

City of LaVergne, Tennessee
Municipal Water System
Cross Connection Control Program

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I. PURPOSE

1. To protect the public potable water supply served by the City of LaVergne Department of Public Works from the possibility of contamination or pollution by isolating, within its customers internal distribution system, such contaminants or pollutants which could back-flow or back-siphon into the public water system.
2. To promote the elimination or control of existing cross-connections, actual or potential, between its customers in-plant potable water system, and non-potable systems.
3. To provide for the maintenance of a continuing program of cross-connection control, which will effectively prevent the contamination or pollution of all potable water systems by cross-connection. (Ord. #2007-17, June, 2007)
4. The City of LaVergne Department of Public Works is to comply with Section 68-221-711 of the Tennessee Code Annotated, as well as the Rules of Public Water Systems, legally adopted in accordance with this policy/ordinance, which pertain to cross-connections, auxiliary intakes, bypasses, and interconnections, and establish an effective, ongoing program to control these undesirable water uses. (Revised January 2009)

II. AUTHORITY

1. The Federal Safe Drinking Water Act of 1974, and the statutes of the State of Tennessee under Tennessee Code Annotated, §§ 68-221-701 through 68-221-720, the water purveyor has the primary responsibility for preventing water from unapproved sources, or any other substances, from entering the public potable water system.
2. City of LaVergne Department of Public Works, Rules and Regulations adopted. (Ord. #91-11, Jan., 1992), (Amended Ord # 2007-17, June, 2007)

III. RESPONSIBILITY

The Director of Public Works shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow or back-siphonage of contaminants or pollutants through the water service connection. If, in the judgement of the Director of Public Works, an approved backflow device is required

at the city's water service connection to any customer's premises, the director, or his delegated agent, shall give notice in writing to said customer to install an approved backflow prevention device at each service connection to his premises. The customer shall, within 90 days install such approved device, or devices, at his own expense, and failure or refusal, or inability on the part of the customer to install said device or devices within ninety (90) days, shall constitute a ground for discontinuing water services to the premises until such device or devices have been properly installed. (Ord. #91-11, Jan.1992) (Amended Ord. # 2007-17, June, 2007)

No person shall cause a cross-connection, auxiliary intake, bypass, or interconnection to be made, or allow one to exist for any purpose whatsoever unless the construction and operation of same has been approved by the Tennessee Department of Environment and Conservation and the operation of such cross-connections, auxiliary intake, bypass, or interconnection is at all times under the direct supervision of the Cross-Connection Control Manager/Coordinator of the Public Water System. (Revised January 2009)

IV. DEFINITIONS

1. "Approved." Any condition, method, device, procedure accepted by the Tennessee Department of Environment and Conservation, Division of Water Supply and the City of La Vergne, Department of Public Works. (Revised January 2009)
2. "Auxiliary Water Supply." Any water supply, on or available, to the premises other than water supplied by the public water system. (Revised January 2009)
3. "Backflow." The reversal of the intended direction of flow of water or mixtures of water and other liquids, gases, or other substances into the distribution pipes of a potable water system from any source. (Revised January 2009)
4. "Backflow Prevention Assembly." An approved assembly designed to prevent backflow. (Revised January 2009)
 - a. "Air gap." A physical separation between the free flowing discharge end of a potable water supply line and an open or non-pressurized receiving vessel. (Revised January 2009)
 - b. "Approved Air Gap". An air gap separation with a minimum

distance of at least twice the diameter of the supply line when measured vertically above the overflow rim of the vessel, but in no case less than one (1) inch. (Revised January 2009)

- c. "Atmospheric Vacuum Breaker." A device which prevents back-siphonage by creating an atmospheric vent when there is either a negative pressure or sub-atmospheric pressure in water system.
- d. "Barometric Loop." A fabricated piping arrangement rising at least thirty-five (35) feet at its topmost point above the highest fixture it supplies. It is utilized in water supply systems to protect against back-siphonage.
- e. "Double Check Detector Assembly." A specially designed assembly composed of line size approved double check valve assembly, with a bypass containing a water meter and approved double check valve assembly specifically designed for such application. The meter shall register accurately for very low flow up to 3 gallons per minute and shall show a registration of all rates of flow. This assembly shall only be used to protect against non-health hazards and is designed primarily for use on fire sprinkler systems. (Revised January 2009)
- f. "Double Check Valve Assembly." An assembly of two internally loaded check valves, either spring loaded or internally weighted, installed as a unit between tightly closing resilient seated shutoff valves and fitted with properly located resilient seated test cocks. This type of device shall only be used to protect against non-health hazard pollutants. (Revised January 2009)
- g. "Double Check Valve with Intermediate Atmospheric Vent." A device having two (2) spring loaded check valves separated by an atmospheric vent chamber.
- h. "Hose Bibb Vacuum Breaker." A device which is permanently attached to a hose bibb and which acts as an atmospheric vacuum breaker.
- i. "Pressure Vacuum Breaker Assembly." An assembly consisting of one or two independently operating spring loaded check valves (and an independently operating spring loaded air inlet valve located on the discharge side of the check valve(s), with tightly closing shutoff valve(s) on each side of the check valves

and properly located test cocks for testing valves. This assembly is approved for internal use only and is not approved for premise isolation by the State of Tennessee. (Revised January 2009)

- j. "Reduced Pressure Principle Detector Assembly." A specifically designed assembly composed of a line-size approved reduced pressure principle backflow prevention assembly with a bypass containing a water meter and approved reduced pressure principle backflow prevention assembly specifically designed for such application. The meter shall register accurately for very low flow rates up to 3 gallons per minute and shall show registration for all flow rates. This assembly shall be used to protect against non-health and health hazards and used for internal protection. (Revised January 2009)
 - k. "Reduced Pressure Principle Assembly." An assembly consisting of two (2) independently acting approved check valves together with hydraulically operating, mechanically independent, pressure differential relief valve located between the check valves and below the first check valve. These units shall be located between two tightly closing resilient seated shut-off valves as an assembly and equipped with properly located resilient seated test cocks. (Revised January 2009)
 - l. "Residential Dual Check." An assembly consisting of two (2) spring loaded, independently operating check valves without tightly closing shut-off valves and test cocks. Generally employed immediately downstream of the water meter to act as a containment device.
- 5. "Backpressure." A pressure in the downstream piping that is higher than the supply pressure. (Revised January 2009)
 - 6. "Back-siphonage." Negative or sub-atmospheric pressure in the supply piping. (Revised January 2009)
 - 7. "Bypass." Any system of piping or other arrangement whereby water may be diverted around a backflow prevention assembly, meter, or any other public water system control device. (Revised January 2009)
 - 8. "Containment." A method of backflow prevention which requires a backflow prevention device at the public water service entrance. (Revised January 2009)

9. "Contamination." The introduction or admission of any foreign substances that cause illness or death. (Revised January 2009)
10. "Contaminant." Any substance introduced into the public water system that will cause illness or death. (Revised January 2009)
11. "Cross-Connection." Any physical arrangement whereby public water is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture or other device which contains, or may contain, contaminated water, sewage, or other waste or liquid of unknown or unsafe quality which may be capable of contaminating the public water supply as a result of backflow caused by the manipulation of valves, because of ineffective check valves or backpressure valves or because of any other arrangement. (Revised January 2009)
12. "Cross Connection Control Coordinator/Manager." The person who is vested with the authority and responsibility for the implementation of the Cross-Connection Control Program and for the provision of this ordinance/policy. (Revised January 2009)
13. "Customer." Any natural or artificial person, business, industry, or governmental entity that obtains water, by purchase or without charges, from the water system. (Revised January 2009)
14. "Department." City of LaVergne Department of Public Works, Water Distribution System or their designee. (Revised January 2009)
15. "Direct Cross Connection." An actual or potential cross-connection subject to backsiphonage and backpressure. (Revised January 2009)
16. "Failed." The status of a backflow prevention assembly determined by a performance evaluation based on the failure to meet all minimums set forth by the approved testing procedure. (Revised January 2009)
17. "Fire System Classifications Protection." The classes of fire protection systems, as designated by the American Water Works Association "M14" for cross-connection control purposes based on water supply sources and the arrangement of supplies, are as follows.

