria, units of (cfu/100mL)



EC = E.coli bacteria, units of (cfu/100mL)

HPC = Heterotrophic Plate Count bacteria, units of (cfu/mL)

PS = Pump Station

MAC = maximum acceptable concentration for Ontario Drinking Water Standards

MOH = Medical Officer of Health

MECP = Ministry of Environment and Climate Change

n/a=not applicable for that system