

**ORANGE WATER & SEWER AUTHORITY
ORDINANCE FOR THE CONTROL OF
BACKFLOW AND CROSS-CONNECTIONS**

SECTION 1. CROSS-CONNECTION CONTROL - GENERAL POLICY

1.1 INTRODUCTION

The purpose of this Cross-Connection Control Ordinance is to define Orange Water and Sewer Authority (OWASA) as the water purveyor in the elimination of all cross-connections within its public potable water supply.

This Ordinance shall apply to all consumers connected to OWASA's public potable water supply.

This Ordinance will comply with the Federal Safe Drinking Water Act (P.L. 93-523), the North Carolina State Administrative Code (Title 15A, Subchapter 8C), and the North Carolina State Building Code (Volume II) as they pertain to cross-connections with the public water supply.

In accordance with General Statute 162A-9.1, OWASA is authorized and empowered to adopt this ordinance

1.2 OBJECTIVE OF ORDINANCE

The specific objectives of the Cross-Connection Control Ordinance are as follows:

1.2.1 To protect the public potable water supply of OWASA from the possibility of contamination or pollution by isolating within the consumer's water system such contaminants, waterborne health hazards and other significant pollutants which could backflow into the public water systems.

1.2.2 To eliminate or control existing cross-connections, actual or potential, between the consumer's potable water system(s) and nonpotable water system(s), plumbing fixtures and industrial piping systems.

1.2.3 To provide a continuing inspection program of cross-connection control which will systematically and effectively control all actual or potential cross-connections which may be installed in the future.

1.3 DESIGNATION OF RESPONSIBILITY

1.3.1 Health Agency's Responsibility

The North Carolina Department of Environment and Natural Resources (Division of Environmental Health) has the responsibility for promulgating and enforcing laws, rules, regulations, and policies applicable to all water purveyors in the State of North Carolina

in carrying out an effective Cross-Connection Control Program.

The Division of Environmental Health also has the primary responsibility of ensuring that the water purveyor operates a public potable water system free of actual or potential sanitary hazards including unprotected cross-connections. The Division of Environmental Health also has the responsibility of ensuring that the water purveyor provides an approved water supply at the service connection to the consumer's water system and, further, that the purveyor requires the installation, testing, and maintenance of an approved backflow prevention assembly on the service connection when required.

1.3.2. OWASA's Responsibility

Except as otherwise provided herein, OWASA is the water purveyor and is responsible for ensuring a safe water supply begins at the source and includes all of the public water distribution system, including the service connection, and ends at the point of delivery to the consumers water systems. In addition, OWASA shall exercise reasonable vigilance to ensure that the consumer has taken the proper steps to protect the public potable water system. OWASA will determine the degree of hazard or potential hazard to the public potable water system, the degree of protection required, and will ensure proper containment protection through an ongoing inspection program. OWASA will identify all facilities where approved backflow prevention assemblies are required to be installed.

When it is determined that a backflow prevention assembly is required for the protection of the public system, OWASA shall require the consumer, at the consumer's expense, to install an approved backflow prevention assembly at service connection, to test immediately upon installation and thereafter at frequency as determined by OWASA, to properly repair and maintain assembly or assemblies and to keep adequate records of each test and subsequent maintenance and repair, including materials and/or replacement parts.

1.3.3. Plumbing Inspectors Responsibility

The plumbing inspection departments of the Town of Chapel Hill, Town of Carrboro, University of North Carolina, and Orange Country have the responsibility to not only review building plans and inspect plumbing as it is installed but, they have the explicit responsibility of preventing cross-connections from being designed and built into the plumbing system within its jurisdiction. Where the review of building plans suggests or detects the potential for cross-connections being made an integral part of the plumbing system, the plumbing inspector has the responsibility, under the North Carolina Building Code, for requiring that such cross-connections be either eliminated or provided with backflow prevention equipment approved by the North Carolina State Building Code.

