

APPENDIX D
PROCEDURE FOR CLEANING, TESTING,
DISINFECTION AND CONNECTION OF
WATERMAINS

PROCEDURE FOR THE CLEANING, TESTING, DISINFECTION, AND CONNECTION OF WATERMAINS

1.0 INTRODUCTION

1.1 Scope: Watermain Installation and Testing Procedures

This procedure covers the cleaning, testing, disinfection, and connection of watermains. Unless specified otherwise this procedure applies to all new watermains, above ground by-pass watermains and relined watermains.

1.2 Definitions

Director means The Corporation of the County of Prince Edward, Director of Development Services Department or his/ her appointed designate.

Municipal Field Representative means The Corporation of the County of Prince Edward, Development Services Department, and functions as the on-site representative for the Director.

Consultant means the Engineering Consulting company, who is retained by the Developer/Proponent and who is also identified as the Engineer of Record for the associated works. .

Contractor means the person, partnership or corporation undertaking the physical installation of the Work.

Developer means the person, partnership or corporation undertaking the work.

ORO means the Municipality's Overall Responsible Operator within the water and Wastewater Operations Department

Specialist means the person, partnership or corporation with expertise in works associated with swabbing, pressure and leakage testing, chlorination, dechlorination and sterilization of watermains. If the Contractor has appropriate expertise with this type of work, the Contractor may be considered as the Specialist for the purposes of this paragraph. If the Contractor is to be considered the Specialist, the Consultant must make a recommendation to the Municipality in order to obtain approval.

Backflow Prevention means the prevention of a reversal of normal flow that could introduce contamination to the potable water supply; accomplished by an air gap or CSA approved backflow preventer selected, installed and tested in accordance with CSA Standard B64.10: Selection and Installation of Backflow Preventers.

Disinfectants mean calcium or sodium hypochlorite that meets or exceeds AWWA 8300 or liquid chlorine that meets or exceeds AWWA 8301. All references to 'chlorine' or 'chlorination' in this document shall mean sodium hypochlorite.

LWO Number means the Environmental Laboratory Work Order Number.

Neutralizing Agent means Sodium Thiosulfate that meets or exceeds Appendix C of AWWA

Standard C651.

SDWA means the Safe Drinking Water Act of Ontario.

NSF 61 means the National Sanitation Foundation, Standard 61.

1.3 References

These procedures are based on and shall be used in conjunction with, the Ontario Provincial Standard Specifications (OPSS), the American Waterworks Association Standards (the most current version of ANSI/AWWA C651 and Appendices A, 8 and C), the Safe Drinking Water Act of Ontario, the Ministry of the Environment and Climate Change (Watermain Disinfection Procedure Nov. 2015), and CAN/CSA-B64.10-11 & B64.10.1-11 (or most current version).

1.4 General Requirements for Watermain Installation and Commissioning

Prior to establishing timelines for the work to be undertaken, the Developer or Contractor shall complete and submit an Application for Connection to Municipal Infrastructure, currently referred to as an Encroachment/ROW Occupancy Permit. Staff will review the Application and communicate with the Applicant if clarification is required. The current form is attached to this document.

In preparation for the commissioning phase, during installation the Contractor shall keep pipes clean and dry and take precautions to protect the interiors of pipes, fittings and valves against contamination. End caps shall be installed when work is not in progress and removed only when connecting the next pipe or appurtenance or continuing work. Pipes shall not be laid directly in water. Existing watermains, which are dead ended during construction, shall have a minimum 25 mm bleeder installed at the dead end. New watermains which are temporarily dead ended shall have a minimum 50mm blow off installed with a temporary cap if there is no hydrant downstream of the last water service on the watermain. All dead ended watermains shall have a sampling hydrant permanently installed at a location approved by the Municipality.

1.5 Connection and Testing Procedures Plan and Meeting

The Contractor shall provide a Commissioning Plan to the Consultant detailing the connection locations, swabbing locations, hydrostatic testing, chlorination and dechlorination methods, disposal of water, bacteriological sampling and final connection methods consistent with this document. If the project is being constructed in phases, this plan shall detail each of these items for each phase. The Consultant shall review, approve and recommend the plan to the Director. The Director shall review and provide approval once it has been deemed acceptable. No work is to proceed until the Director has given written approval of the plan. The Consultant/ Contractor must allow 10 business days for Municipal review and approval.

A pre-watermain connection and testing meeting shall be held by the Consultant prior to any commissioning procedures and shall include representative(s) from the Contractor and Municipality.

1.6 Forms

The following forms are attached to this document:

- a) Application for Encroachment/ROW Occupancy Permit
- b) Watermain Commissioning Form 1 – Field Record for Swabbing of New Watermain
- c) Watermain Commissioning Form 2 – Field Record for Hydrostatic Testing of New Watermain

- d) Watermain Commissioning Form 3 – Field Record for Disinfection
- e) Watermain Commissioning Form 4 – Field Record for De-Chlorination
- f) Watermain Commissioning Form 5 – Field Record for Bacteriological Sampling (Initial Samples)
- g) Watermain Commissioning Form 6 – Field Record for Bacteriological Sampling (24 Hour Samples)
- g) Watermain Commissioning Form 7 – Field Record for Tracer Wire Conductivity Test
- h) Watermain Commissioning Form 8 - Temporary Backflow Prevention Device Report
- i) Watermain Commissioning Form 9 – Certificate for Hydrostatic Pressure Test
- j) Watermain Commissioning Form 10 – Certificate for Disinfection

1.7 Supervision, Testing and Records

The Consultant shall witness and document all cleaning, swabbing, hydrostatic testing, disinfection, sampling activities connection to existing system and charging. The Consultant shall also take and record measurements on the appropriate Watermain Commissioning Forms and provide certification for Hydrostatic Testing and Disinfection procedures. The certificates must be signed by the project Engineer of Record.

