



## MUNICIPAL DRINKING WATER LICENCE

**Licence Number: 014-101**  
**Issue Number: 3**

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, this municipal drinking water licence is issued under Part V of the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 to:

### **The Corporation of the City of Barrie**

**70 Collier Street  
P.O. Box 400  
Barrie ON L4M 4T5**

For the following municipal residential drinking water system:

### **Barrie Drinking Water System**

This municipal drinking water licence includes the following:

<b>Schedule</b>	<b>Description</b>
Schedule A	Drinking Water System Information
Schedule B	General Conditions
Schedule C	System-Specific Conditions
Schedule D	Conditions for Relief from Regulatory Requirements
Schedule E	Pathogen Log Removal/Inactivation Credits

DATED at TORONTO this 21st day of October, 2014

Signature

A handwritten signature in black ink, appearing to read "I. Prashad".

Indra R. Prashad, P.Eng.  
Director  
Part V, *Safe Drinking Water Act*, 2002

## Schedule A: Drinking Water System Information

System Owner	<b>The Corporation of the City of Barrie</b>
Licence Number	<b>014-101</b>
Drinking Water System Name	<b>Barrie Drinking Water System</b>
Schedule A Issue Date	<b>October 21, 2014</b>

The following information is applicable to the above drinking water system and forms part of this licence:

### Licence

Licence Issue Date	October 21, 2014
Licence Expiry Date	October 20, 2019
Application for Licence Renewal Date	April 20, 2019

### Drinking Water Works Permit

Drinking Water System Name	Permit Number	Issue Date
Barrie Drinking Water System	014-201	October 16, 2014

### Permits to Take Water

Water Taking Location	Permit Number	Issue Date
Wells 3A, 4A, 5, 7, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19 and Lake Simcoe	5183-8EZKMA	May 18, 2011

### Financial Plans

The Financial Plan Number for the Financial Plan required to be developed for this drinking water system in accordance with O. Reg. 453/07 shall be:	014-301
Alternately, if one Financial Plan is developed for all drinking water systems owned by the owner, the Financial Plan Number shall be:	014-301A

### Accredited Operating Authority

Drinking Water System or Operational Subsystems	Accredited Operating Authority	Operational Plan No.	Operating Authority No.
Barrie Drinking Water System	The Corporation of the City of Barrie	014-401	014-OA1

## Schedule B: General Conditions

System Owner	The Corporation of the City of Barrie
Licence Number	014-101
Drinking Water System Name	Barrie Drinking Water System
Schedule B Issue Date	October 21, 2014

### 1.0 Definitions

1.1 Words and phrases not defined in this licence and the associated drinking water works permit shall be given the same meaning as those set out in the SDWA and any regulations made in accordance with that act, unless the context requires otherwise.

1.2 In this licence and the associated drinking water works permit:

“**adverse effect**”, “**contaminant**” and “**natural environment**” shall have the same meanings as in the EPA;

“**alteration**” may include the following in respect of this drinking water system:

- (a) An addition to the system,
- (b) A modification of the system,
- (c) A replacement of part of the system, and
- (d) An extension of the system;

“**compound of concern**” means a contaminant that, based on generally available information, may be emitted from a component of the drinking water system to the atmosphere in a quantity that is significant either in comparison to the relevant point of impingement limit or if a point of impingement limit is not available for the compound, then based on generally available toxicological information, the compound has the potential to cause an adverse effect as defined by the EPA at a point of impingement;

“**Director**” means a Director appointed pursuant to section 6 of the SDWA for the purposes of Part V of the SDWA;

“**drinking water works permit**” means the drinking water works permit for the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

“**emission summary table**” means the table that was prepared by a Professional Engineer in accordance with O. Reg. 419/05 and the procedure document listing the appropriate point of impingement concentrations of each compound of concern emitted from a component of the drinking water system and providing comparison to the corresponding point of impingement limit;

“**EPA**” means the *Environmental Protection Act*, R.S.O. 1990, c. E.19;

“**financial plan**” means the financial plan required by O. Reg. 453/07 and the conditions of this licence;

