



BY-LAW 2007-142

A By-law to regulate cross connections and backflow prevention in private plumbing systems as required to protect the Town of Markham drinking water supply and municipal drinking-water system from contamination

WHEREAS pursuant to section 11(3) and (11) of the *Municipal Act*, S.O. 2001, as amended (hereinafter referred to as the "*Municipal Act*") the Corporation of the Town of Markham (hereinafter referred to as the "Town") has the responsibility for the distribution of water within the Town;

AND WHEREAS the Town is deemed to be the "water purveyor" as defined by Part I of the *Ontario Building Code*;

AND WHEREAS pursuant to section 20(1) of the *Safe Drinking Water Act*, S.O. 2002, C.32, as amended, (hereinafter referred to as the "*Safe Drinking Water Act*") it is an offence to cause or permit anything to enter a drinking-water system if it could result in, a drinking-water health hazard, a contravention of a prescribed standard or the interference with the normal operation of the system;

AND WHEREAS s. 11(1) of the *Safe Drinking Water Act* requires every owner of a municipal drinking water system, amongst other things, to ensure that all water provided by the system to the point where the system is connected to a user's plumbing system meets the requirements of the prescribed drinking-water quality standards;

AND WHEREAS Part 7 of the *Ontario Building Code* requires potable water systems to be protected from contamination;

AND WHEREAS pursuant to s. 11(2) paragraph 6 of the *Municipal Act* a municipality may pass a by-law for purposes related to the health, safety and well-being of the inhabitants of persons;

AND WHEREAS contamination of the Town's drinking-water supply can arise as a result of a backflow incident from a private plumbing system which is attached to the Town's municipal drinking-water system;

AND WHEREAS the contamination of the municipal drinking-water system can have an adverse impact on the health, safety and well-being of the users of the Town's drinking water;

AND WHEREAS, the Town desires to protect the health, safety and well-being of the inhabitants of the Town by passing a By-law to put mechanisms in place so as not to permit the discharging of a contaminating substance into the municipal drinking-water system for which the Town is responsible;

AND WHEREAS sections 446(1) and (3) of the *Municipal Act* authorizes a municipality by by-law to require, in default of a required matter or thing being done, that the work may be done by the municipality at the expense of the person required to do it and the costs may be added to the tax rolls and collected in the same manner as taxes.

NOW THEREFORE THE COUNCIL OF THE TOWN OF MARKHAM ENACTS AS FOLLOWS:

1 **DEFINITIONS**

1.0 For the purposes of this By-law:

"ASSE" means the American Society of Sanitary Engineering;

"AWWA" means the American Water Works Association;

“*Authorized Functions List*” means the list of functions and the persons with the required qualifications authorized to carry out such functions as set out in Schedule “A” of this By-Law;

“*auxiliary water supply*” means any water source or system, other than the *Town’s drinking water*, that may be available in a *building* or *structure* on any property;

“*backflow*” means the flowing back of or reversal of the normal direction of flow of water, as defined by the *Ontario Building Code*, as amended ;

“*backflow preventer*” means a device that prevents *backflow* in a water distribution system, as defined by the *Ontario Building Code*;

“*back siphonage*” means a backflow caused by negative pressure in the municipal water distribution system, as defined by the *Ontario Building Code*;

“*building*” shall have the same meaning as set out in the *Building Code Act*;

“*Building Code Act*” means the *Building Code Act*, S.O. 1992, c. 23, as amended, or any successor thereof;

“*certified tester*” means a person who is certified as a tester of backflow preventers;

“*cross-connection*” means any actual or potential connection between a *potable water* system and any source of pollution or contamination and includes any by-pass, jumper connection, removable section of pipe, swivel or changeover device and any other temporary or permanent connecting arrangement through which *backflow* may occur;

“*Cross-Connection Survey Form*” means the form attached as Schedule “B” of this By-Law;

“*CSA Standard*” means the document entitled CAN/CSA-B64.10-01 CAN/CSA-B64.10.1-01 & Amendments - Manual for the Selection and Installation of Backflow Prevention Devices / Manual for the Maintenance and Field Testing of Backflow Prevention Devices published in 2001 by the Canadian Standards Association, or such later edition as referenced by the *Ontario Building Code*;

“*Director of Operations*” shall mean the person designated as the Director of Operations for the Town of Markham or his or her designate;

“*drinking water*” means drinking water as defined in section 2(1) of the *Safe Drinking Water Act* as follows:

- (a) water intended for human consumption, or
- (b) water that is required by an Act, regulation, order, municipal by-law or other document issued under the authority of an Act,
 - i. to be potable, or
 - ii. to meet or exceed the requirements of the prescribed drinking-water quality standards

“*drinking-water system*” means drinking-water system as defined in section 2(1) of the *Safe Drinking Water Act* as follows:

means a system of works, excluding plumbing, that is established for the purpose of providing users of the system with drinking water which includes:

- (a) any thing used for the collection, production, treatment, storage, supply or distribution of water,
- (b) any thing related to the management of residue from the treatment process or the management of the discharge of a substance into the natural environment from the treatment system; and
- (c) a well or intake that serves as the source of entry point of raw water supply for the system.