The plumbing inspector's responsibility begins at the point of delivery downstream of the first installed backflow prevention assembly and continues throughout the entire length of the consumer's water system. The inspector should inquire about the intended use of water at any point where it is suspected that a cross-connection might be made or where one is actually called for by the plans. When such is discovered it shall be mandatory

that a suitable, approved backflow prevention assembly approved by the North Carolina Building Code, North Carolina Department of Environment and Natural Resources and OWASA be required by the plans and be properly installed.

1.3.4. Consumer Responsibility

The consumer has the primary responsibility of preventing pollutants and contaminants from entering his/her potable water system or the public potable water system. The consumer's responsibility starts at the point of delivery from the public potable water system and includes all of his/her water system. The consumer, at his/her expense, shall install, operate, test, and maintain approved backflow prevention assemblies as directed by OWASA. The consumer shall maintain accurate records of tests and repairs made to backflow prevention assemblies and shall maintain such records for a minimum period of three (3) years. The records shall be on forms approved by OWASA and shall include the list of materials or replacement parts used. Following any repair, overhaul, repiping, or relocation of an assembly, the consumer shall have it tested to ensure that it is in good operating condition and will prevent backflow. Tests, maintenance and repairs of backflow prevention assemblies shall be made by a Certified Backflow Prevention Assembly Tester.

1.3.5. Certified Backflow Prevention Assembly Tester Responsibility

When employed by the consumer to test, repair, overhaul, or maintain backflow prevention assemblies, a Certified Backflow Prevention Assembly Tester (Tester) will have the following responsibilities:

The Tester will be responsible for making competent inspections and for repairing, or overhauling backflow prevention assemblies and making reports of such repair to the consumer and OWASA on forms approved by OWASA. The Tester shall include the list of materials or replacement parts used. The Tester shall be equipped with and be competent to use all the necessary tools, gauges, manometers and other equipment necessary to properly test, repair, and maintain backflow prevention assemblies. It will be the Tester's responsibility to ensure that original manufactured parts are used in the repair of or replacement of parts in a backflow prevention assembly. It will be the Tester's further responsibility not to change the design, material or operational characteristics of an assembly during repair or maintenance without prior approval of OWASA. A Tester shall perform the work and be responsible for the competency and accuracy of all tests and reports. The Tester shall provide a copy of all test and repair reports to the consumer and to OWASA within ten (10) business days of any completed test or repair work. A Tester shall maintain such records for a minimum period of three (3) years.

All Certified Backflow Prevention Assembly Testers must obtain and employ backflow prevention assembly test equipment which has been evaluated and/or approved by OWASA. All test equipment shall be registered with OWASA. All test equipment shall be checked for accuracy annually (at a minimum), calibrated, if necessary, and certified to OWASA as to such calibration, employing an accuracy/calibration method acceptable to OWASA.

SECTION 2. DEFINITIONS

2.1 Air gap. The term "air gap" shall mean a physical separation between the free-flowing discharge end of a potable water supply pipeline and an open or nonpressure receiving vessel. An "approved air gap" shall be at least double the diameter of the supply pipe measured vertically above the overflow rim of the vessel - in no case less than 1 inch (2.54 cm).

2.2 Atmospheric Type Vacuum Breaker. The term "atmospheric type vacuum breaker" (also known as the "nonpressure type vacuum breaker") shall mean a device containing a float-check, a check seat, and an air inlet port. The flow of water into the body causes the float to close the air inlet port. When the flow of water stops the float falls and forms a check valve against back-siphonage and at the same time opens the air inlet port to allow air to enter and satisfy the vacuum. A shutoff valve immediately upstream may be an integral part of the device. An atmospheric vacuum breaker is designed to protect against a nonhealth hazard (isolation protection only) under a back-siphonage condition only.

2.3 Auxiliary Water Supply. Any water supply on or available to the premises other than the purveyor's approved public water supply will be considered as an auxiliary 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 term "backflow" shall mean 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 supply of water from any source or sources. See terms Backpressure (2.7) and Backsiphonage (2.8).

