

A Policy for the Control of Backflow and Cross-Connections for Anniston Water Works and Sewer Board

7 March 2008

SECTION 1 - CROSS-CONNECTION CONTROL - GENERAL POLICY

1.1 Purpose

The purpose of this Policy is:

- 1.1.1** To protect the public potable water supply of *Anniston Water Works and Sewer Board* from the possibility of contamination or pollution by isolating within the customer's internal distribution system(s) or the customer's private water system(s) such contaminants or pollutants that could backflow into the public water system; and,
- 1.1.2** To promote the elimination or control of existing cross-connections, actual or potential, between the customer's in-plant potable water system(s) and non potable water systems, plumbing fixtures, and industrial piping systems; and,
- 1.1.3** To provide for the maintenance of a continuing program of cross-connection control.

1.2 Responsibility

The *Anniston Water Works and Sewer Board* shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow of contaminants or pollutants through the water service connection. If, in the judgment of said *Anniston Water Works and Sewer Board* an approved backflow-prevention assembly is required (at the customer's water service connection; or, within the customer's private water system) for the safety of the water system, the *Anniston Water Works and Sewer Board* or their designated agent shall give notice in writing to said customer to install such an approved backflow-prevention assembly(s) at specific location(s) on said premises. The customer shall immediately install such approved assembly(s) at their own expense; and, failure, refusal, or inability on the part of the customer to install, have tested, and maintain said assembly(s) shall constitute grounds for discontinuing water service to the premises until such requirements have been satisfactorily met.

SECTION 2 - DEFINITIONS

2.1 General Manager

The *General Manager* in charge of the *Anniston Water Works and Sewer Board* is invested with the authority and responsibility for the implementation of an effective cross-connection control program and for the enforcement of the provisions of this Policy.

2.2 Approved

Accepted by the *Anniston Water Works and Sewer Board* responsible as meeting an applicable specification stated or cited in this Policy or as suitable for the proposed use.

2.3 Auxiliary Water Supply

Any water supply on or available to the premises other than the purveyor's approved public 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, and so forth; used waters; or industrial fluids, recycled water, re-used water, cooling tower water, storm water, re-circulated water or any other source other than from the Anniston Water Works public water supply. These waters may be contaminated or polluted, 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 of water or mixtures of water and other liquids, gases, or other substances into the distribution pipes of the 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 or contribute to backflow.

2.6 Backsiphonage

Backflow caused by negative or reduced pressure in the supply piping which causes a sub-atmospheric pressure to exist at a site in the water system.

2.7 Backflow Prevention Assembly – Approved (BFP)

The term *approved backflow prevention assembly* shall mean an assembly that has been investigated and approved by the *Anniston Water Works and Sewer Board* and is as *defined later in this policy*. The type of assembly used shall be based on the existing or potential degree of hazard, and backflow condition as determined by the best judgment of the Anniston Water Works Board and industry practice. The types of backflow prevention assemblies are:

- 2.7.1 Air gap. (AG)** - The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet conveying water or waste to a tank, plumbing fixture, receptor, or other assembly and the flood level rim of the receptacle. These vertical, physical separations must be at least twice the diameter of the water supply outlet and never less than 1 in. (25 mm).
- 2.7.2 Reduced-pressure backflow-prevention assembly. (RPZ)** - The approved reduced-pressure principle backflow-prevention assembly consists of two independently acting approved check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves and below the first check valve. These units are located between two tightly closing resilient-seated shutoff valves as an assembly and equipped with properly located resilient-seated test cocks.
- 2.7.3 Double check valve assembly. (DCV)** - The approved double check valve assembly consists of two internally loaded check valves, either spring-loaded or internally weighted, installed as a unit between two tightly closing resilient-seated shutoff valves and fittings with properly located resilient-seated test cocks. This assembly shall only be used to protect against a non-health hazard (that is, a pollutant).
- 2.7.4 Dual check valve assembly. (DuC)** – The approved dual check valve assembly consists of a bronze body construction, with two plastic replaceable check valves, and stainless steel springs. This assembly is designed for non-health hazard residential water system containment, continuous pressure applications. It is installed immediately downstream of the residential water meter, in a vertical or horizontal position.

2.8 Backflow Prevention

A program, ordinance, code, or policy designed to discover, eliminate, and prevent all unauthorized and uncontrolled backflow and cross-connection.

2.9 Backflow Prevention by Containment

The installation of a backflow prevention assembly at the service connection to the premises to protect only the Public Water Supply System.

2.10 Certified Backflow Prevention Assembly Tester

A person who has proven his/her ability to make field test and write reports on backflow prevention assemblies by completing an AWWA Backflow Prevention Assembly Tester Class (or accepted equivalent) and receiving a certification. A copy of this certification must be filed with *Anniston Water Works and Sewer Board* prior to any backflow testing within the Board's System. Each person who is certified shall be conversant with applicable laws, rules, and regulations and have experience in plumbing or pipe fitting or have other equivalent qualifications in the opinion of *Anniston Water Works and Sewer Board*.

