

February 9, 2010

LAWRENCE SUBDIVISION WATER ASSOCIATION

PWS# 00474

Cross Connection/ Backflow Prevention Program

Lawrence Subdivision Water Association recognizes the need to protect its water supply from contamination. When a cross connection with a non potable water source or hazardous chemical exists, a pressure drop in the distribution system can create a backflow, contaminating the system.

Lawrence Subdivision Water Association has 30 residential connections.

The Board will develop a Backflow Prevention Program.

The operator is responsible to carry out the program under the direction of the board.

The program will begin with the distribution of Cross Connection/ Backflow Prevention educational material to all water users. This is both a health issue for customers and an expense issue for the Water System.

An inspection will then be conducted to determine how many sites already have devices that aren't being tested, how many sites need devices, and the hazard level of each site.

The Water Board will create a Master List of premises that need to be inspected and designate a hazard level for each site.

Each homeowner with a backflow device will be responsible for maintenance and annual testing of that device. Homeowners that do not have a backflow device but are determined to need a device will be responsible for the cost of buying and installing the appropriate backflow device for the hazard presented. All testing must be carried out by a State certified tester.

Customers having backflow devices that have not been tested will be notified that they will need to have the device tested in 2010 and annually thereafter.

The operator will be responsible for monitoring the program and notifying the board of problems that may arise.

The board will be responsible to determine what action to take when a problem does come up.

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SECTION 1. PURPOSE:

- A. To protect the public potable water supply served by Lawrence Subdivision Water Association, Inc. from the possibility of contamination or pollution by issuing, from within its customer's internal distribution system, such contaminants or pollutants which could backflow or backsiphon into the public Water System.
- B. To promote the elimination of, or control of, existing cross connections, actual or potential, between the potable Water System and sources of non-potable water or other hazardous substances.
- C. 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.

SECTION 2. INTERPRETATION:

Any interpretation of this document regarding the scope, intent, degree of hazard or type of protection required, will be subject to the current accepted guidelines of the State of Oregon Health Division, Human Resources Department, at the time of interpretation.

SECTION 3. AUTHORITY:

The Federal Safe Drinking Water Act of 1974 and the statutes of the State of Oregon, Administrative Rules Chapters #333-61-070, #333-61-071, and #333-61-072 state that the water supplier has the primary responsibility for the preventing of water from unapproved sources, or any other substances, from entering the public potable water systems.

SECTION 4. RESPONSIBILITY:

The Water System with its designated Cross Connection Inspector shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow or backsiphonage of contaminants or pollutants through the water service connection. If, in the judgement of the Water System and its Cross Connection Inspector, an approved Backflow Prevention Assembly is required at the Water System's connection to any Owner's premise, the Water System shall give notice in writing to said Owner to install an approved Backflow Prevention Assembly at each service connection to this premises. The Owner shall, within ninety (90) days, install such approved assembly or assemblies at his own expense, and failure or refusal, or inability on the part of the Owner to install said assembly or assemblies within ninety (90) days, shall constitute a ground for discontinuing water service to the premises until such assembly or

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assemblies have been properly installed.

SECTION 5. DEFINITIONS:

As used in this document, unless the context indicates otherwise, the following definitions shall apply:

Air Gap Separation - The physical vertical separation between the free flowing discharge end of a potable water supply pipe line and the open or non-pressure receiving vessel.

Approved Backflow Prevention Assembly - An assembly which has been approved by the State of Oregon Health Division, Human Resources Department, for preventing backflow.

Atmospheric Vacuum Breaker - (also known as an anti-siphon valve) A device consisting of a single check valve in the supply line that opens to the atmosphere when the pressure in the line drops atmospheric.

Auxiliary Water Supply - Any water supply, on or available, to the premises other than the supplier's approved public potable water supply.

Backflow - The flow of water or other fluids in the direction opposite to the normal flow.

