

AN ORDINANCE AMENDING CHAPTER 90 OF THE BRANSON MUNICIPAL CODE PERTAINING TO CROSS CONNECTION CONTROL.

NOW THEREFORE, BE IT ORDAINED BY THE BOARD OF ALDERMEN OF THE CITY OF BRANSON, MISSOURI, THE FOLLOWING:

Section 1: That Chapter 90 – *Utilities*, Article IV – *Water*, of the Branson Municipal Code by adding Division 3 - – *Cross Connection Control*, , Sec. 90-271 through Sec. 90-281 as follows:

ARTICLE IV. WATER

DIVISION 3. CROSS CONNECTION CONTROL

Secs. 90-250—90-270. Reserved.

Sec. 90-271. Purpose.

The purposes of this division shall be:

(a) To protect the city’s public potable water system from contamination or pollution by containing, within a user’s internal distribution system or private water system, contaminants or pollutants which could backflow through the service connection into the city’s public potable water supply system.

(b) To promote the elimination, containment, isolation and control of existing cross connections, whether actual or potential, between the public potable water system and the user’s internal distribution system or private water system.

(c) To provide for the maintenance of a continuing program of cross connection control and effectively prevent the contamination or pollution of the public potable water system.

Sec. 90-272. Definitions

The following words, terms and phrases when used in this division, shall have the meaning ascribed to them, except where the content clearly indicates a different meaning:

***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 two times the diameter of the supply pipe measured vertically above the flood level rim of the receiving vessel, but in no case less than one inch. Construction shall be as approved by the Foundation for Cross Connection Control and Hydraulic Research of the University of Southern California and adopted by the Missouri Department of Natural Resources.

Auxiliary water supply means any water source or system, other than the public water supply, that may be available in a building or on a premise.

Backflow means 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.

Backflow prevention assembly means a double check valve, reduced pressure principle backflow preventer or variations of either having resilient-seated shut-off valves on both the upstream and downstream end and the necessary test cocks as integral parts of the assembly that is on the current “list of approved backflow prevention assemblies” established by the Foundation for Cross Connection Control and Hydraulic Research of the University of Southern California and adopted by the Missouri Department of Natural Resources.

Bypass means any arrangement of pipes, plumbing, or hoses designed to divert the flow around an installed backflow device or assembly through which the flow normally passes.

Certified backflow assembly tester means a person certified by the Missouri Department of Natural Resources to inspect, test and report on backflow prevention assemblies.

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 after the connection to the meter and before the first branch line.

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.

Cross-connection means any physical connection between a potable water supply and any waste pipe, soil pipe, sewer, drain, non-potable source or any unapproved source or system based on the standards of the Missouri Division of Health, and through which backflow can occur to contaminate or pollute the public potable water system. Cross-connections also include any potable water supply outlet which is submerged or can be submerged in waste water or any other source of contamination, bypass arrangements, jumper connections, removable sections, swivel or change over devices, and other temporary or permanent devices through which, or because of which, backflow can occur.

Cross-connection control means the use of backflow prevention assemblies, methods and procedures to prevent contamination or pollution of a potable water supply through cross-connections.

Detector double check valve assembly (DDCVA) means a Double Check Valve Assembly (DCVA) with an additional smaller DCVA assembly and flow detector meter in parallel, used to detect system leaks and unauthorized use.

Detector reduced pressure principle backflow prevention assembly (DRP) means an RP with an additional smaller RP assembly and flow detector meter in parallel, used to detect system leaks and unauthorized use.

Double check valve assembly (DCVA) means a backflow prevention assembly consisting of two independently operating check valves, four test cocks, and two shut-off valves.

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) *Class I Hazard—Contamination* means 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 user. The public potable water system shall be protected from a Class I Hazard by an air gap separation or a reduced pressure principle backflow prevention assembly.

(b) *Class II Hazard—Pollutional* means an actual or potential threat to the physical properties of the water system or to the potability of the public or the user's potable water system and which would constitute a nuisance or be aesthetically objectionable or could cause minor damage to the system or its appurtenances, but would not be dangerous to health. The public potable water system shall be protected from a Class II Hazard by an air gap separation, a reduced pressure principle backflow prevention assembly, or a double check valve assembly backflow preventer.

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.