1.8 Valve Operation

Municipal ORO staff must perform the operation of all existing valves inclusive of hydrant secondary valves. In the event of an emergency, the ORO may direct the Contractor to operate valves.

The opening and closing of any valve should be coordinated with the Municipal Field Representative. The Specialist shall notify all known affected residences or businesses shall be notified a minimum of 48 hours prior to a planned disruption of water service.

The opening/closing of any valve required for the installation/removal of a backflow preventer must be coordinated with the Municipality. Typically, a minimum of 3 working days' notice is required.

2. WATERMAIN TESTING PROCEDURE

This document is to be read in conjunction with the forms at the end of this document. These procedures are to be used in conjunction with the Ontario Provincial Standard Specifications (OPSS), the American Waterworks Association Standards (AWWA), the Ministry of the Environment and Climate Change (Watermain Disinfection Procedure), and the Safe Drinking Water Act of Ontario (SDWA). Where conflicts exist between this document and the specifications, standards, and acts referred to above, the more stringent requirement shall apply.

All required chlorine residual tests for the purposes of the Disinfection Phase (Super-Chlorination) shall be performed by the Consultant in the company of the Municipal Field Representative utilizing an electronic tester such as a Hach Pocket Colourimeter or equivalent.

All works associated with swabbing, pressure and leakage testing, chlorination, dechlorination and sterilization of the watermain are to be performed by a Specialist who is company with expertise in this type of work or a company approved by the Director. If the Contractor has appropriate expertise with this type of work, the Contractor may be considered as the Specialist for the purposes of this paragraph.

Temporary by-pass piping shall meet all procedures and requirements of new watermain with the exception of hydrostatic pressure testing. A visual check shall be performed at line pressure on a temporary by-pass to ensure that it is leak free.

2.1 Charging of Watermains

The watermain is to be charged via a temporary connection equipped with an approved backflow preventer as outlined below.

2.2 Temporary Connection and Backflow Preventer

This section is to be read in conjunction with Form 8, located at the end of this document.

The temporary connection is to be used for all water supplies to maintain continuous supply of water unless otherwise noted. The size of the temporary connection shall be 50mm diameter for watermains up to and including 200mm diameter and 100mm diameter for watermains 250mm diameter to 400mm diameter, inclusive. All materials for the temporary connections are to be approved by the Municipality. Watermains larger than 400mm in diameter shall be as per design standards.

For non-municipal projects, the hydrant adapter (inclusive of backflow preventer, valving, fittings and meter) shall be a reduced pressure zone type backflow preventer. The assembly is supplied, installed and certified by licensed professionals provided by the Contractor and/or Specialist.

For municipal projects, the hydrant adapter (backflow preventer) shall be supplied by the Contractor. A meter may be supplied by the Municipality, upon request by the Contractor.

The adapter shall be installed on a prescribed hydrant and charged by the Municipality. Hydrant(s) utilized as the source water for temporary by pass must be indicated in the Commissioning Plan. The hydrant to be utilized will be determined in consultation with the Municipal Field Representative and the Municipal ORO.

Once installed and certified, the backflow preventer shall remain installed until the end of the watermain Commissioning Phase. The backflow preventer must be secured and protected against freezing, tampering, theft and vandalism. If for any reason the backflow preventer has become compromised and/or must be removed prior to the end of the watermain testing phase, the backflow preventer shall be re-certified prior to the Municipality re-charging with system pressure.

The existing distribution system and backflow preventer shall be physically disconnected from the test section during all hydrostatic testing.

2.3 Swabbing

The isolated section of the watermain shall be charged or pressurized prior to the commencement of swabbing. The swabs shall be numbered and carefully controlled by the Specialist to ensure that all swabs that are introduced into the watermain are retrieved and accounted for. The Consultant shall record the number of swabs inserted and retrieved. All swabs must be inspected prior to insertion and immediately after they exit the watermain to ensure that they have remained intact and that pieces of the foam do not remain inside the watermain. New swabs shall be used for this procedure; under no circumstances will used swabs be allowed.

All watermain pipes must be swabbed with a minimum of THREE swabs. A minimum of one swab shall be passed through each hydrant lead, large diameter water service, stub or blow-off. Additional swabs shall be used as directed by the Consultant or Municipal Field Representative should discharge water not run clear within ten seconds of the swab exiting the discharge point. No additional payment/claims shall be made for subsequent swabbing.

Swabs shall be forced through the watermain using potable water at a minimum velocity of 0.6 to 1 meter per

second. The Consultant and Municipal Field Representative must approve all methods of disposal of the discharged water. The Contractor shall take all necessary precautions to minimize soil erosion and shall reinstate any affected areas upon completion.

The swabs must be new open cell polyurethane foam, having a density of 1.5 pounds per cubic foot (24 kilograms per cubic meter) and are to be a minimum of 50mm larger than the nominal pipe diameter with a length at least one and a half times its diameter. Watermains 300mm or smaller may be swabbed through hydrants on approval by the Director. Procedures for swabbing watermains larger than 300mm must also be approved by the Director. Both the aforementioned approvals are to be considered during the Commissioning Plan review.