- a. **Class 1:** Direct connection to the public water main only; no pumps, tanks, or reservoirs; no physical connection from other water supplies; no anti-freeze or other additives of any kind; all sprinkler drains discharging to the atmosphere, dry well or other safe outlet.
 - b. **Class 2:** Same as Class 1, except booster pumps may be installed in connection from the street mains.
 - c. **Class 3:** Direct connection to the public water supply mains in addition to any one or more of the following: elevated storage tanks; fire pumps taking suction from above ground covered reservoirs or tanks; and pressure tanks.
 - d. **Class 4:** Directly supplied from public water supply mains, similar to Class 1 and Class 2, with an auxiliary water supply dedicated to fire department use and available to premises, such as an auxiliary supply located within 1,700 feet of the pumper connection.
 - e. **Class 5:** Directly supplied from public water supply mains and interconnection with auxiliary supplies such as pumps taking suction from reservoirs exposed to contamination, or from rivers, ponds, wells or industrial water systems: where antifreeze or other additives are used.
 - f. **Class 6:** Combined industrial and fire protection systems supplied from the public water mains only, with or without gravity storage or pump suction tanks. (Revised January 2009)
18. "Fixture Isolation." A method of backflow prevention in which a backflow prevention assembly is located to correct a cross-connection at an in-plant location rather than at an water service entrance.
19. "Hazard, Degree of." A term derived from evaluation of the potential risk to public health and the adverse effect of the hazard upon the public water system. (Revised January 2009)
20. "Hazard, Health." A cross-connection or potential cross-connection involving any substance that could, if introduced in the public water supply, caused death, illness, and the spread disease also known as a **High Hazard**. (Revised January 2009)

21. "Hazard, Plumbing." A cross connection located in a customer's potable water system plumbing that is not properly protected by an approved air gap or backflow prevention assembly. (Revised January 2009)
22. "Indirect Cross Connection." An actual or potential cross connection subject to back siphonage only. (Revised January 2009)
23. "Industrial Fluid." Any fluid or solution that may be chemically, biologically, or otherwise contaminated or polluted in a form or concentration that could constitute a health, system, pollution, or plumbing hazard if introduced into the public water supply. This shall include, but is not limited to: polluted or contaminated water, all type of process water or used water originating from the public water system and that may have deteriorated in sanitary quality; chemicals; plating acids and alkalis; circulating cooling water connected to an open cooling tower; cooling towers that are chemically or biologically treated or stabilized with toxic substance; contaminated natural water systems; oil, gases, glycerin, paraffin, caustic, and acid solutions, and other liquids or gases used in industrial processes, or for fire purposes. (Revised January 2009)
24. "Inspection." An onsite evaluation of an establishment to determine if backflow prevention assemblies are needed by the customer to protect the public water system from actual or potential cross connections. (Revised January 2009)
25. "Interconnection." Any system of piping or other arrangement whereby a public water supply is connected directly with a sewer, drain, conduit, or other device, which does, or may carry sewage or not. (Revised January 2009)
26. "Owner." Any person who has legal title to, or license to operate or habitat in, a property upon which a cross-connection inspection is to be made or upon which a cross-connection is present.
27. "Passed." The status of a backflow prevention assembly determined by a performance evaluation in which the assembly meets all minimums set forth by the approved testing procedure. (Revised January 2009)
28. "Performance Evaluation." An evaluation of an approved Double Check Valve Assembly or Reduced Pressure Principle Assembly

(including approved Detector assemblies) using the latest approved testing procedures in determining the status of the assembly. (Revised January 2009)

29. "Person." Any individual, partnership, company, public or private corporation, political subdivision, or agency of the state department, agency or instrumentality of the United States or any other legal entity.
30. "Permit." A document issued by the department, which allows the use of a backflow prevention assembly.
31. "Pollutant." A substance in the public water system that would constitute a non-health hazard and would be aesthetically objectionable if introduced into the public water supply. (Revised January 2009)
32. "Pollution." The presence of a pollutant or substance in the public water supply that degrades its quality so as to constitute a non-health hazard. (Revised January 2009)
33. "Potable Water." Water that is safe for human consumption as prescribed by Tennessee Department of Environment and Conservation, Division of Water Supply. (Revised January 2009)
34. "Public Water Supply." An entity that furnishes potable water for general use and which is recognized as the public water supply by Tennessee Department of Environment and Conservation, Division of Water Supply. (Revised January 2009)
35. "Public Water System." A water system furnishing water to the general public for general use which is recognized as a public water supply by the State of Tennessee. (Revised January 2009)
36. "Service Connection." The point of delivery to the customer's water system; the terminal end of a service connection from the public water system where the department loses jurisdiction and control over the water. "Service Connection" shall include connections to fire hydrants and all other temporary or emergency water service connections made to the public water system. (Revised January 2009)
37. "State." The State of Tennessee, Tennessee Department of Environment and Conservation, Division of Water Supply.

(Revised January 2009)

38. "Survey." An evaluation of a premise by a water system performed for the determination of actual or potential cross connection hazards and the appropriate backflow prevention needed. (Revised January 2009)
39. "Water Service Entrance." That point in the owner's water system beyond the sanitary control of the public water system; generally considered to be the outlet end of the water meter and always before any unprotected branch. (Revised January 2009)
40. "Water System." The water system operated, whether located inside or outside the corporate limits thereof, shall be considered as made up of two (2) parts, the Utility System and the Customer System.
 - a. The Utility System shall consist of the facilities for the production, treatment, storage, and distribution of water and shall include all those facilities of the water system under the complete control of the water department, up to the point where the Customer's System begins (i.e. downstream of the water meter). See Public Water Supply.
 - b. The Customer System shall include those parts of the facilities beyond the termination of the water department distribution system that are utilized in conveying water to the point of use. (Revised January 2009)

V. ADMINISTRATION

1. The department will maintain and operate a cross-connection control program, to include the keeping of necessary records, which fulfills the requirements of the Tennessee Department of Environment and Conservation Cross-Connection Regulations and is approved by the same. It shall be unlawful for any person to cause a cross-connection to be made or allow one to exist for any purpose whatsoever unless the construction and operation of same have been approved by the Tennessee Department of Environment and Conservation, and the operation of such cross-connection is at all times under the direction of the manager of the Public Water System. (Revised January 2009)
2. The owner/customer shall allow his property to be inspected for possible cross-connections, shall supply all test reports and pay all

required fees, and shall follow the provisions of the department's program and the Tennessee Department of Environment and Conservation regulations if a cross-connection is permitted. (Revised January 2009)

3. If the department requires that the public water supply be protected by containment, including all fire sprinkler systems, the owner/customer shall be responsible for water quality beyond the outlet end of the containment device and should utilize appropriate fixture outlet protection for that purpose. (Revised January 2009)

The owner/customer may utilize public health officials, or personnel from the department, or their delegated representatives, or may retain department approved and State certified contractors to assist him in the survey of his facilities and to assist him in the selection of proper fixture outlet devices, and the proper installation of these devices. (Ord. #91-11, Jan. 1992), (Amended Ord. # 2007-17, June, 2007) (Revised January 2009)

VI. REQUIREMENTS

1. Department

- a. On all new installations, the department will provide on-site evaluation and/or inspection of plans in order to determine the type of backflow prevention assembly that will be required, will issue permit, and perform inspection and record all testing procedures and maintain an testing file. In any case, a minimum of a dual check valve will be required in any new residential construction. All new fire sprinkler systems will be installed and tested as required by the Fire Marshal, and all testing reports and installation details will be supplied to the Department prior to the issuance of the Certificate of Occupancy. (Revised January 2009)
- b. For premises existing prior to the start of this program, the department will perform evaluations and inspections of plans and/or premises and inform the owner/customer by letter of any corrective action deemed necessary, the method of achieving the correction, and the time allowed for the correction to be made. Ordinarily, ninety (90) days will be allowed, however, this time period may be shortened depending upon the degree of hazard involved and the history of the device(s) in question. (Revised January 2009)