2.5 Backflow Prevention Assembly - Type

A "backflow prevention assembly" shall mean an assembly used to prevent backflow into a consumer or public potable water system. The type of assembly used should be based on the degree of hazard either existing or potential (as defined herein). The types are:

- a. Double-Check Valve Assembly (DCVA)
- b. Double-Check Detector Assembly (Fire System) (DCDA)
- c. Pressure Vacuum Breaker (PVB)
- d. Reduced Pressure Principle Assembly (RP)
- e. Reduced Pressure Principle-Detector Assembly (Fire System) (RPDA)

2.6 Certified Backflow Prevention Assembly Tester. The term "Certified Backflow Prevention Assembly Tester" (Tester) shall mean a person who has proven their competency to the satisfaction of OWASA. Each person who is certified to make competent tests, or to repair, overhaul, and make reports on backflow prevention assemblies shall be knowledgeable of applicable laws, rules, and regulations, shall be a licensed plumber or have at least two (2) years experience under and be employed by a

North Carolina licensed plumber or plumbing contractor, or have equivalent qualifications acceptable to OWASA, and must hold a certificate of completion from an approved training program in the testing and repair of backflow prevention assemblies.

2.7 Backpressure. The term "backpressure" shall mean any elevation of pressure in the downstream piping system (by pump, elevation of piping, or steam and/or air pressure) above the supply pressure at the point of consideration which would cause, or tend to cause, a reversal of the normal direction of flow.

2.8 Backsiphonage. The term "backsiphonage" shall mean a form of backflow due to a reduction in system pressure which causes a subatmospheric pressure to exist at a site in the water system.

2.9 Approved Check Valve. The term "approved check valve" shall mean a check valve that is drip-tight in the normal direction of flow when the inlet pressure is at least one (1) psi and the outlet pressure is zero. The check valve shall permit no leakage in a direction reversed to the normal flow. The closure element (e.g. clapper, poppet, or other design) shall be internally loaded to promote rapid and positive closure. An approved check valve is only one component of an approved backflow prevention assembly - i.e., pressure vacuum breaker, double-check valve assembly, double-check detector assembly, reduced pressure principle assembly, or reduced pressure detector assembly.

2.10 Consumer. The term "consumer" shall mean any person, firm, or corporation using or receiving water from OWASA water system.

2.11 Consumer's Water System. The term "consumer's water system" shall include any water system commencing at the point of delivery and continuing throughout the consumer's plumbing system located on the consumer's premises, whether supplied by a public potable water or an auxiliary water supply. The systems may be either a potable water system or an industrial piping system.

2.12 Consumer's Potable Water System. The term "consumer's potable water system" shall mean that portion of the privately owned potable water system lying between the point of delivery and point of use and/or isolation protection. This system will include all pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to produce, convey, store, or use potable water.

2.13 Containment. The term "containment" shall mean preventing the impairment of the public potable water supply by installing an approved backflow prevention assembly at the service connection.

2.14 Contamination. The term "contamination" shall mean an impairment of the quality of the water which creates a potential or actual hazard to the public health through the introduction of hazardous or toxic substances or waterborne health hazards in the form of physical or chemical contaminants or biological organisms and pathogens.

2.15 Cross-Connection. A "cross-connection" shall mean any unprotected actual or potential connection or structural arrangement between a public or a consumer's water

system and any other source or system through which it is possible to introduce any contamination or pollution, other than the intended potable water with which the system is supplied. Bypass arrangements, jumper connections, removable sections, swivel or changeover devices, and other temporary or permanent devices through which or because of which "backflow" can or may occur are considered to be cross-connections.

2.16 Double-Check Valve Assembly. The term "double-check valve assembly" shall mean an assembly composed of two (2) independently acting, approved check valves, including tightly closing shut-off valves attached at each end of the assembly and fitted with properly located test cocks. This assembly shall only be used to protect against a nonhealth hazard (i.e., pollutant). Device must be approved by Foundation for Cross-Connection Control and Hydraulic Research.