2.4 Hydrostatic and Leakage Testing

Hydrostatic and Leakage Testing is described as a two-step process. The Contractor, in coordination with the Specialist may, at his option, completely backfill the trench and only perform the two-hour test as described below in Step Two. The Contractor shall identify what process is to be used in the Commissioning Plan. In the event that the single step process is chosen, the Contractor and Specialist assumes all associated responsibility and there shall be no additional allowances or claims for re-excavation should repairs be required as a result of a failed test. Regardless of process chosen, the Municipality may direct the Contractor to completely backfill the trench if local traffic or safety conditions require. In such a circumstance, there shall not be any entitlement to claim for additional allowances.

Hydrostatic and Leakage tests shall be carried out on the test section of watermain after swabbing operations have been successfully completed. The Specialist shall ensure that no air pockets are present in the test section of watermain.

Step One: The test section shall not exceed 365m in length and shall be braced to prevent any movement when the test pressure is applied. The Specialist shall fill the test section with potable water under a pressure of 1035 kPa, (150 psi) for a period of one hour. The exposed parts shall be thoroughly examined and corrected for leakage, as necessary by replacing with new sound material. Repeat as necessary until all defects have been corrected.

Step Two: After backfilling, the Specialist shall fill the maximum test section length of 365m with potable water under a pressure of 1035 kPa (150 psi). Any make-up water utilized shall also be potable. The Consultant, in the company of the Municipal Field Representative shall observe the pressure in the test section during the two hour period. During the test period, no water is to be added – make up water shall only be added after the two hour period has ended. At the end of the two-hour test period, the Consultant shall document the water pressure in the test section and witness and record the amount of make-up water added to the test section to restore the initial pressure of 1035 kPa. The Specialist in coordination with the Consultant, shall accurately measure the quantity of make-up water added utilizing a calibrated container. The measured quantity shall not exceed the Allowable Leakage amount. If leakage exceeds the allowable loss, the leak points shall be located and repaired. All defective pipe, fittings, valves and other appurtenances discovered, shall be removed and replaced with sound material. The test section shall be re-tested until a satisfactory result is obtained.

Allowable Leakage for PVC pipe shall be calculated as follows:

$$L=ND(p)^{1/2}/7,400$$

Where: L = allowable leakage (US gal/hr)
 N = number of joints in tested line
 D = nominal diameter of pipe (in)
 P = average test pressure (psi)

2.5 Disinfection of Watermains

Once the watermain has successfully passed hydrostatic testing, the disinfection phase may commence.

The Specialist shall completely fill the watermain with potable water to remove air pockets and then flushed to remove any particulate. After flushing is completed, the main shall be re-filled with potable water.

The Specialist shall thoroughly mix the chlorine solution prior to pumping it into the system. The Chlorine solution shall be injected into the system using the continuous feed method through the access point on the temporary connection. The chlorine solution shall be applied so that the initial chlorine concentration is a minimum of 50mg/L to a maximum of 200mg/L throughout the system.

The chlorine solution shall flow through each fire hydrant, blow-off and sampling hydrant(s). The chlorine concentration levels shall be measured with an electronic tester and recorded by the Consultant at each sampling location within the test section; this shall be performed in the company of the Municipal Field Representative. Once the minimum concentrations have been achieved throughout the system the recorded concentration levels become the Initial Chlorine Concentration.

The Initial Chlorine Concentration shall be left, isolated, in the system for a minimum of 24 hours. After the required contact time, the chlorine residual shall be measured and recorded at each sample location by the Consultant in conjunction with the Municipal Field Representative. This reading is referred to as the "24 Hour Chlorine Residual" on Form 3, attached to this document. Flow required to take the chlorine residuals shall be provided through the temporary connection. The maximum allowable decrease in Chlorine concentration shall be 40% of the initial chlorine concentration to a maximum decrease of 50 mg/L. In the event the decrease in chlorine concentration is greater than 40% of the initial chlorine concentration or the decrease is greater than 50 mg/L, the chlorine in the system is to be discharged in accordance with section 2.6 and the system shall be re-chlorinated. The Municipal Field Representative has the authority to require further swabbing if the residual is less than 25mg/L.

2.6 Removal/Disposal of Super Chlorinated Water

The Specialist shall de-chlorinate the discharge water to protect receiving streams and other bodies of water, via catch basins or other points of entry, as per the Ministry of Environment (MOE) regulations and ANSIIAWWA C651 as amended. Dechlorination is not required when discharging directly into a sanitary sewer. If the Specialist is proposing to dispose of chlorinated water via sanitary sewer, it must be identified in the Commissioning Plan and be given specific approval by the Municipality. The Specialist shall be required to supply all labour, equipment and materials to dechlorinate the water including, but not limited to, dechlorination mats, diffusers and dechlorination chemicals. There shall be no separate payment and or claim for de-chlorination.

2.7 Bacteriological Sampling

Before the watermain, or temporary above ground by-pass system can be approved for connection to the existing water distribution system, two (2) consecutive rounds of water samples, taken a minimum of 24 hours apart, shall pass the appropriate chlorine residual and bacteriological testing requirements. Samples must be tested for Total Coliform and E. Coli levels. Prior to chlorine residual and bacteriological testing, all other testing and disinfection shall be completed and any super chlorinated water removed from all portions of the watermain system under consideration including hydrant leads, stubs, branches, services, etc.