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.

Premise means buildings or structures located on public or private property.

Public potable water system means any water system supplying water to the general public that is satisfactory for drinking, culinary and domestic purposes and meets the requirements of the Missouri Department of Natural Resources.

Reduced Pressure Principle Backflow Prevention Assembly (RP) means backflow prevention assembly consisting of four test cocks, two shut-off valves, two independently operating, spring loaded check valves with a reduced pressure zone between the checks. The zone contains a relief port which will open at atmosphere if the pressure in the zone falls within two psi of the supply pressure. The assembly provides protection against both back pressure and back-siphonage.

Service connection means the terminal end of a service line from the public water system. If a meter is installed at the end of the service, then the service connection means the downstream end of the meter.

User means an owner, tenant or other person possessing an interest in a subject property, who makes the arrangement with the city for water service to the subject property, and any contract user, which includes all persons and entities who purchase water from the city, whether on a full-time, temporary or emergency basis, for individual use, resale or redistribution.

Utilities department means the city department with responsibility for the oversight of this division.

Sec. 90-273. Applicability and Exemptions.

(a) This division shall apply to all premises served by the public potable water system of the city. All users connected to the city's public potable water system shall adhere to the provisions of this Cross Connection Control Program.

(1) Exceptions:

- a. The requirements of this division shall not apply to residential single family dwellings unless a sprinkler system, irrigation system, swimming pool, spa, or auxiliary water system is existing or has been installed or other cross connection is specifically identified on the premise.
- b. The city may grant a request for exemption, with approval of the Missouri Department of Natural Resources, from the requirements of this division if the user can demonstrate that the activities taking place at the user's facility and the materials used or stored in connection with these activities will not endanger the health of other users or degrade the water quality of the public potable water system should backflow occur, or that any potential risk posed by these materials or activities is isolated from the public water system. Those users granted an exemption in accordance with this section shall report to the utilities department, any proposed change in process, plumbing or material used or stored at the exempted facility at least fourteen (14) days prior to making the change.

(b) Any exemption shall be revoked if the:

- (1) Missouri Department of Natural Resources or the city determines that a user facility has become an actual or potential backflow hazard
- (2) User fails to provide notice at least fourteen (14) days prior to making any changes in process, plumbing or materials used or stored at the facility.

Sec. 90-274. Initial program implementation procedure.

Following adoption of this division the city shall conduct a survey and inspection of all user premises connected to the city's public potable water system in order to determine needs for backflow prevention. Following the initial survey and inspection of each premise the city will provide notification to the user of any requirement for the installation of a backflow assembly or the upgrade of an existing assembly. Within thirty (30) days of notification the user shall submit to the city planning and development department, for review and approval, plans for the installation of the assembly. The planning department shall review the plans within fifteen (15) days. If plans are denied the user shall resubmit corrected plans within ten (10) days of denial notification. Following approval of installation plans the planning and development department will issue a permit for the installation of an assembly as required. Upon receipt of permit the user shall be given ninety (90) days to perform the installation. Failure of the user to meet procedure timelines shall result in discontinuation of water service as described in Section 90-281 (b) and (c) of this division.

Sec. 90-275. Cross connections prohibited.

(a) No water service connection shall be installed or maintained to any premises where actual or potential cross connections to the public potable water system may exist unless such actual or potential cross connections are abated or controlled to the satisfaction of the utilities department and as required by the laws and regulations of the Missouri Department of Natural Resources.

(b) No connection shall be installed or maintained whereby an auxiliary water supply may enter a public potable water system.

(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 utilities department as necessary for the protection of health and safety.

(d) No plumbing branch shall be installed prior to the inlet side of a backflow prevention assembly.

(e) No by-pass shall be installed around any backflow prevention assembly unless there is an approved backflow prevention assembly in the bypass. This application is acceptable for users who desire or require uninterrupted water service during testing, repair or maintenance of an assembly.

(f) No person shall willfully damage, tamper with or modify the intended function of a backflow prevention assembly.

(g) No person shall cover an existing backflow prevention assembly vault or pit with earth, concrete or pavement, or otherwise render it inaccessible.

(h) No connection of a private water distribution system shall be made to the City's public water system unless an approved method of backflow prevention, as determined by the utilities department, is installed.