2.17 Double-Check-Detector Assembly. The term "double-check-detector assembly" shall mean a specially designed assembly composed of a line-size approved double-check valve assembly with a specific bypass water meter and a meter-sized approved double-check valve assembly. The meter shall register (in U.S. gallons) accurately for only very low rates of flow and shall show a registration for all rates of flow. This assembly shall only be used to protect against a nonhealth hazard (i.e., pollutant). Device must be approved by Foundation for Cross-connection Control and Hydraulic Research.

2.18 Degree Of Hazard. The term "degree of hazard" shall be derived from the evaluation of conditions within a system which can be classified as either a "pollutional" (nonhealth) or a contaminations (health) hazard.

2.19 Health Hazard. The term "health hazard" shall mean an actual or potential threat of contamination of a physical, chemical, biological, pathogenic or toxic nature to the public or consumer's potable water system to such a degree or intensity that there would be a danger to health. Examples of waterborne health hazards include but are not limited to:

Physical - radioisotopes/radionuclides;

Chemical - lead, mercury and other heavy metals, organic compounds, other

Biological - microorganisms and pathogens like cryptosporidium, typhoid,

toxics a
cholera

2.20 Nonhealth Hazard. The term "nonhealth hazard" shall mean an actual or potential threat to the quality of the public or the consumer's potable water system. A nonhealth hazard is one that, if introduced into the public water supply system could be a nuisance to water customers but would not adversely affect human health.

2.21 Pollutional Hazard. The term "pollutional hazard" shall mean an actual or potential threat to the quality or the potability of the public or the consumer's potable water system but which would not constitute a health or a system hazard, as defined. The maximum degree or intensity of pollution to which the potable water system could be degraded under this definition would cause a nuisance or be aesthetically objectionable or could cause minor damage to the system or its appurtenances

2.22 Health Agency. The term "health agency" shall mean the North Carolina Department of Environment and Natural Resources.

2.23 Industrial Fluids. The term "industrial fluids" shall mean any fluid or solution which may be chemically, biologically, or otherwise contaminated or polluted in a form or concentration such as would constitute a health, or nonhealth hazard if introduced into a public or consumer potable water system. Such fluids may include, but are not limited to: process waters; chemicals in fluid form; acids and alkalis; oils, gases; etc.

2.24 Industrial Piping System. The term "industrial piping system" shall mean a system used by the consumer for transmission, conveyance or storage of any fluid, solid or gaseous substance other than an approved water supply. Such a system would include all pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to produce, convey,

2.25 Isolation. "Isolation" is the act of confining a localized hazard within a consumer's water system by installing approved backflow prevention assemblies. Disclaimer: OWASA may make recommendations, upon facility inspection, as to the usages of isolation devices/assemblies, but does not assume or have responsibility whatsoever for such installations.

2.26 Point Of Delivery. "Point of delivery" shall generally be at the back side of the meter, adjacent to the public street where the OWASA's water distribution mains are located. The consumer shall be responsible for all water piping and control devices located on the consumer's side of the point of delivery.

2.27 Pollution. The term "pollution" shall mean an impairment of the quality of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably affect the aesthetic qualities of such waters for domestic use.

2.28 Potable Water. The term "potable water" shall mean water from any source which has been approved for human consumption by the North Carolina Department of Environment and Natural Resources (NCDENR).

2.29 Public Potable Water System. The term "public potable water system" shall mean any publicly or privately owned water system operated as a public utility, under a current NCDENR permit, to supply water for public consumption or use. This system will include all sources, facilities, and appurtenances between the source and the point of delivery such as valves, pumps, pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to produce, convey, treat, or store a potable water for public consumption or use.

2.30 Reduced Pressure Principle Backflow Prevention Assembly. The term "reduced pressure principle backflow prevention assembly" shall mean an assembly containing within its structure a minimum of two (2) independently acting, approved check valves, together with a hydraulically operating, mechanically independent, pressure differential relief valve located between the check valves and at the same time below the first check valve. The first check valve reduces the supply pressure to a predetermined

amount so that during normal flow and at cessation of normal flow, the pressure between the checks shall be less than the supply pressure. In case of leakage of either check valve, the pressure differential relief valve, by discharge to atmosphere, shall operate to maintain the pressure between the checks less than the supply pressure.