“*Fire service main*” as defined by the *Ontario Building Code*, means a pipe and its appurtenances that are connected to a source of water and that are located on a property,

- a) between the source of water and the base of the riser of a water-based fire protection system,
- b) between the source of water and inlets to foam making systems,

- c) between the source of water and the base elbow of private hydrants or monitor nozzles,
- d) as fire pump suction and discharge piping not within a *building*, or
- e) beginning at the inlet side of the check valve on a gravity or pressure tank.

“*minor hazard*” means any cross-connection or potential cross-connection that constitutes only a nuisance, with no possibility of any health hazard, and which is identified as a minor hazard connection by the *CSA Standards*;

“*moderate hazard*” means any minor hazard that has a low probability of becoming a severe hazard, and which is identified as a moderate hazard connection by the *CSA Standards*;

“*municipal drinking-water system*” means municipal drinking-water system as defined by section 2(1) of the *Safe Drinking Water Act* as follows:

a drinking-water system or part of a drinking-water system,

- (a) that is owned by a municipality or by a municipal service board established under s. 195 of the *Municipal Act, 2001*,
- (b) that is owned by a corporation established under section 203 of the *Municipal Act, 2001*,
- (c) from which a municipality obtains or will obtain water under the terms of a contract between the municipality and the owner of the system, or
- (d) that is in a prescribed class;

“*Ontario Building Code*” means O. Reg. 350/06, of the *Building Code Act, 1992*, S.O. 1992, c.23, as amended or any successor thereof .

“*Ontario Fire Code*” means O. Reg. 388/97 of the *Fire Protection and Prevention Act, 1997*, S.O. c.4, as amended or any successor thereof.

“*owner*” means any person, firm or corporation having control over property to which this By-law applies and includes the owner registered on the title of the property and any occupant of any building or structure located on such property;

“*plumbing*” means plumbing as defined by the *Safe Drinking Water Act* as follows:

a system of works,

- (a) that comprise a “water system” for the purposes of the definition of the *Building Code Act, 1992*, other than equipment installed in plumbing to treat water, and
- (b) that are connected to a drinking-water system;

“*potable water*” means water that is safe for human consumption and that complies with section 10 of the *Safe Drinking Water Act*;

“*potable water system*” means the *plumbing* that conveys *potable water*;

“*premise isolation*” means isolation of the water located within a building or structure from the Town’s water supply;

“*professional engineer*” means a person who holds a licence or a temporary licence issued under the *Professional Engineers Act, R.S.O. 1990, c.P. 28*, as amended;

“*residential full flow-through fire sprinkler/standpipe system*” means an assembly of pipes and fittings installed in the residential portions of a building containing one or two dwelling units that conveys water from the water service pipe to outlets in the sprinkler and standpipe systems and is fully integrated into the potable water system to ensure a regular flow of water through all parts of the sprinkler and standpipe systems, as defined by Part I of the *Ontario Building Code*;

“*severe hazard*” means any cross-connection or potential cross-connection involving any substance that could be a danger to health and which is identified as a severe hazard connection by the *CSA Standards*;

“*source isolation*” means isolation of the water located within or having flowed through a source or potential source of contamination within a building or structure including a device, machine, water system or the like, from any potable water system;

“*structure*” means anything constructed or built permanently or temporarily which is provided with a source of *potable water*;

“*Test Report*” means a report in the form set out as Schedule “C” of this By-law;

“*Test Tag*” means a tag in the form set out as Schedule “D” of this By-law;

“*Town*” means the Corporation of the Town of Markham and includes its employees, servants and agents;

“*water meter*” means the water meter installed within a premises to record the amount of water supplied to such premises by the Town through the *municipal drinking-water system*;

“*zone isolation*” means the isolation of the water located within an area of a building or structure from any potable water system located within such building or structure.

2 APPLICATION OF BY-LAW

2.0 This By-law applies to all property within the Town, except *buildings* or *structures* of residential occupancies where each dwelling unit is individually serviced from the *municipal drinking-water system* through a single connection less than 50mm diameter.