2.11 Contamination

An impairment of a potable water supply by the introduction or admission of any foreign substance that degrades the quality of water or the public water system and/or creates a

health hazard.

2.12 Cross-Connection

A connection or potential connection between any part of a potable water system and any other environment containing other substances in a manner that, under any circumstances would allow such substances to enter the potable water system. Other substances may be gases, liquids, or solids, such as chemicals, waste products, steam, water from other sources (potable or nonpotable), *dust, fines, fibers, particles* or any matter that may alter the color, taste, odor of the water or impact water quality in any way.

2.13 Cross-Connection-Controlled

A connection between a potable water system and a nonpotable water system with an approved backflow-prevention assembly properly installed and maintained so that it will continuously afford the protection commensurate with the degree of hazard as determined by the *Anniston Water Works and Sewer Board*.

2.14 Cross-Connection Control by Containment

The installation of an approved backflow-prevention assembly at the water service connection to any customer's premises, where it is physically and economically unfeasible to find and permanently eliminate or control all actual or potential cross connections within the customer'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 customer's water system where there are actual or potential cross-connections that cannot be effectively eliminated or controlled at the point of the cross-connection.

2.15 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.

2.15.1 Hazard-health. A cross-connection or potential cross-connection involving any substance that could, if introduced into the potable water supply, cause death or illness, spread disease, or have a substantial probability of causing such effects.

2.15.2 Hazard-plumbing. A plumbing-type cross-connection in a consumer's potable water system that has not been properly protected by an approved air gap or an approved backflow-prevention assembly.

2.15.3 Hazard-non-health. A cross-connection or potential cross-connection involving any substance that generally would not be a health hazard but would constitute a nuisance or be aesthetically objectionable, if introduced into the potable water supply.

2.15.4 Hazard-system. An actual or potential threat of severe damage to the physical properties of the public potable water system or the consumer's potable water system or of a pollution or contamination that would have a protracted effect on the quality of the potable water in the system.

2.16 Industrial-Fluids System

Any system containing a fluid or solution that may be chemically, biologically, or otherwise contaminated or polluted in a form or concentration, such as would constitute a health, system, pollution, or plumbing hazard, if introduced into an approved 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 that may have deteriorated in sanitary quality; chemicals in fluid form; plating acids and alkalis; circulating cooling waters connected to an open cooling tower; and or cooling towers that are chemically or biologically treated or stabilized with toxic substances; contaminated natural waters, such as wells, springs, streams, rivers, bays, harbors, seas, irrigation canals or systems, and so forth; oils, gases, glycerin, paraffin's, caustic and acid solutions, and other liquid and gaseous fluids used in industrial or other purposes for fire-fighting purposes.

2.17 Pollution

The presence of any foreign or objectionable substance (organic, inorganic, radiological, or biological) in water that tends to degrade its quality so as to constitute a non-health hazard or impair the usefulness of the water or quality of the water to a degree which does not create an actual hazard to the public health, but which does adversely or in any way affect such waters for domestic use and consumption..

2.18 Water-Potable

Water that is safe for human consumption as described by the public health authority having jurisdiction.

2.19 Water-Nonpotable

Water that is not safe for human consumption or that is of questionable quality.

2.20 Service Connection

The terminal end of a service connection from the public potable water system, that is, where the water purveyor loses jurisdiction and sanitary control over the water at its point of delivery to the customer's water 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 takeoffs from the service line ahead of any meter or backflow-prevention assembly located at the point of delivery to the customer'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 potable water system.

2.21 Water-Used

Any water supplied by a water purveyor from a public potable water system to a consumer's water system after it has passed through the point of delivery and is no longer under the sanitary 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 The 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 customer'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 customer's system.
- 3.1.5 The customer's system shall include those parts of the facilities beyond the termination of the utility distribution system that are utilized in conveying utility delivered domestic water to points of use. For the Anniston Water Works that may be either: the water meter, the Detector Check assembly, or, in the case of non-metered fire connections, the tap to the distribution main, whichever is applicable.

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 ***ADEM ADMIN. Code R. 335-7-9*** and this ***Policy for the Control of Backflow and Cross-Connections for Anniston Water Works and Sewer Board***. Service of water to any premises shall be discontinued by the water purveyor if a backflow-prevention assembly required by this ***ADEM ADMIN. Code R. 335-7-9*** and this ***Policy for the Control of Backflow and Cross-Connections for Anniston Water Works and Sewer Board*** is not installed, tested, and maintained, or if it is found that a backflow-prevention assembly has been removed, bypassed, or if an unprotected cross-connection exists on the premises. Service will not be restored until such conditions or defects are cured. This provision may not apply to services that have remained active and were installed prior to creation of this policy.