“**licence**” means this municipal drinking water licence for the municipal drinking water system identified in Schedule A of this licence;

“**operational plan**” means an operational plan developed in accordance with the Director’s Directions – Minimum Requirements for Operational Plans made under the authority of subsection 15(1) of the SDWA;

“**owner**” means the owner of the drinking water system as identified in Schedule A of this licence;

“**permit to take water**” means the permit to take water that is associated with the taking of water for purposes of the operation of the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

“**point of impingement**” means any point in the natural environment that is not on the same property as the source of the contaminant and as defined by section 2 of O. Reg. 419/05;

“**point of impingement limit**” means the appropriate standard from Schedule 1, 2 or 3 of O. Reg. 419/05 and if a standard is not provided for a compound of concern, the appropriate criteria listed in the Ministry of the Environment publication titled “Summary of Standards and Guidelines to support Ontario Regulation 419: Air Pollution – Local Air Quality (including Schedule 6 of O. Reg. 419 on Upper Risk Thresholds)”, dated February 2008, as amended;

“**procedure document**” means the Ministry of the Environment procedure titled “Procedure for Preparing an Emission Summary and Dispersion Modelling Report” dated July 2005, as amended;

“**Professional Engineer**” means a Professional Engineer who has been licenced to practice in the Province of Ontario;

“**provincial officer**” means a provincial officer appointed pursuant to section 8 of the SDWA;

“**publication NPC-300**” means the Ministry of the Environment publication titled “Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning” dated August 2013, as amended;

“**SDWA**” means the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32;

“**sensitive populations**” means any one or a combination of the following locations where the health effects of nitrogen oxides emissions from emergency generator(s) shall be considered using the point of impingement limit instead of the Ministry of the Environment screening level for emergency generator(s):

- (a) health care units (e.g., hospitals and nursing homes),
- (b) primary/junior public schools,
- (c) day-care facilities, and
- (d) playgrounds;

“**subsystem**” has the same meaning as in Ontario Regulation 128/04 (Certification of Drinking Water System Operators and Water Quality Analysts);

“**surface water**” means water bodies (lakes, wetlands, ponds - including dug-outs), water courses (rivers, streams, water-filled drainage ditches), infiltration trenches, and areas of seasonal wetlands;

## 2.0 Applicability

- 2.1 In addition to any other requirements, the drinking water system identified above shall be established, altered and operated in accordance with the conditions of the drinking water works permit and this licence.

## 3.0 Licence Expiry

- 3.1 This licence expires on the date identified as the licence expiry date in Schedule A of this licence.

## 4.0 Licence Renewal

- 4.1 Any application to renew this licence shall be made on or before the date identified as the application for licence renewal date set out in Schedule A of this licence.

## 5.0 Compliance

- 5.1 The owner and operating authority shall ensure that any person authorized to carry out work on or to operate any aspect of the drinking water system has been informed of the SDWA, all applicable regulations made in accordance with that act, the drinking water works permit and this licence and shall take all reasonable measures to ensure any such person complies with the same.

## 6.0 Licence and Drinking Water Works Permit Availability

- 6.1 At least one copy of this licence and the drinking water works permit shall be stored in such a manner that they are readily viewable by all persons involved in the operation of the drinking water system.

## 7.0 Permit to Take Water and Drinking Water Works Permit

- 7.1 A permit to take water identified in Schedule A of this licence is the applicable permit on the date identified as the Schedule A Issue Date.
- 7.2 A drinking water works permit identified in Schedule A of this licence is the applicable permit on the date identified as the Schedule A Issue Date.

## 8.0 Financial Plan

- 8.1 For every financial plan prepared in accordance with subsections 2(1) and 3(1) of O. Reg. 453/07, the owner of the drinking water system shall:
- 8.1.1 Ensure that the financial plan contains on the front page of the financial plan, the appropriate financial plan number as set out in Schedule A of this licence; and
- 8.1.2 Submit a copy of the financial plan to the Ministry of Municipal Affairs and Housing within three (3) months of receiving approval by a resolution of municipal council or the governing body of the owner.