2.1 Notwithstanding section 2.0 of this By-law, this By-law applies to plumbing in residential occupancies having connections to the *municipal drinking-water system* and

2.1.1 any auxiliary water supply, or

2.1.2 a lawn sprinkler system, or

2.1.3 a fire protection system, except for a *residential full flow-through fire sprinkler/standpipe system*.

3 CROSS-CONNECTION PROHIBITED – OWNER’S RESPONSIBILITY

3.0 No person or *owner* shall connect, cause to be connected, or allow to remain connected to the Town’s *municipal drinking-water system* or any other potable water system any plumbing, piping, fixture, fitting, container, appliance, vehicle, machine or the like in a manner which may under any circumstance allow water, waste water or any other liquid, chemical or substance to enter such *municipal drinking-water system* or *potable water system*.

3.1 No person or *owner* shall connect, cause to be connected, or allow to remain connected any *auxiliary water supply* or private well to a *plumbing system* which is supplied by the Town’s *municipal drinking-water system*.

4 PERSONS PERMITTED TO CARRY OUT WORK

4.0 Only those persons with the required qualifications listed in the *Authorized Functions List* attached as Schedule “A” shall carry out the corresponding functions set out in therein.

4.1 In order to perform *Cross-Connection Surveys* and testing of *backflow preventers* required pursuant to this By-law, the persons listed in the *Authorized Functions List* attached as Schedule “A” who are permitted to perform the survey or testing shall also have and submit proof of the following qualifications in a form satisfactory to the Town:

4.1.1 A certificate from an accredited organization or association issued in accordance with the requirements set by the *ASSE* or *AWWA*, designating the person as a “Certified Backflow Prevention Assembly Tester” which has been issued or renewed within five years prior to date of the submission of the *Cross Connection Survey* or *Test Report*; and

- 4.1.2 A current calibration certificate for the test equipment issued within the twelve months prior to date of submission of a *Test Report*.

5 APPLICATION OF CSA STANDARD

- 5.0 Except as otherwise set out in this By-law, the maintenance and field testing of *backflow preventers* required pursuant to this By-law shall be undertaken in accordance with the CSA Standard.
- 5.1 Wherever the *CSA Standard* and this By-law are in conflict, the provisions of this By-law shall prevail.

6 CROSS-CONNECTION SURVEY REQUIRED

- 6.0 Every three years or as otherwise required by the Town, every *owner* of a building or structure to which this By-law applies shall cause a survey to be undertaken and carried out of all *plumbing* in each building or structure in accordance with the following:
- 6.0.1 the *owner* shall ensure that each survey conducted is carried out on the prescribed *Cross-Connection Survey Form* and is undertaken and completed by a person permitted to do so pursuant to the *Authorized Functions List*; and
- 6.0.2 the *owner* shall ensure that the completed *Cross-Connection Survey Form* is provided to the *Director of Operations* within 14 days of the survey being conducted.
- 6.1 Where a *source isolation backflow preventer* has been installed in equipment by the manufacturer of the equipment, the *owner* is required to have the *cross-connection* reviewed by a person permitted to do so pursuant to the *Authorized Functions List* to determine if the *backflow preventer* complies with the requirements of the *Ontario Building Code* and the *CSA Standard*. These cross-connections shall be identified on the *Cross-Connection Survey Form*.
- 6.2 When a new connection to the *municipal drinking-water system* is made, the *owner* shall complete and submit a survey prior to the *plumbing* being put into use.
- 6.3 Where a modification to *plumbing*, equipment or a process has been made after the submission of a survey as required by this by-law, the *owner* shall complete and resubmit a new survey to the Town prior to the modified *plumbing* being put into use.

7 INSTALLATION OF BACKFLOW PREVENTERS

- 7.0 Every person installing a *backflow preventer* or causing a *backflow preventer* to be installed or replaced shall ensure that:
- 7.0.1 such device is installed in accordance with good engineering practices and the requirements of the *Building Code Act* and the *Ontario Building Code*;
- 7.0.2 a building permit is obtained in accordance with the provisions of the *Building Code Act*;
- 7.1 Every *owner* of property upon which a *backflow preventer* is installed shall ensure that such device is in proper working order at all times.