SECTION 4 - INSPECTION OF FACILITIES

- 4.1 Each Customer shall, upon request, furnish to the *Engineering Department of the Anniston Water Works and Sewer Board*, any pertinent information, including, but not limited to, construction and plumbing plans, specifications, information regarding water use requirements, materials handled on-site; etc.
- 4.2 Nothing contained in this policy shall relieve the Customer of the responsibility for conducting or causing to be conducted periodic surveys of water-use practices on his premises to determine whether there are actual or potential uncontrolled cross-connections within the Customer's plumbing system through which contaminant or pollutants could flow back into his own and/or the *Anniston Water Works and Sewer Board* Potable Water System. Nor shall the customer be relieved from any responsibility or liability for backflow incidents or damages resulting from such an incident by the operation of any of the policies or recommendations contained herein.
- 4.3 The customer's system must be opened for inspection at all reasonable times to authorized representatives of the *Anniston Water Works and Sewer Board* to determine whether cross-connections or other structural or sanitary hazards, including violations of these regulations, exist. Inspection will be scheduled at a time mutually agreeable with the Customer's representative and the *Anniston Water Works and Sewer Board* representative. *Anniston Water Works and Sewer Board* will then use the information gathered to determine the degree of potential backflow or backsiphonage hazard and specify the type of backflow protection required at the Customer's service connection. If the Customer's premises are classified in whole or in part as restricted or high security with no admittance, maximum protection (RPZ) at the service connection will be required.
- 4.4 Should any conditions be discovered during an inspection which could result in a violation of this Policy, maximum protection may be required. Whenever such a condition becomes known, the *Anniston Water Works and Sewer Board* representative shall immediately notify the Customer of this requirement and corrective action necessary to bring the facility in compliance with this policy and/or with State statutes. If the Customer brings the facility up to full code compliance within a ninety (90) day period, minimum protection may be allowed at the service connection, provided potential hazards within the premises are isolated.
- 4.5 If, after reasonable notice to the Customer of a violation of this policy existing on the Customer's premises, with no corrective action being taken by the Customer, water service shall be discontinued, and any other precautionary measures taken that are deemed necessary to protect the quality of the water in the *Anniston Water Works and Sewer Board* Public Potable Water Supply and Distribution System. Water service shall not be restored until the danger has been eliminated in compliance with this policy.
- 4.6 Due to the changes in equipment, processes, methods of manufacturing and additions to plants, building etc., it is understood the water use requirements may undergo continual change. As a result, potential and actual cross-connection conditions may change or existing protection may be rendered ineffective or by-passed. For these reasons annual or more frequent inspections may be required at some facilities. Additionally, all new building

construction shall be plan checked by an *Anniston Water Works and Sewer Board* representative to insure conformance with this policy.

- 4.7 If, while in the course of a routine inspection or special-investigation, a condition of imminent or actual high hazard of water system contamination is discovered, the *Anniston Water Works and Sewer Board* representative shall be authorized to take- immediate-steps as deemed necessary to correct the hazardous condition. This shall include the authority to immediately discontinue potable water service to the premises where a hazardous condition may be occurring. Such emergency steps, including discontinuance of water service, may be taken without advance notice to the Customer; and service will not be restored until the hazardous condition has been corrected and reinspected. The Customer shall be notified as soon as possible thereafter if water service has been discontinued; and the matter immediately brought to the *General Manager's* attention.
- 4.8 If a Customer discovers a hazardous situation where contaminants and/or pollutants are actually in the process or suspected of entering the Water Supply or Distribution System, the Customer shall immediately notify the *Anniston Water Works and Sewer Board* so that appropriate measures may be taken to contain and isolate the contaminants and/or pollutants. The Customer is authorized, and encouraged to take any such immediate steps as he deems necessary to correct the questionable existing hazardous condition. He is further responsible for notifying the **Engineering Department of the *Anniston Water Works and Sewer Board*** of the need for flushing any impurities out of Public Water Supply and/or Distribution System. In the event that this occurs outside of normal business hours the customer shall contact the Board's 24 hour number for after hours assistance.
- 4.9 Any corrective or precautionary actions taken by *Anniston Water Works and Sewer Board* for any violation as described herein shall be at the Customer's sole expense, and any such charges shall be paid in full before water service is restored. Additionally, *Anniston Water Works and Sewer Board* will accept no responsibility whatsoever for any damages, charges, lost production, etc., resulting from the interruption or discontinuance of service under these conditions.