Backflow Prevention Assembly (also call a Cross Connection Device) - An assembly which prevents backflow into the water system's potable water supply or customer's piping system and which appears on the approved list as provided by the Oregon State Health Division.

Backpressure - A condition in which the customer's water system pressure is greater than the water supplier's system pressure.

Check Valve - A valve that permits flow in only one direction.

Contaminant - Any physical, chemical, biological, or radiological substance or matter in water which may render the water non-potable, according to Oregon Law.

Containment - A method of backflow prevention which requires a backflow preventer at the water service entrance.

Cross Connection - Any link or channel (actual or potential) between the piping which carries potable drinking water and the piping or fixtures which carry non-potable water or other substances.

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Cross Connection Inspector - An individual currently certified by the Division to inspect for cross connections.

Cross Connection Tester - An individual currently certified by the Division to test Approved Backflow Prevention Assemblies.

Customer System - All plumbing, piping, and appurtenances on the customer's side of the point of metering or connection.

Division - The State of Oregon Health Division, Human Resources Department.

Double Check Valve Assembly - An assembly of two independently acting check valves with a shut-off valve on each side of the two check valves. The assembly also has test ports for checking the water tightness of each check valve. The assembly must be an approved Backflow Prevention Assembly.

Facility Survey - An on-site review of the water source, facilities, equipment, operation, and maintenance for the purpose of evaluating the hazards to the drinking water supply.

Fixture Isolation - A method of backflow prevention in which a backflow preventer is located to correct a cross connection at an in-plant location rather than at a water service entrance.

Owner - A 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.

Person - An individual, partnership, company, public or private corporation, political subdivision or agency of the State Division, agency or instrumentality of the United States or any other legal entity.

Permit - A document issued by local authority (city or county) which allows the installation and use of a Backflow Prevention Assembly.

Pollutant - A foreign substance that, if permitted to get into the public water system, will degrade its quality so as to constitute a hazard, or impair the usefulness or quality of the water to a degree which creates an actual hazard to the public health and which does adversely and unreasonably effect such water for domestic use.

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Pressure Vacuum Breaker Assembly - A mechanical assembly consisting of one spring-loaded check valve in the supply line and a spring-loaded air inlet on the downstream side of the check valve which will open to atmosphere when the pressure in the assembly drops below one pound per square inch. The complete assembly consists of two shut-off valves and two test ports for checking water tightness of the check valve. The Assembly must be an approved Backflow Prevention Assembly.

Reduced Pressure Principle Backflow Prevention Assembly (RP) - An assembly for preventing backflow incorporating two check valves, a differential relief valve located between the two check valves, two shut-off valves, one on each end of the assembly, test ports for checking water tightness of the check valves and the operator of the relief valve. The Assembly must be an approved Backflow Prevention Assembly.

Reduced Pressure Principle Detector Assembly (RPD) - Same as an RP Assembly with the addition of a water meter and an additional RP Assembly bypassing the main line Assembly for the purpose of measure low or proportional flow. The complete Assembly must be an approved Backflow Prevention Assembly.

Safe Drinking Water (Potable Water) - Water which has sufficiently low concentrations of microbiological, inorganic chemical, organic chemical, radiological or physical substances so that individuals drinking such water at normal levels of consumption will not be exposed to disease-causing organisms or other substances which may produce harmful physical effects.

Secondary Contaminant - Contaminants which at levels generally found in drinking water do not present an unreasonable risk to health, but do adversely affect taste, odor or color.

Service Connection - The point of delivery of water at or near the property line, generally at the water meter.

Water Service Entrance - Same as Service Connection.

Water System or Water Supply - Lawrence Subdivision Water Association, Inc.

SECTION 6. ADMINISTRATION:

A. The Water System will operate a cross connection control program, to include the keeping of necessary records, which fulfills the requirements of the Division's Cross Connection Regulations and is approved by the Division.

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B. The Owner shall allow his property to be inspected at all reasonable times for possible cross connections and shall follow the provisions of the Water System's program and the Division's regulations if a cross connection is identified.