8 TESTING OF DEVICES

- 8.0 Every *owner* who has a *backflow preventer* installed on his or her property shall ensure that:
- 8.0.1 such device is tested by a *certified tester* when it is first installed and annually thereafter or when requested by the *Town*, and also when it is cleaned, repaired, overhauled or relocated;
- 8.0.2 when such device is tested, that a *Test Report* of such test is completed by a person permitted to do so pursuant to the *Authorized Functions List* on a form approved by the *Town*;

- 8.0.3 the *Test Report* is submitted to the *Director of Operations* within 14 days of the test being conducted by the *certified tester*; and
- 8.0.4 in the event that such device is malfunctioning or otherwise not in proper working order, cause the device to be repaired or replaced forthwith.
- 8.1 Every person who tests a *backflow preventer* shall carry out such testing in accordance with this By-law and the *CSA Standard*.
- 8.2 In addition to the testing methods set out in section 6 of the *CSA Standard*, test procedures established by the *ASSE* or *AWWA* for testing *backflow preventers* may be employed.
- 8.3 Every person who tests a *backflow preventer* shall:
 - 8.3.1 within 14 days of carrying out such test, provide a legible *Test Report* to the *Director of Operations* in respect of such test;
 - 8.3.2 upon completing such test, complete and affix a *Test Tag* to the device or immediately adjacent to the device on the piping connected thereto; and
 - 8.3.3 upon finding that such device is malfunctioning or otherwise not in proper working order, immediately notify the *owner* of the premises and the *Town* of such condition.

9 MAINTENANCE OF FIRE SERVICE MAINS

- 9.0 Where a private fire hydrant or yard hydrant is connected to a *fire service main* that is supplied by the *municipal drinking-water system*, the owner shall cause the hydrant to be inspected annually as required by s. 6.6.5.1 of the *Ontario Fire Code* and shall provide the *Town* with a copy of the record of hydrant operation as required to be kept in accordance with s. 6.6.5.8 of the *Ontario Fire Code*.

10 ADMINISTRATION AND ENFORCEMENT

- 10.0 The *Director of Operations* shall be responsible for the administration and enforcement of this By-law.
- 10.1 Everyone who contravenes any of the provisions of this By-law is guilty of an offence and upon conviction is liable to a maximum fine as established pursuant to the provisions of the *Provincial Offences Act*, R.S.O. 1990, c.P. 33, as amended.
- 10.2 Where the requirements of this By-law are not met or a condition exists on any property that may allow contamination of the *Town's municipal drinking-water system* or *Town's water supply* or the contamination of any other potable water system on such property, including any residential building or structure, the *Town* may:
 - 10.2.1 issue and serve an Order to Comply on the *owner* of the property requiring the *owner* to comply with the requirements of the By-law and/or to eliminate the condition which may allow contamination and in so doing may prescribe the time period for compliance with such Order; or
 - 10.2.2 If a condition exists on a property which may result in the contamination of the *Town's municipal drinking-water system* or the *Town's water supply*, the *Town* may, in addition to issuing an Order to Comply, shut off the water supply to the property or any portion thereof until the condition is eliminated to the satisfaction of the *Town*.
- 10.3 Service of an Order to Comply shall be made by personal service or by prepaid registered mail to the address of the *owner* shown on the last revised assessment roll. Where service is made by registered mail, it shall be deemed to have been received by the owner on the fifth day after the date of mailing.
- 10.4 Wherever this By-law directs or requires any work or thing to be done, in default of it being done by the person directed to do it, such work may be done by the *Town* or its agents at the expense of the person and the *Town* may recover all expenses incurred in doing the work by action or by adding the costs to the tax roll and collecting them in the same manner as taxes.

10.5 In addition to any other provision of this By-law, the Town may at any time issue an Order to an *owner* to conduct tests, provide reports and undertake any other measures required for the elimination of a cross-connection and the prevention of backflow.

11 GENERAL PROVISIONS

11.0 Where a timeframe is set out in this By-law for carrying out any action, the Town may extend the time for compliance beyond the established timeframe provided such extension is required and is acceptable to the Town.

11.1 Schedule "A" through "D" inclusive and the *CSA Standard* shall form part of this By-law.

11.2 If a court of competent jurisdiction declares any section or part of this By-law invalid or unenforceable, it is the intention of Council that the remainder of the By-law shall continue to be in force.

11.3 This By-law comes into force and effect on the date of its passing and enactment.

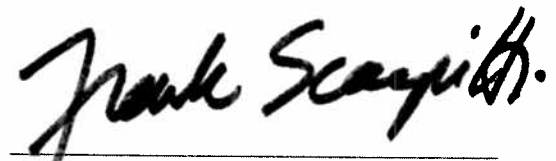
12 DATE OF COMPLIANCE

12.0 Completion of the first cross-connection survey and testing of *backflow preventers* and assemblies shall occur prior to the date set out below for the degree of hazard:

Degree of Hazard According To CAN/CSA-B64.10-01	Compliance Date
Severe	one year from passage of the By-law
Moderate and Minor	three years from passage of the By-law

READ A FIRST, SECOND, AND THIRD TIME AND PASSED THIS
26TH DAY OF JUNE, 2007.