The Specialist is to provide a minimum of 3 work days' notice to the Municipal Field Representative who will coordinate sampling with the Municipal Overall Responsible Operator (ORO). The Specialist shall utilize the

temporary connection to obtain the flow necessary for sampling. The ORO's office will take bacteriological samples at each sample location indicated in the Commissioning Plan. Should the Specialist wish to take a "Source" sample, the sample must be collected downstream of the backflow preventer. The Contractor must supply the chain of custody documentation and sample bottles from an accredited Environmental Laboratory. It must be noted on the chain of custody that the samples are "Construction Samples – Not Reportable". The Municipalities Drinking Water System Number shall not be named on the chain of custody unless otherwise directed by the Municipality. The Specialist shall deliver the samples in a cooler containing an ice pack to the accredited Environmental Laboratory along with the completed chain of custody documents. The watermain test section shall be immediately shut down, isolated and must not be disturbed or flushed for the period between this sample round and the next bacteriological sample round 24 hours later. The watermain must remain continually pressurized from the start of the bacteriological testing until the connection to the existing system is undertaken.

Samples shall be taken from the end of every dead end and from every 360 metres or less of new watermain pipe. No hose or fire hydrant shall be used in the collection of bacteriological samples.

2.8 Sample Results

Laboratory staff will process and log in the bottle(s). Each chain of custody form will be assigned LWO Number. In addition to the LWO, each sample bottle will be assigned a unique record number. Samples delivered after 3:30pm on working days will be set up the same day but may not be logged in until the next day. Samples delivered after 4:00pm on working days may not be set up for analysis or logged in until the next day.

Laboratory staff will communicate with the Specialists office to advise of the results. Once the ORO's office has reviewed and confirmed the records, they will communicate with the Directors office who will in turn communicate with the Consultant and/or Specialist and Contractor.

It may be possible for special arrangements to be made to collect and deliver sample bottles to the laboratory on a weekend, which may incur additional costs to the Contractor. The Consultant shall advise the Municipal Field Representative of such special requests as soon as possible.

If sample results are successful, connection to the existing water distribution system can proceed as outlined, below. A single failed bacteriological parameter will constitute a failure of the entire sampling round. If sample results do not meet requirements, the failed section must be flushed or re-disinfected as directed by the Municipal Field Representative and re-sampled at the sample locations. Sampling will continue until two (2) consecutive sets of water samples, taken a minimum of 24 hours apart, pass both the appropriate chlorine residual and bacteriological requirements.

Note: The Backflow Preventer is to remain installed on the temporary connection until the bacteriological tests have passed.

3. CONNECTION TO EXISTING WATER DISTRIBUTION SYSTEM

Prior to connection to the existing water distribution system, the Watermain Commissioning Forms 1-10 and the bacteriological test results must be submitted in a package by the Consultant to the Municipal Field Representative for review and approval.

All connections to the existing water distribution system shall be via Live Tap. In instances where a Live Tap cannot be performed, cutting into the system may be permitted by the Municipality. In such cases, it must be identified in the Commissioning Plan along with the specific reasons for the cut-in connection. The Municipality

will outline additional requirements of the Contractor should a cut-in connection be approved. Regardless of the connection method, the Municipal Field Representative and ORO's Staff must be present for the connection. The Specialist is to provide a minimum of 3 work days' notice to the Municipal Field Representative who will coordinate the connection with the ORO.

Once the bacteriological tests have passed, the connection to the existing watermain shall be performed. A sump, minimum 300mm depth, shall be excavated in the trench bottom and filled with clear stone to provide a location to collect and pump water.

Watermains shall be cut back to remove any temporary taps. The Contractor shall disinfect the connection watermain pipe as outlined in Section 3.1 and shall dewater the watermain and trench in a controlled manner as to not allow backflow of water into the watermain.

If trench water, dirt, or debris has entered the watermain during the final connection, the watermain shall be aggressively flushed and additional bacteriological samples shall be taken as directed by the Municipal Field Representative.

3.1 Connections

The Contractor shall ensure that the final connection is no longer than one pipe length.

The new pipe, fittings and valves required for the connection shall be spray-disinfected and swabbed with a minimum 1 % to maximum 12% solution of chlorine immediately prior to being installed. The existing watermain being connected to, shall also be cleaned in the immediate area of the connection and spray-disinfected with the same solution.

Where existing watermains are tapped, the pipe surface at the location of the tap shall be cleaned and disinfected using a minimum 1% sodium hypochlorite solution. Where applicable, the drill/cutting/tapping bits and all surfaces of mainstops, service saddles, tapping sleeves and valves which will come into contact with drinking water shall likewise be cleaned and disinfected using a minimum 1% sodium hypochlorite solution immediately prior to installation. If any of the disinfected surfaces come into contact with the soil and/or water in the excavation prior to use, the cleaning and disinfection procedure shall be repeated.

3.2 Tracer Wire

During the final connection of the new watermain to the existing distribution system, the Contractor shall ensure that the new tracer wire is connected to the existing tracer wire.

After the final grading, the Contractor shall demonstrate the integrity of the underground tracer wire by applying a conductivity signal and confirming the signal on all watermains and services. The Consultant shall witness the conductivity test(s) and provide written confirmation on the attached form, Form 7.

A continuity signal shall be applied to the tracer wire and the signal confirmed over the entire length of all tracer wire installed. The signal shall be detectable for a distance of at least 300m from either side of the signal connection point. At no point shall there be a break in the continuity of the tracer wire.

It shall be demonstrated that the tracer wire on the services is connected to the watermain tracer wire and that the service tracer wire is intact for the length of the service.

The Contractor shall demonstrate that the tracer wire in chambers can be accessed from finished grade and that the signal is detectable on the watermain outside of the chamber.

3.3 Valve Positioning

During final connection of the new watermain, the Contractor shall demonstrate that all valves, main and service, are in the final positioning as outlined in the commissioning plan or as directed by the Municipal Field Representative.