Sec. 90-276. Types of protection required.

(a) Generally. The type of protection required by this division shall depend on the degree of hazard which exists, as established by the Foundation for Cross Connection Control and Hydraulic Research of the University of Southern California and adopted by the Missouri Department of Natural Resources.

(b) Uses constituting potential Class I Hazards. An approved air gap separation or an approved RP shall be installed when the public potable water system may be contaminated with substances that could cause a Class I health hazard. Examples:

- (1) Facilities that manufacture vehicle, aircraft, construction or agricultural equipment;**
- (2) Potable water dispensing stations which are served by a public potable water system;**
- (3) Facilities including dairies, soft drink bottlers, breweries, canneries, packing houses and reduction plants;**
- (4) Car washes;**
- (5) Chemical, biological and radiological laboratories including those in high schools, trade schools, colleges, universities and research institutions;**
- (6) Hospitals, clinics, medical buildings, autopsy facilities, morgues, mortuaries and other medical facilities;**
- (7) Metal or plastic manufacturing, fabrication, cleaning, plating or processing facilities;**
- (8) Facilities manufacturing paper and paper products;**
- (9) Facilities 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 potable water system;**
- (10) Commercial facilities that use herbicides, pesticides, fertilizers or any chemical which would be a contaminant to the public potable water system;**
- (11) Facilities processing, blending or refining animal, vegetable or mineral oils;**
- (12) Commercial laundries and dye works;**
- (13) Sewage, storm water and industrial waste treatment facilities and pumping stations;**

- (14) Waterfront facilities including piers, docks, and marinas;**
- (15) Industrial facilities which recycle water;**
- (16) Restricted or classified facilities or other facilities closed to the supplier of water;**
- (17) Fire sprinkler systems using any chemical additives;**
- (18) Auxiliary water systems;**
- (19) Irrigation systems with facilities for injection of pesticides, herbicides or other chemicals or with provisions for creating back pressure;**
- (20) Portable tanks for transporting water taken from a public potable water system;**
- (21) Facilities that have pumped or re-pressurized cooling or heating systems that are served by a public water system, including all boiler systems;**
- (22) In cases of intricate plumbing and piping arrangements;**
- (23) When entry to all portions of the premises is not readily accessible for inspection purposes making it impracticable or impossible to ascertain whether or not cross-connections exist;**
- (24) Any cross-connection that could permit introduction of contaminants into the public or user's potable water system creating health hazards; and**
- (25) Food processing or preparation facilities or other establishments with carbonation or chemical injection equipment.**

(c) Uses constituting potential Class II Hazards. An approved air gap separation, an approved RP or an approved DCVA shall be installed when the public potable water system may be polluted with substances that could cause a Class II hazard not dangerous to health. Examples:

- (1) Tanks to store water from the public potable water system for firefighting only, unless the tanks meet the requirements of the Missouri Department of Natural Resources for construction to maintain bacteriological quality of the water;**
- (2) Fire sprinkler systems not using chemical additives;**
- (3) Irrigation systems without facilities for injection of pesticides, herbicides or other chemicals;**
- (4) Multi-story buildings, such as hotels, motels, malls, office buildings or apartment houses;**
- (5) Any cross-connection that could permit introduction of pollutants into the public or user's potable water system and create a nuisance, aesthetically objectionable water**

or may cause minor damage to the public potable water system or its appurtenances; and

- (6) Food processing or preparation facilities without carbonation or chemical injection equipment.

(d) Other uses. User facilities not designated a backflow hazard by Sec. 90-276 subsection (b) or (c) may be designated a Class I or Class II backflow hazard by written notification from the utilities department to the user. The notice shall specify the nature of the user's activity which necessitates designation of the facility as a backflow hazard, the type of backflow protection required and the date by which the user shall install or construct this assembly on the user's service line to the facility.

(e) Temporary connections.

- (1) Temporary connections to the water system for any purpose shall be considered a Class I health hazard and shall be protected by an RP or an air gap separation.
- (2) When a fire hydrant connected to the public potable water system is used as a temporary water source, the connection shall be considered a Class I health hazard and shall be protected by an RP. The utilities department will provide and install an RP along with a temporary meter connection. The RP shall not be removed or relocated by the user.
- (3) A mobile business connected to the public potable water system for a temporary water source shall be considered a Class I health hazard and shall be protected by an RP or an air gap separation supplied by the business. Examples of such mobile business', not all inclusive, are power washing, carpet cleaning, chemical fertilizer applicators, hydro-seeders, boring machines, watering trucks, and sewer cleaning equipment.