SHEILA BIRRELL, TOWN CLERK


FRANK SCARPITTI, MAYOR

Note: Schedule "A" - Authorized Function List
Schedule "B" - Cross-Connection Survey
Schedule "C" - Test Report, Reduced Pressure Principle Backflow Prevention Assembly
Schedule "D" - Test Report, Double Check Valve/Pressure Vacuum Breaker
Schedule "E" - Test Tag

SCHEDULE "A"
Town of Markham
By-law Number 2007-142

AUTHORIZED FUNCTIONS LIST

ITEM	FUNCTION	Professional Engineer with Tester's Certificate	Certified Engineering Technologist ¹ with Tester's Certificate	Licensed Master Plumber with Tester's Certificate	Journeyman Plumber ² with Tester's Certificate	Apprentice Plumber ³ with Tester's Certificate	Fire System Sprinkler Fitter with Tester's Certificate	Lawn Irrigation System Installer with Tester's Certificate
1	Carry out Cross Connection Survey	✓	✓	✓	✓			
2	Test Backflow Prevention Device	✓	✓	✓	✓	✓		
3	Items 1, 2, 3 & 4 above in Respect of Fire Protection Systems						✓	
4	Items 3 & 4 above in Respect of Lawn Sprinkler System							✓

Note: Tester's Certificate means "Certified Backflow Prevention Assembly Tester" certificate obtained from an accredited organization or association.

1 Required to be under the direction of a Professional Engineer

2 Required to be employed by a Licensed Plumbing Contractor

3 Required to be employed by a Licensed Plumbing Contractor and under the direct supervision of a Master Plumber or Journeyman Plumber

SCHEDULE "B"
Town of Markham
By-law Number 2007-142

CROSS-CONNECTION SURVEY
 Plumbing System Fire Protection System Lawn Irrigation System

Date (YYYY/MM/DD):

Page #

Note: Surveyor is required to submit copies of this report to the Town of Markham and the owner of property.

Building/Facility:		Address:		Owner:		Report Given to (Owner):	
Surveyor Name: Occupation: Telephone Number: Business Address:		Authorized Function List Qualifications Submitted <input type="checkbox"/> Submitted within previous 12 Months, or <input type="checkbox"/> Backflow Prevention Device Tester certificate		Town of Markham Water Meter <input type="checkbox"/> Meter on Domestic Water Service Serial Number: _____ <input type="checkbox"/> Meter on Fire Protection System Service Serial Number: _____		Signature of Owner: _____ Signature of Surveyor: _____	
Location of Cross-Connection	Existing Protection Type	Serial # (if Applicable)	Date of Last Test (if Applicable)	Acceptable Protection Yes/No	Required Upgrade	Remarks	
1							
2							
3							
4							
5							
6							
7							
8							
9							
The Personal information collected herein is subject to the <i>Municipal Freedom of Information and Protection of Privacy Act</i> . The information is collected under the authority of Town of Markham By-law 2007-XXX and may be used for the enforcement and administration of the By-law, and will be stored by the Town for such period of time which facilitates the enforcement and administration of the By-law. Completion of this form constitutes consent by the owner, tester and/or surveyor to these terms and uses, unless otherwise modified or revised in writing and delivered to the Director of Operations for the Town of Markham.		* DCVA/DCVAF - Double Check Valve Assembly/Double Check Valve Assembly for Fire Protection * AVB - Atmospherc Vacuum Breaker * PVB - Pressure Vacuum Breaker HCVB - Hose Connection Vacuum Breaker LFVB - Laboratory Faucet Vacuum Breaker * DCAP - Dual Check Valve with Atmospheric Port * DuC/DuCF - Dual Check Valve/Dual Check Valve for Fire Protection * DuCV - Dual Check Valve with Intermediate Vent		* RP/RPF - Reduced Pressure Principle/Reduced Pressure Principle for Fire Protection * SCVAF - Single Valve for Fire Protection AG - Air Gap *LACV - Listed Alarm Check Valve * RSCV - Resilient Seated Check Valve N - None * - Building Permits required for installation of these devices			

SCHEDULE "C"
Town of Markham
By-law Number 2007-142



Waterworks Department
 Cross-Connection Control
 101 Town Centre Boulevard
 Markham, ON L3R 9W3
 Telephone: 905-477-7000
 Fax: 905-479-7772
 Email: waterworks@markham.ca