- c. The department will not allow any potential or perceived cross-connection to remain unless it is protected by an approved backflow prevention assembly for which a permit has been issued and which will be regularly tested to insure satisfactory operation. (Revised January 2009)
- d. The department shall inform the owner/customer by letter, of any failure to comply, by the time of the first re-inspection. The department will allow an additional fifteen (15) days for the correction. In the event the owner/customer fails to comply with the necessary correction by the time of the second re-inspection, the department will inform the owner/customer by letter, that the water service to the owner's/customer's premises will be terminated within a period not to exceed five (5) days. In the event that the owner/customer informs the department of extenuating circumstances as to why the correction has not been made, a time extension may be granted by the department but in no case will exceed an additional thirty (30) days. (Revised January 2009)
- e. If the department determines at any time that a serious threat to the public water system or public health exists, the water service will be terminated immediately. (Revised January 2009)
- f. The department shall have on file, a list of private contractors who are certified backflow device testers. All charges for these backflow prevention assembly tests will be paid by the owner/customer of the building or property. All backflow prevention assembly testing reports will be supplied by the owner/customer to the department at initial installation, any required re-testing, and all annual testing as required by this program. (Revised January 2009)
- g. The department began initial premise inspections to determine the nature of existing or potential hazards, following the approval of this program by the board of mayor and aldermen, during the calendar year 2007. Initial focus will be on high hazard industries and commercial premises.
- h. Test of fire sprinkler system backflow prevention assemblies are restricted and regulated by State departments other than the Tennessee Department of Environment and Conservation. **ALL** backflow prevention assemblies (including fire sprinkler

assemblies) required by the public water supply system to protect the distribution system are required by Tennessee Department of Environment and Conservation to be inspected annually. Testing of fire sprinkler system backflow assemblies require specialized testing certification which the department does not maintain, and due to liability restrictions cannot obtain. The department will accept initial and annual testing certification of fire sprinkler assemblies from contractors whom have obtained and maintain the appropriate testing licenses from those State agencies that maintain jurisdiction on fire sprinkler assemblies. Contractor approval by the department for fire sprinkler system assembly testing are to be submitted and maintained in the same manner by the department as non fire sprinkler assembly contractors, listed in another section of this program document. (Revised January 2009)

- i. The requirements contained herein shall apply to all customers and premises of the LaVergne Water System, and is hereby made a condition required to be met before water service is provided to any customer. This policy/ordinance shall be strictly enforced since it is essential for the protection of the public water supply against contamination and pollution. (Revised January 2009)

2. Owner/Customer

- a. The owner/customer shall be responsible for the elimination or protection of all cross-connections on his premises. (Revised January 2009)
- b. The owner/customer, after having been informed by a letter from the department, shall at his expense, install, maintain, and test, or have tested, any and all backflow prevention assemblies on his premises. (Revised January 2009)
- c. The owner/customer shall correct any malfunction of the owner's/customer's backflow prevention assemblies which are revealed by periodic or annual testing. All costs associated with these required repairs are the responsibility of the owner/customer. (Revised January 2009)

- d. The owner/customer shall inform the department of any proposed or modified cross-connections and also any existing cross-connections of which the owner/customer is aware but has not been found by the department. All costs associated with the correction of these items are the responsibility of the owner/customer. (Revised January 2009)
- e. The owner/customer shall not install a by-pass around any backflow prevention assembly unless there is a approved backflow prevention assembly of the same type on the bypass. Owners/customers who cannot shut down operation for testing of the device(s) must supply at their cost any additional approved devices necessary to allow testing to take place. (Revised January 2009)
- f. The owner/customer shall install backflow prevention assembly devices in a manner approved by the department and the State. (Revised January 2009)
- g. The owner/customer shall install only backflow prevention assembly devices approved by the department and the State. (Revised January 2009)
- h. Any owner/customer having a private well or other private water source, must have a permit if the well or source has the potential to or is cross-connected to the department's system. Permission to cross-connect will be denied by the department. The owner/customer shall be required to install a backflow prevention assembly at the service entrance if a private water source is maintained, even if it is not cross-connected to the department's system. (Revised January 2009)
- i. In the event the owner/customer installs plumbing to provide potable water for domestic purposes which is on the department's side of the backflow prevention assembly, such plumbing must have its own approved backflow prevention assembly installed. (Revised January 2009)
- j. The owner/customer shall be responsible for the payment of all cross connection control program fees for permits, annual or semi-annual device testing, re-testing in the case that the device fails to operate correctly, and subsequent re-

inspections for non-compliance with department requirements. Non-payment of these fees or other failures to comply will result in disconnection of service and will be subject to all charges for disconnection and reconnection of service.(Ord. #91-11, Jan. 1992) (Amended Ord. # 2007-17, June, 2007) (Revised January 2009)

VII. DEGREE OF HAZARD

The department recognizes the threat to the public water system arising from cross-connections. All threats will be classified by degree of hazard and will require the installation of approved reduced pressure principle backflow prevention devices or double check valves. (Ord. #91-11, Jan. 1992) (Amended Ord. # 2007-17, June, 2007)

VIII. PERMITS

1. Cross-connection permits are required for each backflow prevention assembly device on new building construction and shall be obtained from the City of LaVergne Building Codes Department. A fee will be charged for the permit. (Revised January 2009)
2. Permits are non-transferable. Permits are subject to revocation and become immediately revoked if the owner/customer should so change the type of cross-connection or degree of hazard associated with the service. New owners must obtain a new permit from the Building Codes department, and pay the current permit fee. (Revised January 2009)
3. A permit is not required when fixture isolation is achieved with the utilization of a non-testable backflow prevention assembly. (Ord. #91-11, Jan. 1992) (Revised January 2009)

IX. EXISTING IN-USE BACKFLOW PREVENTION DEVICES

Any existing backflow prevention assembly shall be allowed to continue in service unless the degree of hazard is such as to supersede the effectiveness of the present backflow prevention assembly, or result in an unreasonable risk to the public health. Where the degree of hazard has increased, as in the case of a residential installation converting to a business establishment, any existing backflow prevention assembly must be upgraded as a minimum to a reduced pressure principle device or a reduced pressure principle device must be installed in the event that no backflow device was present. (Ord.

#91-11, Jan. 1992) (Amended Ord. # 2007-17, June, 2007) (Revised January 2009)

X. PERIODIC TESTING

1. Reduced pressure principle backflow prevention devices shall be tested and inspected at least annually with the test period not to exceed 12 months. (Revised January 2009)
2. Annual testing shall be performed by a department approved certified tester. This testing will be done at the owner's/customer's expense. Independent testing may be performed on any device by a private testing company, provided that company has been accepted by the Department, and the work performed is completed and certified by a certified inspector. Copies of all testing reports produced by the certified tester for each backflow prevention assembly shall be supplied to the department. (Revised January 2009)
3. The periodic testing conducted by the department shall be conducted during the department's regular business hours. Exceptions to this will occur when at the request of the owner/customer, which may require additional charges to cover the increased costs to the department. (Revised January 2009)
4. Any backflow prevention assembly device which fails during a department conducted periodic test will be repaired or replaced. When repairs are necessary, upon completion of the repair, the device will be re-tested at owners/customers expense to insure correct operation. High hazard situations will not be allowed to continue unprotected if the backflow prevention assembly device fails the test and cannot be repaired immediately. In other situations, a compliance date of not more than thirty (30) days after the test date will be established. The owner/customer is responsible for costs to repair the existing device, or a replacement device. Parallel installation of two (2) approved devices is an effective means of the owner/customer insuring that uninterrupted water service during testing or repair of devices and is strongly recommended when the owner/customer desires such continuity. (Revised January 2009)
5. Backflow prevention assembly devices will be tested more frequently than specified in (1) above, in cases where there is a history of test failures and the department feels that due to the degree of hazard

involved, additional testing is warranted. Cost of the additional test will be borne by the owner/customer. (Ord. #91-11, Jan. 1992) (Amended Ord. # 2007-17, June, 2007) (Revised January 2009)

XI. RECORDS AND REPORTS

1. Records. The department will initiate and maintain the following:
 - a. Master files on customer cross-connection test and/or inspection.
 - b. Master files on cross-connection permits.
 - c. Master files on fire sprinkler system backflow prevention assembly devices, testing and inspections. (Revised January 2009)
 - d. Copies of permits and permit applications.
 - e. Copies of lists and summaries supplied to the board of mayor and aldermen.
2. Reports. The department will initiate and maintain the following:
 - a. Annual summary of cross-connection inspections. (Ord. #91-11, Jan. 1992) (Amended Ord. # 2007-17, June, 2007) (Revised January 2009)

XII. FORMS

Appendix I contains the typical cross connection control program forms and documents for the use of the department.

XIII. FEES AND CHARGES

The department will publish a list of fees or charges for the following services or permits:

1. Cross Connection Control Device Permit fee: \$25.00
2. Testing fees - \$40.00 first test.
2. Re-testing fees - \$40.00.
3. Fee for re-inspection - \$0.00.

4. Charges for after-hours inspections or tests -Overtime rate minimum 4 hours times 2. (Ord. #91-11, Jan. 1992) (Amended Ord. # 2007-17, June, 2007) (Revised January 2009)

XIV. BACKFLOW PREVENTION DETERMINATION

An approved backflow prevention assembly shall be installed on each service line to a customer's premises (within 5 feet of the water meter) and in all cases, before the first branch line leading off the service line, if it is impractical or easily altered to provide an effective air gap separation, when any of the following conditions exist.

