

# **Backflow Prevention Program**



**Brunswick-Glynn County  
Joint Water & Sewer Commission**

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Brunswick-Glynn County  
Joint Water & Sewer Commission  
**Backflow Prevention Program**

**I. Purpose**

A. To protect the public potable water supply served by the Brunswick-Glynn County Joint Water & Sewer Commission from the possibility of contamination or pollution by isolating, within its customers internal distribution system, such contaminants or pollutants which could backflow or backsiphon into the public water system.

B. To promote the elimination or control of existing cross-connections, actual or potential, between a non-residential potable water system, and non-potable systems.

C. To provide for the maintenance of a continuing program of cross-connection control which will effectively prevent the contamination or pollution of all potable water systems by cross-connection.

**II. Authority**

A. The United States Environmental Protection Agency Safe Drinking Water Act of 1974 and the Georgia Safe Drinking Water Act of 1977 state that the water purveyor has the primary responsibility for preventing water from unapproved sources, or any other substances, from entering the public potable water system.

B. The City of Brunswick and Glynn County ordinances, as adopted.

**III. Responsibility**

The Executive Director of the Joint Water & Sewer Commission shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow or backsiphonage of contaminants or pollutants through the water service connection. If, in the judgement of the Executive Director of the Joint Water & Sewer Commission, an approved backflow device is required at the water service connection to any customer's premises, the Executive Director, or his delegated agent, shall give notice in writing to said customer to install an approved backflow prevention device at each service connection to the premises. The customer shall, within 90 days, install such approved device, or devices, at the customer's own expense, and failure, refusal, or inability on the part of the customer to install said device or devices within 90 days, shall constitute a ground for discontinuing water service to the premises until such device or devices have been properly installed.

#### **IV. Definitions**

##### **A. Approved**

Approved by the Executive Director of the Joint Water & Sewer Commission as meeting an applicable specification stated or cited in this regulation, or as suitable for the proposed use.

##### **B. Auxiliary Water Supply**

Any water supply, on or available, to the premises other than the purveyor's approved public potable water supply.

##### **C. Backflow**

The flow of water or other liquids, mixtures or substances, under positive or reduced pressure in the distribution pipes of a potable water supply from any source other than its intended source.

##### **D. Backflow Preventer**

A device or means designed to prevent backflow or backsiphonage. Most commonly categorized as air gap, reduced pressure principle device, double check valve assembly, pressure vacuum breaker, atmospheric vacuum breaker, hose bibb vacuum breaker, dual check, double check with intermediate atmospheric vent, and barometric loop.

###### **D.1 Air Gap**

A physical separation sufficient to prevent backflow between the free-flowing discharge end of the potable water system and any other system. Physically defined as a distance equal to twice the diameter of the supply side pipe diameter but never less than one (1) inch.

###### **D.2 Atmospheric Vacuum Breaker**

A device that prevents backsiphonage by creating an atmospheric vent when there is either a negative pressure or sub-atmospheric pressure in a water system.

###### **D.3 Barometric Loop**

A fabricated piping arrangement rising at least thirty-five (35) feet at its topmost point above the highest fixture it supplies. It is utilized in water supply systems to protect against backsiphonage.

###### **D.4 Double Check Valve Assembly**

An assembly of two (2) independently operating spring loaded check valves with tightly closing shut off valves on each side of the check valves, plus properly located test cocks for the testing of each check valve.

#### D.5 Double Check Valve with Intermediate Atmospheric Vent

A device having two (2) spring loaded check valves separated by an atmospheric vent chamber.

#### D.6 Hose Bibb Vacuum Breaker

A device that is permanently attached to a hose bibb and which acts as an atmospheric vacuum breaker.

#### D.7 Pressure Vacuum Breaker

A device containing one or two independently operated spring loaded check valves and an independently operated spring-loaded air inlet valve located on the discharge side of the check or checks. Device includes tightly closing shut-off valves on each side of the check valves and properly located test cocks for the testing of the check valve(s).

#### D.8 Reduced Pressure Principle Backflow Preventer

An assembly consisting of two (2) independently operating approved check valves with an automatically operating differential relief valve located between the two (2) check valves, tightly closing shut-off valves on each side of the check valves plus properly located test cocks for the testing of the check valves and the relief valve. Also known as an RPZ or RP backflow preventer.