SECTION 5 - WATER FROM OTHER SOURCES

- 5.1** When any premise or facility is served by the *Anniston Water Works and Sewer Board*, and the Customer at said premises continues to have a well or any other source of water, it shall be a violation of this policy for plumbing on said premises to be installed or so interconnected that the water in the *Anniston Water Works and Sewer Board* Water Supply or Distribution System can in any way become intermingled with the other source of water.
- 5.2** Upon discovery of an interconnection on any premises being furnished water through the **Anniston Water Works and Sewer Board** Water System and any alternate source, as described above, the Customer shall be notified that the interconnection must be removed and/or controlled by an approved backflow prevention device within thirty (30) days, and that failure to remove or correct the interconnection will result in removal of the meter which will not be reinstalled until the maximum backflow protection is installed at the service connection, and the Customer has paid all associated costs. In those cases where the Board determines that such a connection represents an imminent danger to the public water system and the public health the Board may require a more expeditious time table for correction.

SECTION 6 - WATER FROM FIRE HYDRANTS

6.1 FIRE HYDRANT USE OTHER THAN FIGHTING FIRES:

All tanks, tanker trucks, sprinkler trucks, hydro-mulchers, spraying trucks and any other containers that will be filled with water obtained from *Anniston Water Works and Sewer Board* Service Area must acquire from the **Engineering Department** of said **Board** a **Fire Hydrant Meter Assembly** having attached an approved backflow prevention device.

SECTION 7 - SELECTION OF DEVICES

7.1 CRITERIA

Backflow prevention assemblies shall be selected on the basis of the impurities involved and the type of cross-connections.

7.1.1 Impurities may be classified as:

7.1a Contaminants (High Hazard) – those impurities which may come into contact with potable water and create a health hazard, causing sickness or death.

7.1b Pollutants (Low Hazard) – those impurities which may come into contact with potable water and aesthetically affect the taste, odor, or appearance of the potable water, but not create a health hazard.

7.1.2 Cross-connections may be classified as:

7.1.3a Non-Pressure Type Cross-Connection - an installation where a potable water pipe is connected to a fixture or extended below the overflow rim of a receptacle, or an environment, containing a fluid at atmospheric pressure which is or may be contaminated; polluted or cannot be approved as safe, wholesome and potable for human consumption (nonpotable water).

7.1.3b Pressure Type Cross-Connection—an installation where a potable water line is connected to a closed vessel or piping system containing a fluid which is or may be contaminated, polluted or cannot be approved as safe, wholesome and potable for human consumption (nonpotable water).

7.2 MATERIALS For Devices

All backflow devices, including accessories, components and fittings in sizes up to 2-inch nominal diameter shall be bronze with threaded connections. Sizes above 2-inch shall be bronze, cast-iron-or steel that has a fusion bonded-epoxy coating applied inside and out (except for bronze), and shall have flanged connections.

7.3 IDENTIFICATION

Each backflow prevention device shall have a brass identification tag; securely attached with corrosion-resistant mechanical fasteners, and/or embossed to notate the manufacturer's name, serial number, and maximum working pressure and temperature.

7.4 TYPE OF PROTECTION REQUIRED

7.4.1 An approved backflow prevention assembly shall be installed on each service line to a customer's water system at or near the property line, or at an approved location by the *Engineering Department of the Anniston Water Works and Sewer Board*, but in all cases, before the first branch line leading off the service line wherever the following conditions exist:

- 7.4.1a** Any premises having an auxiliary water supply which is not under the control of *Anniston Water Works and Sewer Board*, such as a well, spring, reservoir, etc., shall have an air gap at an approved location or a reduced pressure zone backflow prevention assembly installed at the service connection.
- 7.4.1b** Any premises on which any industrial fluids or other objectionable substances are handled or stored in such a manner as to create an actual or potential hazard to the Public Potable Water Supply or Distribution System, in the opinion of the *General Manager* or his authorized representative shall have an air gap at an approved location or a reduced pressure zone backflow prevention assembly installed at the service connection. This shall include the handling of process waters and waters originating from the utility system that have been subject to deterioration in quality.
- 7.4.1c** Any premises having internal cross-connections that cannot be permanently corrected and controlled or having intricate plumbing and piping arrangements or where entry to all portions of the premise is not accessible for inspection purposes; making it impractical or impossible to ascertain whether or not dangerous cross-connections exist, shall have an air gap at an approved location or a reduced pressure zone backflow prevention assembly installed at the service connection.
- 7.4.1d** Any premises greater than one story in height shall have a reduced pressure zone backflow prevention assembly installed at the service connection.
- 7.4.1e** Any premises where, due to security requirements or other restrictions, it is impossible or impractical to make a complete in plant cross-connection survey, shall have an air gap at an approved location or a reduced pressure zone backflow prevention assembly installed at the service connection.
- 7.4.1f** Any premises where there is water or other substances which would be objectionable, but not hazardous to health, if introduced into the Public Potable Water Supply or Distribution System, shall have as a minimum a double check valve backflow prevention assembly installed at the service connection.
- 7.4.1g** All premises having unprotected cross-connections shall have a reduced pressure zone or double check valve backflow prevention assembly installed at the service connection, depending upon the degree of hazard. This applies as well to all premises where potential cross-connections exist or where it is expected that the Customer may make piping or equipment changes which could result in the installation of a cross-connection.

