

# **AUBURN WATER SYSTEM, INC**

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## **BACKFLOW / CROSS CONNECTION CONTROL PROGRAM**

### **Rules and Regulations**

#### **1.1 PURPOSE** The purpose of this rule is:

**1.1.1** To protect the public potable water supply of Auburn Water System Inc., (AWS) and its customers from the possibility of contamination or pollution by containing within the member's internal distribution system(s) or the member's private water system(s), such contaminants or pollutant which could backflow by backpressure or backsiphonage into the community water supply system.

**1.1.2** To promote the elimination or control of existing cross connections, **actual or potential**, between the member's on-site potable water system(s) and non-potable water systems, plumbing fixtures industrial piping systems, and irrigation.

**1.1.3** To provide for the maintenance of a continuing program of cross connection control which will systematically and effectively prevent the contamination or pollution of all potable water systems.

#### **1.2 RESPONSIBILITY**

Auburn Water System, Inc (AWS) shall authorize measures for the protection of the community potable water distribution system from contamination or pollution. If, in the judgment of the General Manager or his/her designee, an approved backflow prevention assembly is required at the AWS service connection to any member's premises, for safety of

the water system, the general manager or his/her designated agent shall assure notice is provided in writing to said **member to install such an approved assembly or assemblies at his own expense; and failure, refusal or inability on the part of the member to install said assembly or assemblies immediately shall constitute grounds for discontinuing water service** to the premises until such assembly or assemblies have been properly installed. (**Only** AWS Certified Backflow Technicians will annually test all assemblies, for which a fee will be applied to the customer's account upon successful testing, or a trip fee may be charged for additional trips made for testing). AWS shall maintain records of the installation, inspection/testing, and repair of backflow protection being required at or for service connections from AWS.

### 1.3 **AUTHORITY**

These Rules and Regulations of Auburn Water System Inc., relating to cross connection control are adopted and implemented pursuant to the requirements of Sections 403.850 - 403.864, Florida Statutes and Safe Drinking Water Act, and rules adopted pursuant thereto by **Florida Department of Environmental Protection, Florida Administrative Code, Chapter 62-555.360.**

## SECTION 2 **DEFINITIONS**

- 2.1 **AWS RESPONSIBILITY.** AWS is invested with the authority and responsibility to implement an effective cross-connection control program and to enforce the provisions of these rules and regulations.
- 2.2 **APPROVED.** Accepted by the authority responsible as meeting an applicable specification stated or cited in these rules and regulations, or as suitable for the proposed use.
- 2.3 **AUXILLIARY WATER SUPPLY.** Any water supply on or available to the premises other than the purveyor's approved public potable water supply. These auxiliary waters may include water from another purveyor's public potable water supply or any natural source(s) such as a well, spring, river, stream, harbor, et., or "used water" or industrial fluids. These waters may be polluted or contaminated or they may be objectionable and constitute an unacceptable water source over which the water purveyor does not have sanitary control.
- 2.4 **BACKFLOW .** The undesirable reversal of flow in a potable water distribution system as a result of a cross connection.
- 2.5 **BACKPRESSURE.** A pressure, higher than the supply pressure, caused by a pump, elevated tank, boiler or any other means that may cause backflow.
- 2.6 **BACKSIPHONAGE.** The flow of water, liquids or other mixtures of substances into the distributing pipes of a potable water supply system from any source other than its intended source caused by the sudden reduction of pressure in the potable water supply system.
- 2.7 **BACKFLOW PREVENTER.** An assembly or means designed to prevent backflow.

**2.7.1 Air Gap.** The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other device and the flood level rim of said vessel. An approved air gap shall be at least double the inside diameter of the supply pipe, measured vertically, above the top of the rim of the vessel and, in no case less than one inch, when an air gap is used at the service connection to prevent the contamination or pollution of the public potable water system, an emergency bypass may be installed around the air gap system and an approved reduced pressure principal assembly shall be installed in the bypass system.

**2.72 Pressure Principle Assembly.** An assembly of two independently operating approved check valves with an automatically operating differential relief valve between the two check valves, tightly closing shut off valves on either side of the check valves, plus properly located test cocks for the testing of the check and relief valves. The entire assembly shall meet the design and performance specifications and approval of a recognized and system approved testing agency for backflow prevention assemblies. The assembly shall operate to maintain the pressure in the zone between the two check valves at a level lower than the pressure on the community water supply side of the assembly. At cessation of normal flow, the pressure between the two check valves shall be less than the pressure on the water supply side of the assembly. In case of leakage of either of the check valves, the differential relief valve shall operate to maintain the reduced pressure in the zone between the check valves by discharging to the atmosphere. When the inlet pressure is two pounds per square inch or less, the relief valve shall open to the atmosphere.

**2.73 Pressure Principle Assembly Installation.** To be approved these assemblies shall be readily accessible for inline maintenance and testing and shall be installed in a location where **no part of the assembly will be submerged.** Generally installed 12 to 18 inches above the ground but has to be at least 12 to 36 inches above the ground drainage system, or flood elevation. Pit installations are not allowed. It must be installed within one foot of the meter for any type of alternative water supply. If it is installed for irrigation using AWS water only, it may be installed within one foot of the first cross connection made on the water main from the meter to the house, on the irrigation/cross connection line. It is recommended that you install a “y” strainer, per manufacturer’s instructions.

**2.74 Pressure Vacuum Breaker Assembly.** A pressure vacuum breaker is similar to an atmospheric vacuum breaker except that the checking unit “poppet valve” is activated by a spring. This type of vacuum breaker does not require a negative pressure to react and can be used on the pressure side of a valve.

**2.75 Pressure Vacuum Breaker Assembly Installation.** The PVB must be installed at least 12 inches above the highest downstream point on the system. It must be installed vertically (with inlet on the bottom), it prevents backsiphonage only, not back pressure. PVB’s are not allowed with chemical irrigation or where back pressure is a potential threat, or with alternative water supplies. PVB’s cannot be installed in pit installations. PVB’s must be installed within one foot of the first cross connection made on the water main from the

meter to the house, on the irrigation/cross connection line. It is recommended that you install a “y” strainer, per manufacturer’s instructions.

**2.76 Double Check Valve Assembly.** An assembly of two independently operating approved check valves with tightly closing shut-off valves on each side of the check valve, plus properly located test cocks for the testing of each check valve. The entire assembly shall meet the design and performance specifications and approval of a recognized and system approved testing agency for backflow prevention assemblies. To be approved, these assemblies shall be readily accessible for in-line maintenance and testing. Double Checks are only allowed to be used on a fire line or for a meter over one inch, provided the size is the only hazard.

**2.77 Double Check Valve Assembly Installation.** Generally installed 12 to 18 inches above grade but has to be at least 12 to 36 inches above ground, drainage system, or flood elevation. Permission must be given before installation for any pit installation. We do not allow pit installations in low lying areas subject to flooding or in known flood plains. This backflow should be installed within 1 foot of the meter. It is recommended that you install a “y” strainer, per manufacturer’s instructions.

**2.8 CONTAMINATION.** An impairment of a potable water supply by the introduction or admission of any foreign substance that degrades the water quality or creates a health hazard.

**2.9.CROSS CONNECTION.** A connection, or a potential connection, between any part of a potable water system and any other medium containing substances in a manner that could allow such substances to enter the potable water system. Substances may be gases, liquids or solids, such as chemicals, waste products, steam, water from other sources (potable and non potable), or any substance that could change the color, odor or chemical content of the water or introduce harmful chemicals, bacteria or other contaminants.

**2.10 CROSS CONNECTION CONTROLLED.** A connection between a potable water system and a non potable water system, or other medium, with an approved backflow prevention assembly properly installed that will continuously afford the protection warranted from the medium to the public water supply.

**2.11 CROSS CONNECTION CONTROL BY CONTAINMENT.** The installation of an approved backflow prevention assembly at the water service connection to any member’s premises by the member, where it is physically and economically unfeasible to find, permanently eliminate or control all actual or potential cross connections with the member’s water system; or, it shall mean the installation of an approved backflow prevention assembly on the service line leading to and supplying a portion of a member’s water system where there are actual or potential cross connections which cannot be effectively eliminated or controlled at the point of cross connection.

**2.12 HAZARD – DEGREE OF.** The term is derived from an evaluation of the potential risk to public health and the adverse effect of the hazard upon the potable water system.

**2.12.1 Hazard – Health.** A cross connection or potential cross connection involving any substance that could, if introduced in the potable water system, cause death, illness, spread disease, or have a high probability of causing such effects.

**2.12.2 Hazard – Plumbing.** A plumbing type cross connection in a member's potable water system that has not been properly protected by an approved vacuum breaker, air gap separation or backflow prevention assembly. Unprotected plumbing cross connections are considered a health hazard.

**2.12.3 Hazard – Non Health.** A cross connection or a potential cross connection involving any substance that generally would not be a health hazard but which would constitute a nuisance or be aesthetically objectionable if introduced into the potable water system, such as odor or color.

**2.12.4 Hazard – System.** An actual or potential threat of severe damage to the physical properties of the public potable water system or the member's potable water system or of a pollutant or contaminate which could have a prolonged effect on the quality of the potable water in the system.

**2.13 INDUSTRIAL FLUIDS SYSTEM.** Any system containing a fluid or solution which may be chemically, biologically or otherwise contaminated or polluted in a form or concentration to constitute a health, system, pollution or plumbing hazard if introduced into a public water supply. This may include, but not be limited to: polluted or contaminated waters; all types of process waters and "used waters" originating from the public potable water system which may have deteriorated in bacteriological and/ or chemical quality; chemicals in fluid form' plating acids and alkalies; circulated cooling waters connected to an open cooling tower and/or cooling towers that are chemically or biologically treated or stabilized with toxic substances; unsafe natural water such as from well, springs, streams, rivers, bay, harbors, seas, irrigation canals or systems, etc., oils, gases, glycerin, paraffin, caustic and acid solutions and other liquid and gaseous fluids used in industrial or other purposes or for firefighting purposes.

**2.14 POLLUTION.** The presence of any foreign substance in water which tends to degrade its quality so that it constitutes a health hazard or impair the usefulness of the water.

**2.15 WATER – POTABLE.** Any water that is safe for human consumption as prescribed by the public health authority having jurisdiction.

**2.16 WATER - NON POTABLE.** Water that is not safe for human consumption or which according to recognized standards is of questionable quality. This may also include private water supplies which have not been tested and approved by health authorities for consumption.

**2.17 WATER – RECLAIMED.** Shall mean wastewater which, as a result of treatment, is suitable for direct beneficial use, or a controlled use that would not otherwise occur, but is deemed unsafe for human consumption.

**2.18 WATER – SERVICE CONNECTIONS.** The terminal end of a service connection from the public potable water system; i.e., where the water purveyor loses jurisdiction and sanitary control over the water at its point of delivery to the member's system. If a meter is installed at the end of the service connection, then the service connection shall mean the downstream end of the meter. There should be no unprotected connections from the service line ahead of any meter or backflow prevention assembly located at the point of delivery to the member's water system. Service connection shall also include water service connection from a fire hydrant and all other temporary or emergency water service connections from the public water system.

**2.19 WATER – USED.** Any water supplied by a water purveyor from the public potable water system to a member's water system after it has passed through the point of delivery and it is no longer under the control of the water purveyor.

## **SECTION 3 REQUIREMENTS**

### **3.1 WATER SYSTEM.**

**3.1.1** The water system shall be considered as made up of two parts: the utility system and the customer system.

**3.1.2** Utility system shall consist of the source facilities and the distribution system; and shall include all those facilities of the water system under the complete control of the utility, up to the point where the member's system begins.

**3.1.3** The source shall include all components of the facilities utilized in the production, treatment, storage, and delivery of water to the distribution system.

**3.1.4** The distribution system shall include the network of conduits used for the delivery of water from the source to the member's system.

**3.1.5** The member's system shall include those parts of the facilities beyond the termination of the utility distribution system which are utilized in conveying utility delivered domestic water to points of service.

### **3.2 POLICY.**

**3.2.1** No water service connection to any premises shall be installed or maintained by the water purveyor unless the water supply is protected as required by state laws and regulations and the Auburn Water System's Rules and Regulations. Service of water to any premises shall be

discontinued by the water purveyor if a backflow prevention assembly required by these rules and regulations is not installed, tested and maintained, or if it is found that a backflow prevention assembly has been removed, by-passed, or if an unprotected cross connection exists on the premises. Service will not be restored until such conditions or defects are corrected.

**3.2.2** The member's system should be open for inspection at all reasonable times to authorized connections or other sanitary hazards, including violations of these regulations, exist. When such a condition becomes known, the General Manager or his/her designee, shall deny or immediately discontinue service to the premises by providing for a physical break in the service line until the member has corrected the condition(s) in conformance with state and county statutes and ordinances relating to plumbing and water supplies and regulations adopted pursuant thereto. Refusal by a member to allow an inspection shall be considered prima facie evidence of the existence of cross connections, thereby requiring the installation of an approved reduced pressure principle backflow prevention device or the disconnection of service.

**3.2.3** At no time will an approved backflow assembly restrict the flow of water in either a potable water or dedicated fire line.

**3.2.3.a** In the case of both commercial and domestic water service, the bore of the backflow assembly shall be no smaller than the full flow bore of the measuring device (meter).

**3.2.3.b** In the case of dedicated fire lines, the backflow assembly's bore will be the same diameter as the required tap, as per state and local fire statutes.

**3.2.4 An approved backflow prevention assembly shall be installed on each service line to a member's water system at or near the property line by the member, or in a location approved by the General Manager or his/her designee, but, in all cases, before the first branch line leading off the service line whenever the following conditions exist:**

**3.2.4.a** In the case of premises having an auxiliary water supply which is not or may not be safe for human consumption and which is not acceptable as an additional source by the General Manager or his/her designee, the public water system shall be protected against backflow or potential backflow, from the premises by the member installing an approved reduced pressure backflow prevention assembly on the service line.

**3.2.4.b** In the case of premises on which any industrial fluids or any other objectionable substance is handled in such a fashion as to create an actual or potential hazard to the public water system, the public system shall be protected against backflow from the premises by the member installing an approved reduced pressure backflow prevention assembly on the service line. This shall include the handling of process waters and waters originating from the utility system which have been subject to deterioration in quality.

**3.2.4.c** In the case of premises having (1) internal cross connections that cannot be permanently corrected and controlled, or (2) intricate plumbing and piping arrangements or where entry to all portions of the premises is not readily accessible for inspection purposes, making it impracticable or impossible to ascertain whether or not dangerous cross connection exist, the public water system shall be protected against backflow from the premises by the member installing an approved reduced pressure backflow prevention assembly on the service line.

**3.2.5 The type of protective assembly required under subsections 3.2.4a, b, and c shall depend upon the degree of hazard which exists as follows:**

**3.2.5.a** In the case of any premises where there is an auxiliary water supply as stated in subsection.

**3.2.5.b** Of this section and it is not subject to any of the following rules; the public water system shall be protected by an approved reduced pressure principle backflow prevention assembly, by the member installing the required backflow.

**3.2.5.c** In the case of any premises where there is water or substance that would be objectionable but not hazardous to health, if introduced into the public water system, the public water system shall be protected by the member installing an approved reduced pressure principle assembly.

**3.2.5.d** In the case of any premises where there is any material dangerous to health which is handled in such a fashion as to create an actual or potential hazard to the public water system, the public water system shall be protected by the member installing an approved reduced pressure principle backflow prevention assembly. Examples of premises where these conditions will exist include but are not limited to, sewage treatment plants, sewage umping stations, chemical manufacturing plants, hospitals, mortuaries, plating plants, veterinary offices, film processing labs, hair salons, lumber mills and any situation determined by the General Manager or his/her designee to be a health hazard.

**3.2.5.e** In the case of any premises where there are uncontrolled cross connections, either actual or potential, an approved reduced pressure principle backflow prevention assembly at the service connection must be provided by the member. The member is responsible for the proper installation of the backflow device.

**3.2.5.f** In the case of any premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impractical to make a complete in plant cross connection survey, the public water system shall be protected against backflow by the member installing the required backflow for the situation.

**3.2.5.g** In the case of a dedicated fire line tap whether for fire sprinklers and/or hydrants, the public water system shall be protected by an approved pressure vacuum breaker or reduced pressure principle assembly backflow prevention assembly. If a hydrant is to be present on any project, other than single family residences, the hydrant is to be installed on the dedicated fire line downstream of the backflow assembly, by the member. If a dedicated fire line is to have any substance (e.g. antifreeze or dry chemicals) present other than potable water, an immediate upgrade in protection to a reduced pressure principle assembly is required.

**3.2.5.h** In the case of irrigation supplied by a public water system as described in section 2.15, the public water system shall be protected with the minimum of a pressure vacuum breaker backflow prevention assembly or a reduced pressure principle assembly. If any alternate source of water is cross connected, an immediate upgrade to an approved reduced pressure backflow prevention assembly is required. If any chemicals are to be injected into the system (e.g. chemigations), an immediate upgrade in protection to a reduced pressure principle assembly is required.

**3.2.5.i** In the case of pools that are protected with an approved air gap, all potable hose bibs within 100 feet of the pool and pumping systems will be required to have an ASSE approved hose bib vacuum breaker installed. If the pool's air gap does not meet AWWA installation requirements, an immediate repair will need to be performed, or a reduced pressure principle backflow prevention assembly will be required.

**3.2.5.j** In the case of any property(s), other than single family dwellings, which utilizes reclaimed water for any purpose, an approved reduced pressure backflow prevention assembly will be required either as a new installation or as a retro-fit. The assembly will be required to meet all AWWA installation requirements and shall be installed at the point of service on the potable water.

**3.2.5.k** AWS will furnish and install an in-line dual check backflow prevention device on all residential potable water services that are one inch in diameter or less. All residential potable water service larger than one inch will require a reduced pressure principle assembly or a double check backflow, installed within one foot of the meter, depending on the level of hazard.

**3.2.6** As per the Florida contracting statutes chapter 489, all backflow assemblies are required to be installed by a licensed contractor with the following exception (chapter 489-103):

**3.2.6.a** The owner of the property may install any required backflow assemblies on his/her property, with certain restrictions, without a contractor's license.

**3.2.6.b** An employee of a property owner may install any required backflow assemblies on his/her owner's property with "employee" being defined as a person who receives compensation from and is under the supervision of the property owner and said property owner regularly deducts FICA, applicable taxes and provides workers compensation as required by law.

**3.2.6.c** Any such assembly or maintenance in which the aggregate contract price for labor, materials and other items is less than \$1000.

**3.2.7** Any backflow prevention assembly required herein shall be of a model and size approved by the General Manager or his/her designee. The term "approved backflow prevention assembly" shall mean as assembly that has been manufactured in full conformance with the standards established by the America Water Works Association entitled: AWWA C510-89 Standard for Double Check Assembly, AWWAS C511-89 Standard for Reduced Pressure Principle Assembly and AWWA C512-15 for Pressure Vacuum Breakers, and have met completely the laboratory and field performance specifications of the Foundation for Cross-Connection Control and Hydraulic Research of the University of California established by "Specification of Backflow Prevention Assemblies" – section 10 of the most current issues of the Manual for Cross Connection Control. Said AWWA and FCCC & HR standards and specifications have been adopted by AWS. Final approval shall be evidenced by a Certificate of Approval issued by an approved testing laboratory certifying full compliance with said AWWA and FCCC & HR standards and specifications. The following testing laboratory has been qualified by AWS to test and certify Backflow Preventer: Foundation for Cross Connection Control and Hydraulic Research University of Southern California, University Park, Los Angeles, CA 90089.

Testing laboratories, other than the laboratory listed above, will be added to an approved list as they are qualified by AWS. Backflow Preventers which may be subjected to backpressure or backsiphonage that have been fully tested and have been granted a certificate of approval by said qualified laboratory and are listed on the laboratory's current list of "approved backflow prevention assemblies" may be used without further qualifications. It is also required that all backflow prevention assemblies will have replaceable seats. AWS reserves the right to disapprove any assembly in this purveyor system, which is otherwise approved, but has a chronic and excessively high failure rate.

Florida Department of Environmental Protections requires all community water systems to establish a routine cross connection control program. Additionally, the water systems are required to provide a written plan developed using accepted practices of the American Water Works Association, AWWA M14 and 7. This is outlined in Florida Department of Environmental Protection Rule 62-555-360.

AWWA Manual M14 states: "An approved backflow prevention assembly shall be installed at the service connection of the water purveyor to any premises where there is an auxiliary water supply or system, even though there is no connection between the auxiliary water supply and the public potable water system. It is important to define premises as referred to in this statement.

Premises = A tract of land with its component parts (as buildings); also a building or part of a building usually with its appurtenances (as grounds or easements). It is important to note here that the backflow prevention assembly is to be required even if NO connection between the auxiliary water supply and the public potable water system exists. This is in place to protect the system and its other customers should the cross connection be made at some point in the future.