

**APPENDIX A**

**INSTALLATION CRITERIA FOR  
REDUCED PRESSURE PRINCIPLE AND  
DOUBLE CHECK VALVE BACKFLOW  
PREVENTION ASSEMBLIES**

INSTALLATION CRITERIA FOR  
REDUCED PRESSURE PRINCIPLE AND DOUBLE  
CHECK VALVE BACKFLOW PREVENTION ASSEMBLIES

MINIMUM INSTALLATION REQUIREMENTS are underlined, all others are suggestions or items to consider:

- A. The RP assemblies should never be subject to flooding; therefore should:
1. Never be located in a pit or other area subject to flooding
  2. Avoid piped drains for enclosures housing the units. Provision should be made for discharging water (maximum design discharge) directly through the wall of the enclosure housing the unit at a slightly higher elevation than surrounding ground level or maximum flood level.
  3. The lowest part of the relief valve discharge port should be a minimum of 12 inches above either:
    1. The ground
    2. Top of the opening(s) in enclosure wall
    3. Maximum flood level

Whichever is highest, in order to prevent any part of the assembly from becoming submerged.
- B. All new backflow prevention assemblies being installed in Tennessee for the protection of a public water system should be included on the latest listing of "Approved Backflow Prevention Assemblies" maintained by the Division of Water Supply.
- C. The assemblies should be installed where the units can be easily tested and repaired.
1. Installation of assemblies 2" and less there must be a minimum of six inch clearance from all walls. Assemblies over 2" must be a minimum of twelve inches from all walls.
  2. Assemblies installed in stationery enclosures should have at least a 2 ft. clearance on each side of the assembly to facilitate testing and servicing. Adequate drainage must be provided.

3. Assemblies should not be installed higher than 5 ft. from the floor/ground to the center line of the assembly unless safe permanent access is provided for testing and servicing.
- D. The pipelines should be thoroughly flushed to remove foreign material and debris. A strainer should be added on the inlet side of the assembly before installation except for fire protection service lines.
- E. Installation of backflow prevention assemblies will not allow any unprotected or uninspected connections in front of the backflow prevention assembly.
- F. Backflow preventers should be installed with unions and isolation valves on both ends of the assembly to allow removal of the assembly for repair or replacement.
- G. Provisions should be made to protect the assemblies from freezing. Insulating materials should not restrict the relief valve discharge accessibility to test cocks or name plate of the unit. All enclosures should be designed to provide for adequate draining for the relief valve.
- H. The relief valve of an RP should never be plugged, restricted, or solidly piped to a drain, ditch or pump. Rigidly secured air-gap funnels may be used to direct discharges away from the unit provided an approved air-gap separation is provided at the relief valve discharge and again at the discharge end of the drainpipe. An adequate area drain is recommended to handle the maximum relief valve flow to prevent flooding.
- I. The test cocks, valve stems, or name plates should not be painted and their accessibility, operation of legibility should not be hampered nor the relief valve discharge passage be restricted by insulation or other coverings.
- J. The assemblies should be installed in an approved position as listed in the Latest Approved List and special supports added if needed.
- K. For applications where water temperatures exceed 110° F (43° C) only approved hot water devices are to be used.
- L. Prior to completing the installation, temperature pressure relief valves on heating vessels should be properly installed and in good working condition. If needed, thermal expansion tanks should be installed.

- M. No unprotected bypasses or connections are made between the assembly and meter.

Existing assemblies not meeting the minimum requirements above, with the exception of being installed in an area that may allow flooding of the assembly, may be allowed variances by the water system. However, no variance may be allowed that will compromise the protection of the assembly or that will allow contaminants in the distribution system. All variances should be documented and kept on file for the life of the assembly. Please review the document entitled Approved Backflow Prevention Assemblies.

## APPENDIX A

### TYPICAL CROSS CONNECTION HAZARDS

Actual or potential cross connection hazards may be present within every water system. To better understand and become aware of these hazards, the following examples are provided.

#### **A. Common Facilities and Systems Likely to have Cross Connection Hazards:**

1. Auxiliary Water Systems  
Any premises or facility with an alternate water supply on or available to the premises. Water stored in reservoirs that are not properly protected or circulated is considered an auxiliary supply.
2. Food Processing  
Pressure cookers, autoclaves, retorts, and other steam connected facilities.
3. Cooling Systems Single Pass  
Compressors, heat exchangers, air-conditioning equipment, and other water-cooled equipment that may be sewer connected.
4. Farming Operations  
Poultry houses, chicken houses with automatic proportioning pumps or feeder barrels for supplying water with live virus or other medication, livestock watering troughs with below the rim filling outlet, diluting and mixing of pesticides and insecticides, mixing and spray equipment, greenhouses, dilution of liquid fertilizers, dairies, unprotected hose bibbs.
5. Fire Protection Systems  
Piping systems and storage reservoirs that may be treated for prevention of scale formation, corrosion, algae, or slime.  
  
Piping systems that contain non-potable plumbing materials.  
  
Booster pumps without suction pressure sustaining valves or low suction pressure cutoff switches.  
  
Sprinkler systems filled with antifreeze solutions Piping systems filled with chemical compounds used in fighting fires.

Fire systems with an auxiliary source of supply or which are located within 1700 ft. of streams, lakes, ponds, reservoirs, or other non-potable waters that could be utilized in emergencies.

6. Film Processing

Automatic film processing machines, tanks, vats, and other facilities used in processing film.

7. Hydraulic Test Facilities

Hydraulic test equipment using pumps, rams, pressure cylinders, or other hydraulic principles, which may force liquids back into the public water system.

Piping systems, tanks, and other equipment where the public water system pressure is used directly and which may be subject to backpressure.

8. Industrial Piping Systems

Industrial piping systems containing chemicals, gases, cutting or hydraulic fluids, coolants, antifreeze, hydrocarbon products, paraffin, caustic or acid solutions and other substances.

9. Industrial Systems -- Chemical Contamination

Tanks, can and bottle washing machines, and piping systems where caustics, acids detergents, and other compounds are used in cleaning, sterilizing, and flushing.

10. Residential or Commercial lawn irrigation systems.

Irrigation systems equipped with pumps, injectors, pressurized tanks, or other facilities for injecting agricultural chemicals, such as, fungicides, pesticides, herbicides, and other toxic or objectionable substances, require immediate protection.

11. Laundry and Dyeing Facilities

Laundry machines having under rim or bottom inlets, dry cleaning equipment, solvent reclaim facilities.

Wash water storage tanks equipped with re-circulating pumps.

Dye vats in which toxic chemicals and dyes are used.

Shrinking, bluing, and dyeing machines directly connected to re-circulating systems.

Boilers, steam lines, and heat exchangers.

12. Paper Processing

Pulp, bleaching, dyeing, and processing facilities that may be contaminated with toxic chemicals.

13. Petroleum Processing

Steam boilers, steam lines, mud pumps and mud tanks, oil well casing used for dampening gas pressure, dehydration tanks, oil and gas tanks in which hydraulic pressures are used to raise oil and gas levels, gas and oil lines used for testing, excavating, and slugging.

14. Plating Facilities

Plating facilities using highly toxic cyanides, heavy metals, such as, copper, cadmium, chrome, acids, and caustic solutions.

Plating solution filtering equipment with pumps and circulating lines.

Tanks, vats, or other vessels used in painting, de-scaling, anodizing, cleaning, stripping, oxidizing, etching, pickling, dipping, and rinsing operations and lines used for transferring fluids.

15. Storage Tanks, Cooling Towers, and Circulating Systems

Storage tanks, cooling towers, reservoirs, and circulatory systems contaminated with bird droppings, algae, slimes, or with water treatment compounds, such as copper, chromate, phenols, and mercury.

16. Sewerage Systems

Cross connections to sewage pumps for priming, water seal lubrication, cleaning, flushing, or unclogging.

Water-operated sewage pump ejectors.

Sewer lines used for disposing of filter or softener backwash, water from cooling systems, or for providing a quick drain for building lines and lines used for flushing or blowing out obstruction in sewer lines.

17. Steam Generation Facilities

Steam generating facilities and lines which may be contaminated with boiler compounds, heat exchangers, single wall steam heated water heating equipment.

18. Hospital-Medical Facilities

Unprotected connections to bedpan washers, hydrotherapy tubs, toilets, urinals, autopsy and mortuary equipment, aspirator, x-ray and photo processing equipment, vacuum pump seals.

Unprotected connections to laboratory equipment which may be chemically or bacteriologically contaminated, such as, steam sterilizers, autoclaves, specimen tanks, and pipette washers.

**B. Equipment posing significant risk of creating cross connections.**

Establishments with equipment list will normally require premise isolation with a Reduced Pressure Principle Assembly or Double Check Valve Assembly depending on hazard unless otherwise found to have an appropriate air gap.

Many devices or equipment below may be designed and constructed with approved air gaps that would adequately protect the water system. However, the cross-connection control inspector should consider and make judgments on the amount risk that the establishment poses to the distribution and not solely on the presence or absence of the devices, situations, or equipment listed below.

The following is an incomplete list of equipment normally requiring backflow prevention assemblies, it is to be noted than any connection with piping, equipment, or devices that contain or may contain substances that are pollutants or contaminants will require premises isolation.

Air-conditioning systems (using water for processing)

Aspirators

Air lines

Autoclaves and sterilizers

Auxiliary systems

Baptismal tanks

Bathtubs (Hard Piped)

Bedpan washers

Bidets

Booster pumps

Brine tanks, softeners

Boilers



Car wash equipment  
Chemical feeders  
Chillers  
Chlorination equipment  
Coffee urns  
Commercial cookers  
Condensers  
Compressors  
Cooling systems  
Cooling towers  
Culture vats  
Cuspidor, dental  
Developing equipment  
Dishwashers  
Display fountains  
Drinking fountains  
Ejectors, steam or water  
Extractors  
Fire protection systems, standpipes, sprinkler systems and drain lines  
Fish tanks, ponds  
Floor drains  
Food mixing tanks  
Frost-free toilets, hydrants, and fountains  
Garbage grinders  
Garbage can washers  
Garden sprayers  
Heat exchangers  
Humidity controls  
Hydraulic equipment  
Hydraulic insecticide or fertilizer applicators  
Hydraulic lifts  
Ice makers  
Irrigation systems, lawn sprinklers  
Kitchen equipment  
Laboratory equipment  
Laundry equipment  
Lavatories  
Lawn sprinklers  
Liquid handling systems  
Lubrication, pump bearings  
Medical equipment  
Pest control equipment  
Photo laboratory sinks  
Potato peelers

Pressure cookers  
Process water circulation systems  
Pump, priming systems  
Sewer flush tanks  
Shampoo sinks, basins  
Showers, telephone type shower heads  
Sinks, slop sinks  
Soda fountains  
Solar water and space heating equipment  
Steam boilers  
Steam tables  
Stop and waste vales  
Swimming pools, ponds, fountains  
Tank and vats  
Therapeutic tanks, spas, and hot tubs  
Threaded hose bibbs  
Toilets, flush-o-meter, flush tank, ball-cock, flush valve siphon jet  
Vegetable peelers  
Vacuum systems  
Urinals (siphon set blowout)  
Vacuum systems (water operated with water seals)  
Water treatment devices  
Water troughs  
Water-using mechanical equipment  
Water Jacketed tanks, vats, cookers

**C. Premises, facilities or establishments that pose a significant risk of cross-connection**

Reduced Pressure Backflow Prevention Assemblies required for premises isolation

Agricultural processing facilities  
Aircraft and missile plants  
Amusement parks  
Animal hospitals and clinics  
Automotive plants  
Auxiliary water systems  
Autopsy facilities  
Beverage bottling plants  
Breweries  
Automotive plants  
Auxiliary water systems  
Autopsy facilities

Beverage bottling plants  
Breweries  
Buildings (multistory) - hotels, apartment houses, public and private buildings, or structures having unprotected cross connections  
Campgrounds  
Canneries  
Car washes  
Chemical plants - manufacturing, processing, compounding, treatment, packing, storage  
Chemically contaminated water systems  
Civil works  
Clinics  
Cold storage plants  
Dairies, creameries  
Dry cleaners  
Dental buildings  
Dye works  
Extermination Companies  
Fertilizer plants  
Fertilizer (liquid) and spray distributors  
Film laboratories  
Fire sprinkler systems  
Funeral homes  
Hospitals  
Laboratories  
Laundries and dye works  
Lawn irrigation systems  
Medical buildings  
Metal manufacturing, cleaning, processing, and fabricating plant  
Mortuaries  
Morgues  
Motion picture studio  
Nursing home or convalescent homes  
Greenhouses, plant nurseries  
Oil and gas production, storage, or transmission facilities  
Oil refineries  
Packing houses  
Paper and paper product plants  
Plating plants  
Power plants  
Private wells  
Radioactive materials or substances - plants or facilities that process or use radioactive materials  
Reduction plants

Restricted, classified, or other closed facilities  
Rubber plants  
Sand and gravel plants  
Schools and colleges  
Sewage pumping stations  
Storm water pumping stations  
Hard plumbed swimming pools, ponds, and fountains  
Tanneries of all kinds  
Therapeutic tanks, spas, and hot tubs  
Vegetable and food processing facilities  
Waterfront facilities and industries  
Water treatment plants  
Wastewater treatment plants  
Water using recreational facilities (swimming pools, water slides)

**D. Other situations or conditions that pose a significant risk of contamination:**

1. The degree of hazard involved.
2. The likelihood of frequent and/or unapproved plumbing changes.
3. The probability of frequent modification of water using equipment.
4. The complexity of the internal piping system.
5. The difficulty in making frequent inspections to verify that the internal protection provided is being adequately maintained.
6. The likelihood of protective assemblies being rendered ineffective.
7. The ease of access to premises.
8. The time necessary to inspect all water outlets not protected by a backflow prevention assembly.
9. The time needed to inspect the facility at least annually to determine if new cross connections have been created.

**WATER SYSTEM  
CROSS-CONNECTION SURVEY  
RESIDENTIAL**

Occupant Name \_\_\_\_\_

Occupant Address \_\_\_\_\_

1. Occupancy: \_\_\_ Own \_\_\_ Rent
2. Meter serves: Homes How Many? \_\_\_\_\_  
Buildings How Many? \_\_\_\_\_
3. Do you have? (Please Check all that apply):  
Hot Tub \_\_\_\_\_ Swimming Pool \_\_\_\_\_ Jacuzzi \_\_\_\_\_  
Waterbed \_\_\_\_\_ Solar System \_\_\_\_\_ Green House \_\_\_\_\_  
Underground Sprinkler System \_\_\_\_\_ Darkroom Equipment \_\_\_\_\_  
Drip/Soaker/Irrigation System \_\_\_\_\_ Portable Dialysis Machine \_\_\_\_\_  
Insecticide Sprayers (That attach to garden hose also) \_\_\_\_\_  
Utility sink w/threaded faucet \_\_\_\_\_  
Wood burning hot water heater \_\_\_ Ghost pipes (unidentified) \_\_\_
4. Do you have bathtub that fills from the bottom? Yes \_\_\_ No \_\_\_
5. Do you have a water softener or any extra water treatment system?  
Yes \_\_\_ No \_\_\_
6. Do you have an auxiliary water supply on your premises?  
Yes \_\_\_ No \_\_\_
7. Do you have livestock and use a water trough or water system  
connected to by public water? Yes \_\_\_ No \_\_\_
8. Is your home or building elevated above your water meter?  
Yes \_\_\_ No \_\_\_
9. Does a creek, river, or spring water run near or on your property?  
Yes \_\_\_ No \_\_\_
10. Do you have a booster pump, well pump, or any other type water  
pump? Yes \_\_\_ No \_\_\_
11. Do you receive irrigation water from a different source?  
Yes \_\_\_ No \_\_\_
12. Do you have a backflow protection device on your property now?  
Yes \_\_\_ No \_\_\_
13. Do you have any situation that you are aware of that could create  
a cross connection? Yes \_\_\_ No \_\_\_
14. Do you have any other water-using equipment on your property  
not mentioned above? Yes \_\_\_ No \_\_\_

If yes, please list below:

\_\_\_\_\_

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Phone #

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**Please notify this office if any of the above conditions change.**

## **State Guidance for Approved Backflow Prevention Assemblies**

All assemblies, used to protect the public water supply, must be approved by the Division of Water Supply. New installation and replacement assemblies required by a public water system must be included on the latest listing of the Approved List maintained by the Division of Water Supply. A backflow prevention device will qualify as an assembly, if it is consistent with the following definitions:

### **Double Check-Detector Check Valve Assembly (DCDA)**

A specially designed unit composed of a line size approved double check valve assembly with a specific bypass line equipped with a small water meter and a 3/4 inch approved double check valve assembly. The meter shall register accurately for only very low rates of flow and shall show a registration for all rates of flow. The meter will detect small leakage or theft of water for unmetered fire lines. This assembly is designed for fire service lines and is recommended for unmetered fire lines. This assembly is designed to protect against a low hazard or pollutant.

### **Double Check Valve Assembly (DCVA)**

An assembly composed of two independently acting, approved check valves, including tightly closing shutoff valves located at each end of the assembly and fitted with properly located test cocks. This assembly is designed to protect against a low hazard or pollutant.

### **Reduced Pressure Principal Backflow Prevention Assembly (RPBP)**

An assembly containing two 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 unit shall include properly located test cocks and tightly closing shutoff valves at each end of the assembly. This assembly is designed to protect against a health hazard (i.e. contaminant).

### **Reduced Pressure Principle-Detector Backflow Prevention Assembly (RPDA)**

A specially designed assembly composed of a line-size approved pressure principle backflow prevention assembly with a bypass containing a specific water meter and an approved reduced pressure principle backflow prevention assembly. The meter shall register accurately for only very low rates of flow up to 3 gpm and shall show a registration for all rates of flow. This assembly shall be used to protect against a non-health hazard or a health hazard. The RPDA is primarily used on fire sprinkler systems. This assembly is designed to protect against a health hazard (i.e. contaminant).

The following assemblies will meet recommendations and requirement for protection of the water system:

1. Reduced Pressure Principle Assembly
2. Reduced Pressure Principle Detector Assembly
3. Double Check Valve Assembly\*
4. Double Check Valve Detector Assembly\*

\* Double Check Valve Assemblies and Double Check Valve Detector Assemblies are permissible on non-chemical fire lines Class 1-3 only. Use of these assemblies is at discretion of the water purveyor.

Atmospheric Vacuum Breakers, Pressure Vacuum Breakers, and Spill-Resistant Pressure Vacuum Breakers are not approved by the Division of Water Supply for premise isolation.

### **Existing Assemblies not on Approved List**

Assemblies not listed on the Approved List may be accepted by the Division of Water Supply as an approved assembly under very strict guidelines. The water purveyor may elect, at their discretion, to accept only assemblies listed on the Approved List in order to establish the utmost confidence in backflow protection and prevention.

The Division of Water Supply highly recommends the use of assemblies listed only on the Approved List. Approval of assemblies not listed on the Approved List will be considered on a case-by-case basis by the water system with fulfillment of these requirements:

1. Approved Ordinance and Ordinance of water purveyor at the time of installation did not address or require assemblies from Approved List. Ordinance or ordinance must be amended and approved, if needed, to allow unapproved existing assemblies that meet the following requirements.
2. Assembly must meet all installation criteria required by the water provider.
3. Must meet the definition of assembly and is annually tested. The assembly must be deemed Passed to remain as an acceptable and approved backflow prevention assembly for the protection of the water system.
4. Installation, operation, and maintenance of the assembly will provide adequate protection against backflow.
5. Assembly must be repaired using manufacturer-specified parts in accordance to procedures outlined by manufacturer.

6. A written plan must be reported by the water provider concerning the assembly not shown on the latest Approved List. The plan will specify all conditions and information concerning the assembly including manufacturer, model, serial number, installation, repair information (if available), time line of replacement (depending on type of hazard and risk of contamination) if assembly cannot be repaired in accordance with manufacturer procedures. All plans and worksheets must be completed and kept on file by the water system.
7. If assembly cannot be repaired according to the manufacturer-specified procedures, it must be replaced with an assembly listed on the latest Approved List. The replacement assembly will be installed, operated, and maintained in accordance to the approved ordinance/ordinance of the water purveyor.

### **State Guidance for Backflow Prevention Assembly Performance Evaluations**

Performance evaluations are needed to demonstrate that all parts of the assemblies are performing as designated and as approved.

1. Performance evaluations must be performed on every assembly at least annually.
2. Each backflow prevention assembly must be deemed Passed to remain approved and acceptable protection for the public water system.

Passed: The status of a backflow prevention assembly determined by a performance evaluation in which the assembly meets all minimum standards set forth by the approved testing procedure.

#### **Reduced Pressure Principle Assembly:**

- a. Relief Valve must have an opening point of 2.0 psid or greater.
- b. Backpressure on Check Valve #2 must hold tight.
- c. Static Pressure Drop across Check Valve #1 must be 3.0 psid or greater than relief valve opening point.
- d. Shutoff Valve #2 must hold tight.
- e. Static Pressure Drop across Check Valve #2 must be 1.0 psid or greater.



**Double Check Valve Assembly:**

- a. Static Pressure Drop across Check Valve #1 must be 1.0 psid or greater.
  - b. Backpressure on Check Valve #2 must hold tight.
  - c. Shutoff Valve #2 must hold tight.
  - d. Static Pressure Drop across Check Valve #2 must be 1.0 psid or greater.
3. The Backflow Prevention Assembly Tester must have, at minimum, a valid Certificate of Competency in Testing and Evaluation Backflow Prevention Assemblies and a valid test kit certification by a manufacturer-approved entity.
  4. Backflow Prevention Assembly Testers must test and evaluate according to the latest Division of Water Supply's approved procedures.
  5. Test kits must be certified annually and the water provider and tester must show proof of certification from manufacturer-approved entities.
  6. Proof of annual test kit certification and Certificate of Competency must be current and kept on file for each tester by water provider for five years.
  7. Test reports must be completely and accurately documented and the appropriate evaluation determined from testing procedure.
  8. All correspondence and documentation pertaining to each backflow prevention assembly will be kept on file by the water provider for at least five years. This includes, but not limited to, test reports, repair reports and installation records.
  9. Each location requiring an assembly will have a documented backflow prevention assembly, if the assembly at the address cannot be identified or is not the correct assembly, the water provider will be notified.
  10. Every assembly must pass each part of the Performance Evaluation. If any test does not meet the minimum requirements set forth in the testing procedure, the assembly is deemed Failed. If conditions around the assembly do not allow the assembly to be tested, the assembly fails the assembly performance evaluation. (Examples would include assembly is submerged, test cocks missing or plugged, relief valve continually discharging.)

Failed: The status of a backflow prevention assembly determined by a performance evaluation based on the failure to meet all minimum standards set forth by the approved testing procedure.

11. Assemblies must be tested when installed and after every repair. Backflow prevention assemblies on lawn irrigation systems must be tested when assemblies are placed in service. If lawn irrigation backflow assemblies are taken out of service to winterize the system, upon startup of the system, the assemblies must be retested.
12. Water systems may elect to place additional requirements on assembly testers as long as there is no conflict with State statute or regulation.

### **State Guidance for Certificate Competency for Testing and Evaluating Backflow Prevention Assemblies**

The information listed below is guidance concerning Certificate of Competencies:

- Anyone testing backflow prevention assemblies for the purposes outlined in the water system's Cross-Connection Control Ordinance or Ordinance must have a valid Certificate of Competency in Testing and Evaluation of Backflow Prevention Assemblies issued by the Division of Water Supply.
- A valid certificate is defined as a Certificate (Basic or Renewal) issued by the state of Tennessee that has not surpassed the three-year time limit from issuance. After certificates have been granted by the State of Tennessee, a Certificate No. is assigned to the applicant. Certificates are valid for three (3) years after certificates are granted. All Certificates are no longer valid, if the Renewal Certificate is not attained within three (3) years from the date the certificate was issued. A 1 year grace period is allowed to attend the renewal class however, the person must not be allowed to test after the 3 year expiration.
- The applicant must complete and satisfy all requirements set forth by the Division of Water Supply to attain and renew the Certificate of Competency.
- Applicant must successfully complete a State-approved Basic Cross-Connection Control training session, written exam, and practical exam to attain an initial Certificate of Competency. The student must successfully complete a State-approved Renewal Cross-Connection Control training session and practical exam to renew the Certificate of Competency.

- Certificate of Competency must be valid in order to perform assembly evaluations.
- In order to renew the Certificate of Competency, a Renewal Course and Exam must be taken within three years after the issuance date to remain valid.
- If the Certificate of Competency is not renewed three years after issuance, the certificate is no longer valid, but does not expire.
- A one year grace period to renew the Certificate of Competency is allowed once the three year time limit has passed.
- Water providers will not accept a test report from a tester whose certificate is in the grace period or has expired.
- If the tester does not renew during the one year grace period, the certificate expires and the tester must take the Basic Course and Basic Exam in order to attain the Certificate of Competency.

### **State Guidance Concerning Lawn Irrigation Systems**

Lawn irrigation systems, both commercial and residential, are recognized by the State of Tennessee Division of Water Supply as an actual and potential cross-connection to a public water system. The contact between the sprinkler heads and the soil or submergence of sprinkler heads allows a connection between the potable water system and water of unknown or unsafe quality.

Soil and standing water in contact with the sprinkler heads poses a significant risk of containing E.coli, Cryptosporidium, Giardia, other pathogens, and hazardous chemicals used for lawn care. Many lawn irrigation systems use toxic chemicals injected in the piping to fertilize and eliminate undesired plants.

#### **Required Protection for Lawn Irrigation Systems by Public Water Systems:**

- For public water systems to protect their distribution lines, lawn irrigation systems are protected by a **Reduced Pressure Principle Assembly** or **Reduced Pressure Principle Detector Assembly**.
- Double Check Valves cannot be used for premise isolation on lawn irrigation systems. Double Check Valves may be used for non-health hazards only. Water which contains or may contain pathogens or harmful chemicals is considered a health hazard and

must be protected by a **Reduced Pressure Principle Assembly** or **Reduced Pressure Principle Detector Assembly** only.

- Pressure vacuum breakers, Spill-resistant vacuum breaker, and atmospheric vacuum breakers may not be used to protect the public water system's main-line piping or distribution system. These devices are point-of-use devices and may not be used for premise isolation.
- Assemblies must be tested annually.
- Assemblies on lawn irrigation systems must be tested during the start-up period (typical maximum time limit is within 90 days). Annual testing just prior to winterization or seasonal shutdown is not acceptable. Testing may also be initially staggered in order to reduce problems with scheduling tests.

**Backflow Incident Report Form**

Reporting Agency: \_\_\_\_\_ Report Date: \_\_\_\_\_

Reported By: \_\_\_\_\_ Title: \_\_\_\_\_

Mail Address: \_\_\_\_\_ City: \_\_\_\_\_

State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Telephone: \_\_\_\_\_

Date of Incident: \_\_\_\_\_ Time of Occurrence: \_\_\_\_\_

General Location (Street, etc.): \_\_\_\_\_

Backflow Originated From:

Name of Premises: \_\_\_\_\_

Street Address: \_\_\_\_\_ City: \_\_\_\_\_

Contact Person: \_\_\_\_\_ Telephone: \_\_\_\_\_

Type of Business: \_\_\_\_\_

Description of Contaminants:  
(Attach Chemical Analysis of MSDS if available)

\_\_\_\_\_  
\_\_\_\_\_

Distribution of Contaminants:

Contained within customer's premises: Yes: \_\_\_\_ No: \_\_\_\_

Number of persons affected: \_\_\_\_\_

Effect of Contamination:

Illness Reported: \_\_\_\_\_

Physical irritation reported: \_\_\_\_\_

\_\_\_\_\_

Backflow Incident Report Form

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Cross Connection Source of Contaminant (boiler, chemical pump, irrigation system, etc):

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Cause of Backflow (main break, fire flow, etc.):

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Corrective Action Taken to Restore Water Quality (main flushing, disinfection, etc.)

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Corrective Action Ordered to Eliminate or Protect from Cross Connection (type of backflow preventer, location, etc.)

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Previous Cross Connection Survey of Premises:

Date: \_\_\_\_\_ By: \_\_\_\_\_

Types of Backflow Preventer Isolating Premises:

RPBA: \_\_\_\_\_ RPDA: \_\_\_\_\_ DCVA: \_\_\_\_\_ DCDA: \_\_\_\_\_

Air Gap: \_\_\_\_\_ None: \_\_\_\_\_ Other Type: \_\_\_\_\_

Date of Latest Test of Assembly: \_\_\_\_\_

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Backflow Incident Report Form  
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Notification of Division of Water Supply:

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Person Notified: \_\_\_\_\_

Attach sheets with additional information, sketches, and/or media information,  
and mail to Local Environmental Field Office.

**WELL USER AGREEMENT  
OF NON-USE OR CONNECTION TO THE PUBLIC WATER SUPPLY**

In accordance with Water System's Cross Connection Control program and state law, a private well or auxiliary water source may not be connected in any manner to the public water supply unless proper protection against cross connection is provided. Only a Reduced Pressure Backflow Preventer or an approved air gap (complete separation from public water supply) may be used for protection. These devices must have prior approval by Water System. Customers using the public water supply and not in compliance with this rule will have their water service discontinued.

**Check appropriate box:**

- This serves as notification that a well is located on the property at the following address:
  
- This serves as notification that a well is not located on the property at the following address:

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Please type or print

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I (we) understand and agree that this system is, and shall remain totally segregated from the public water supply, and no unapproved or unauthorized cross connections, auxiliary intakes, bypasses, or interconnections with any type of irrigation systems or otherwise will be permitted without the proper cross connection control device and approval of the Water System.

I (we) further understand and agree that should an auxiliary water supply be connected to the public water system at the above address, maximum cross connection control equipment in the form of an approved air gap or reduced pressure backflow prevention device shall be installed to protect the public water supply.

Date: \_\_\_\_\_

Name: \_\_\_\_\_ Notary: \_\_\_\_\_

Signature: \_\_\_\_\_ Commission Expires: \_\_\_\_\_