7.5 TYPICAL FACILITIES AND REQUIRED PROTECTION

- 7.5.1** All hospitals shall have a reduced pressure zone backflow prevention assembly installed on all service connections supplying potable water to their premises.
- 7.5.2** All medical buildings, sanitariums, veterinary offices, morgues, mortuaries, autopsy facilities, laboratories, nursing and convalescent homes and clinics shall have a reduced pressure zone backflow prevention assembly installed on all service connections supplying potable water to their premises.
- 7.5.3** All hotels and apartments served with master meters shall have a double check valve backflow prevention assembly installed at the service connection, unless a reduced pressure zone backflow prevention assembly is required for some other

reason outlined herein.

- 7.5.4** All toxic chemical manufacturers shall have a reduced pressure zone backflow prevention assembly installed at the service connection.
- 7.5.5** All sewage treatment plants and lift stations shall have a reduced pressure zone backflow prevention assembly installed at the service connection.
- 7.5.6** Dairies, breweries, and beverage plants shall have a reduced pressure zone or double check valve backflow prevention assembly installed at the service connection, depending on the degree of hazard.
- 7.5.7** Schools, colleges, restaurants and any facilities generating steam shall have a double check valve or reduced pressure zone backflow prevention assembly installed at the service connection, depending upon the degree of hazard.
- 7.5.8** Service stations and commercial car washing facilities shall have a reduced pressure zone backflow prevention assembly installed at the service connection or shall have and approved air gap at all possible cross-connections.
- 7.5.9** All irrigation systems shall have a double- check valve backflow prevention assembly installed at the service connection, unless the system utilizes chemical siphoning or injection apparatus, in which case a reduced pressure zone backflow prevention assembly shall be required at the service connection.
- 7.5.10** All fire sprinkler systems shall require a reduced pressure zone backflow prevention assembly.
- 7.5.11** All commercial and residential properties with ¾” or 1” service and meter connections shall have a dual check valve installed at the service connection. This installation will be by *Anniston Water Works and Sewer Board* at the time of service installation, and such costs will be included in the tapping fee.
- 7.5.12** **All commercial poultry, livestock and animal processing facilities shall have a reduced pressure zone backflow prevention assembly device on all water connections to the premises.**

7.6. EXCEPTIONS AND CLARIFICATIONS

The *General Manager* or his authorized representative may downgrade or upgrade any of the backflow prevention requirements contained herein on a case-by-case basis. Clarifications and interpretations of these regulations may also be made, and the *General Manager's* decisions shall be final and binding.

SECTION 8 - APPROVAL OF DEVICES

- 8.1 Any backflow-prevention assembly required herein shall be a model and size approved by the *Anniston Water Works and Sewer Board*. The term *approved backflow-prevention assembly* shall mean an assembly that has been investigated and approved by the *Anniston Water Works and Sewer Board* and that has been manufactured in full conformance with the standards established by the American Water Works Association titled:

ANSI/AWWA C510-89-Standard for Double Check Valve Backflow-Prevention Assembly, and AWWA C511-89-Standard for Reduced-Pressure Principle Backflow Prevention Assembly, and have met completely the laboratory and field performance specifications of the Foundation for Cross-Connection Control and Hydraulic Research (FCCCHR) of the University of Southern California established by "Specification of Backflow-Prevention Assemblies" - Sec. 10 of the most current issue of the *Manual of Cross-Connection Control*.

Said AWWA and FCCCHR standards and specifications have been adopted by the *Anniston Water Works and Sewer Board*. Final approval shall be evidenced by a "Certificate of Approval" issued by an approved testing laboratory certifying full compliance with said AWWA standards and FCCCHR specifications.

The following testing laboratory has been qualified by the *Anniston Water Works and Sewer Board* to test and certify backflow prevention assemblies: 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 the *Engineering Department of the Anniston Water Works and Sewer Board*.

Backflow prevention assemblies that 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 testing or qualification.