1. All premises listed as High Risk High Hazard including industrial fluids, sewage, or any other non-potable substances are handled in such a manner as to create actual or potential health hazard to the water system.
2. Premises having auxiliary water supply, including but not limited to a well, cistern, spring, pond, river, or creek that is not, or may not be, of safe bacteriological or chemical quality and that is not acceptable as an additional source by the Cross-Connection Control Coordinator/Manager or designee.
3. The plumbing from a private well or other water supply entering the building served by the public water supply, or is connected, directly or indirectly, to the public water supply.
4. The owner or occupant of the premises cannot, or is not willing to demonstrate that the water use and protective features of the plumbing are such that frequent alterations are made to the plumbing.
5. The nature and mode of operation within the premises is such that frequent alterations are made to the plumbing.
6. The nature of the premises is such that the use of the structure may change to a use wherein backflow prevention is required.
7. There is likelihood that protective measures may be subverted, altered, or disconnected.
8. Any premises having service and fire flow connections, most commercial and educational buildings, construction sites, all

industrial and medical facilities, lawn irrigation systems, public or private swimming pools, private fire hydrant connections used by any fire department in combating fires, photographic laboratories, standing ponds or other bodies of water, auxiliary water supplies, and wastewater treatment plants.

9. Any premises having fountains, water softeners or other point of use treatment systems, hot tubs or spas, or other type(s) of water using equipment.
10. Premises otherwise determined by the Cross-Connection Control Coordinator/Manager or designee to create an actual or potential hazard to the public water system.
11. In the case of any premises where there is any material dangerous to health that is handled in such a fashion as may create an actual or potential health hazard to the public water system, the public water system shall be protected by an air gap separation (at the discretion of water provider to allow) or a reduced pressure principle backflow prevention assembly. The following premises, where such conditions may exist, include but are not limited to: sewage treatment plants, sewage pumping stations, chemical manufacturing plants, hospitals, mortuaries, funeral homes, and metal plating operations.
12. In the case of any premises where, because of security requirements or other prohibition or restriction it is impossible or impractical to make a complete cross-connection survey, the public water system shall be protected against backflow from the premises by either and air gap separation (at the discretion of the water provider) or reduced pressure principle assembly on each service line to the premises.
13. A backflow prevention assembly shall be installed on each fire service line (Fire System Classifications are as defined in Section IV "Definitions) at the property line or immediately inside the building being served, but in all cases, before the first branch line leading off the service line wherever any of the following conditions exist:
 - a. Class 1, 2, and 3 fire protection systems shall require at minimum a double check valve (detector) assembly; provided however, that a reduced pressure principle (detector) shall be required:

- i. Underground fire sprinkler pipelines are parallel to and within (10') feet horizontally of pipelines carrying waste water or significantly toxic wastes; or
 - ii. Premises having unusually complex piping systems;
 - iii. The pumpers connecting to the system have corrosion inhibitors or other chemical added to the tanks of the fire trucks;
 - iv. The piping system(s) has corrosion inhibitors or other chemical added to prevent freezing;
 - v. An auxiliary water supply exists within 1,700 feet of any likely pumper connection.
- b. Class 4, Class5, Class 6 fire protection systems shall require an air gap, or a reduced pressure principle assembly (detector) as determined by the Cross-Connection Control Coordinator/Manager or designee.
 - c. Where a fire sprinkler system is installed on the premises, a minimum of double check valve assembly (detector) shall be required.
 - d. When a fire sprinkler system uses chemicals, such as liquid foam, to enhance fire suppression a reduced pressure principle detector assembly shall be required.
 - e. The Cross-Connection Control Coordinator/Manager may require internal or additional backflow prevention devices where it is deemed necessary to protect potable water supplies within the premises.
14. In the case of any premises with an auxiliary water supply and not subject to any of the following rules, the Public Water System shall be protected by an air gap separation or a reduced pressure principle assembly.
15. Double Check Valve Assemblies (and Detectors) may **only** be used for Class 1-3 fire protection systems (at the discretion of water provider to even allow).
16. In the case of any premises where there are uncontrolled cross-connections, either actual or potential, the public water system

shall be protected by a reduced pressure principle assembly (detector) or air gap separation (as the discretion of water provider) assembly on each service line to the premises.

17. In the case of any premises where, because of security requirements or other prohibitions or restrictions it is impossible to make a complete cross-connection survey, the public water system shall be protected against backflow from the premises by either an air gap separation (at the discretion of the water provider) or reduced pressure assembly on each service line to the premises.
18. In the case of any premises where toxic substances are present that could pose an undue health hazard, the Cross-Connection Control Coordinator/Manager or designee may require an air gap separation or reduced pressure assembly at the service connection to protect the public water system.

XV. APPROVED BACKFLOW PREVENTION ASSEMBLIES AND METHODS

1. All backflow prevention assemblies shall be fully approved and listed as acceptable by the State of Tennessee as to manufacture, model, size, application, orientation, and alterations. The assembly must have a status of Passed determined by performance evaluations to suffice as an approved backflow prevention assembly. The method of installation of backflow prevention devices shall comply with installation criteria set forth by this Policy/Ordinance and the State of Tennessee. Installation shall be at the sole expense of the owner/customer or occupant of the premises.
2. The type of protective assembly required by this Policy/Ordinance shall depend on the degree of hazard that exists. Reduced Pressure Principle Assemblies (Detector) may be used for health hazards and non-health hazards. Double Check Valve Assemblies (Detector) may **only** be used for non-health hazards and is limited to Class 1-3 fire systems only.
3. Pressure vacuum breakers, spill-resistant vacuum breakers, and atmospheric vacuum breakers are not allowed for premise installation and will not satisfy the requirements of this Policy/Ordinance for adequate backflow prevention due in part to the inability to protect against backpressure.

XVI. BACKFLOW PREVENTION ASSEMBLY INSTALLATION REQUIREMENTS

Minimum acceptable criteria for installation of backflow prevention assemblies shall include the following:

1. All backflow prevention assemblies shall be installed at minimum in the approved orientation as indicated by the latest Approved List.
2. All new assemblies installed must be on the Approved Assemblies List maintained by the Division of Water Supply and existing assemblies must have status of approved.
3. Installation of assemblies shall be performed by person granted authority by the water provider. All backflow prevention assemblies installed in fire protection systems must be performed by persons possessing a fire sprinkler contractor license. Evidence of current certification and license must be on file with the Cross-Connection Control Coordinator/Manager before any installation or testing of the devices can be performed.
4. All assemblies shall be installed in accordance with the manufacturer installation instructions and by the State of Tennessee installation guide, from the State Manual or policies on cross-connection control, unless such instructions are in conflict with this policy, in which case the policy/ordinance shall control, and shall possess all test cocks and fittings required for testing the assembly. All test cocks will be fitted with adapters and all fittings shall permit direct connection to test kits used by the department.
5. The entire assembly including test cocks and valves shall be easily accessible for testing and repair and shall meet all confined space requirements of OSHA/TOSHA.
6. Reduced Pressure Backflow Prevention Assemblies shall be located so that the relief valve discharge port is a minimum of twelve (12) inches, plus nominal diameter of the supply line, above the floor surface. The maximum height above the floor surface shall not exceed sixty (60) inches.
7. Clearance of devices from wall surfaces or other obstructions shall be a minimum of six (6) inches; or if a person must enter the

enclosure for repair or testing, the minimum distance shall be twenty-four inches.

8. Devices shall be protected from freezing, vandalism, mechanical abuse, and from any corrosive, sticky, greasy, abrasive, or other damaging substance.
9. Devices shall be positioned where discharge from a relief port will not create undesirable conditions. An approved air gap shall separate the relief port from any drainage system. Such air-gap shall not be altered without the specific approval of the department.
10. Devices shall be located in an area free from submergence or flood potential and cannot be placed in a pit.
11. **All** devices shall be adequately supported to prevent sagging.
12. An approved strainer, fitted with a test cock, shall be installed immediately upstream of all backflow prevention assemblies or shut-off valve, except on fire lines, using only non-corrosive fillings (e.g. brass or bronze) in the device assembly.
13. Gravity drainage is required on all installations. Below ground installations shall not be permitted for Reduced Pressure Principle Assemblies (detectors).
14. Fire hydrant drains shall not be connected to the sanitary sewer, and fire hydrants shall not be installed in such manner that back siphonage or backflow through the drain may occur.
15. Where jockey (low volume-high pressure) pumps are utilized to maintain elevated pressure, as in fire protection system, the discharge of the pump shall be on the downstream side of any check valve or backflow prevention assembly. Where the supply for the jockey pump is taken from the upstream supply side of the check valve or backflow prevention assembly, a backflow prevention assembly of the same type(s) required on the main line shall be installed on the supply line.