## 9.0 Interpretation

- 9.1 Where there is a conflict between the provisions of this licence and any other document, the following hierarchy shall be used to determine the provision that takes precedence:
- 9.1.1 The SDWA;
- 9.1.2 A condition imposed in this licence that explicitly overrides a prescribed regulatory requirement;
- 9.1.3 A condition imposed in the drinking water works permit that explicitly overrides a prescribed regulatory requirement;
- 9.1.4 Any regulation made under the SDWA;
- 9.1.5 Any provision of this licence that does not explicitly override a prescribed regulatory requirement;
- 9.1.6 Any provision of the drinking water works permit that does not explicitly override a prescribed regulatory requirement;
- 9.1.7 Any application documents listed in this licence, or the drinking water works permit from the most recent to the earliest; and
- 9.1.8 All other documents listed in this licence, or the drinking water works permit from the most recent to the earliest.
- 9.2 If any requirement of this licence or the drinking water works permit is found to be invalid by a court of competent jurisdiction, the remaining requirements of this licence and the drinking water works permit shall continue to apply.

- 9.3** The issuance of and compliance with the conditions of this licence and the drinking water works permit does not:
- 9.3.1 Relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including the *Environmental Assessment Act*, R.S.O. 1990, c. E.18; and
- 9.3.2 Limit in any way the authority of the appointed Directors and provincial officers of the Ministry of the Environment to require certain steps be taken or to require the owner to furnish any further information related to compliance with the conditions of this licence or the drinking water works permit.
- 9.4** For greater certainty, nothing in this licence or the drinking water works permit shall be read to provide relief from regulatory requirements in accordance with section 46 of the SDWA, except as expressly provided in the licence or the drinking water works permit.

## 10.0 Adverse Effects

- 10.1** Nothing in this licence or the drinking water works permit shall be read as to permit:
- 10.1.1 The discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect; or
- 10.1.2 The discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters.
- 10.2** All reasonable steps shall be taken to minimize and ameliorate any adverse effect on the natural environment or impairment of the quality of water of any waters resulting from the operation of the drinking water system including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.
- 10.3** Fulfillment of one or more conditions imposed by this licence or the drinking water works permit does not eliminate the requirement to fulfill any other condition of this licence or the drinking water works permit.

## 11.0 Change of Owner or Operating Authority

- 11.1** This licence is not transferable without the prior written consent of the Director.
- 11.2** The owner shall notify the Director in writing at least 30 days prior to a change of any operating authority identified in Schedule A of this licence.
- 11.2.1 Where the change of operating authority is the result of an emergency situation, the owner shall notify the Director in writing of the change as soon as practicable.

## 12.0 Information to be Provided

- 12.1** Any information requested by a Director or a provincial officer concerning the drinking water system and its operation, including but not limited to any records required to be kept by this licence or the drinking water works permit, shall be provided upon request.

## 13.0 Records Retention

- 13.1** Except as otherwise required in this licence or the drinking water works permit, any records required by or created in accordance with this licence or the drinking water works permit, other than the records specifically referenced in section 12 of O. Reg. 170/03, shall be retained for at least 5 years and made available for inspection by a provincial officer, upon request.

## 14.0 Chemicals and Materials

- 14.1** All chemicals and materials used in the alteration or operation of the drinking water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60, NSF/61, and NSF 372.
- 14.1.1 In the event that the standards are updated, the owner may request authorization from the Director to use any on hand chemicals and materials that previously met the applicable standards.
- 14.1.2 The requirement for the owner to comply with NSF 372 shall come into force no later than October 17, 2016.
- 14.2** The most current chemical and material product registration documentation from a testing institution accredited by either the Standards Council of Canada or by the American National Standards Institution ("ANSI") shall be available at all times for each chemical and material used in the operation of the drinking water system that comes into contact with water within the system.
- 14.3** Conditions 14.1 and 14.2 do not apply in the case of the following:
- 14.3.1 Water pipe and pipe fittings meeting AWWA specifications made from ductile iron, cast iron, PVC, fibre and/or steel wire reinforced cement pipe or high density polyethylene (HDPE);
- 14.3.2 Articles made from stainless steel, glass, HDPE or Teflon®;
- 14.3.3 Cement mortar for watermain lining and for water contacting surfaces of concrete structures made from washed aggregates and Portland cement;
- 14.3.4 Gaskets that are made from NSF approved materials;
- 14.3.5 Food grade oils and lubricants, food grade anti-freeze, and other food grade chemicals and materials that are compatible for drinking water use; or