SECTION 9 - TESTS, MAINTENANCE AND REPAIRS

- 9.1** All backflow prevention devices, whether existing or new, shall be maintained in a safe and reliable operating condition. It shall be the duty and responsibility of the customer to have a thorough inspection and operational test at the time of installation of backflow prevention assemblies not installed by the *Anniston Water Works and Sewer Board*.
- 9.1.1** The cost of inspection, testing, maintenance and repair of all backflow prevention devices shall be borne by the customer.
- 9.1.2** All devices failing to meet performance standards of AWWA, ASSE, FCCCHR of USC or any other prescribed standard shall be promptly repaired and retested. Any devices exhibiting a history of sub-standard performance shall be placed on a more frequent testing schedule, and continued failure to meet the standards shall require replacement with new devices.
- 9.1.3** Test procedures for all backflow prevention devices shall be as outlined in the USC FCCCHR; Manual of Cross-Connection Control, latest edition.
- 9.1.4** It shall be the duty of the customer-user at any premises where RPZ or DCV backflow prevention assemblies are installed to have certified inspections and operational tests made at least once per year. In those instances where the *Anniston Water Works and Sewer Board* deems the hazard to be great enough, certified inspections may be required at more frequent intervals. These inspections and tests shall be at the expense of the water user and shall be performed by the assembly manufacturer's representative, or by a certified tester approved by the *Anniston Water Works and Sewer Board*.

*At the discretion of the **General Manager** or his authorized representative service may be terminated until such time that the customer meets the requirements for annual testing and inspection of a backflow prevention device covered under this policy. Or, he may order the testing and certification of such a device and bill to the customer for all costs associated there with in the manner customary for billing of other services for customers and within the time limits and penalties regarding payment that are usual and customary for the Board.*

These assemblies shall be repaired, overhauled, or replaced at the expense of the customer-user whenever said assemblies are found to be defective. Records of such tests, repairs, and overhaul shall be kept for five years and a copy sent to:

***Anniston Water Works and Sewer Board
ATTN: Engineering Department
P. O. Box 2268
Anniston, AL 36202***

- 9.2** All presently installed backflow-prevention assemblies that do not meet the requirements of this section but were approved assemblies for the purpose described herein at the time of installation and that have been properly maintained, shall, except for the inspection and

maintenance requirements under subsection 3.2.6, be excluded from the requirements of this policy so long as the **Anniston Water Works and Sewer Board** is assured that they will satisfactorily protect the utility system. Whenever the existing assembly is moved from the present location, requires more than minimum maintenance, or when the **Anniston Water Works and Sewer Board** finds that the maintenance constitutes a hazard to health, the unit shall be replaced by an approved backflow-prevention assembly meeting the requirements of this policy. This provision shall be invalid where operation of law or administrative codes change and such exemptions or exceptions are no longer legal or approved by the regulatory authority having jurisdiction over such matters.

- 9.3** If a backflow prevention device is found to be inoperative or malfunctioning, the customer will be given a reasonable time to bring the device into compliance. Unless otherwise agreed to by **Anniston Water Works and Sewer Board**, thirty (30) days shall be considered a reasonable time for correction to be made.
- 9.3.1** An exception to the time period shall be based on each case involving actual or imminent system contamination, which may require immediate or more rapid correction measures, as determined by **Anniston Water Works and Sewer Board**.
- 9.3.2** If corrective measures are not taken in the prescribed time; termination of water service may be recommended, and the customer shall be issued a certified letter of intent to terminate service. If the customer complies with the corrections prior to the deadline stated in this letter, termination procedures will be stopped. Otherwise, the **General Manager** or his authorized representative shall cause the water service to the building or premises to be terminated and may take any other such precautionary measure deemed necessary to prevent or eliminate any danger of contamination of the Public Potable Water Supply System.
- 9.3.3** The **General Manager** or his authorized representative may cause termination of service if a reduced pressure backflow prevention assembly has been bypassed or failed to be tested as required herein.
- 9.3.4** The **General Manager** or his authorized representative may cause termination of service if an air- gap separation system is compromised or altered so as not to be functional as a backflow prevention device.
- 9.3.5** The **General Manager** or his authorized representative may cause termination of service if; in his opinion, a hazardous condition exists which cannot be immediately corrected.
- 9.3.6** If any case where water service has been terminated for failure to comply with these regulations, service shall not be restored until the system has been brought into full compliance and a written order to reconnect has been given by the **General Manager** or his authorized representative. Any and all costs associated with termination and reconnection of water service shall be paid by the customer prior to restoration of service.

SECTION 10 - INSTALLATION OF DEVICES

- 10.1 All backflow prevention devices shall be installed in a location that provides a safe working environment for testing and maintenance. The installed location shall be readily and easily accessible, dry, free from extreme cold, heat, and/or electrical hazards. All devices shall be installed in an area where water spillage is not objectionable.
- 10.2 All backflow devices shall be installed using a coupling to facilitate removal of the device.
- 10.3 Installations shall be performed by a duly licensed plumber, mechanical or utility contractor, or *Anniston Water Works and Sewer Board* Crews, and shall be approved by *Anniston Water Works and Sewer Board*.
- 10.4 When a dual or double check valve backflow prevention assembly is used, it shall be installed at or as close to the service connection or meter as practical, in an approved meter box, covered vault or insulated enclosure.
- 10.5 When a reduced pressure zone backflow prevention assembly is used, it shall be installed at or as close to the service connection or meter as practical and shall be above ground in a structure to protect from freezing if possible. The above ground structure must meet *Anniston Water Works and Sewer Board approval for* reduced pressure zone backflow prevention assembly enclosure.
- 10.6 Facilities which must have a continuous uninterrupted water supply shall install backflow prevention devices in parallel for testing and maintenance purposes. *Anniston Water Works and Sewer Board* will not accept an unprotected bypass around a reduced pressure-zone backflow prevention assembly unless the bypass is also equipped with an approved backflow prevention device.
- 10.7 All vaults containing backflow devices shall have a removable top to facilitate removal or repair of the device.
- 10.8 Installation of all backflow prevention devices shall be in accordance with this policy, and any other applicable Codes and Regulations, as well as the manufacturer's recommendations.