C. If the Water System requires that the public Water System be protected by containment, the Owner shall be responsible for water quality beyond the outlet end of the containment device and should utilize a backflow assembly for that purpose. He may utilize public health officials, or personnel from the Water System, or their delegated representatives, to assist in the survey of the facilities and to assist in the selection of proper fixture outlet devices, and the proper installation of the devices.

Section 7. REQUIREMENTS:

Backflow Prevention Assemblies shall be installed on each service line of an Owner's system at or near 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:

- 1) There is an auxiliary water supply which is, or could be connected to the potable water piping.
- 2) Where there is piping for conveying liquids other than potable water, and where that piping is installed and operated in a manner which could cause a cross connection.
- 3) There are cross connections or intricate plumbing which make it impractical to ascertain whether or not cross connections exists.
- 4) In the case where there has been a history of repeating the same or similar cross connection or a backflow, even though these have been removed or disconnected.
- 5) Where there is a building over two stories in height or any plumbing system that is greater than or equal to thirty (30) feet above the Water System main from which it is served.
- 6) Where fire hydrants or fire systems are connected to the potable domestic water service within the property being served.
- 7) Where a single water service is used to supply three or more dwellings.
- 8) Where the water meter serving the property is one and one-half inch or larger.
- 9) Where there is backflow or backsiphonage potential.
- 10) Where any fixture is subject to being submerged.
- 11) Where the system is not open for inspection.

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SECTION 8. THE TYPE OF BACKFLOW PROTECTION REQUIRED:

The type of protection required shall be commensurate with the degree of hazard which exists as follows:

- 1) An approved Air Gap of at least twice the inside diameter, but not less than one (1) inch, of the incoming supply line measured vertically above the top rim of the vessel, or an approved Reduced Pressure Principle Backflow Prevention Assembly shall be installed where the substance which could backflow is a Contaminant or potentially hazardous to health. Examples of premises where these conditions exist include hospitals, mortuaries, car washes, medical clinics, auxiliary water systems, boilers, sewage piping, etc.
- 2) An approved Double Check Valve Assembly shall be installed where the substance which could backflow is a Secondary Contaminant. Examples would include landscape irrigation systems, multiple dwelling units served by a single water service, pools, spas, etc.
- 3) An approved Pressure Vacuum Breaker or an Atmospheric Vacuum Breaker shall be installed where the substance which could backflow is objectionable but does not pose an unreasonable risk to health and where there is no possibility of backpressure in the downstream piping.
- 4) In the case of all private fire services, an approved Backflow Prevention Assembly installed to the Water System's specifications shall be required. The Water System may require a monitoring meter or detection system to detect unauthorized use or leakage within the system. The type of Backflow Prevention Assembly shall be as follows:
 - a) Low or Medium Hazard - Systems with or without a pumper connection but no auxiliary water supplies available, chemical additives, or other detectable cross connections require an approved Double Check Valve Assembly.
 - b) High Hazard - Systems with auxiliary water supplies, chemical additives or other detectable cross connections shall require an approved Reduced Pressure Principle Backflow Prevention Assembly.

SECTION 9. APPROVAL OF ASSEMBLIES:

All Backflow Prevention Assemblies required under this policy shall be a type and model approved by the Division.

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SECTION 10. OWNER'S DUTIES:

1. The Owner shall be responsible for the elimination or isolation of all cross connections on his premises.
2. The Owner shall make his premises available for inspection for cross connections at all reasonable times.
3. The Owner, after having been informed by a letter from the Water System, shall at his own expense, obtain proper permits, install, maintain, have tested any and all Backflow Prevention Assemblies on his premises.
4. The Owner shall have corrected any malfunctions of the Backflow Prevention Assemblies which is revealed by the required periodic testing or during a time when the assembly should have worked but failed.
5. The Owner shall inform the Water System of any proposed or modified cross connections and also any existing cross connections of which the Owner is aware but which has not been found by the Water System.
6. The Owner shall not install a by-pass around any Backflow Prevention Assembly unless there is a Backflow Prevention Assembly of the same type on the by-pass. Owners shall not tamper with any backflow devices.
7. The Owner shall install Backflow Prevention Assemblies in a manner approved by the Water System.
8. The Owner shall install only Backflow Prevention Assemblies approved by the Division.
9. Any Owner having a private well or other private water source, must have permission from the Water System and the well must meet all current Division testing and codes if the well or source is cross connected to the Water System's water supply. Permission to cross connect may be denied by the Water System. The Owner is 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 Water System.
10. In the event the Owner installs plumbing to provide potable water for domestic purposes which is on the Water System's side of the Backflow Prevention Assembly, such plumbing must have its own Backflow Prevention Assembly installed.
11. Owner must, at own expense, arrange for an annual test of each Backflow Prevention Assembly and provide results of such tests to Water System.

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SECTION 11. PREVIOUSLY INSTALLED ASSEMBLIES:

Backflow Prevention Assemblies which were approved at the time they were installed but are not on the current list of approved assemblies shall be permitted to remain in service until the Water System has inspected the devices and has, in writing, requested that Owner make a change in the assembly.

SECTION 12. PERIODIC TESTING:

- A. All testable Backflow Prevention Assemblies shall be tested and inspected at least annually.
- B. Periodic testing and inspections shall be performed by a Division's certified tester or from a list provided by the Water System. This testing will be done at the Owner's expense.
- C. Any Backflow Prevention Assembly that fails during a periodic test will be repaired or replaced. When repairs are necessary, upon completion of the repair the assembly will be tested at Owner's expense to insure correct operation. High hazard situations will not be allowed to continue if the Backflow Prevention Assembly 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 by the Water System. The Owner is responsible for spare parts, repair tools, or a replacement assembly. Parallel installation of two (2) devices is an effective means by the Owner for insuring uninterrupted water service during testing or repair of devices and is strongly recommended when the Owner desires such continuity.
- D. Backflow Prevention Assemblies will be tested more frequently than specified in A. above, if the Water System feels that there is a history of failures. Cost of additional testing will be borne by the Owner.

SECTION 13. ENFORCEMENT:

The Cross Connection Inspector as designated by the Water System shall cause the water service to the premises to be immediately discontinued or denied by a physical break in the service until the Owner has corrected the condition in conformance with this policy/program in any of the following situations:

- 1) When it becomes known that a condition such as a cross connection, plumbing, structural or sanitary hazard, or other violation of this policy/program is present.
- 2) In those cases of extreme emergency, and where an immediate threat to life or public health is found to exist.

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- 3) When, in other cases and after a reasonable length of time has been allowed as determined by the Water System's designated Cross Connection Inspector, the tests, repairs, and/or replacement of Backflow Prevention Assemblies or any other requirement within this policy/program is not performed in accordance with this policy/program.

SECTION 14. RECORDS AND REPORTS:

The Water System will initiate and maintain the following:

- A. Water System Records
 1. Master files on Owners' cross connection tests and/or inspections.
 2. Master files on Backflow Prevention Assembly permits issued by county/city to Water System customers.
 3. Copies of lists and summaries supplied to the Division.
 4. Initial listing of low hazard cross connections.
 5. Initial listing of high hazard cross connections.
- B. Reports
 1. Annual Summary including data about Water System Backflow Prevention Assemblies installation, inspection and repair to the Division in format and frequency required by the Division.

SECTION 15. FEES:

If the Water System charges any fees for this policy/program, the Water System will provide a list of such current fees upon request to Owner or Division.

SECTION 16. EFFECTIVE DATE:

The effective date of this policy/program is December 31, 1995.

Written for Lawrence Subdivision Water Association, Inc. by Mike Myers, Cross Connection Inspector/Tester #1835, Utility Services Specialists.