- 14.3.6 Any particular chemical or material where the owner has written documentation signed by the Director that indicates that the Ministry of the Environment is satisfied that the chemical or material is acceptable for use within the drinking water system and the chemical or material is only used as permitted by the documentation.

## 15.0 Drawings

- 15.1 All drawings and diagrams in the possession of the owner that show any treatment subsystem as constructed shall be retained by the owner unless the drawings and diagrams are replaced by a revised or updated version showing the subsystem as constructed subsequent to the alteration.
- 15.2 Any alteration to any treatment subsystem shall be incorporated into process flow diagrams, process and instrumentation diagrams, and record drawings and diagrams within one year of the substantial completion of the alteration.
- 15.3 Process flow diagrams and process and instrumentation diagrams for any treatment subsystem shall be kept in a place, or made available in such a manner, that they may be readily viewed by all persons responsible for all or part of the operation of the drinking water system.

## 16.0 Operations and Maintenance Manual

- 16.1 An up-to-date operations and maintenance manual or manuals shall be maintained and applicable parts of the manual or manuals shall be made available for reference by all persons responsible for all or part of the operation or maintenance of the drinking water system.
- 16.2 The operations and maintenance manual or manuals, shall include at a minimum:
- 16.2.1 The requirements of this licence and associated procedures;
  - 16.2.2 The requirements of the drinking water works permit for the drinking water system;
  - 16.2.3 A description of the processes used to achieve primary and secondary disinfection within the drinking water system;
  - 16.2.4 Procedures for monitoring and recording the in-process parameters necessary for the control of any treatment subsystem and for assessing the performance of the drinking water system;
  - 16.2.5 Procedures for the operation and maintenance of monitoring equipment;
  - 16.2.6 Contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset conditions and equipment breakdown;
  - 16.2.7 Procedures for dealing with complaints related to the drinking water system, including the recording of the nature of the complaint and any investigation and corrective action taken in respect of the complaint;

- 16.2.8 An inspection schedule for all wells associated with the drinking water system, including all production wells, standby wells, test wells and monitoring wells;
  - 16.2.9 Well inspection and maintenance procedures for the entire well structure of each well including all above and below grade well components; and
  - 16.2.10 Remedial action plans for situations where an inspection indicates non-compliance with respect to regulatory requirements and/or risk to raw well water quality.
- 16.3** Procedures necessary for the operation and maintenance of any alterations to the drinking water system shall be incorporated into the operations and maintenance manual or manuals prior to those alterations coming into operation.

## Schedule C: System-Specific Conditions

System Owner	The Corporation of the City of Barrie
Licence Number	014-101
Drinking Water System Name	Barrie Drinking Water System
Schedule C Issue Date	October 21, 2014

### 1.0 Performance Limits

#### Rated Capacity

- 1.1** For each treatment subsystem listed in column 1 of Table 1, the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed the value identified as the rated capacity in column 2 of the same row.

<b>Table 1: Rated Capacity</b>	
Column 1 Treatment Subsystem Name	Column 2 Rated Capacity (m <sup>3</sup> /day)
Surface Water Treatment Plant	60,000
Well 3A, Anne Street	6,552
Well 5, John Street	6,552
Well 7, Tiffin Street	6,552
Well 9, Johnson Street	6,552
Well 11, Heritage Park	9,100
Well 12, Centennial Park	9,100
Well 13, Johnson Street	6,552
Well 14, Heritage Park	9,100
Well 15, Centennial Park	9,100
Well 16, Brown Wood Drive	7,862
Well 17, Cross Street	11,232
Well 18, Cross Street	11,232

### Maximum Flow Rates

- 1.2 For each treatment subsystem listed in column 1 of Table 2, the maximum flow rate of water that flows into a treatment subsystem component listed in column 2 shall not exceed the value listed in column 3 of the same row.