The unit shall include tightly closing shutoff valves located at each end of the assembly and each assembly shall be fitted with properly located test cocks. The assembly is designed to protect against a health hazard (i.e., contaminant). Device must be approved by Foundation for Cross-Connection Control and Hydraulic Research.

2.31 Reduced Pressure Principle-Detector Assembly. The term "reduced pressure principle-detector assembly" shall mean a specially designed assembly composed of a line-size approved reduced pressure principle backflow prevention assembly with a specific bypass water meter and a meter-sized approved reduced pressure principle backflow prevention assembly. The meter shall register (in U.S. gallons) accurately for only very low rates of flow and shall show a registration for all rates of flow. This assembly shall be used to protect against health hazard (i.e., contaminant). Device must be approved by Foundation for Cross-Connection Control and Hydraulic Research.

2.32 Service Connections. The term "service connection" shall mean the terminal end of a service connection from the public potable water system, i.e., where OWASA loses jurisdiction and control over the water at its point of delivery to the consumer's water system.

2.33 Pressure Type Vacuum Breaker. The term "pressure type vacuum breaker" shall mean an assembly containing an independently operating internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve. The assembly is to be equipped with properly located test cocks and tightly closing shutoff valves attached at each end of the assembly. This assembly is designed to protect against a health hazard (i.e., contaminant) under a back-siphonage condition only.

2.34 Water Purveyor. The term "water purveyor" shall mean the consumer or operator of a public potable water system providing an approved water supply to the public.

2.35 Unapproved Water Supply. The term "unapproved water supply" shall mean a water supply which has not been approved for human consumption by the NCDENR.

2.36 Used Water. The term "used water" shall mean any water supplied by a water purveyor from a public water system to a consumer's water system after it has passed through the point of delivery and is no longer under the control of the water purveyor.

SECTION 3. RIGHT OF ENTRY

3.1 Upon presentation of proper credentials and identification, authorized representatives from OWASA shall have the right to enter any building, structure, or premises during normal business hours, or at any time during the event of an emergency

to perform any duty imposed by this Ordinance. Those duties may include sampling and testing of water, or inspections and observations of all piping systems connected to the public water supply. Where a consumer has security measures in force which would require proper identification and clearance before entry into their premises, the consumer shall make necessary arrangements with the security guards so that upon presentation of suitable identification, OWASA personnel will be permitted to enter without delay for the purpose of performing their specific responsibilities. Refusal to allow entry for these purposes may result in discontinuance of water service.

3.2 On request, the consumer shall furnish to OWASA any pertinent information regarding the water supply system on such property where cross-connections and backflow are deemed possible.

SECTION 4. ELIMINATION OF CROSS-CONNECTIONS: DEGREE OF HAZARD

4.1 When cross-connections are found to exist, the owner, his/her agent, occupant, or tenant will be notified in writing to disconnect the same within the time limit established by OWASA. The degree of protection required and maximum time allowed for compliance will be based upon the potential degree of hazard to the public water supply system. If, in the judgment of OWASA, an imminent health hazard exists water service to the building or premises where a cross-connection exists may be terminated unless an air gap is immediately provided, or the cross-connection is immediately eliminated. The maximum time limits are as follows:

4.2 Cross-connections with private wells or other auxiliary water supplies require immediate disconnection.

4.3 All facilities which pose a potential health hazard to the potable water system must have a reduced pressure principle backflow prevention assembly within 60 days of notification by OWASA.

4.4 All industrial and commercial facilities not identified as a "health hazard" shall be considered nonhealth hazard facilities. All nonhealth hazard facilities must install a double-check valve assembly within 90 days of notification by OWASA.

4.5 Water mains served by OWASA but not maintained by the OWASA shall be considered cross-connections, with degree of hazard to be determined by OWASA. Degree of protection shall be based upon the degrees of hazard, as determined by OWASA.