Section 11 - Service Applications Requiring Backflow Prevention Devices

Type of Facility	Minimum BFP Device
Breweries, Distilleries, Bottling Plants	RPZ
Car Wash, Convenience Store with Car Wash	RPZ
Chemical Plants	RPZ
Dairies	RPZ
Dentist Office	RPZ
Fertilizer Plants	RPZ
Film Laboratory or Processing Plant	RPZ
Fire Lines	RPZ
Food or Beverage Plant	RPZ
Hospitals, Clinics, Medical Buildings	RPZ
Irrigation Systems	DC / RPZ (*)
Laboratories	RPZ
Laundries & Dry Cleaning Plants	DC
Machine Tool Plants	RPZ / DC (ψ)
Meat, Fish, Poultry Packing or Processing Houses	RPZ
Metal Processing	RPZ / DC (ψ)
Metal Plating	RPZ
Morgues or Mortuaries (Embalming establishments)	RPZ
Nursing Homes	RPZ
Paper Products Plant	RPZ
Pesticides (Exterminating Companies)	RPZ
Petroleum Processing Plant	RPZ
Petroleum Storage Yard	RPZ / DC (ψ)
Pharmaceutical or Cosmetic Plant	RPZ
Piers, Docks, or Waterfront Facilities	RPZ
Power Plants	RPZ
Radioactive Materials Plants	RPZ
Restaurants, with Industrial type Garbage Disposals	RPZ
Sand and Gravel Plants	DC
Schools with Laboratories	RPZ
Schools, Colleges, Restaurants, etc., generating steam	RPZ / DC (ψ)
Service Stations and Gas Stations (with Car Wash)	RPZ
Sewage Treatment Plants (a.k.a. Waste Treatment Plants)	RPZ
Sewage Pumping Stations	RPZ
<u>Swimming Pools with Piped Fill Lines</u>	RPZ
Multi-Story Buildings (anything over one story)	RPZ
Veterinary Establishments	RPZ
Premises having auxiliary water system not connected to the Anniston Water Works and Sewer Board Water System (wells, springs, County Water, a private reservoir on site, etc.).	RPZ
Restricted, Classified, or Closed Facilities (the Cross-connection Hazard will be considered highest in these cases)	RPZ

Facilities having multiple connections to <i>Anniston Water Works and Sewer Board</i> Water system (ex. service connections from two different streets to the same corner building, where internal plumbing may be cross-connected internally).	RPZ
Hotels, Apartment Houses, Public and Private Buildings, or any Other Structures Having Unprotected Cross-Connections	RPZ
Buildings with Cooling Towers, Reservoirs, and circulating systems (which may be contaminated with bird dropping vermin, algae, bacterial slimes, etc.)	RPZ / Air Gap

RPZ =	Reduced Pressure Zone Backflow Prevention Device
DC =	Double Check Backflow Prevention Device
Air Gap =	A device which creates a physical separation between the discharge end of the system plumbing and any containment vessel of the customer.
DuC =	Dual Check Valve Backflow Prevention Device

(ψ)	Type Device determined by degree of Hazard (Contamination / Pollution)
(*)	RPZ Device may be downgraded to DC Device on case-by-case basis.
(:j:)	Air Gap must be permanent structure that cannot be defeated and is observable from a distance.

Section 12 - Typical Backflow Prevention Device Test Form

Backflow Prevention Device Test Form																												
Customer		Contact Person																										
Name:		Name:																										
Address:		Phone:																										
City:		Zip code:	Title:																									
Business Category:			Application:																									
Device																												
Type:	Size:	Model:	Serial #:																									
Device Location:																												
Condition:			Access:																									
Shut-off Valve Types: <input type="checkbox"/> O.S.& Y. <input type="checkbox"/> N.R.S. <input type="checkbox"/> Ball <input type="checkbox"/> Wheel																												
Test ports on device and in working order: <input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4																												
Valve status prior to testing:		No.1 Shut-off <input type="checkbox"/> Closed <input type="checkbox"/> Open <input type="checkbox"/> Device cannot be tested as is. (See Remarks) No.2 Shut-off <input type="checkbox"/> Closed <input type="checkbox"/> Open																										
Test	Date:	Time:	Static Line Pressure: p.s.i.																									
Double Check [DC]		Reduced Pressure [RPZ]																										
<table border="0" style="width: 100%;"> <tr> <td style="text-align: right; padding-right: 10px;">→</td> <td style="border: 1px solid black; padding: 2px;">No.1 Shut-off Valve: <input type="checkbox"/> Closed Tight <input type="checkbox"/> Leaked</td> <td style="text-align: left; padding-left: 10px;">←</td> </tr> <tr> <td style="text-align: right; padding-right: 10px;">→</td> <td style="border: 1px solid black; padding: 2px;">No.2 Shut-off Valve: <input type="checkbox"/> Closed Tight <input type="checkbox"/> Leaked</td> <td style="text-align: left; padding-left: 10px;">←</td> </tr> <tr> <td style="text-align: right; padding-right: 10px;">→</td> <td style="border: 1px solid black; padding: 2px;">Pressure drop across No.1 Check valve: p.s.i.</td> <td style="text-align: left; padding-left: 10px;">←</td> </tr> <tr> <td style="text-align: right; padding-right: 10px;">→</td> <td style="border: 1px solid black; padding: 2px;">Pressure drop across No.2 Check valve: p.s.i.</td> <td style="text-align: left; padding-left: 10px;">←</td> </tr> <tr> <td style="text-align: right; padding-right: 10px;">→</td> <td style="border: 1px solid black; padding: 2px;">Against reverse pressure of 10 p.s.i., No.1 Check valve: <input type="checkbox"/> Closed Tight <input type="checkbox"/> Leaked</td> <td style="text-align: left; padding-left: 10px;">←</td> </tr> <tr> <td style="text-align: right; padding-right: 10px;">→</td> <td style="border: 1px solid black; padding: 2px;">Against reverse pressure of 10 p.s.i., No.2 Check valve: <input type="checkbox"/> Closed Tight <input type="checkbox"/> Leaked</td> <td style="text-align: left; padding-left: 10px;">←</td> </tr> <tr> <td style="text-align: right; padding-right: 10px;">→</td> <td style="border: 1px solid black; padding: 2px;">Differential Pressure Relief valve opened at: p.s.i. <input type="checkbox"/> Did not open.</td> <td style="text-align: left; padding-left: 10px;">←</td> </tr> </table>		→	No.1 Shut-off Valve: <input type="checkbox"/> Closed Tight <input type="checkbox"/> Leaked	←	→	No.2 Shut-off Valve: <input type="checkbox"/> Closed Tight <input type="checkbox"/> Leaked	←	→	Pressure drop across No.1 Check valve: p.s.i.	←	→	Pressure drop across No.2 Check valve: p.s.i.	←	→	Against reverse pressure of 10 p.s.i., No.1 Check valve: <input type="checkbox"/> Closed Tight <input type="checkbox"/> Leaked	←	→	Against reverse pressure of 10 p.s.i., No.2 Check valve: <input type="checkbox"/> Closed Tight <input type="checkbox"/> Leaked	←	→	Differential Pressure Relief valve opened at: p.s.i. <input type="checkbox"/> Did not open.	←	<table border="0" style="width: 100%;"> <tr> <td style="text-align: left; padding-left: 10px;">←</td> <td style="border: 1px solid black; height: 40px;"></td> <td style="text-align: right; padding-right: 10px;">←</td> </tr> </table>			←		←
→	No.1 Shut-off Valve: <input type="checkbox"/> Closed Tight <input type="checkbox"/> Leaked	←																										
→	No.2 Shut-off Valve: <input type="checkbox"/> Closed Tight <input type="checkbox"/> Leaked	←																										
→	Pressure drop across No.1 Check valve: p.s.i.	←																										
→	Pressure drop across No.2 Check valve: p.s.i.	←																										
→	Against reverse pressure of 10 p.s.i., No.1 Check valve: <input type="checkbox"/> Closed Tight <input type="checkbox"/> Leaked	←																										
→	Against reverse pressure of 10 p.s.i., No.2 Check valve: <input type="checkbox"/> Closed Tight <input type="checkbox"/> Leaked	←																										
→	Differential Pressure Relief valve opened at: p.s.i. <input type="checkbox"/> Did not open.	←																										
←		←																										
Valve status upon completion of testing:		No.1 Shut-off <input type="checkbox"/> Closed <input type="checkbox"/> Open No.2 Shut-off <input type="checkbox"/> Closed <input type="checkbox"/> Open		Based on these results, this device has: <input type="checkbox"/> Passed <input type="checkbox"/> Failed																								
<input type="checkbox"/> This device requires repairs before testing / re-testing. (See Remarks)			Tester's Name: _____ Signed: _____ <small style="text-align: center;">PLEASE PRINT</small>																									
Remarks																												