16. Fixed position, high volume fire pumps shall be equipped with suction limiting control to modulate the pump if the residual line pressure reaches 20 psi. If line pressure drops below 20 psi, the pump will shut off to protect the distribution system. This shut off system must be tested annually for proper operation and report of the test must be sent to the office of Cross-Connection Control.

XVII. ASSEMBLY PERFORMANCE EVALUATIONS AND TESTING

1. All assemblies used to protect public water system must be tested every 12 months. In those instances where the Cross-Connection Control Coordinator/Manager deems the hazard to be great enough, a performance evaluation may be required at more frequent intervals.
2. Any assembly not tested with in the 12 month period will be deemed not approved and have a status of **Failed**. The owner/customer will be sent notification of that the assembly is not in compliance with this ordinance or policy.
3. All assemblies must be deemed **Passed** for each initial and subsequent annual performance evaluations to satisfy as approved backflow prevention assembly.
4. All assemblies will be tested by backflow prevention assembly tester possessing a **valid Certificate of Competency in Testing and Evaluation Backflow Prevention Assemblies** issued by the State of Tennessee.
5. All performance evaluation tests must be performed with an annually certified test kit.
6. Certifications for test kits are valid for one year after certification is performed. If the test kit is not recertified after one year, it is deemed expired.
7. Test kits must be certified annually and the backflow prevention assembly tester must show proof of certification from manufacturer-approved entities. No performance evaluations will be accepted from a backflow prevention assembly tester with an expired test kit certification.
8. Proof of annual test kit certification and Certificate of Competency must be kept on file for each tester by water provider.

9. Backflow Prevention Assembly Testers must test and evaluate according to the latest Division of Water Supply's latest approved procedures for Reduced Pressure Principle Assembly and the Double Check Valve Assembly.
10. If any test does not meet the minimum requirements set forth in the approved testing procedure, the assembly is deemed **Failed** and does not suffice as an approved backflow prevention device. If conditions around the assembly do not allow the assembly to be tested, the assembly fails the assembly performance evaluation and is marked **Failed** on test report. (Examples would include assembly is submerged, test cocks missing or plugged, relief valve continually discharging).
11. Backflow Prevention Assemblies are deemed **Passed** if all parts of the performance evaluation meet the minimum requirements in the approved testing procedure.
12. Each location requiring an assembly will have a documented backflow prevention assembly, if the assembly at the address cannot be identified or is not the same, the water provider will be notified and a determination of which assembly is used for protection of the water system. (All areas that need protection will be listed by address and location along with the serial no. of device)
13. Test reports must be completely and accurately documented and the appropriate evaluation (**Passed** or **Failed**) determined from testing procedure. Any test report that is not recorded completely in the sections pertinent to the results of the performance evaluation tests will not be accepted by the Public Water System.
14. All performance evaluations on file will be recorded on an (State and Water System) approved test report.
15. Assemblies must be tested when installed and after every repair. Backflow prevention assemblies on lawn irrigation systems must be tested when assemblies are placed in service after winterization (to prevent testing just prior to winterization). If lawn irrigation backflow assemblies are removed to winterize the system, upon startup of the system, the assemblies must be retested.
16. Failure to maintain a backflow prevention assembly that is deemed **Passed** shall be grounds for discontinuance of water service. The removal, bypassing, or altering of a protective device or installation,

without the approval of the Cross-Connection Control Coordinator/Manager or designee, thereof so as to render a device ineffective shall constitute grounds for discontinuance of water service. Water service to such premises shall not be restored until the customer has corrected or eliminated such conditions or defects to the satisfaction this ordinance/policy and the Cross-Connection Control Coordinator/Manager or designee.

17. The Water System shall require the occupant of the premises to keep the backflow prevention assembly working properly and a status of Passed. Repairs shall be made by qualified personnel acceptable to the Water System within the time limits set forth by this policy. Expense of such repairs shall be borne by the owner or occupant of the premises. The failure to maintain a backflow prevention assembly in proper working order and a status of Passed shall be grounds for discontinuance of water service.
18. The backflow prevention assembly must be tested after every repair and have a status of Passed to be in compliance with this policy/ordinance.
19. Cross-Connection Control Coordinator/Manager or designee shall have the right to inspect and test any assemblies whenever it is deemed necessary. Water service shall not be disrupted to the assembly without the knowledge of the occupant of the premises.

XVIII. CORRECTIONS OF VIOLATIONS

1. Any owner/customer having cross-connections, auxiliary intakes, bypasses, or interconnection(s) in violation of this ordinance/policy shall, after a thorough investigation of existing conditions and an appraisal of the time required, complete the work within the time designated by the Cross-Connection Control Coordinator/Manager or designee, but in no case shall the time for correction exceed ninety (90) days for High and Low Hazards or fourteen (14) days for High Risk High Hazards.
2. Failure to comply with any order of the Cross-Connection Control Coordinator/Manager or designee within the time set out there-in shall result in the termination of water service.
3. Where cross-connections, auxiliary intakes, bypasses, or interconnections are found to constitute a high risk high hazard to the public water supply the Cross-Connection Control

- Manager/Coordinator or designee shall require prompt corrective action (within 14 days) to be taken to eliminate the threat. Expeditious steps shall be taken to disconnect the public water system from the customer's piping systems unless the extreme hazard is corrected immediately.
4. Failure to correct conditions threatening the safety of the public water system as prohibited by this ordinance or Tennessee Code Annotated 68-221-711 within the time limits set by the Cross-Connection Control Coordinator/Manager or designee or this ordinance/policy, shall be cause for denial or termination of water service. If proper protection is not provided after times set forth in this policy/ordinance, the Cross-Connection Control Coordinator/Manager or designee shall give the customer written notification that water service is to be discontinued, and thereafter physically separate the public water system from the customer's system in such a manner that the two systems cannot be connected by an unauthorized person.
 5. In the event that a backflow prevention assembly is deemed Failed (Initial or Annual Performance Evaluation), failure to install backflow prevention assemblies as requested by the Water System, or there are deficiencies in the installation from failure to conform to the installation criteria specified in this ordinance, or from deterioration, then the Cross-Connection Control Coordinator/Manager or designee shall issue a written notice of failure or deficiency within ten (10) days. The time limit is dependent on risk of contamination and may not be greater than 90 days. (Revised January 2009)

Addendum

1. Residential dual check. Effective the date of the acceptance of this Cross-Connection Control Program for the City of La Vergne, Tennessee all new residential buildings will be required to install a residential dual check device immediately downstream of the water meter. Installation of this residential dual check device on a retrofit basis on existing service lines will be instituted at a time and at a potential cost to the homeowner as deemed necessary by the department.

The homeowner must be aware that installation of a residential dual check valve results in a potential closed plumbing system within his residence. As such, provisions may have to be made by the owner to provide for thermal expansion within his closed loop and/or pressure relief valves.

2. Strainers The department does require that all new retrofit installations of reduced pressure principle devices and double check valve backflow prevention assembly devices include the installation of strainers located immediately upstream of the backflow device. The installation of strainers will preclude the fouling of backflow devices due to both foreseen and unforeseen circumstances occurring to the water supply system such as water main repairs, water main breaks, fires, periodic cleaning and flushing mains, etc. These occurrences may "stir up" debris within the water main that will cause fouling of backflow devices installed without the benefit of strainers. (Ord. #91-11, Jan. 1992) (Revised January 2009)

Appendix

APPENDIX I
SAMPLE FORMS

Sample Forms/Letters

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Date: *Month, 00, 0000*

Customer Name (Customer Name & Address Goes Here)
123 Industrial Drive
My Town, TN 33333

RE: CROSS CONNECTION SURVEY-DATE AND TIME OF SURVEY

In accordance with City Ordinance #2007-17, The La Vergne Department of Public Works conducts an ongoing program for the detection and elimination of possible hazards associated with cross connections. As part of the program, we are required to conduct periodic inspections of industrial and commercial establishments.

We will be inspecting your facility at 123 Industrial Drive on Date and Time of Survey

The inspection will not require interruption of your water supply and should take approximately 10 to 15 minutes. An individual who is knowledgeable of your water system plumbing must be available to assist during the inspection.