4.6 In the event that OWASA personnel do not have sufficient access to every portion of a private water system (i.e., classified research and development facilities; Federal government property) to allow a complete evaluation of the degree of hazard associated with such private water systems, an approved reduced pressure principle backflow prevention assembly shall be required as a minimum of protection.

4.7 No person shall fill special use tanks or tankers containing pesticides, fertilizers, other toxic chemicals or their residues from the public water system except at an

OWASA-approved location equipped with an air gap or an approved reduced pressure principle backflow prevention assembly properly installed on the public water supply.

SECTION 5. INSTALLATION OF ASSEMBLIES

5.1 All backflow prevention assemblies shall be installed in accordance with the specifications furnished by OWASA and/or in the latest edition of the North Carolina Building Code, whichever is most restrictive.

5.2 All new construction plans and specifications, when required by the North Carolina Building Code and the North Carolina Division of Environment Health, shall be made available to OWASA for review and approval and to determine the degree of hazard.

5.3 Ownership, testing, and maintenance of the assembly shall be the responsibility of the consumer.

5.4 All double-check valve assemblies must be installed in drainable pits wherever below ground installation is necessary, in accordance with detailed specifications provided by OWASA. Double-check valve assemblies may be installed in a vertical position with prior approval from OWASA, provided the flow of water is in an upward direction.

5.5 Reduced pressure principle backflow prevention assemblies must be installed in a horizontal position and in a location in which no portion of the assembly can become submerged in any substance under any circumstance. Pit and/or below grade installations are prohibited.

5.6 The installation of any backflow prevention assembly which is not approved by OWASA must be replaced by one which is approved by OWASA.

5.7 The consumer is responsible to make sure a backflow prevention assembly is working properly upon installation and is required to furnish the following information to OWASA within fifteen (15) days after a reduced pressure principle backflow preventer (RP), double-check valve assembly (DCVA), pressure vacuum breaker (PVB), double-check-detector assembly (DCDA), or reduced pressure principle detector assembly (RPDA) is installed:

- 5.7.1 Service address where assembly is located
- 5.7.2 Owner (and address, if different from service address)
- 5.7.3 Description of assembly's location
- 5.7.4 Date of installation
- 5.7.5 Installer (include name, plumbing company represented, plumber's license number)
- 5.7.6 Type of assembly and size of assembly
- 5.7.7 Manufacturer, model number, serial number
- 5.7.8 Test results/report

5.8 When it is not possible to interrupt water service, provisions shall be made for a "parallel installation" of backflow prevention assemblies. OWASA will not accept an unprotected bypass around a backflow preventer.

5.9 Upon notification by OWASA, the consumer shall install the appropriate containment assembly not to exceed the following time frame:

- Health Hazard.....60 days
- Nonhealth Hazard..... 90 days

5.10 Following installation, all RP, DCVA, PVB, DCDA, and RPDA are required to be tested by a certified backflow prevention assembly tester within ten (10) days.

SECTION 6. TESTING AND REPAIR OF ASSEMBLIES

6.1 Testing of backflow prevention assemblies shall be made by a certified backflow prevention assembly tester approved by OWASA. Such tests are to be conducted upon installation and annually thereafter or at a frequency established by OWASA. A record of all testing and repairs is to be retained by the consumer. Copies of the records must be provided to OWASA within ten (10) business days after the completion of any testing, and/or repair work.

6.2 Any time that repairs to backflow prevention assemblies are deemed necessary, whether through annual or required testing, or routine inspection by the consumer or by OWASA, these repairs must be completed within a specified time in accordance with the degree of hazard. In no case shall this time period exceed:

1. Health Hazard Facilities - 7 days
2. Non-Health Hazard Facilities - 21 days

6.3 All backflow prevention assemblies with test cocks are required to be tested annually or at a frequency established by OWASA.

6.4 All certified backflow prevention assembly testers must obtain and employ backflow prevention assembly test equipment which has been evaluated and/or approved by OWASA. All test equipment shall be registered with OWASA and shall be checked for accuracy annually (at a minimum), calibrated if necessary, and certified to OWASA as to such accuracy/calibration, employing a calibration method acceptable to OWASA (See Section 1.3.5).

6.5 It shall be unlawful for any consumer or certified backflow prevention assembly tester to submit any record to OWASA which is false or incomplete in any material respect. It shall be unlawful for any consumer or certified tester to fail to submit to OWASA any record which is required by this Ordinance. Such violations may result in any of the enforcement actions outlined in Section 10 of this Ordinance.

SECTION 7. FACILITIES REQUIRING PROTECTION

Approved backflow prevention assemblies shall be installed on the service line to any facility that OWASA has identified as having a potential for backflow.

The following types of facilities or services have been identified by OWASA as having a potential for backflow of nonpotable water into the public water supply system. Therefore, an approved backflow prevention assembly may be required on all such services according to the degree of hazard present. Other types of facilities or services not listed below may also be required to install approved backflow prevention assemblies if determined necessary by OWASA. As a minimum requirement, all commercial services will be required to install a double-check valve assembly, unless otherwise listed below.

Abbreviations:

- DCVA = Double-Check Valve Assembly
- RP = Reduced Pressure Principle Assembly
- DCDA = Double-Check Detector Assembly
- RPDA = Reduced Pressure Detector Assembly
- AG = Air Gap
- PVB = Pressure Vacuum Breaker

7.1 Automotive Services Stations, Dealerships, etc.

- a. No Health Hazard: DCVA
 - b. Health Hazard: RP
- 7.2 Auxiliary Water Systems:
- a. Approved Public/Private Water Supply: DCVA
 - b. Unapproved Public/Private Water Supply: AG
 - c. Used Water and Industrial Fluids: RP
- 7.3 Bakeries
- a. No Health Hazard: DCVA
 - b. Health Hazard: RP
- 7.4 Beauty Shops/Barber Shops
- a. No Health Hazard: DCVA
 - b. Health Hazard: RP
- 7.5 Beverage Bottling Plants: RP
- 7.6 Breweries: RP
- 7.7 Buildings - Hotels, apartment houses, public and private buildings, or other structures having unprotected cross-connections.
- a. (Under five stories) No Health Hazard: DCVA
 - b. (Under five stories) Health Hazard: RP
 - c. (Over five stories) All: RP
- 7.8 Canneries, packing houses, and rendering plants: RP
- 7.9 Commercial carwash facilities: RP
- 7.10 Commercial greenhouses: RP
- 7.11 Commercial sales establishments (department stores, malls, etc.)
- a. No Health Hazard: DCVA
 - b. Health Hazard: RP
- 7.12 Concrete/asphalt plants: RP
- 7.13 Dairies and cold storage plants: RP
- 7.14 Dye works: RP
- 7.15 Film laboratories: RP
- 7.16.1 Fire Systems 3/4"(inch) to 2"(inch)
- a. No Health Hazard: DCDA
 - b. Health Hazard: (Booster Pumps, Foam, Antifreeze Solution, etc.): RP

- 7.16.2 Fire Systems 2 1/2"(Inch) to 10"(inch) (or larger)
 - a. No Health Hazard: DCDA
 - b. Health Hazard: (Booster Pumps, Foam, Antifreeze Solution,etc.): RPDA
- 7.16.3 Fire Trucks: RP
- 7.17 Hospitals, medical buildings, sanitariums, morgues, mortuaries, autopsy facilities, nursing and convalescent homes, medical clinics, and veterinary hospitals: RP
- 7.18 Laundries:
 - a. No Health Hazard: DCVA
 - b. Health Hazard: (i.e., Dry Cleaners): RP
- 7.19 Lawn irrigation systems (split taps):
 - a. No Health Hazard: DCVA
 - b. Health Hazard: (Booster Pumps, Chemical Systems): RP
- 7.20 Metal manufacturing, cleaning, processing, and fabricating- plants: RP
- 7.21 Mobile home parks:
 - a. No Health Hazard: DCVA
 - b. Health Hazard: R-P
- 7.22 Oil and gas production, storage or transmission properties: RP
- 7.23 Pest control (exterminating and fumigating): RP
- 7.24 Power plants: RP
- 7.25 Restaurants:
 - a. No Health Hazard: DCVA
 - b. Health Hazard: RP
- 7.26 Restricted, classified, or other closed facilities: RP
- 7.27 Sand and gravel plants: RP
- 7.28 Schools and colleges: RP
- 7.29 Sewage and storm drain facilities: RP
- 7.30 Swimming Pools: RP
- 7.31 Waterfront facilities and industries: RP