TEST REPORT
Reduced Pressure Principle Backflow
Prevention Assembly

Note: Tester is required to submit copies of this report to the Town of Markham and the owner of property										
Address Location							Postal Code			
Occupant				Emergency Contact Person			Telephone			
Owner							Telephone			
Address of Owner							Postal Code			
Name of Certified Tester				Tester Certification Information:			Telephone			
Occupation:				<input type="checkbox"/> Submitted within previous 12 Months, or <input type="checkbox"/> Backflow Prevention Device Tester certificate						
Business Name				Business Address			Postal Code			
Make of TEST KIT				Model Number		Serial Number		Date of Last calibration		
Make of ASSEMBLY				Model Number		Serial Number		Size		
INSTALL DATE	YY	MM	DD	Location of Assembly (ie. Building, room number, installed on what system)						
Premise <input type="checkbox"/> Source <input type="checkbox"/> Zone <input type="checkbox"/>			Device Tagged? Yes <input type="checkbox"/> No <input type="checkbox"/>		Antifreeze solution test meets the requirements of NFPA? Yes <input type="checkbox"/> No <input type="checkbox"/>			Water Works Valve Lock Removed? Yes <input type="checkbox"/> No <input type="checkbox"/>		
TYPE OF TEST Initial <input type="checkbox"/> Annual <input type="checkbox"/> Other <input type="checkbox"/>		Date of Test		YYYY	MM	DD	SHUT OFF VALVE NO. 2 Leaked <input type="checkbox"/> Closed Tight <input type="checkbox"/>		Line pressure at time of test ___ Psi ___ kPa	
TEST	Differential Pressure Relief Value			Check Valve No. 1			Check Valve No. 2			TEST RESULTS Passed <input type="checkbox"/> Failed <input type="checkbox"/>
	<input type="checkbox"/> Failed to Open			Leaked <input type="checkbox"/> Closed Tight <input type="checkbox"/>			Leaked <input type="checkbox"/> Closed Tight <input type="checkbox"/>			
	<input type="checkbox"/> Opened at ___ Psi ___ kPa			Pressure differential across ___ kPa First check valve (no flow) ___ Psi			Pressure differential across ___ kPa First check valve (no flow) ___ Psi			

IF THE ASSEMBLY FAILS THE INITIAL TEST FOR ANY REASON, COMPLETE THIS SECTION AND NOTE REPAIR BELOW:

Reason for Failure (if apparent)

REPAIRS	Differential Pressure Relief Value		Check Valve No. 1		Check Valve No. 2		Shut Off Valve No. 2	
	CLEANED	REPLACED	CLEANED	REPLACED	CLEANED	REPLACED	CLEANED	REPLACED
<input type="checkbox"/>	Disc Upper	<input type="checkbox"/>	<input type="checkbox"/>	Disc	<input type="checkbox"/>	<input type="checkbox"/>	Disc	<input type="checkbox"/>
<input type="checkbox"/>	Disc Lower	<input type="checkbox"/>	<input type="checkbox"/>	Spring	<input type="checkbox"/>	<input type="checkbox"/>	Spring	<input type="checkbox"/>
<input type="checkbox"/>	Spring	<input type="checkbox"/>	<input type="checkbox"/>	Guide	<input type="checkbox"/>	<input type="checkbox"/>	Guide	<input type="checkbox"/>
<input type="checkbox"/>	Diaphragm Large	<input type="checkbox"/>	<input type="checkbox"/>	Pin Retainer	<input type="checkbox"/>	<input type="checkbox"/>	Pin Retainer	<input type="checkbox"/>
<input type="checkbox"/>	Upper	<input type="checkbox"/>	<input type="checkbox"/>	Hinged Pin	<input type="checkbox"/>	<input type="checkbox"/>	Hinged Pin	<input type="checkbox"/>
<input type="checkbox"/>	Lower	<input type="checkbox"/>	<input type="checkbox"/>	Seat	<input type="checkbox"/>	<input type="checkbox"/>	Seat	<input type="checkbox"/>
<input type="checkbox"/>	Spacer Lower	<input type="checkbox"/>	<input type="checkbox"/>	Diaphragm	<input type="checkbox"/>	<input type="checkbox"/>	Diaphragm	<input type="checkbox"/>
<input type="checkbox"/>	Seat	<input type="checkbox"/>	<input type="checkbox"/>	Other (describe)	<input type="checkbox"/>	<input type="checkbox"/>	Other (describe)	<input type="checkbox"/>
<input type="checkbox"/>	Other (describe)	<input type="checkbox"/>						
DATE OF RE-TEST YEAR MONTH DAY / /								
RE-TEST	<input type="checkbox"/> Failed to Open <input type="checkbox"/> Opened at ___ Psi ___ kPa		Leaked <input type="checkbox"/> Closed Tight <input type="checkbox"/>		Leaked <input type="checkbox"/> Closed Tight <input type="checkbox"/>		RE-TEST RESULTS Passed <input type="checkbox"/> Failed <input type="checkbox"/>	
			Pressure differential across ___ kPa First check valve (no flow) ___ Psi		Pressure differential across ___ kPa First check valve (no flow) ___ Psi			