Please coordinate with our cross connection inspector, (*Inspector Name and Phone Number*) if this date is inconvenient or if you desire additional information.

Your cooperation in this matter will be greatly appreciated.

Sincerely,

Cross-Connection Survey Form

Date: _____

Name of Company, Corporation, or Business: _____

Address: _____

Name: _____

Type of Use: Industrial _____ Commercial _____ Governmental _____ Other _____

Location of Service: _____

Size of Service: _____ Inch Metered? Yes No

Require non-interrupted water service? Yes No

Does Boiler Feed utilize chemical additives? Yes No

Is Backflow protection incorporated? Yes No

Are air conditioning cooling towers utilized? Yes No

Is Backflow protection incorporated? Yes No

Is a Water Saver utilized on condensing lines or cooling towers? N/A Yes No

Is the make-up supply line backflow protected? Yes No

Is process water in use, and if so, is it potable supply water or "Raw" water Yes No

Raw Protected Unprotected

Is fire protection water separate from the potable supply? Yes

No

Are Containment Devices in place? Yes No

Summary

Degree of Hazard: High Low

Type of Device recommended for containment: RPZ DCV None

Fixture Outlet protection required? Yes

No

If so, where?

CROSS CONNECTION INVESTIGATION FORM

Facility name _____

Address _____

Phone _____

Inspected by _____

<u>NAME</u>	<u>POSITION</u>	<u>INTERVIEWED</u>	<u>CORRESPONDENCE</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

FINDINGS (Attach sketch if necessary)

RECOMMENDATIONS

Investigation Letter Written

ACTION TAKEN & DATES

INSPECTION CHECK LIST

Name of Firm _____

Mailing Address _____

Time _____ Date _____ Water Pressure _____ pH _____ Chlorine Residual _____

<ul style="list-style-type: none"> <input type="checkbox"/> Air Conditioning <input type="checkbox"/> Air Washers <input type="checkbox"/> Air Conditioned Chillwater <input type="checkbox"/> Air Conditioned Condenser Water <input type="checkbox"/> Air Conditioned Cooling Towers <input type="checkbox"/> Air Compressors <input type="checkbox"/> Autopsy Tables <input type="checkbox"/> Aspirator, Medical <input type="checkbox"/> Aspirator, Weedicide and Root Feeders <input type="checkbox"/> Autoclave & Sterilizer <input type="checkbox"/> Boiler Feed Line <input type="checkbox"/> Baptismal Fount <input type="checkbox"/> Bathtub Below Rim Filler <input type="checkbox"/> Bedpan Washer, flushing Rim <input type="checkbox"/> Bidet <input type="checkbox"/> Brine Tank <input type="checkbox"/> Bottle Washer <input type="checkbox"/> Chemical Feeder Tanks <input type="checkbox"/> Chlorinator <input type="checkbox"/> Coffee Urn <input type="checkbox"/> Cuspidor, Dental <input type="checkbox"/> Chiller Tanks <input type="checkbox"/> Cooking Kettles <input type="checkbox"/> Condensate Tanks <input type="checkbox"/> Demineralized System <input type="checkbox"/> Digesters, Hospital <input type="checkbox"/> Dishwater <input type="checkbox"/> Drinking Fountain <input type="checkbox"/> Degreasing Equipment <input type="checkbox"/> Dye Vats and Tanks <input type="checkbox"/> Developing Tanks <input type="checkbox"/> Dairy Barn Equipment <input type="checkbox"/> Etching Tanks <input type="checkbox"/> Stills <input type="checkbox"/> Starch Tanks <input type="checkbox"/> Sitz Bath <input type="checkbox"/> Sprinkler System, Fire Protection <input type="checkbox"/> Shampoo Basin Hose Rinse, Beauty Shop <input type="checkbox"/> Sinks, Wash-up <input type="checkbox"/> Serrated Faucets <input type="checkbox"/> Sizing Vats and Boxes <input type="checkbox"/> Solution Tanks <input type="checkbox"/> Urinal, Siphon Jet Blow-out 	<ul style="list-style-type: none"> <input type="checkbox"/> Urinal, Trough <input type="checkbox"/> Fountain, Ornamental <input type="checkbox"/> Detergent Dispenser <input type="checkbox"/> Floor Drains Flushing <input type="checkbox"/> Garbage Can Washer <input type="checkbox"/> Garbage Disposals <input type="checkbox"/> Hydro-Therapy Baths <input type="checkbox"/> Humidifier Tank & Boxes <input type="checkbox"/> Hose Faucets <input type="checkbox"/> Hot Water Heater & Tanks <input type="checkbox"/> Ice Maker <input type="checkbox"/> Janitor Closets <input type="checkbox"/> Lab Equipment <input type="checkbox"/> Laundry Machine <input type="checkbox"/> Lavatory <input type="checkbox"/> Lawn Sprinkler <input type="checkbox"/> Boat, Marina <input type="checkbox"/> Make-up Tank <input type="checkbox"/> Pump, Prime Lines <input type="checkbox"/> Pump, Water Oper Eject <input type="checkbox"/> Photo Lab Sinks <input type="checkbox"/> Photostat Equipment <input type="checkbox"/> Pump Pneumatic Eject <input type="checkbox"/> Pipette Washer <input type="checkbox"/> Potato Peeler <input type="checkbox"/> Processing Tanks <input type="checkbox"/> Re-circulated Water <input type="checkbox"/> Sewer, Sanitary <input type="checkbox"/> Sewer, Storm <input type="checkbox"/> Swimming Pool <input type="checkbox"/> Sewer, Flushing Manhole <input type="checkbox"/> Steam Cleaner <input type="checkbox"/> Steam Table <input type="checkbox"/> Ultrasonic Baths <input type="checkbox"/> Vats <input type="checkbox"/> Telephone, Showers <input type="checkbox"/> Water Closets, Tank <input type="checkbox"/> Water Closets, Flush <input type="checkbox"/> Water Oper Equipment <input type="checkbox"/> Water Treatment Tanks <input type="checkbox"/> Water Well Secondary System <input type="checkbox"/> Wash Tanks
--	--

Remarks: _____

Date: *Month 00, 0000*

Customer Name (Customer Name & Address Goes Here)
123 Industrial Drive
My Town, TN 33333

RE: INSPECTION RESULTS FOR POSSIBLE CROSS CONNECTION

On Date of Inspection, the La Vergne Department of Public Works conducted an inspection of your facilities for possible cross connections that might pose a hazard to the public water system.

No unprotected cross connections were noted during the inspection. The facility is currently in compliance with City Ordinance #2007-17 and requires no additional protection against possible backflow.

If you relocate your place of business, modify existing plumbing, or place new water using equipment into operation please notify our cross connection inspector, (*Inspector Name and Phone Number Goes Here*).

The friendly, cooperative manner encountered during the inspection was greatly appreciated.

Sincerely,

Date: *Month 00, 0000*

Customer Name (Customer Name & Address Goes Here)
123 Industrial Drive
My Town, TN 33333

RE: INSPECTION RESULTS FOR POSSIBLE CROSS CONNECTIONS

On *Date of Inspection*, the La Vergne Department of Public Works conducted an inspection of your facilities for possible cross connections that might pose a hazard to the public water system. These cross connections represent a danger to the public health and thus they must be isolated from the public water supply. The La Vergne Department of Public Works and the Tennessee Department of Environment and Conservation regulation mandate that the La Vergne Department of Public Works require backflow prevention devices where these situation exit.

You are required by City Ordinance #2007-17 to install a Reduced Backflow Prevention Assembly Device located so that it will isolate the production area of your facility from the public water supply. This device must be installed within thirty to ninety days.

Information on approved models and the installation of the device is enclosed. Please call our cross connection inspector, (*Inspector Name and Phone Number Goes Here*), should you have any other questions. Your cooperation and assistance in this matter is greatly appreciated.

Sincerely,

Date: *Month, 00, 0000*

Customer Name (Customer Name & Address Goes Here)
123 Industrial Drive
My Town, TN 33333

RE: INSPECTION RESULTS FOR POSSIBLE CROSS CONNECTIONS

On Date of Inspection, the La Vergne Department of Public Works conducted an inspection of your facilities for possible cross connections that might pose a hazard to the public water system. These cross connections represent a danger to the public health and thus they must be isolated from the public water supply. The La Vergne Department of Public Works and the Tennessee Department of Environment and Conservation regulations mandate that the La Vergne Department of Public Works require backflow prevention devices where these situations exist. The following deficiency was noted:

“Previous correspondence dated *Date of Last Correspondence*, required *List Requirements Here*”

“Since appropriate action has not been taken to protect the public water system, you are hereby notified that your facility is in violation of City Ordinance #2007-17. You are required to complete the corrective actions within 15 days. Failure to do so may result in the water service being discontinued or other action, as provided by the Ordinance, may be taken without further notice.”