4. WATER SERVICES

Services 100mm in diameter and larger shall be considered mainline and shall meet all mainline procedures and testing requirements.

Service connections shall be tapped and connected under pressure. All connections shall be inspected to ensure they are drip tight prior to backfilling. The pipe shall be left exposed where directed by the Municipal Field Representative, after which backfilling shall be completed. All new water service pipe 38mm in diameter up to but not including 100mm diameter, as well as all sized of temporary by-pass service hose, shall be disinfected. The chlorine solution shall be applied so that the chlorine concentration is a minimum of 25mg/L and does not exceed 100mg/L. Pre-disinfected pipe shall be sealed immediately following disinfection until immediately prior to connection.

All new services shall be thoroughly flushed prior to connecting to the existing service. Required fittings and valves shall be cleaned and spray-disinfected with a minimum 1 % to maximum 12% solution of chlorine immediately prior to the connection.

All by-pass services hoses to be used will be of potable water grade and shall meet the requirements of NSF 61 Standard. Service hoses shall be capped on both ends with brass caps until installed. Service hoses shall not be installed on by-pass piping until the day of the change over from the distribution watermain to the above ground by-pass watermain.

5. PRIVATE WATERMAIN

Private Watermains shall follow the same commissioning procedure at outlined in this document, except that, at the discretion of the Municipality, the Municipal Field Representative may not be present at the same frequency.

All Private Watermain connections to Municipal watermain shall be separated by a Backflow Prevention Device and water meter as specified by the Municipality. Where connections are already in existence and Backflow Prevention and Metering is not currently installed, the Municipality may elect to install such appurtenances at its own costs at any time, or may require the installation of the appurtenances by the Developer should a substantial expansion to the Private Watermain be requested by the Developer. In such a case, the Developer would be advised during the development approvals stage of the expansion.



The Corporation of the County of Prince Edward

Operational Services

Office: 115 Lake Street, Picton, ON K0K 2T0

Mailing: 332 Picton Main Street, Picton, ON K0K 2T0

T: 613.476.6505 | F: 613.476.9121

operations@pecounty.on.ca | www.thecounty.ca

Right of Way or Temporary Road Occupancy Permit

Please note: payment and proof of insurance must accompany application

Applicant's Name: _____

Address: _____

Phone: _____ Fax: _____

Email: _____

Date: _____

Type of Permit:

Right of Way – work on Municipal Property including boring, road cuts, paving, ditching, grading, etc.

Road Occupancy – placement of dumpsters, moving trucks, window cleaning, etc.

Location of Work: _____

Estimated Date of Work: _____

Scope of Work (specify): _____

Reason for Work: _____

The Constructor must have \$2,000,000 (Two Million Dollars) liability insurance to work on The County right-of-way. Proof of insurance coverage to accompany application.

Agreement:

I/We hereby agree to assume liability for all damages incurred as a result of the above work or occupancy and to indemnify and save harmless The County of Prince Edward from any actions, claims, suits or demands made against The County by any person arising out of the issuance of this application. 48 hours notice is required for all involved. Deposit (if applicable) will be refunded once work has been completed to the satisfaction of Prince Edward County Operational Services Department.

Signature of Applicant

Date

Approved by The County of Prince Edward

Date



The Corporation of the County of Prince Edward
Operational Services
 Office: 115 Lake Street, Picton, ON K0K 2T0
 Mailing: 332 Picton Main Street, Picton, ON K0K 2T0
 T: 613.476.6505 | F: 613.476.9121
operations@pecounty.on.ca | www.thecounty.ca

The Corporation of the County of Prince Edward
Fees and Charges

Schedule "D"

TRANSPORTATION SERVICES

Item/Services	Jan 1, 2015	HST
ROADS		
Entrance Permits, per entrance. Additional financial security may be required	\$400.00	N
Additional inspections, if required, per inspection	\$75.00	N
Oversize Load Moving Permits, per move. Additional financial security may be required	\$25.00	N
If inspection of move is required, per inspection	\$50.00	N
Temporary Road Occupancy Permit	\$25 plus \$10/day	N
Annual Oversize Load Move Permit	\$150.00	N
Road Occupancy Permit for work on municipal road allowance including, boring, road cuts, paving, grading, etc., per location	\$400.00	N
ROAD CLOSURES		
Processing Fee	\$750.00	N
Additional expenses (e.g. legal, appraisal, title search, registration, survey and land costs)	At Cost	Y
ENCROACHMENT AGREEMENTS		
Encroachment Agreements	\$400.00	N
Road Use Agreements – 500 KW capacity and smaller projects	\$400.00	N
Road Use Agreements – Over 500 KW capacity projects	\$5,000.00	N
Additional expenses (e.g. legal, appraisal, title search, registration, survey and land costs)	At Cost	Y
FINGERBOARDS/SIGNS		
Finger Board Signs – Production and Installation of new sign	\$100.00	Y
Finger Board Signs - Annual maintenance charge per sign	\$60.00	Y
Picton Industrial Park Sign - Installation of sign	\$100.00	N
Picton Industrial Park Sign - Annual maintenance charge per sign	\$35.00	N

WATERMAIN COMMISSIONING FORM 1
Field Record for Swabbing of New Watermain

PROJECT INFORMATION

PROJECT NAME: _____

LOCATION: _____

CONSULTANT: _____

CONTRACTOR: _____

SPECIALIST: _____

MUNICIPAL FIELD REPRESENTATIVE: _____

TEST / PROCEDURE INFORMATION

TEST LOCATION: _____

DATE: _____

PERFORMED BY (PRINT): _____

WITNESSED BY (PRINT): _____

SECTION ID	No. SWABS INSERTED	No. SWABS RETRIEVED

RESULTS: Satisfactory Unsatisfactory

Remarks: _____

SIGNATURES

SPECIALIST: _____ **CONSULTANT:** _____

MUNICIPAL FIELD REPRESENTATIVE: _____

WATERMAIN COMMISSIONING FORM 2
Field Record for Hydrostatic and Leakage Testing of New Watermain
 To be performed only after Swabbing has achieved satisfactory results