Table 2: Maximum Flow Rates		
Column 1 Treatment Subsystem Name	Column 2 Treatment Subsystem Component	Column 3 Maximum Flow Rate (L/s)
Not Applicable	Not Applicable	Not Applicable

- 1.3 Despite conditions 1.1 and 1.2, a treatment subsystem may be operated temporarily at a maximum daily volume and/or a maximum flow rate above the values set out in column 2 of Table 1 and column 3 of Table 2 respectively for the purposes of fighting a large fire or for the maintenance of the drinking water system.
- 1.4 Condition 1.3 does not authorize the discharge into the distribution system of any water that does not meet all of the requirements of this licence and all other regulatory requirements, including compliance with the Ontario Drinking Water Quality Standards.

### Residue Management

- 1.5 In respect of an effluent discharged into the natural environment from a treatment subsystem or treatment subsystem component listed in column 1 of Table 3:
- 1.5.1 The annual average concentration of a test parameter identified in column 2 shall not exceed the value in column 3 of the same row; and
- 1.5.2 The maximum concentration of a test parameter identified in column 2 shall not exceed the value in column 4 of the same row.

Table 3: Residue Management			
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Annual Average Concentration (mg/L)	Column 4 Maximum Concentration (mg/L)
Not Applicable	Not Applicable	Not Applicable	Not Applicable

### UV Disinfection Equipment Performance

- 1.6 For each treatment subsystem or treatment subsystem component listed in column 1 of Table 4:
- 1.6.1 The UV disinfection equipment while directing water to the distribution system shall be operated such that a continuous pass-through UV dose is maintained throughout the life time of the UV lamp(s) that is at least the minimum continuous pass-through UV dose set out in column 2 of the same row;

- 1.6.2 The UV disinfection equipment shall be operated within validated operating conditions;
- 1.6.3 The UV sensors shall be verified with a reference UV sensor according to the manufacturer's recommended verification frequency, or otherwise at least once each month that the UV disinfection equipment is in operation;
- 1.6.4 The UV disinfection equipment shall be calibrated according to the manufacturer's recommended calibration frequency or otherwise at least once every 12 months during which the drinking water system is in operation; and
- 1.6.5 Further to condition 1.6.4, the UV disinfection equipment shall be calibrated not more than 30 days before or after the next calibration due date.

**Table 4: UV Disinfection Equipment Performance**

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Minimum Continuous Pass-Through UV Dose (mJ/cm <sup>2</sup> )
Well 5, John Street	40

## 2.0 Flow Measurement and Recording Requirements

- 2.1 For each treatment subsystem identified in column 1 of Table 1 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for:
- 2.1.1 The flow rate and daily volume of treated water that flows from the treatment subsystem to the distribution system.
- 2.1.2 The flow rate and daily volume of water that flows into the treatment subsystem.
- 2.2 For each treatment subsystem component identified in column 2 of Table 2 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for the flow rate and daily volume of water that flows into the treatment subsystem component.
- 2.3 Where a rated capacity from Table 1 or a maximum flow rate from Table 2 is exceeded, the following shall be recorded:
- 2.3.1 The difference between the measured amount and the applicable rated capacity or maximum flow rate specified in Table 1 or Table 2;
- 2.3.2 The time and date of the measurement;
- 2.3.3 The reason for the exceedance; and

- 2.3.4 The duration of time that lapses between the applicable rated capacity or maximum flow rate first being exceeded and the next measurement where the applicable rated capacity or maximum flow rate is no longer exceeded.

### 3.0 Calibration of Flow Measuring Devices

- 3.1 All flow measuring devices must be checked and calibrated in accordance with the manufacturer's instructions.
- 3.2 If the manufacturer's instructions do not indicate how often to check and calibrate a flow measuring device, the equipment must be checked and calibrated at least once every 12 months during which the drinking water system is in operation.
- 3.2.1 For greater certainty, if condition 3.2 applies, the equipment shall be checked and calibrated not more than 30 days before or after the first anniversary of the day the equipment was checked and calibrated in the previous 12-month period.

### 4.0 Additional Sampling, Testing and Monitoring

#### Drinking Water Health and Non-Health Related Parameters

- 4.1 For each treatment subsystem or treatment subsystem component identified in column 1 of Tables 5 and 6 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 at the sampling frequency listed in column 3 and at the monitoring location listed in column 4 of the same row.

<b>Table 5: Drinking Water Health Related Parameters</b>			
<b>Column 1 Treatment Subsystem or Treatment Subsystem Component Name</b>	<b>Column 2 Test Parameter</b>	<b>Column 3 Sampling Frequency</b>	<b>Column 4 Monitoring Location</b>
Well 11, Heritage Park	VOCs <sup>1</sup>	Monthly	Raw Water
Well 12, Centennial Park	VOCs <sup>1</sup>	Monthly	Raw Water
Well 14, Heritage Park	VOCs <sup>1</sup>	Monthly	Raw Water
Well 15, Centennial Park	VOCs <sup>1</sup>	Monthly	Raw Water

<sup>1</sup> VOCs include:

1,2-dichlorobenzene	Dichloromethane
1,4-dichlorobenzene	Monochlorobenzene
1,2-dichloroethane	Tetrachloroethylene
1,1-dichloroethylene	Trichloroethylene
Benzene	Vinyl chloride
Carbon tetrachloride	

<b>Table 6: Drinking Water Non-Health Related Parameters</b>			
<b>Column 1 Treatment Subsystem or Treatment Subsystem Component Name</b>	<b>Column 2 Test Parameter</b>	<b>Column 3 Sampling Frequency</b>	<b>Column 4 Monitoring Location</b>
Well 3A, Anne Street	Sodium	Quarterly	Raw Water
Well 9, Johnson Street	Sodium	Quarterly	Raw Water
Well 11, Heritage Park	Sodium	Quarterly	Raw Water
Well 12, Centennial Park	Sodium	Quarterly	Raw Water
Well 13, Johnson Street	Sodium	Quarterly	Raw Water
Well 14, Heritage Park	Sodium	Quarterly	Raw Water

### Environmental Discharge Parameters

**4.2** For each treatment subsystem or treatment subsystem component identified in column 1 of Table 7 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 using the sample type identified in column 3 at the sampling frequency listed in column 4 and at the monitoring location listed in column 5 of the same row.

**4.3** For the purposes of Table 7:

4.3.1 Manual Composite means the mean of at least three grab samples taken during a discharge event, with one sample being taken immediately following the commencement of the discharge event, one sample being taken approximately at the mid-point of the discharge event and one sample being taken immediately before the end of the discharge event; and

4.3.2 Automated Composite means samples must be taken during a discharge event by an automated sampler at a minimum sampling frequency of once per hour.

**4.4** Any sampling, testing and monitoring for the test parameter Total Suspended Solids shall be performed in accordance with the requirements set out in the publication "Standard Methods for the Examination of Water and Wastewater", 21<sup>st</sup> Edition, 2005, or as amended from time to time by more recently published editions.

<b>Table 7: Environmental Discharge Parameters</b>				
<b>Column 1 Treatment Subsystem or Treatment Subsystem Component Name</b>	<b>Column 2 Test Parameter</b>	<b>Column 3 Sample Type</b>	<b>Column 4 Sampling Frequency</b>	<b>Column 5 Monitoring Location</b>
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

- 4.5** Pursuant to Condition 10 of Schedule B of this licence, the owner may undertake the following environmental discharges, associated with the maintenance and repair of the drinking water system:
- 4.5.1 Discharge of potable water from watermains to roads or storm sewers;
  - 4.5.2 Discharge of non-potable water from watermains, that has been dechlorinated, to roads or storm sewers;
  - 4.5.3 Direct discharge of potable water from reservoirs, elevated tanks, storage tanks, and pumping stations
    - 4.5.3.1 To roads or storm sewers; and
    - 4.5.3.2 To a watercourse, where the discharge has been dechlorinated, and if necessary sediment and erosion control measures have been implemented.
  - 4.5.4 Discharge of raw water from groundwater wells, where if necessary sediment and erosion control measures have been implemented.
  - 4.5.5 Discharges of raw water or potable water from the treatment subsystem to the environment, where if necessary the discharge has been dechlorinated and sediment and erosion control measures have been implemented.