Information on approved models and the installation of the device is enclosed. Please call our cross connection inspector, (*Inspector Name and Phone Number Goes Here*), should you have any other questions and when the corrective measures have been taken and so and a verification inspection can be conducted. Your cooperation and assistance in this matter is greatly appreciated.

Sincerely,

BACKFLOW ASSEMBLY TEST REPORT

Service Address _____

Name of Premises _____ Location of device _____

Device _____
Number Manufacturer Model Size Serial

Test Kit _____
Manufacturer Serial Number Date Certified

- RP
- DC
- DCDA
- RPDA

Reduced Pressure Principle Assembly				
Relief Valve Opening Point	Check Valve # 2 Backpressure Test	Check Valve #1	No. 2 Shutoff Valve	Check Valve #2
Opened at _____ psid	Closed Tight <input type="checkbox"/>	Held at _____ psid	Closed Tight <input type="checkbox"/>	Held at _____ psid
Did not open <input type="checkbox"/>	Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>

Double Check Valve Assembly				Backflow Assembly Status
Check Valve #1	Check Valve # 2 Backpressure Test	No. 2 Shutoff Valve	Check Valve #2	
Held at _____ psid	Closed Tight <input type="checkbox"/>	Closed Tight <input type="checkbox"/>	Held at _____ psid	Passed <input type="checkbox"/>
Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>	Failed <input type="checkbox"/>

Date _____ Time _____ Certified Tester # _____

Test by (Signature) _____ Print Name _____

Your signature certifies that all information provided on this section is correct.

Comments: _____

Date: *Month 00, 0000*

Customer Name (Customers Name and Address Goes Here)
123 Industrial Drive
My Town, TN 33333

RE: TEST RESULTS FOR BACKFLOW PREVENTION DEVICES

Attached is a copy of the test report(s) for your backflow prevention device(s), which was tested on *Date of Test*.

“Overall testing indicates the device is meeting acceptable performance standards as defined in the Tennessee Department of Environment and Conservation and Environment’s Cross Connection Control Manual.”

The friendly, cooperative manner encountered during the inspection was greatly appreciated.

Sincerely,

Date: *Month 00, 0000*

Customer Name (Customers Name and Address Goes Here)
123 Industrial Drive
My Town, TN 33333

RE: TEST RESULTS FOR BACKFLOW PREVENTION DEVICES

On *Date of Test*, the La Vergne Department of Public Works conducted an inspection of your facility's backflow prevention device(s). The following deficiencies were noted:

Enter Deficiencies. The device must be serviced to insure proper operation. Please take these corrective actions within thirty days.

Please call our cross connection inspector, (*Inspector Name and Phone Number Goes Here*), once repairs are completed so verification testing can be conducted. Technical data on the device is enclosed. The friendly, cooperative manner encountered during the inspection was greatly appreciated.

Sincerely,

BACKFLOW ASSEMBLY REPAIR REPORT

R E P A I R S	Cleaned <input type="checkbox"/> Replaced: (List all parts replaced) List any additional repair items not previously addressed:
Date _____ Time _____ Certified Tester # _____ Repair by (Signature) _____ Print Name _____ Your signature certifies that all information provided on this section is correct.	

Reduced Pressure Principle Assembly				
Relief Valve Opening Point	Check Valve # 2 Backpressure Test	Check Valve #1	No. 2 Shutoff Valve	Check Valve #2
Opened at _____ psid	Closed Tight <input type="checkbox"/>	Held at _____ psid	Closed Tight <input type="checkbox"/>	Held at _____ psid
Did not open <input type="checkbox"/>	Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>

Double Check Valve Assembly				Backflow Assembly Status
Check Valve #1	Check Valve # 2 Backpressure Test	No. 2 Shutoff Valve	Check Valve #2	
Held at _____ psid	Closed Tight <input type="checkbox"/>	Closed Tight <input type="checkbox"/>	Held at _____ psid	Passed <input type="checkbox"/>
Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>	Leaked <input type="checkbox"/>	Failed <input type="checkbox"/>
Date _____ Time _____ Certified Tester # _____ Test by (Signature) _____ Print Name _____ Your signature certifies that all information provided on this section is correct.				

Comments: _____

Date: *Month 00, 0000*

Customer Name (Customer Name and Address Goes Here)
123 Industrial Drive
My Town, TN 33333

RE: PERIODIC BACKFLOW PREVENTION ASSEMBLY TESTING-*DATE AND TIME OF TEST*

As part of the La Vergne Department of Public Works ongoing program for the detection and elimination of possible hazards associated with cross connections, we are required to conduct period testing of backflow prevention device(s) to ensure compliance meeting performance standards.

We will be testing the device(s) at *123 Industrial Drive on Date and Time of Test*. The test requires interruption of the water supply beyond the device being tested for approximately 5 to 15 minutes unless dual devices are installed.

Please coordinate with our cross connection inspector, (*Inspector Name and Phone Number Goes Here*), if this date is inconvenient or if you desire additional information. An individual who is knowledgeable of your water system must be available to assist on the date of the inspection.

Your cooperation on this matter will be appreciated.

Sincerely,

Date: *Month 00, 0000*

Customer Name (Customer Name and Address Goes Here)
123 Industrial Drive
My Town, TN 33333

RE: FIRE SPRINKLER SYSTEM BACKFLOW PREVENTION ASSEMBLY TESTING-*DATE AND TIME OF TEST*

As part of the La Vergne Department of Public Works ongoing program for the detection and elimination of possible hazards associated with cross connections, we are required to verify the annual test of your fire sprinkler system backflow prevention device(s) to ensure it is meeting performance standards.

Please coordinate with our cross connection inspector, (*Inspector Name and Phone Number Goes Here*), the submittal of the approved testing documentation to comply with this reporting requirement.

Your cooperation on this matter will be appreciated.

Sincerely,

Date: *Month, 00, 0000*

Customer Name (Customer Name & Address Goes Here)
123 Residential Drive
My Town, TN 33333

RE: RESIDENTIAL CROSS CONNECTION SURVEY-DATE AND TIME OF SURVEY

In accordance with City Ordinance #2007-17, The La Vergne Department of Public Works conducts an ongoing program for the detection and elimination of possible hazards associated with cross connections. As part of the program, we are required to conduct periodic inspections of residential units.

We will be inspecting your facility at 123 Residential Drive on Date and Time of Survey

The inspection will not require interruption of your water supply and should take approximately 10 to 15 minutes. An individual who is knowledgeable of your water system plumbing must be available to assist during the inspection.

Please coordinate with our cross connection inspector, (*Inspector Name and Phone Number*) if this date is inconvenient or if you desire additional information.

Your cooperation in this matter will be greatly appreciated.

Sincerely,

Residential Cross-Connection Questionnaire Survey

Occupant Name _____

Occupant Address _____

1. Occupancy: ___ Own ___ Rent
2. Meter serves: Homes How Many? ___
 Buildings How Many? ___
3. Do you have? (Please Check all that apply):
Hot Tub _____ Swimming Pool _____ Jacuzzi _____
Waterbed _____ Solar System _____ Green House _____
Underground Sprinkler System _____ Darkroom Equipment _____
Drip/Soaker/Irrigation System _____ Portable Dialysis Machine _____
Insecticide Sprayers (That attach to garden hose also) _____
Utility sink w/threaded faucet _____
Wood burning hot water heater _____ Ghost pipes (unidentified) _____
4. Do you have bathtub that fills from the bottom? Yes ___ No ___
5. Do you have a water softener or any extra water treatment system? Yes ___ No ___
6. Do you have an auxiliary water supply on your premises? Yes ___ No ___
7. Do you have livestock and use a water trough or water system connected to by public water?
Yes ___ No ___
8. Is your home or building elevated above your water meter? Yes ___ No ___
9. Does a creek, river, or spring water run near or on your property? Yes ___ No ___
10. Do you have a booster pump, well pump, or any other type water pump? Yes ___ No ___
11. Do you receive irrigation water from a different source? Yes ___ No ___
12. Do you have a backflow protection device on your property now? Yes ___ No ___
13. Do you have any situation that you are aware of that could create a cross-connection?
Yes ___ No ___
14. Do you have any other water-using equipment on your property not mentioned above?
Yes ___ No ___

If yes, please list below:

Print Name

Phone #

Signature

Date

Please notify this office if any of the above conditions change.

Example of Cross Connection Card File

Facility Name:				
Contact Name:			Phone Number : ()	
Address:				
Backflow Devices				
Type	Serial #	Model/Size	Location	Last Test Date

Well User Agreement

In accordance with the LaVergne Department of Public Works cross connection control program, a private well or auxiliary water source may not be connected in any manner to the public water supply unless proper protection against cross connection is provided. Only Reduced Pressure Backflow Preventers or approved air gaps may be used for protection. These devices must have prior approval by the department. Customers not in compliance with this rule will have their water service discontinued.

This serves as notification that a well will be utilized at the following address:

Please type or print

I (we) understand and agree that this system is, and shall remain totally segregated from the public water supply, and no unapproved or unauthorized cross connections, auxiliary intakes, bypasses, or interconnections will be permitted without the written approval of the Tennessee Department of Environment and Conservation and the LaVergne Department of Public Works.

I (we) further understand and agree that should an auxiliary water supply be connected to the public water system at the above address, maximum cross connection control equipment in the form of an approved air gap or reduced pressure backflow prevention device shall be installed to protect the public water supply.

Name: _____

Signature: _____

Notice to Customers

Cross Connection Control Permit

Pursuant to recent revisions to the City of LaVergne Cross Connection Policy, anyone installing, repairing, or testing a backflow prevention device shall first obtain a cross connection permit from the LaVergne Department of Public Works.

Tennessee Code Annotated, Sections 68-221-701 through 68-221-720, places the majority of the responsibility on the public water system, i.e. the LaVergne Department of Public Works, for the supplying safe water to its customers and controlling cross connection hazards. This law specifically prohibits the water purveyor from installing or maintaining a water service connection to customer where cross connections or backflow hazards exist or have a potential to exist. The Tennessee Department of Environment and Conservation requires that all public water suppliers have an ongoing Cross Connection Control Program. This program must include provisions for public education, routine on-site inspections enforcement, installation, repair and testing, and records maintenance. The City of La Vergne Board of Mayor and Alderman approved a program which provides for the implementation and operation of a program to effectively control cross connection hazards. This program specifically prohibits cross connections and makes provisions regarding the policies and operational aspects of the program.

Periodic inspections are conducted at any premises where cross connection hazards are deemed possible. The Department's personnel shall have the right to inspect premises and test backflow prevention devices during any reasonable hour. All devices shall be tested at least annually by qualified personnel possessing valid certification from the Tennessee Department of Environment and Conservation. All testing, maintenance and inspection services are to be at the expense of the owner or occupant of the premises.

A cross connection control permit fee of \$25.00 shall be assessed for each backflow prevention device. A completed "Installation/Tester Tag" shall be affixed to a device upon completion of the work. The tester of any backflow prevention device shall complete and return the "Cross Connection Control Device Installer/Tester Report" prior to the approval of a device.

If you have any questions or need further information, contact the Cross Connection Control Coordinator at 615-793-4739.

APPENDIX II

CROSS CONNECTION CONTROL GENERAL INFORMATION

CROSS CONNECTION CONTROL GENERAL INFORMATION

State Law-Tennessee Code Annotated (Section 68-221-701 through 68-221-720)

Tennessee Code Annotated, Section 68-221-701 through 68-221-720, places the responsibility on the public water system, i.e. the La Vergne Department of Public Works, for supplying safe water to its customers and controlling cross connection hazards. This law specifically prohibits the water purveyor from installing or maintaining a water service connection to a customer where cross connections or backflow hazards exists or have a potential to exist. The Tennessee Department of Environment and Conservation requires that all public water suppliers have an ongoing Cross Connection Control Program. Local authorities must adopt a policy which authorizes cross connection control program activities. The program must include provisions for public education routine on-site inspections, enforcement, installation, testing and repair, and records maintenance.

The program relating to cross connection control was approved by the City of La Vergne, Board of Mayor and Aldermen in June, 2007. This policy provides for the implementation and operation of a program to effectively control cross connection hazards. This program specifically prohibits cross connections and makes provisions regarding the policies and operational aspects of program. The LaVergne Department of Public Works is responsible for the enforcement of this policy and has developed the following policies and procedures for the implementation and maintenance of this program.

Cross Connection Control Program Policies

Cross Connection Control Permits:

A cross connection control permit shall be required for the installation, testing, repair or alteration of any backflow prevention device connection to the public water supply for water service, fire protection or any other purpose. Anyone wishing to install, test or repair a backflow prevention device shall provide proof of valid cross connection control certification and a certificate of liability insurance, prior to the issuance of a permit. The cost of the permit is \$25.00 for each device to be installed, tested or repaired. A permit may be obtained in the LaVergne Department of Public Works office during normal business hours. At the time of permit issuance, the applicant should receive the following information:

Minimum Acceptable Installation Criteria for Backflow Prevention Devices

The LaVergne Department of Public Works has developed criteria for the installation of backflow prevention devices. These criteria establish a minimum standard for the proper installation of backflow prevention devices in the jurisdiction of the LaVergne Department of Public Works.

List of Currently Approved Backflow Prevention Devices

Only devices currently approved by the Foundation for Cross-Connection Control (FCCC&GR) and the Tennessee Department of Environment and Conservation, Division of Water Supply may be used for the control of cross connection hazards. Information on

recently approved devices may be obtained from the Division of Water Supply or the manufacturer.

Cross Connection Control Certification

Valid, State of Tennessee issued, Certification of Special Training and Demonstration of Competency in the Installation, Maintenance and Testing of Backflow Prevention Devices is required to install, test or repair backflow prevention devices serviced by the LaVergne Department of Public Works. Proof of certification (photocopy of the certificate) shall be filed with the Department prior to the issuance of a permit for any of the above mentioned work. The following organizations can provide information on certification:

Fleming Environmental Training Center
2022 Blanton Drive
Murfreesboro, TN 37129-2912
Phone: (615)898-8090

Tennessee Assn. of Utility Districts
P.O. Box 2529
Murfreesboro, TN 37133-2529
Phone: (615)896-9022

Certificate of Liability Insurance

Any person installing, testing or repairing any backflow prevention device shall maintain on file with the Cross Connection Control Program Administrator a current copy of a valid Certificate of Liability Insurance in an amount of not less than \$500,000.00. Proof of insurance shall be on file prior to the issuance of any permit.

Internal Protection

In addition to the mainline backflow prevention device(s), internal protection of the potable water supply may be required. Internal protection is utilized to prevent the contamination of potable water after it has entered the customer's water piping system. In such cases, additional backflow prevention devices are necessary to isolate specific areas or sources of potential contamination.

Statement Required-Wells

Any premises supplied by an additional source of water, other than that supplied by the LaVergne Department of Public Works, such as a well, must file with the LaVergne Department of Public Works a statement attesting that no cross connection exists on the premises. Such statement must include the location and a description of all additional water sources utilized on the premises and shall contain an agreement that no cross connections shall be permitted. Maximum backflow protection shall be required on all public water supplies to the premises.

Installation/Testing Report and Tag

Any person installing, repairing, or testing any backflow prevention device shall, upon completion of the work, affix a completed "Installation/Tester Tag" upon the device. The tester of any backflow prevention device shall also complete and return the "Cross Connection Control Device Installer/Tester Report" prior to the approval of the device. The certified person doing the actual work upon the device shall complete the information on both items in their entirety. The Cross Connection Control Program

Administrator shall inspect all newly installed devices, and shall attach either a blue “approved” or a red “rejected” tag. No devices shall be inspected or approved unless a completed “Installation/Tester Tag” is affixed to the device. If any device is rejected, the inspector will notify the person identified on the green tag.

All backflow prevention devices shall be tested at least annually by a person possessing a valid certification from the Tennessee Department of Environment and Conservation, Division of Water Supply, as outline above. A permit shall be required for this testing and records of all backflow prevention device testing shall be submitted to the department upon completion of each test.

State Program Information

The State of Tennessee, Department of Environment and Conservation, Division of Water Supply regulates and approves all municipal cross connection control programs. Further information regarding State requirements for a cross connection control program may be obtained from:

Department of Environment and Conservation
Division of Water Supply
6th Floor, L&C Tower
401 Church Street
Nashville, TN 37243-1549

APPENDIX III

ORDINANCE 2007-17

APPENDIX IV

August 2008.

STATE LISTING OF APPROVED DEVICE