PROJECT INFORMATION

PROJECT NAME: _____
 LOCATION: _____
 CONSULTANT: _____
 CONTRACTOR: _____
 SPECIALIST: _____
 MUNICIPAL FIELD REPRESENTATIVE: _____

TEST INFORMATION

TEST LOCATION: _____
 DATE: _____
 CONDUCTED BY (PRINT): _____
 WITNESSED BY (PRINT): _____

SECTION ID	LENGTH	MATERIAL	DIAMETER	PRESSURE		TIME		VOLUME LOSS (LITRES)	
				START	END	START	END	ALLOWABLE*	MEASURED

**Attach Allowable Leakage Calculations to this form*

RESULTS: Satisfactory Unsatisfactory

Remarks: _____

SIGNATURES

SPECIALIST: _____ CONSULTANT: _____
 MUNICIPAL FIELD REPRESENTATIVE: _____

WATERMAIN COMMISSIONING FORM 3

Field Record for Disinfection – (Super-Chlorination and Residual Sampling)

To be performed only after Hydrostatic Testing has achieved satisfactory results

PROJECT INFORMATION

PROJECT NAME: _____

LOCATION: _____

CONSULTANT: _____

CONTRACTOR: _____

SPECIALIST: _____

MUNICIPAL FIELD REPRESENTATIVE: _____

PROCEDURE/TEST INFORMATION

WATERMAIN SECTION ID: _____

DATE: _____

DISINFECTANT UTILIZED: _____

METHOD OF INFUSION: _____

CONDUCTED BY (PRINT): _____

WITNESSED BY (PRINT): _____

SAMPLING INFORMATION

DATE	SAMPLE LOCATION	INITIAL CHLORINE RESIDUAL		24 HOUR CHLORINE RESIDUAL	
		TIME	(mg/L)	TIME	(mg/L)

METHOD OF RESIDUAL MEASUREMENT: _____

SAMPLED BY: _____
(Consultant's Office Representative)

WITNESSED BY: _____

WATERMAIN COMMISSIONING FORM 4

Field Record for De-Chlorination

To be performed during flushing of Super Chlorinated Water

PROJECT INFORMATION

PROJECT NAME: _____

LOCATION: _____

CONSULTANT: _____

CONTRACTOR: _____

SPECIALIST: _____

MUNICIPAL FIELD REPRESENTATIVE: _____

PROCEDURE/TEST INFORMATION

WATERMAIN SECTION ID: _____

DATE: _____

DECHLORINATION CATALYST UTILIZED: _____

METHOD OF INFUSION: _____

CONDUCTED BY (PRINT): _____

WITNESSED BY (PRINT): _____

SAMPLING INFORMATION

DATE	SAMPLE LOCATION	CHLORINE RESIDUAL	
		TIME	(mg/L)

METHOD OF RESIDUAL MEASUREMENT: _____

SAMPLED BY: _____
(Consultant's Office Representative)

WITNESSED BY: _____

WATERMAIN COMMISSIONING FORM 5

Field Record for Bacteriological Sampling

To be performed only after Disinfection has achieved satisfactory results

INITIAL SAMPLES (ROUND #1)

PROJECT INFORMATION

PROJECT NAME: _____

LOCATION: _____

CONSULTANT: _____

CONTRACTOR: _____

SPECIALIST: _____

MUNICIPAL FIELD REPRESENTATIVE: _____

PROCEDURE INFORMATION

WATERMAIN SECTION ID: _____

DATE: _____

CONDUCTED BY (PRINT): _____

WITNESSED BY (PRINT): _____

SAMPLING INFORMATION

DATE	LWO No.	SAMPLE LOCATION	CHLORINE RESIDUAL		
			TOTAL (mg/L)	FREE (mg/L)	COMBINED (mg/L)

METHOD OF MEASUREMENT: _____

SIGNATURES

SAMPLED BY: _____

(ORO'S Office Representative)

WITNESSED BY: _____

WATERMAIN COMMISSIONING FORM 6

Field Record for Bacteriological Sampling

To be performed only after Disinfection has achieved satisfactory results

24 HOUR SAMPLES (ROUND #2)

PROJECT INFORMATION

PROJECT NAME: _____

LOCATION: _____

CONSULTANT: _____

CONTRACTOR: _____

SPECIALIST: _____

MUNICIPAL FIELD REPRESENTATIVE: _____

PROCEDURE INFORMATION

WATERMAIN SECTION ID: _____

DATE: _____

CONDUCTED BY (PRINT): _____

WITNESSED BY (PRINT): _____

SAMPLING INFORMATION

DATE	LWO No.	SAMPLE LOCATION	CHLORINE RESIDUAL		
			TOTAL (mg/L)	FREE (mg/L)	COMBINED (mg/L)

METHOD OF MEASUREMENT: _____

SIGNATURES

SAMPLED BY: _____
(ORO'S Office Representative)

WITNESSED BY: _____

WATERMAIN COMMISSIONING FORM 7

Field Record for Tracer Wire Conductivity Test

PROJECT INFORMATION

PROJECT NAME: _____

LOCATION: _____

CONSULTANT: _____

CONTRACTOR: _____

SPECIALIST: _____

MUNICIPAL FIELD REPRESENTATIVE: _____

PROCEDURE INFORMATION

DATE: _____

TEST LOCATION:

Street to Street: _____

Station to Station : _____

DESCRIPTION ON TRACER WIRE CONNECTION TO EXISTING WATERMAIN:

GAUGE AND TYPE OF EQUIPMENT USED:

PARAMETER	SATISFACTORY	UNSATISFACTORY
Continuity Signal applied to Tracer Wire and the signal confirmed over the entire length of all Tracer Wire installed		
Tracing Wire on services is connected to watermain Tracer Wire and wire is intact for the length of the service		
Tracing Wire in chambers is detectable on the watermain outside of the chamber		

TEST RESULTS: Satisfactory Unsatisfactory

Remarks:

SIGNATURES

SPECIALIST: _____ **CONSULTANT:** _____

MUNICIPAL FIELD REPRESENTATIVE: _____



Development Services Department
 Edward Building
 280 Main Street
 2nd Floor
 K0K 2T0

**DRINKING WATER SYSTEMS
 CROSS CONNECTION CONTROL
 WATERMAIN COMMISSIONING FORM 8
 BACKFLOW PREVENTION DEVICE REPORT**

**TEMPORARY BFP DEVICE INSTALLATION FOR THE PURPOSES
 OF WATERMAIN COMMISSIONING**

To be submitted by the consultant to the Municipal Field Representative. This test report form and the tests must be completed by a certified tester and as required by CSA B64 Standard.

FACILITY AND OWNER INFORMATION

Occupant/Company	<input type="text"/>	Facility Address	<input type="text"/>
Telephone	<input type="text"/>	City	<input type="text"/>
Email	<input type="text"/>	Postal Code	<input type="text"/>
Owner	<input type="text"/>	Owner Address	<input type="text"/>
Telephone	<input type="text"/>	City	<input type="text"/>
Email	<input type="text"/>	Postal Code	<input type="text"/>

LOCATION DETAILS AND HAZARD LEVEL

Is this BFP device for premises isolation? YES <input type="checkbox"/> NO <input type="checkbox"/>	Water Meter # <input type="text"/>
Does the facility have a fire system? YES <input type="checkbox"/> NO <input type="checkbox"/>	Is there a by-pass line around the meter? YES <input type="checkbox"/> NO <input type="checkbox"/>
Is this BFP device on a fire system? YES <input type="checkbox"/> NO <input type="checkbox"/>	Is the by-pass protected by the premises BFP? (Is the premises BFP downstream of the by-pass?) YES <input type="checkbox"/> NO <input type="checkbox"/>
Is there a branch connection, hose connection, or a split between the water meter & the BFP device? YES <input type="checkbox"/> NO <input type="checkbox"/>	Is the by-pass valve sealed in the off position? YES <input type="checkbox"/> NO <input type="checkbox"/>
If YES, how is it protected? <input type="text"/>	

HAZARD LEVEL OF INSTALLATION

SEVERE MODERATE MINOR

Building permit number for all new installations

BACKFLOW PREVENTION DEVICE DETAILS

Serial # <input type="text"/>	Manufacturer <input type="text"/>	Model <input type="text"/>
Type of BFP Device <input type="text"/>	Device Orientation <input type="checkbox"/> Horizontal <input type="checkbox"/> Vertical	
Pipe Size <input type="text"/>	Location of Assembly (i.e., Room #) <input type="text"/>	
Installation Date (YY/MM/DD) <input type="text"/>	Tagged with a UK Tag? <input type="checkbox"/> Tag # <input type="text"/>	NO <input type="checkbox"/>

GENERAL TEST INFORMATION

Successful Test Date <input type="text"/>	Type of Test <input type="checkbox"/> New <input type="checkbox"/> Annual <input type="checkbox"/> Replace	Old Serial # <input type="text"/>
Tester Name <input type="text"/>	Certification # <input type="text"/>	
Company Name <input type="text"/>	Telephone <input type="text"/>	
Address <input type="text"/>	Postal Code <input type="text"/>	
Test Kit Serial # <input type="text"/>	Manufacturer <input type="text"/>	
Model <input type="text"/>	Calibration Date <input type="text"/>	

Any false information or misleading statements made on this report will render any approval granted by The Corporation of the County of Prince Edward null and void and may result in removal of the certified tester and/or testing company from the Utilities Cross Connection Control database of approved testers for a predetermined length of time.

TEST DETAILS

RP/RPF Assembly Serial # <input style="width:100%;" type="text"/>			Check Valve 1	Check Valve 2
Pressure Differential Across Check Valve (no flow)			<input style="width:50%;" type="text"/>	<input style="width:50%;" type="text"/>
Relief Valve	Check Valve 1	Check Valve 2	Opened, Opening Point of Relief Valve (2psi or greater) <input style="width:100%;" type="text"/>	
Failed to Open <input type="checkbox"/>	Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>	Buffer (3psi or greater) <input style="width:100%;" type="text"/>	
Opened <input type="checkbox"/>	Closed Tight <input type="checkbox"/>	Closed Tight <input type="checkbox"/>		
DCVA; DCVF; SCVAF Serial # <input style="width:100%;" type="text"/>			PVB / SRPVB Assembly Serial # <input style="width:100%;" type="text"/>	
Check Valve 1	Check Valve 2	Air Inlet Valve	Check Valve	
Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>	Failed to Open <input type="checkbox"/>	Leaked <input type="checkbox"/>	
Closed Tight <input type="checkbox"/>	Closed Tight <input type="checkbox"/>	Opened <input type="checkbox"/>	Closed Tight <input type="checkbox"/>	
Pressure Differential Across Check <input style="width:50%;" type="text"/>	Pressure Differential Across Check <input style="width:50%;" type="text"/>	Opened at (Pressure) <input style="width:50%;" type="text"/>	Pressure Differential Across Check <input style="width:50%;" type="text"/>	
Shut Off Valves	Valve 1	Valve 2		
	Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>	Closed <input type="checkbox"/>	
Static Inlet Pressure at Time of Test (Required for Pass) <input style="width:100%;" type="text"/>				
Test Date <input style="width:100%;" type="text"/>			TEST RESULTS	PASSED <input type="checkbox"/>
				FAILED <input type="checkbox"/>