#### D.9 Dual Check Backflow Preventer

An assembly of two (2) spring loaded, independently operating check valves without tightly closing shut-off valves and test cocks. Generally employed immediately downstream of the water meter to act as a containment device.

### E. Backpressure

A condition in which the customer's system pressure is greater than the BGJWSC system pressure.

F. Backsiphonage

The flow of water or other liquids, mixtures or substances into the distribution pipes of the 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.

G. Commission

The Brunswick-Glynn County Joint Water & Sewer Commission. Also known as BGJWSC and JWSC.

H. Containment

A method of backflow prevention that requires a backflow preventer at the water service entrance.

I. Contaminant

A substance that will impair the quality of the water to a degree that it creates a serious health hazard to the public leading to poisoning or the spread of disease.

J. Cross-connection

Any actual or potential connection between the public water supply and a source of contamination or pollution.

K. Environmental Protection Division

The State of Georgia Environmental Protection Division of the Georgia Department of Natural Resources.

L. Executive Director

The Executive Director, or his/her delegated representative in the Brunswick-Glynn County Joint Water & Sewer Commission, is invested with the authority and responsibility for the implementation of a Backflow Prevention Program and for the enforcement of the provisions of the Ordinance.

M. Fixture Isolation

A method of backflow prevention in which a backflow preventer is located to correct a cross connection at an in-plant location rather than at a water service entrance. Interior connections are secondary to the primary device at the

public main connection and testing reports are not generally submitted to the utility.

N. Owner

Any person who has legal title to, or license to operate or habitat in, a property upon which a cross-connection inspection is to be made or upon which a cross-connection is present.

O. Permit

A document issued by the Joint Water & Sewer Commission that allows the use of a backflow preventer.

P. Person

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

Q. Pollutant

A foreign substance, that if permitted to get into the public water system, will degrade its quality so as to constitute a moderate hazard, or impair the usefulness or quality of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably effect such water for domestic use.

R. Program Specialist

The delegated representative of the Brunswick-Glynn County Joint Water & Sewer Commission as approved by the Executive Director of the Joint Water & Sewer Commission. The person is the administrator of the Backflow Prevention Program. Also known as the Backflow Compliance Coordinator.

S. Water Service Entrance

That point in the owner's water system beyond the sanitary control of the District; generally considered to be the outlet end of the water meter and always before any unprotected branch.

**V. Administration**

A. The Joint Water & Sewer Commission will operate a Backflow Prevention Program, to include the keeping of necessary records, which fulfills the requirements of the Commission's Cross-Connection Regulations as outlined in the Ordinance.

B. The Owner shall allow his property to be inspected for possible cross-connections and shall follow the provisions of the Joint Water & Sewer Commission's program and the Commission's Regulations if a cross-connection is permitted.

C. If the Joint Water & Sewer Commission requires that the public supply be protected by containment, the Owner shall be responsible for water quality beyond the outlet end of the containment device and should utilize fixture outlet protection for that purpose.

The Executive Director may utilize public health officials, or personnel from the Joint Water & Sewer Commission, or their delegated representatives, to assist him in the survey of his facilities and to assist him in the selection of proper fixture outlet devices, and the proper installation of these devices.

## **VI. Requirements**

### **A. Joint Water & Sewer Commission**

1. On new installments, the Joint Water & Sewer Commission will provide on-site evaluation and/or inspection of plans in order to determine the type of backflow preventer, if any, that will be required, will issue permit, and schedule routine inspection and testing. In any case, a minimum of a dual check valve will be required in any new construction.

2. For premises existing prior to the start of this program, the Joint Water & Sewer Commission will perform evaluations and inspections of plans and/or premises and inform the owner by letter of any corrective action deemed necessary, the method of achieving the correction, and the time allowed for the correction to be made. Ordinarily, ninety (90) days will be allowed, however, this time period may be shortened depending upon the degree of hazard involved and the history of the device(s) in question.

3. The Joint Water & Sewer Commission will not allow any cross-connection to remain unless it is protected by an approved backflow preventer for which a permit has been issued and which will be regularly tested to insure satisfactory operation.

4. The Joint Water & Sewer Commission shall inform the Owner by letter of any failure to comply by the time of the first re-inspection. The Joint Water & Sewer Commission will allow an additional fifteen (15) days for the correction. In the event the Owner fails to comply with the necessary correction by the time



of the second re-inspection, the Joint Water & Sewer Commission will inform the Owner by letter, that the water service to the Owner's premises will be terminated within a period not to exceed five (5) days. In the event that the Owner informs the Joint Water & Sewer Commission of extenuating circumstances as to why the correction has not been made, a time extension may be granted by the Joint Water & Sewer Commission but in no case will exceed an additional thirty (30) days.

5. If the Joint Water & Sewer Commission determines *at any time* that a serious threat to the public health exists, the water service will be terminated immediately.

6. The Joint Water & Sewer Commission shall have, on file, a list of Private Contractors who are certified backflow device testers. The Owner of the building or property will pay all charges for these tests.

B. Owner

1. The Owner shall be responsible for the elimination or protection of all cross-connections on his premises.

2. The Owner, after having been informed by a letter from the Joint Water & Sewer Commission, shall at his expense, install, maintain, and test, or have tested, any and all backflow preventers on his premises.

3. The Owner shall correct any malfunction of the backflow preventer that is revealed by periodic testing.

4. The Owner shall inform the Joint Water & Sewer Commission of any proposed or modified cross-connections and also any existing cross-connections of which the Owner is aware but has not been found by the Joint Water & Sewer Commission.

5. The Owner shall not install a by-pass around any backflow preventer unless there is a backflow preventer of the same type on the bypass. Owners who cannot shut down operation for testing of the device(s) must supply additional devices necessary to allow testing to take place.

6. The Owner shall install backflow preventers in a manner approved by the Joint Water & Sewer Commission.

7. The Owner shall install only backflow preventers approved by the Joint Water & Sewer Commission or the Commission.

8. Any Owner having a private well or other private water source must not cross-connect the well or source to the Joint Water & Sewer Commission's system.

9. In the event the Owner installs plumbing to provide potable water for domestic purposes, which is on the Joint Water & Sewer Commission's side of the backflow preventer, such plumbing must have its own backflow preventer installed.

10. The Owner shall be responsible for the payment of all fees for permits, annual or semi-annual device testing, re-testing in the case that the device fails to operate correctly, or has been found to be in non-compliance with Joint Water & Sewer Commission requirements.

## **VII. Degree of Hazard**

The Joint Water & Sewer Commission recognizes the threat to the public water system arising from cross-connections. All threats will be classified by degree of hazard, listed as low, medium and high risk.

A. Category I, High risk: A facility considered as a possible source of contaminates. This category would include hospitals, doctors and dentist offices, metal plating operations, chemical companies, facilities that have the capabilities of exerting back pressure on their water tap and other industrial businesses using toxic substances. These operations shall be required to install a reduced pressure principle backflow prevention assembly for maximum protection.

B. Category II, Medium risk: A facility considered as a possible source of pollutants. This category would include commercial businesses such as groceries, restaurants, day care centers, master-metered office buildings, and any business that has an auxiliary water supply. These operations shall be required to install either a reduced pressure principle backflow prevention assembly or a double check backflow prevention assembly dependant upon their required degree of protection.

C. Category III, Low risk: Considered to be least likely to be a source of contaminant or pollutant. Typically this would include single or duplex family dwellings or offices served by a single water meter. All low risk facilities shall be required to install a dual check backflow prevention assembly unless one has been previously supplied by the BGJWSC.

## **VIII. Permits**

The Joint Water & Sewer Commission shall not permit a cross-connection within the public water supply system unless it is considered necessary and that it cannot be eliminated.

A. Cross-connection permits that are required for each backflow prevention device are obtained from the Joint Water & Sewer Commission.

B. Permits shall be renewed annually for medium and high-risk devices and are non-transferable. Permits are subject to revocation and become immediately revoked if the Owner should so change the type of cross-connection or degree of hazard associated with the service.

C. A permit is not required when fixture isolation is achieved with the utilization of a non-testable backflow preventer, such as those dual check backflow prevention assemblies installed in Category III low-risk facilities.

**IX. Approval of Backflow Prevention Devices**

Any existing backflow preventer shall be allowed by the Joint Water & Sewer Commission to continue in service unless the degree of hazard is such as to supersede the effectiveness of the present backflow preventer, or result in an unreasonable risk to the public health. Where the degree of hazard has increased, any existing backflow preventer must be upgraded to a reduced pressure principle device or a reduced pressure principle device must be installed in the event that no backflow device was present.

All backflow prevention devices at the connection to the public system must be approved by the Joint Water & Sewer Commission in accordance with the applicable standards of the American Society of Sanitary Engineering, the American National Standard Institute, the American Water Works Association, the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research, the Standard Plumbing Codes and the Brunswick-Glynn County Joint Water & Sewer Commission Backflow Prevention Program.

**X. Periodic Testing**

A. All testable backflow prevention devices shall be tested and inspected at least annually.

B. Periodic testing shall be performed by a certified tester approved in advance by the Joint Water & Sewer Commission. This testing will be done at the owners' expense.

C. Any backflow preventer that fails during a periodic test will be repaired or replaced. When repairs are necessary, upon completion of the repair the device will be re-tested at owner expense to insure correct operation. High hazard situations will not be allowed to continue unprotected if the backflow preventer fails the test and cannot be repaired immediately. In other situations, a compliance date of not more than thirty (30) days after the test date will be established. The owner is responsible for spare parts, repair tools, or a replacement device. Parallel installation of two (2) devices is an effective means of the owner insuring that uninterrupted water service during testing or repair of devices and is strongly recommended when the owner desires such continuity.

D. Backflow prevention devices will be tested more frequently than specified in A., above, in cases where there is a history of test failures and the Joint Water & Sewer Commission feels that due to the degree of hazard involved, additional testing is warranted. Cost of the additional tests will be born by the owner.

## **XI. Records and Reports**

### **A. Records**

The Joint Water & Sewer Commission will initiate and maintain the following:

1. Master files on customer cross-connection tests and/or inspections.
2. Master files on cross-connection permits.
3. Paper and/or digital copies of each permit and permit application.
4. Paper and/or digital copies of lists and summaries supplied to the Commission.

### **B. Reports**

The Joint Water & Sewer Commission will make available the following to the State, as required:

1. Initial listing of high hazard cross-connections.
2. Initial listing of medium hazard cross-connections.
3. Initial listing of low hazard cross-connections.
4. Annual update lists of items 1, 2, and 3 above.
5. Annual summary of cross-connection inspections.

## **XII. Cross-Connection Emergency Response Plan**

All customer inquiries concerning water quality are directed to the Joint Water & Sewer Commission. When a complaint is received, it is evaluated over the phone with the customer. If the complaint is determined to be a potential problem, a member of the Joint Water & Sewer Commission is dispatched to the area reporting the problem. On arrival in the problem area, the technician will:

A. Make a preliminary judgment of the problem by checking odor and appearance.

B. If a cross-connection problem is suspected, notify the Executive Director immediately. If the preliminary report indicates the necessity, the Executive Director may activate follow up procedures before the samples are returned to the laboratory.

C. Pick up samples and return them for laboratory testing. When samples of the suspected water are returned to the laboratory immediate tests will be made to determine the nature of the pollutant or contaminant. If the limitations of

available test equipment prevent identification of the pollutant, the Georgia EPD will be contacted and a sample dispatched by a Joint Water & Sewer Commission courier for additional testing.

If follow up procedures are activated, at this point the Executive Director and the Backflow Compliance Coordinator are both contacted and notified of the situation. Beginning with the initial inspector's preliminary report, the Backflow Compliance Coordinator shall immediately examine the cross-connection control files to determine potential sources of contamination in the area of concern. The Executive Director will begin an evaluation of the problem and activate any or all of the following options he/she believes proper.

A. Direct the emergency line crews to open hydrants in the problem area and flush the lines.

B. If an identified potentially hazardous cross-connection is in the vicinity of the problem area (as shown on the location map with the hydrants and valves), he/she may contact the responsible persons (from the cross-connection control files) and with Joint Water & Sewer Commission personnel make an immediate inspection. If a cross-connection exists, it will be corrected or the water service disconnected. If the customer whom is responsible for the incident can be identified, said customer shall bear the cost of correcting the affected systems.

C. Direct the emergency line crews to close valves to isolate the problem area from the total distribution system.

D. Notify customers in the affected areas using existing emergency notification methods established for boil water advisories.

E. Should any testing or discovery during this emergency procedure reveal a health hazard contamination, additional checks to establish the problem area limits will be made, the problem area flushed and treated until proven safe. This situation would also involve using local radio and television media and Joint Water & Sewer Commission personnel to inform the public and make personal contact with each customer in the problem area.

Standard Operating Procedures of the Joint Water & Sewer Commission provide for personnel to be on duty or on call to execute the above emergency plan at all times. This procedure also requires operating personnel to inform the Executive Director of emergency problems.