All assemblies and installations shall be subject to inspection and approval by OWASA.

SECTION 8. CONNECTIONS WITH UNAPPROVED SOURCES OF SUPPLY

8.1 No person shall connect or cause to be connected any supply of water not approved by the NCDENR to the water system supplied by OWASA. Any connections allowed by OWASA must be in conformance with the backflow prevention requirements of this Ordinance.

8.2 In the event of contamination or pollution of a public or consumer potable water system, the consumer shall notify OWASA immediately in order that appropriate measures may be taken to overcome and eliminate the contamination or pollution.

SECTION 9. FIRE PROTECTION SYSTEMS

9.1 All connections for fire protection systems connected with the public water system 2" and smaller shall be protected with an approved double-check valve assembly as a minimum requirement. All fire systems using toxic additives or booster pumps shall be protected by an approved reduced pressure principle detector assembly at the main service connection.

9.2 All connections for fire protection systems connected with the public water system greater than two 2" shall be protected with an approved double-check detector assembly as a minimum requirement. All fire protection systems using toxic or hazardous additives or booster pumps shall be protected by an approved reduced pressure principle detector assembly at the main service connection.

9.3 All existing backflow prevention assemblies 2-1/2" and larger installed on fire protection systems that were initially approved by OWASA shall be allowed to remain on the premises, as long as they are being properly maintained, tested and repaired as required by this Ordinance. However, if the existing assembly must be replaced (once it can no longer be repaired), or in the event of proven water theft through an unmetered source, the consumer shall be required to install an approved double-check detector assembly or reduced pressure principle detector assembly as required by this provision.

SECTION 10. ENFORCEMENT

10.1 The consumer or person in charge of any installation found not to be in compliance with the provisions of this Ordinance shall be notified in writing with regard to the corrective action(s) to be taken.

10.2 Such notice must explain the violation and give the time period within which the violation must be corrected. The time period set to correct a violation shall not exceed 30-days after receiving notice unless otherwise specified by Section 4. If the violation has been determined by OWASA to be an imminent hazard the consumer shall be required to correct the violation immediately.

10.3 In the event a consumer is found in violation of this ordinance and fails to correct the violation in a timely manner or to pay any civil penalty or expense assessed under this section, water service may be terminated, and shall be reestablished when the violation is

corrected and any applicable civil penalties are paid.

10.4 The violation of any section of this ordinance may be punished by a civil penalty listed as followed:

10.4.1 Unprotected cross-connection involving a private water system which creates an imminent hazard - \$1,000.00 per day not to exceed \$10,000.00.

10.4.2 Unprotected cross-connection involving a private water system which is of a moderate or high hazard - \$500.00 per day not to exceed \$5,000.00.

10.4.3 If in the judgment of OWASA, any consumer, manager, supervisor, or person in charge of any installation is found to be in noncompliance with the provisions of this Ordinance and/or neglects their responsibility to correct a violation, water service may be discontinued until compliance is achieved.

10.4.4 Failure of a consumer or certified tester to submit any record required by this Ordinance, or the submission of falsified reports/records may result in a civil penalty of up to \$500.00 per violation. If a certified backflow prevention assembly tester submits falsified records to OWASA, OWASA shall permanently revoke that tester.

10.4.5 Failure to test or maintain backflow prevention assemblies as required - \$200.00 per day.

10.5 Enforcement of this program shall be administered by the Executive Director of OWASA or his/her authorized representative.