REPAIR – If the device fails the initial test for any reason complete repair and retesting

Check Applicable Valve(s)	Relief Valve <input type="checkbox"/>	Check Valve 1 <input type="checkbox"/>	Check Valve 2 <input type="checkbox"/>	Air Inlet Valve <input type="checkbox"/>	Shut Off <input type="checkbox"/>
Check Applicable Repair:	General Inspection, Cleaning, Servicing <input type="checkbox"/>			Parts Replaced (Check applicable below) <input type="checkbox"/>	
Parts Replaced:	Disc <input type="checkbox"/>	Spring <input type="checkbox"/>	Diaphragm <input type="checkbox"/>	Seat <input type="checkbox"/>	Guide <input type="checkbox"/>
	O-Rings <input type="checkbox"/>	Poppet <input type="checkbox"/>	Repair Kit <input type="checkbox"/>		

RETEST DETAILS

RP/RPF Assembly Serial # <input style="width:100%;" type="text"/>			Check Valve 1	Check Valve 2
Pressure Differential Across Check Valve (no flow)			<input style="width:50%;" type="text"/>	<input style="width:50%;" type="text"/>
Relief Valve	Check Valve 1	Check Valve 2	Opened, Opening Point of Relief Valve (2psi or greater) <input style="width:100%;" type="text"/>	
Failed to Open <input type="checkbox"/>	Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>	Buffer (3psi or greater) <input style="width:100%;" type="text"/>	
Opened <input type="checkbox"/>	Closed Tight <input type="checkbox"/>	Closed Tight <input type="checkbox"/>		
DCVA; DCVF; SCVAF Serial # <input style="width:100%;" type="text"/>			PVB / SRPVB Assembly Serial # <input style="width:100%;" type="text"/>	
Check Valve 1	Check Valve 2	Air Inlet Valve	Check Valve	
Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>	Failed to Open <input type="checkbox"/>	Leaked <input type="checkbox"/>	
Closed Tight <input type="checkbox"/>	Closed Tight <input type="checkbox"/>	Opened <input type="checkbox"/>	Closed Tight <input type="checkbox"/>	
Pressure Differential Across Check <input style="width:50%;" type="text"/>	Pressure Differential Across Check <input style="width:50%;" type="text"/>	Opened at (Pressure) <input style="width:50%;" type="text"/>	Pressure Differential Across Check <input style="width:50%;" type="text"/>	
Shut Off Valves	Valve 1	Valve 2		
	Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>	Closed <input type="checkbox"/>	
Static Inlet Pressure at Time of Test (Required for Pass) <input style="width:100%;" type="text"/>				
Test Date <input style="width:100%;" type="text"/>			TEST RESULTS	PASSED <input type="checkbox"/>
				FAILED <input type="checkbox"/>

CERTIFICATION OF TEST RESULTS

I certify that I have tested the device identified on this report in accordance with The Corporation of the County of Prince Edward and as specified by the CSA B64 standard and that the information provided is true and accurate

Certified Tester Name _____	Certified Tester Signature _____	Date _____
Owner/Owner Representative/Occupant _____	Owner/Owner Representative/Occupant _____	Date _____

INSPECTOR'S COMMENTS

Any false information or misleading statements made on this report will render any approval granted by The Corporation of the County of Prince Edward null and void and may result in removal of the certified tester and/or testing company from the Utilities Cross Connection Control database of approved testers for a pre-determined length of time.

WATERMAIN COMMISSIONING FORM 9

CERTIFICATE

of

HYDROSTATIC PRESSURE TEST

GENERAL INFORMATION	
Project:	
Project Location:	
Testing Completed by:	
Date:	

TEST RESULTS	
Date of Test:	
Time Test Initiated:	
Time Test Completed:	
Elapsed Time:	
Initial Pressure:	
Pressure at Completion:	
Total Pressure Loss:	
Allowable Loss (L):	
Measured Loss (L):	
Comments:	

CERTIFICATION OF TEST RESULTS		
I certify that the Hydrostatic Testing of the potable water service connection was successfully completed and meets the requirements of OPSS 441 and AWWA C651-14.		
Name:	Signature:	Date:

WATERMAIN COMMISSIONING FORM 10

CERTIFICATE
of
DISINFECTION

GENERAL INFORMATION	
Project:	
Project Location:	
Testing Completed by:	
Date:	

TEST RESULTS			
Date & Time Test Initiated:			
Date & Time Test Completed:			
Duration (Minimum 24 hours):			
DATE	SAMPLE LOCATION	INITIAL CHLORINE RESIDUAL	24 HOUR CHLORINE RESIDUAL
		(mg/L)	(mg/L)
Comments:			

CERTIFICATION OF TEST RESULTS		
I certify that Disinfection of the potable water service connection was successfully completed and meets the requirements of OPSS 441 and AWWA C651-14.		
Name:	Signature:	Date: