BACKFLOW PREVENTION REGULATIONS

The following are Backflow Prevention Regulations (herein "Regulations") of CONSOLIDATED PUBLIC WATER SUPPLY DISTRICT NO. 1 OF BOONE COUNTY, MISSOURI, herein the "District."

Section 1. Cross Connection Control -- General Recitals

A. Purpose. The purpose of these Regulations are:

1. To protect the District's water supply system from contamination or pollution by containing within the customer's internal distribution system or private water system contaminants or pollutants which could backflow through the service connection into the District's water supply system.

2. To promote the elimination, containment, isolation, or control of existing cross connections, actual or potential, between the District's water supply system and the customer's water system, fixtures and equipment.

3. To provide for the maintenance of continuing program of cross connection control which will systematically and effectively prevent the contamination or pollution of the District's water system.

B. Application. These Regulations shall apply to all premises served by the District.

C. Corrective Action. If, in the judgment of the District or its authorized representative, cross connection protection is required through either piping modification or installation of an approved backflow prevention assembly, the District shall give notice of such to the customer. The customer shall immediately comply by providing the required protection at the customer's own expense; and failure, refusal, or inability on the part of the customer to provide such protection shall constitute grounds for discontinuing water service to the premises until such protection has been provided.

Section II. Definitions

A. The definitions listed in Appendix A shall apply in the interpretation and enforcement of these Regulations.

Section III. Cross Connections Prohibited

A. No water service connection shall be installed or maintained to any premises where actual or potential cross connections to the District's water system and the customer's

water system may exist unless such actual or potential cross connections are abated or controlled to the satisfaction of the District.

B. No connection shall be installed or maintained whereby an auxiliary water supply may enter the District's water system or the customer's water system unless such auxiliary water supply and the method of connection and use of such supply shall have been approved by the District.

C. No water service connection shall be installed or maintained to any premises in which the plumbing system, facilities, and fixtures have not been constructed and installed using acceptable plumbing practices considered by the District as necessary for the protection of health and safety.

Section IV. Survey and Investigations

A. The customer's premises shall be open at all reasonable times to the District, or its authorized representative, for the conduction of inspections, surveys and investigations of water use practices within the customer's premises to determine whether there are actual or potential cross connections to the customer's water system through which contaminants or pollutants could backflow into the District's water system.

B. On request by the District or its authorized representative, the customer shall furnish information on water use practices within the customer's premises.

C. It shall be the responsibility of the customer to conduct periodic surveys of water use practices on the customer's premises to determine whether there are actual or potential cross connections to the customer's water system through which contaminants or pollutants could backflow into the customer's water system or the District's water system.

Section V. Type of Protection Required

The type of protection required by these Regulations shall depend on the degree of hazard which exists, as follows:

A. An approved air gap separation shall be installed where the District water system may be contaminated with substances that could cause a severe health hazard.

B. An approved air gap separation or an approved reduced pressure principle backflow prevention assembly shall be installed where the District's water system may be contaminated with a substance that could cause a health hazard.

C. An approved air gap separation or an approved reduced pressure principle backflow prevention assembly or an approved double check valve assembly shall be installed

where the District's water system may be polluted with substances that could cause a pollutional hazard not dangerous to health.

Section VI. Where Protection is Required

A. An approved backflow prevention assembly shall be installed on each service line to a customer's water system serving premises where, in the judgment of the District or its representative actual or potential hazards to the District's water system exist. The type and degree of protection required shall be commensurate with the degree of hazard.

B. An approved air gap separation or reduced pressure principle backflow prevention assembly shall be installed at the service connection or within any premises where, in the judgment of the District or its representative, the nature and extent of activities on the premises, or the materials used in connection with the activities, or material stored on the premises, would present an immediate and dangerous hazard to health should a cross connection occur, even though such cross connection may not exist at the time the backflow prevention assembly is required to be installed. This includes but is not limited to the following situations:

1. Premises having an auxiliary water supply, unless the quality of the auxiliary supply is acceptable to the District.

2. Premises having internal cross connections that are not correctable or intricate plumbing arrangements which make it impractical to ascertain whether or not cross connections exist.

3. Premises where entry is restricted so that inspection for cross connections cannot be made with sufficient frequency or at sufficiently short notice to assure the cross connections do not exist.

4. Premises having a repeated history of cross connections being established or reestablished.

5. Premises, which due to the nature of the enterprise therein, are subject to recurring modification or expansion.

6. Premises on which any substance is handled under pressure so as to permit entry into the District's water system, or where a cross connection could reasonably be expected to occur. This shall include the handling of process waters and cooling waters.

7. Premises where materials of a toxic or hazardous nature are handled such that if back siphonage or backpressure should occur, a serious health hazard may result.

C. The types of facilities listed in Appendix B fall into one or more of the categories of premises where an approved air gap separation or reduced pressure principle backflow prevention assembly is required by the District to protect the District's water supply and must be installed at these facilities unless all hazardous or potentially hazardous conditions have been eliminated or corrected by other methods to the satisfaction of the District.

D. The type of facility listed in Appendix C are premises where an approved double check valve assembly is required by the District as the minimum level of protection for the District's water supply and must be installed at these facilities unless all hazardous or potentially hazardous conditions have been eliminated or corrected by other methods to the satisfaction of the District.

E. Customer facilities not listed in Appendix B or C may be designated a backflow hazard by written notification from the District. The notice shall specify the nature of the customer activity that necessitates designation of the facility as a backflow hazard, the type of backflow protection required and the date by which the customer shall install or construct the required assembly.

Section VII. Backflow Prevention Assemblies

A. Any backflow prevention assembly required to protect the facilities listed in Appendix B and C shall be of a model or construction approval by the District.

1. Air gap separation to be approved shall be at least twice the diameter of the supply pipe, measured vertically above the top rim of the receiving vessel, but in no case less than one inch.

2. A double check valve assembly for Class II hazards or a reduced pressure principle backflow prevention assembly for Class I hazards shall be approved by the water purveyor, and shall appear on the current list of approved backflow prevention assemblies maintained by the Missouri Department of Natural Resources (Double Check Valve Assemblies and Reduced Pressure Backflow Prevention Assemblies approved by the University of Southern California's Foundation for Cross Connection Control and Hydraulic Research).

3. Any new, or existing, sprinkler and/or hydrant fire line system that is upgraded, modified or changed shall have a Single Detector Check Valve with detector bypass line, 5/8x3/4 detector meter, and bypass line double check valve located downstream of the detector meter, installed in a 60" flat top manhole or 6'x8' ID vault at the District main. Or, at the District's discretion, a Double Check Detector Assembly (DCDA) or Reduced Pressure Detector Assembly (RPDA)

backflow preventer may be installed in the sprinkler system, in the buildings mechanical room. A 5/8x3/4 inch detector bypass meter will be provided by the District at Owner's expense. The above installations shall be at Owners expense in accordance with the plans and specifications of the District.

Section VIII. Installation

A. Backflow prevention assemblies required by these Regulations shall be installed at a location and in a manner approved by the District and shall be installed at the expense of the customer.

B. Backflow prevention assemblies shall be installed and in an orientation as specified by the manufacturer. The Department of Natural Resources maintains a list of approved backflow prevention assemblies and the orientation allowed for each assembly.

C. Modification to an assembly using spare parts other than those of the original manufacturer invalidates the approval of the device.

D. No bypass piping shall be allowed around a backflow prevention assembly unless the bypass is equipped with the same degree of backflow prevention protection and is tested annually.

E. Backflow prevention assemblies installed on the service line to a customer's water system shall be located so as to be readily accessible for maintenance and testing and protected from freezing. No reduced pressure principle backflow prevention assembly shall be located where it will be submerged or subject to flooding by any fluid.

F. No plug or additional piping shall be affixed to the pressure differential relief port valve (except for specifically-designed funnel apparatus available from the manufacturer). The pressure differential relief port must be a minimum of twelve (12) inches above the floor level.

G. Private firelines start at the connection to the District Downstream Isolation Valve, which is a part of the District Connection Assembly, located at the District main, or where warranted, where the fireline crosses a property line.

H. All 4 and 6 inch single detector check valves shall be installed in a 60" flat top manhole and 8 and 10 inch single detector check valves shall be installed in a 6'x8' ID vault, both manholes and vaults shall be from a District approved precaster. Flat top manholes shall have a 60" RPS 60 aluminum clam shell type access door, and 6x8 foot ID vaults shall have 48"x48" TPD type double access door. Access doors shall have a load rating of 300 lbs. per sq. ft. Bottom of carrier pipe thru manhole or vault shall be a minimum of 12" above the floor and top of carrier pipe shall be a minimum of 48" to

ground line. The above installations shall be at Owners expense in accordance with the plans and specifications of the District.

Section IX. Testing of Backflow Prevention Assemblies

A. It shall be the duty of the customer at any premises on which backflow prevention assemblies required by these Regulations are installed to have inspections, tests, and overhauls made in accordance with the following schedule, or more often where test results indicate a need.

1. Air gap separations shall be inspected at the time of installation and at least every twelve months thereafter.

2. Double check valve assemblies shall be inspected and tested for proper operation at the time of installation and at least every twelve months thereafter.

3. Reduced pressure principle backflow prevention assemblies shall be inspected and tested for proper operation at the time of installation and at least every twelve months thereafter.

4. Single detector check valve backflow prevention assemblies on firelines shall be inspected and tested for proper operation at the time of installation and at least every twelve months thereafter. Owner shall provide a water supply and hose connection for testing of Owner's single detector check valve, if water for testing is not available on site.

B. Inspections, tests, and overhauls of backflow prevention assemblies shall be made at the expense of the customer and shall be performed by a State of Missouri certified backflow prevention assembly tester.

C. Whenever backflow prevention assemblies required by these Regulations are found to be defective, they shall be repaired or replaced at the expense of the customer without delay.

D. Modification to an assembly using spare parts other than those of the original manufacturer invalidates the approval of the device.

E. The customer must maintain a complete record of each backflow prevention assembly from purchase to retirement. This shall include a comprehensive listing that includes a record of all tests, inspections, and repairs. Records of inspection, tests, repairs, and overhauls shall be made available to the District upon request.

F. As long as the backflow hazard exists, backflow prevention assemblies shall not be bypassed, made inoperative, removed or otherwise made ineffective.

G. Backflow test reports received prior to April 1 are acceptable for the year.

H. The District shall establish an annual anniversary date for inspection or test reports to be submitted by the customers of the District and in connection therewith the following procedure shall be followed:

1. The District will give written notice (April 1) to each customer who is required to submit an annual inspection or test report to the District by the date of (May 30) when said report must be received by the District.

2. If the customer fails to deliver to the District a copy of the annual inspection or test report by the due date referred to in the preceding paragraph, the District will give notice (June 10) of the delinquency to the customer and to the Missouri Department of Natural Resources.

3. If the customer fails to submit to the District a copy of an annual inspection or test report within thirty (30) days after the notice referred to in paragraph 2 above is mailed to the customer (July 10), the District will have the right to disconnect the water service of the customer without further notice.

Section X. Backflow Fees

Each customer of the District who is required to maintain a backflow device on said customer's water system shall pay to the District the following fees:

1. A monthly backflow fee in the amount of $2.00 per month per backflow device, which may from time to time be changed by the District.

2. In the event of disconnection of service to a customer for failure to comply with these Regulations, the customer must pay a reconnection fee for reconnection of services by the District during normal business hours in the amount of $100.00 per reconnection as from time to time changed by the District.

3. If the customer cannot locate a State of Missouri Certified Backflow Tester to complete their annual inspection and test report on their irrigation system backflow assembly and feels their backflow assembly would pass a backflow test, the District offers testing of the customers backflow device for a fee of $200.00 that will be added to the customer's account. The backflow test charge will be added to the customer's account whether the backflow passes or fails. A

failed backflow test by the District requires the customer to have another certified backflow tester repair and retest their backflow assembly. Non-payment of the District backflow test fee will cause the customer's account to be locked and a reconnection fee of $100.00 applied to the customer's account as described in above paragraph 2. The $200.00 backflow test fee shall be as from time to time changed by the District.

Section XI. Retirement of Backflow Assemblies

1. A customer who wants to remove their lawn irrigation system from service may request the retirement of their backflow assembly. This is accomplished by the customer first notifying the District backflow department and then a certified backflow tester and requesting to eliminate their lawn or irrigation system by having the backflow assembly removed and the piping capped or plugged on both sides of the backflow assembly location, thus eliminating the backflow hazard.

   The certified tester shall send the District a backflow test report showing the backflow assembly was pulled with the piping capped or plugged on each side of the former backflow assembly location, thus eliminating the backflow hazard. Upon receiving the completed backflow test report the District will remove the backflow assembly from its active records.

   There may be other situations in which retirement of a backflow assembly would apply, whereby the backflow hazard, is going to be, or has been eliminated, and retirement of the backflow assembly is requested. Retirement of the backflow assembly is completed in much the same way as the lawn irrigation systems.

Section XII. Service Disconnection

The District shall have the right to disconnect the water service of any customer without prior notice in the event of the occurrence of any of the following:

1. The customer fails to furnish to the District a backflow inspection or test report for new devices within sixty (60) days after the device is installed.

2. The customer fails to submit to the District the annual inspection or test report by the deadline referred to in Section IX (H) (3) above.

3. The backflow prevention assembly required by this Regulation is not installed, tested and maintained in a manner acceptable to the District.

4. A backflow prevention assembly has been removed or bypassed or if an unprotected cross connection exists on a customer's premises.

5. The water service to a customer's premises shall not be restored until the customer has corrected or eliminated the aforesaid condition or defect in conformance with these Regulations to the satisfaction of the District and the customer has paid to the District the required reconnection fee.

Section XIII. Prior Regulations

The policy governing Backflow Prevention Regulations adopted by the Board of Directors of the District on November 9, 2023 with an effective date of January 1, 2024 is hereby revoked and declared null and void.

Adopted by the Board of Directors of CONSOLIDATED PUBLIC WATER SUPPLY DISTRICT NO. 1 OF BOONE COUNTY, MISSOURI on the 19 day of SEPT, 2024.

President

ATTEST:

Lauren Kill

Clerk

APPENDIX A

DEFINITIONS

1. "Air gap separation" means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other device and the overflow level rim of the receptacle, and shall be at least double the diameter of the supply pipe measured vertically above the flood level rim of the vessel, but in no case less than one inch.

2. "Auxiliary water supply" means any water source or system, other than the water system of the District, that may be available in the building or premises.

3. "Backflow" means the flow other than the intended direction of flow, of any foreign liquids, gases, or substances into the distribution system of the District.

4. "Backflow prevention assembly" means any double check valve or reduced pressure principle backflow preventer having resilient-seated shut-off valves on both the upstream and downstream end and the necessary test cocks as integral parts of the assembly.

5. "Customer" means the owner or person in control of any premises supplied by or in any manner connected to the water system of the District.

6. "Containment" means protection of the public water supply by installing a backflow prevention assembly or air gap separation on the main service line to a facility.

7. "Contamination" means an impairment of the quality of the water by sewage, process fluids, or other wastes to a degree which could create an actual hazard to the public health through poisoning or through spread of disease by exposure.

8. "Cross connection" means any physical link between the water system of the District and any other substance, fluid, or source, which makes possible contamination of the potable water supply due to the reversal of flow of the water in the piping or distribution system.

9. "District" means Consolidated Public Water Supply District No. 1 of Boone County, Missouri.

10. "Hazard, Degree of" means an evaluation of the potential risk to public health and the adverse effect of the hazard upon the potable water system.

a. Hazard, Health - any condition, device, or practice in the water supply system and its operation which could create or may create a danger to the health and well-being of the water consumer.

b. Hazard, Plumbing - a plumbing type cross connection in a customer's potable water system that has not been properly protected by a vacuum breaker, air gap separation or backflow prevention assembly.

c. Hazard, Pollutional - an actual or potential threat to the physical properties of the water system or to the potability of the District's or the customer's water system but which would constitute a nuisance or be aesthetically objectionable or could cause damage to the system or its appurtenances, but would not be dangerous to health.

d. Hazard, System - an actual or potential threat of severe damage to the physical properties of the District's water system or the customer's water system, or of a pollution or contamination which would have a protracted effect on the quality of the potable water in the system.

11. "Isolation" means protection of a facility's internal plumbing system by installing a backflow prevention assembly, air gap separation, or other backflow prevention device on an individual fixture, appurtenance, or system.

12. "Pollution" means the presence of any foreign substance (organic, inorganic, or biological) in water which tends to degrade its quality so as to constitute a hazard or impair the usefulness of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably affect such waters for domestic use.

13. "Public potable water system" means any publicly or privately owned water system supplying water to the general public which is satisfactory for drinking, culinary, and domestic purposes and meets the requirements of the Missouri Department of Natural Resources.

14. "Service connection" means the terminal end of a service line from the District's water system. If a meter is installed at the end of the service, then the service connection means the downstream end of the meter.

APPENDIX B

TYPES OF FACILITIES REPRESENTING HIGH HAZARD CROSS CONNECTIONS

1. Aircraft and missile manufacturing plants;

2. Automotive plants including those plants which manufacture motorcycles, automobiles, trucks, recreational vehicles and construction and agricultural equipment;

3. Potable water dispensing stations which are served by a public water system;

4. Beverage bottling plants including dairies and breweries;

5. Canneries, packing houses and reduction plants;

6. Car washes;

7. Chemical, biological and radiological laboratories including those in high schools, trade schools, colleges, universities and research institutions;

8. Hospitals, clinics, medical buildings, autopsy facilities, morgues, mortuaries, dental clinics, veterinary facilities and other medical facilities;

9. Metal or plastic manufacturing, fabrication, cleaning, plating or processing facilities;

10. Plants manufacturing paper and paper products;

11. Plants manufacturing, refining, compounding or processing fertilizer, film, herbicides, natural or synthetic rubber, pesticides, petroleum or petroleum products, pharmaceuticals, radiological materials or any chemical which would be a contaminant to the public water system;

12. Commercial facilities that use herbicides, pesticides, fertilizers or any chemical which would be a contaminant to the public water system;

13. Plants processing, blending or refining animal, vegetable or mineral oils;

14. Commercial laundries and dye works;

15. Sewage, storm water and industrial waste treatment plants and pumping stations;

16. Waterfront facilities including piers, docks, marinas and shipyards;

17. **Industrial facilities which recycle water;**

18. **Restricted or classified facilities or other facilities closed to the supplier of water or the department;**

19. **Fire sprinkler systems using any chemical additives;**

20. **Auxiliary water systems;**

21. **Irrigation systems with facilities for injection of pesticides, herbicides or other chemicals or with provisions for creating back pressure;**

22. **Portable tanks for transporting water taken from a public water system;**

23. **Facilities which have pumped or repressurized cooling or heating systems that are served by a public water system, including all boiler systems; and**

24. **Facilities which contain any boiler system and are serviced by a public water system.**

APPENDIX C

TYPES OF FACILITIES REPRESENTING LOW HAZARD CROSS CONNECTIONS

1. **Tanks to store water from the public water system for firefighting only, unless the tanks meet the requirements of the department for construction to maintain bacteriological quality of the water;**

2. **Fire sprinkler systems not using chemical additives. This only applies to new fire sprinkler systems or fire sprinkler systems scheduled for modifications;**

3. **Irrigation systems without facilities for injection of pesticides or other chemicals. The backflow prevention assembly may be installed between the customer service line and the irrigation system; and**

4. **Cross-connections that could permit introduction of contaminants into the public or customer water system and create a nuisance, be aesthetically objectionable, or cause minor damage to the water distribution system or its appurtenances.**