Remarks:

OFFICE USE ONLY	I hereby declare that the information provided herein is true and certify that I have tested the above assembly in accordance to the Town of Markham By-Law 2007-xx as amended and CAN/CSA-B64.10-01
	Signature of Certified Tester _____ Date YY MM DD _____ WHITE - Markham YELLOW - Tester PINK - Occupant or Owner

The personal information collected herein is subject to the *Municipal Freedom of Information and Protection of Privacy Act*. The information is collected under the authority of Town of Markham By-law 2007 - XXX and may be used for the enforcement and administration of the By-law, and will be stored by the Town for such period of time which facilitates the enforcement and administration of the By-law. Completion of this form constitutes consent by the owner, tester and/or surveyor to these terms and uses, unless otherwise modified or revised in writing and delivered to the Director of Operations for the Town of Markham

SCHEDULE "D"
Town of Markham
By-law Number 2007-142



Waterworks Department
 Cross-Connection Control
 101 Town Centre Boulevard
 Markham, ON L3R 9W3
 Telephone: 905-477-7000
 Fax: 905-479-7772
 Email: waterworks@markham.ca

TEST REPORT
**Double Check Valves Assembly/
 Pressure Vacuum Breaker**

Note: Tester is required to submit copies of this report to the Town of Markham and the owner of property									
Address Location								Postal Code	
Occupant				Emergency Contact Person				Telephone	
Owner								Telephone	
Address of Owner								Postal Code	
Name of Certified Tester				Tester Certification Information: <input type="checkbox"/> Submitted within previous 12 Months, or <input type="checkbox"/> Backflow Prevention Device Tester certificate				Telephone	
Business Name				Business Address				Postal Code	
Make of TEST KIT				Model Number		Serial Number		Date of Last Calibration	
Make of ASSEMBLY				Model Number		Serial Number		Size	
INSTALL DATE	YY	MM	DD	Location of Assembly (ie. Building, room number, installed on what system)					
Premise <input type="checkbox"/> Source <input type="checkbox"/> Zone <input type="checkbox"/>			Device Tagged? Yes <input type="checkbox"/> No <input type="checkbox"/>		Antifreeze solution test meets the requirements of NFPA-? Yes <input type="checkbox"/> No <input type="checkbox"/>			Waterworks Valve Lock Removed? Yes <input type="checkbox"/> No <input type="checkbox"/>	
TYPE OF TEST Initial <input type="checkbox"/> Annual <input type="checkbox"/> Other <input type="checkbox"/>			Date of Test		YYYY	MM	DD	SHUT OFF VALVE NO. 2 Leaked <input type="checkbox"/> Closed Tight <input type="checkbox"/> Line pressure at time of test _____ Psi _____ kPa	
TEST	Check Valve No 1		Check Valve No 2		Pressure Vacuum Breaker		Test Results		
	With Flow	Against Flow	With Flow	Against Flow	Air in Valve	Chck Valve	Passed <input type="checkbox"/>		
	<input type="checkbox"/> Leaked	<input type="checkbox"/> Leaked	<input type="checkbox"/> Leaked	<input type="checkbox"/> Leaked	<input type="checkbox"/> Failed to Open	<input type="checkbox"/> Leaked	Failed <input type="checkbox"/>		
	<input type="checkbox"/> Closed Tight	<input type="checkbox"/> Closed Tight	<input type="checkbox"/> Closed Tight	<input type="checkbox"/> Closed Tight	<input type="checkbox"/> Opened at	<input type="checkbox"/> Closed tight	Sight Tube Test		
	Pressure Drop _____ Kpa		Pressure Drop _____ Kpa		_____ Kpai	_____ kPa	Passed <input type="checkbox"/>		
	Across Check _____ Psi		Across Check _____ Psi		_____ Psi	_____ Psi	Failed <input type="checkbox"/>		

IF THE ASSEMBLY FAILS THE INITIAL TEST FOR ANY REASON, COMPLETE THIS SECTION AND NOTE REPAIR BELOW:

Reason for Failure (if apparent) _____

REPAIRS	DOUBLE CHECK VLV ASSEMBLY				Pressure Vacuum Breaker				Date of Re-test / / YY MM DD
	Check Valve No. 1		Check Valve No. 2		Air in Valve		Chck Valve		
	<input type="checkbox"/> Disc	<input type="checkbox"/> Disc	<input type="checkbox"/> Spring	<input type="checkbox"/> Spring	<input type="checkbox"/> Failed to Open	<input type="checkbox"/> Leaked	Passed <input type="checkbox"/>		
	<input type="checkbox"/> Spring	<input type="checkbox"/> Spring	<input type="checkbox"/> Guide	<input type="checkbox"/> Guide	<input type="checkbox"/> Opened at	<input type="checkbox"/> Closed tight	Failed <input type="checkbox"/>		
	<input type="checkbox"/> Guide	<input type="checkbox"/> Guide	<input type="checkbox"/> Pin Retainer	<input type="checkbox"/> Pin Retainer	_____ Psi	_____ kPa	Sight Tube Test		
	<input type="checkbox"/> Pin Retainer	<input type="checkbox"/> Pin Retainer	<input type="checkbox"/> Hinged Pin	<input type="checkbox"/> Hinged Pin	_____ Psi	_____ Psi	Passed <input type="checkbox"/>		
	<input type="checkbox"/> Hinged Pin	<input type="checkbox"/> Hinged Pin	<input type="checkbox"/> Seat	<input type="checkbox"/> Seat		_____ Psi	Failed <input type="checkbox"/>		
	<input type="checkbox"/> Seat	<input type="checkbox"/> Seat	<input type="checkbox"/> Diaphragm	<input type="checkbox"/> Diaphragm					
	<input type="checkbox"/> Diaphragm	<input type="checkbox"/> Diaphragm	<input type="checkbox"/> Other (describe)	<input type="checkbox"/> Other (describe)					
	<input type="checkbox"/> Other (describe)	<input type="checkbox"/> Other (describe)							
RE-TEST	With Flow	Against Flow	With Flow	Against Flow	Air inlet Valve	Check Valve	Test Results		
	<input type="checkbox"/> Leaked	<input type="checkbox"/> Leaked	<input type="checkbox"/> Leaked	<input type="checkbox"/> Leaked	<input type="checkbox"/> Failed to Open	<input type="checkbox"/> Leaked	Passed <input type="checkbox"/>		
	<input type="checkbox"/> Closed Tight	<input type="checkbox"/> Closed Tight	<input type="checkbox"/> Closed Tight	<input type="checkbox"/> Closed Tight	<input type="checkbox"/> Opened at	<input type="checkbox"/> Closed tight	Failed <input type="checkbox"/>		
	Pressure Drop _____ kPa		Pressure Drop _____ kPa		_____ Psi	_____ kPa			
	Across check _____ Psi		Across check _____ Psi		_____ Psi	_____ Psi			

Remarks: _____

OFFICE USE ONLY	I hereby declare that the information provided herein is true and I certify that I have tested the above assembly in accordance to the Town of Markham By-Law **** as amended and CAN/CSA-B64.10-01 _____ Signature of Certified Tester WHITE - Markham
	_____ Date YY MM DD YELLOW - Tester PINK - Occupant or Owner
The personal information collected herein is subject to the <i>Municipal Freedom of Information and Protection of Privacy Act</i> . The information is collected under the authority of Town of Markham By-law 2007 - XXX and may be used for the enforcement and administration of the By-law, and will be stored by the Town for such period of time which facilitates the enforcement and administration of the By-law. Completion of this form constitutes consent by the owner, tester and/or surveyor to these terms and uses, unless otherwise modified or revised in writing and delivered to the Director of Operations for the Town of Markham.	

SCHEDULE "E"
Town of Markham
By-law Number 2007-142
TEST TAG

Front of tag

Town of Markham Waterworks Department Cross-Connection Control (905) 477-7000		DATE INSTALLED		
BACKFLOW PREVENTION ASSEMBLY TAG		YY YY	MM	DD
ADDRESS				
TYPE OF ASSEMBLY <input type="checkbox"/> RP <input type="checkbox"/> DCVA <input type="checkbox"/> PVB		MANUFACTURER		SIZE
MODEL NUMBER:		SERIAL NUMBER		
LOCATION:				
<u>DO NOT REMOVE</u>				

Reverse side of tag

TEST DATE			TESTER'S COMPANY	TESTER'S NO.	TESTER'S INITIALS
YY	MM	DD			
<u>DO NOT REMOVE</u>					