### UV Disinfection Equipment

- 4.6** For each treatment subsystem or treatment subsystem component listed in column 1 of Table 8 and in addition to any other sampling, analysis and recording that may be required, continuous monitoring and recording with a minimum testing/reading and recording frequency of every four (4) hours shall be carried out for the test parameters set out in column 3 of the same row.

<b>Table 8: UV Disinfection Equipment</b>		
<b>Column 1 Treatment Subsystem or Treatment Subsystem Component Name</b>	<b>Column 2 Control Strategy</b>	<b>Column 3 Test Parameter</b>
Well 5, John Street	Calculated Dose	Calculated UV Dose
		Flow Rate
		UV Intensity
		UV Lamp Status

- 4.7** For Well 5, John Street and in addition to any other sampling, analysis and recording that may be required, weekly monitoring and recording shall be carried out for the test parameter UV transmittance.

**5.0 Studies Required**

5.1 No studies required.

**6.0 Source Protection**

6.1 No source water protection requirements.

## Schedule D: Conditions for Relief from Regulatory Requirements

System Owner	The Corporation of the City of Barrie
Licence Number	014-101
Drinking Water System Name	Barrie Drinking Water System
Schedule D Issue Date	October 21, 2014

### 1.0 Lead Regulatory Relief

- 1.1** Any relief from regulatory requirements previously authorized by the Director in respect of the drinking water system under section 38 of the SDWA in relation to the sampling, testing or monitoring requirements contained in Schedule 15.1 of O. Reg. 170/03 shall remain in force until such time as Schedule 15.1 of O. Reg. 170/03 is amended after June 1, 2009.
- 1.2** In addition to condition 1.1, for a drinking water system or drinking water subsystem identified by columns 1 and 2 of Table 1 and notwithstanding the provisions of Schedule 15.1 of O. Reg. 170/03, the owner is not required to comply with the sampling requirements of columns 3, 4 and 5 of the same row.

<b>Table 1: Number of Sampling Points Required for Compliance with Schedule 15.1 of O. Reg. 170/03</b>				
Column 1 Drinking Water System or Drinking Water Subsystem Name	Column 2 DWS Number	Column 3 Number of Sampling Points in Plumbing that Serves Private Residences	Column 4 Number of Sampling Points in Plumbing that Does Not Serve Private Residences	Column 5 Number of Sampling Points in Distribution System
Barrie Drinking Water System	220001192	50	5	10

- 1.3** For a drinking water system or drinking water subsystem identified by columns 1 and 2 of Table 2 and in exchange for any relief from regulatory requirements granted in condition 1.2 and subject to any other applicable conditions of this licence and drinking water works permit, the owner is required to comply with the sampling requirements of columns 3, 4 and 5 of the same row.

<b>Table 2: Number of Sampling Points Required for Relief from Regulatory Requirements</b>				
Column 1 Drinking Water System or Drinking Water Subsystem Name	Column 2 DWS Number	Column 3 Number of Sampling Points in Plumbing that Serves Private Residences	Column 4 Number of Sampling Points in Plumbing that Does Not Serve Private Residences	Column 5 Number of Sampling Points in Distribution System
Barrie Drinking Water System	220001192	0	5	10

- 1.4 For a drinking water system or drinking water subsystem identified by columns 1 and 2 of Table 3, the relief from regulatory requirements granted in condition 1.2 is in effect for the sampling period identified in column 3 of the same row.

<b>Table 3: Sampling Periods</b>		
<b>Column 1 Drinking Water System or Drinking Water Subsystem Name</b>	<b>Column 2 DWS Number</b>	<b>Column 3 Sampling Period</b>
Barrie Drinking Water System	220001192	June 15, 2014 to October 15, 2014 December 15, 2014 to April 15, 2015 June 15, 2015 to October 15, 2015 December 15, 2015 to April 15, 2016 June 15, 2016 to October 15, 2016 December 15, 2016 to April 15, 2017 June 15, 2017 to October 15, 2017 December 15, 2017 to April 15, 2018 June 15, 2018 to October 15, 2018 December 15, 2018 to April 15, 2019 June 15, 2019 to October 15, 2019

- 1.5 In the event O. Reg. 170/03 is amended to require fewer sampling locations than specified under the relief granted in accordance with condition 1.2, then the regulation shall prevail.
- 1.6 Subsection 15.1 – 5 (Reduced Sampling) of O. Reg. 170/03 does not apply to the drinking water system or drinking water subsystems identified in this licence as long as the relief from regulatory requirements granted in accordance with condition 1.2 remains in effect.

## 2.0 Other Regulatory Relief

- 2.1 Not applicable.

## Schedule E: Pathogen Log Removal/Inactivation Credits

System Owner	The Corporation of the City of Barrie
Licence Number	014-101
Drinking Water System Name	Barrie Drinking Water System
Schedule E Issue Date	October 21, 2014

### 1.0 Primary Disinfection Pathogen Log Removal/Inactivation Credits

#### Surface Water Treatment Plant [SURFACE WATER]

Log Removal/Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Surface Water Treatment Plant	2	3	4

Log Removal/Inactivation Credits Assigned	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Primary Membrane Filtration	2	2.5	2.0
Chlorine Disinfection	0	0.5	2.0

#### Well 3A, Anne Street [GROUNDWATER]

Log Removal/Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Well 3A, Anne Street	0	0	2

Log Removal/Inactivation Credits Assigned	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Chlorine Disinfection	0	0	2

#### Well 5, John Street [GROUNDWATER]

Log Removal/Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Well 5, John Street	0	0	2

Log Removal/Inactivation Credits Assigned	Cryptosporidium Oocysts	Giardia Cysts	Viruses
UV Treatment	0	0	2

**Well 7, Tiffin Street** [GROUNDWATER]

Log Removal/Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Well 7, Tiffin Street	0	0	2

Log Removal/Inactivation Credits Assigned	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Chlorine Disinfection	0	0	2

**Well 9, Johnson Street** [GROUNDWATER]

Log Removal/Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Well 9, Johnson Street	0	0	2

Log Removal/Inactivation Credits Assigned	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Chlorine Disinfection	0	0	2

**Well 11, Heritage Park** [GROUNDWATER]

Log Removal/Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Well 11, Heritage Park	0	0	2

Log Removal/Inactivation Credits Assigned	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Chlorine Disinfection	0	0	2

**Well 12, Centennial Park** [GROUNDWATER]

Log Removal/Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Well 12, Centennial Park	0	0	2

Log Removal/Inactivation Credits Assigned	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Chlorine Disinfection	0	0	2

**Well 13, Johnson Street** [GROUNDWATER]

Log Removal/Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Well 13, Johnson Street	0	0	2

Log Removal/Inactivation Credits Assigned	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Chlorine Disinfection	0	0	2

**Well 14, Heritage Park** [GROUNDWATER]

Log Removal/Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Well 14, Heritage Park	0	0	2

Log Removal/Inactivation Credits Assigned	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Chlorine Disinfection	0	0	2

**Well 15, Centennial Park** [GROUNDWATER]

Log Removal/Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Well 15, Centennial Park	0	0	2

Log Removal/Inactivation Credits Assigned	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Chlorine Disinfection	0	0	2

**Well 16, Brown Wood Drive** [GROUNDWATER]

Log Removal/Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Well 16, Brown Wood Drive	0	0	2

Log Removal/Inactivation Credits Assigned	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Chlorine Disinfection	0	0	2

**Well 17, Cross Street** [GROUNDWATER]

Log Removal/Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Well 17, Cross Street	0	0	2

Log Removal/Inactivation Credits Assigned	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Chlorine Disinfection	0	0	2

**Well 18, Cross Street** [GROUNDWATER]

Log Removal/Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Well 18, Cross Street	0	0	2

Log Removal/Inactivation Credits Assigned	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Chlorine Disinfection	0	0	2