Sec. 90-277. User requirements.

(a) All users shall:

- (1) Eliminate cross-connections or install an approved backflow prevention assembly at a location required under this division.
- (2) Correct malfunctions and make necessary repair of backflow prevention assemblies.
- (3) Inform the utilities department of any auxiliary water supply on or available to the subject property.
- (4) Install thermal expansion control or release devices within user's plumbing system to control or release pressures that may dissipate into the public potable water system.

- (5) Unless restricted or classified make the user's premise accessible at reasonable times to the utilities department or other authorized city representatives for the conduction of surveys and investigations of water use practices to determine whether actual or potential cross connections exist within the user's water system.
- (6) Conduct periodic surveys of water use practices on their premises to determine whether actual or potential cross connections exist within their water system through which contaminants or pollutants could backflow into their own or the public potable water system.
- (7) Upgrade or replace an existing backflow prevention assembly that does not meet requirements when:

 - a. The assembly cannot be made testable;
 - b. The assembly does not meet the test standards as established by the Foundation for Cross Connection Control and Hydraulic Research of the University of Southern California and adopted by the Missouri Department of Natural Resources; or
 - c. When the utilities department determines the operations on the user's side of the assembly constitutes such a potential hazard as to require upgrade or replacement.
- (8) Immediately report any failure, removal, modification or replacement of a backflow prevention assembly, air gap separation or any suspected backflow to the utilities department.

Sec. 90-278. Installation requirements.

(a) Approval of utilities department required. Backflow prevention assemblies required by this division shall be installed, at the expense of the user, at a location and in a manner approved by the utilities department.

(b) Specifications for gap separation assemblies. Air gap separations shall be at least two times the diameter of the supply pipe, measured vertically above the top rim of the receiving vessel, but in no case less than one inch.

(c) Specifications for DCVA

- (1) Interior building applications are recommended; however, valve pit or valve vault installations are acceptable.**
- (2) Assemblies installed in a valve pit shall have a minimum of twelve (12) inches of clearance from the lowest point of the valve to a permeable layer of at least twelve**

- (12) inches of clean gravel. The valve pit must have an adequate amount of a permeable layer to keep the pit free of water.
- (3) Valve vault applications shall allow a minimum of twelve (12) inches of clearance from the lowest point of the valve to the vault floor.
 - (4) Valve vaults shall have a drain to daylight through an adequate and permanent gravity drain with a slope of at least one percent. Installation plans shall indicate the elevation of the vault floor, drain piping and drainage area. Drainage pipe shall be screened and of adequate size to drain water during standard maintenance and testing procedures.
 - (5) If a gravity drain requirement cannot be met the vault shall be equipped with an automatic sump pump. The pump shall be set in a recessed section of the vault floor with an output piped through the vault wall above grade.
 - (6) For assemblies larger than three (3) inch, the minimum clearance shall be thirty (30) inches free space on the testable side and twelve (12) inches on the opposite side, eight (8) inches from the last flange on each end, and six (6) inches above the highest point.
 - (7) For assemblies less than three (3) inch, the minimum clearance shall be thirty (30) inches free space between the testable side and twelve (12) inches on the opposite side, four (4) inches on each end and six (6) inches above the highest point.

(d) Specifications for RP.

- (1) Assembly shall be installed in a location where it will not be submerged or subject to flooding by any fluid.
- (2) The lowest point of the assembly shall be at least twelve (12) inches but not more than thirty-six (36) inches above the surface elevation or high water level, whichever is highest.
- (3) Assemblies shall be installed with no plug or additional piping affixed to the pressure differential relief port (except for specifically designed air gap funnel apparatus available from the manufacturer).
- (4) Assemblies shall not be installed below grade, or in a vault or pit.
- (5) When installed inside a building, the relief port discharge shall be piped outside or to a floor drain and be sized for maximum discharge as recommended by the manufacturer.
- (6) Assembly shall be installed with the relief port pointed down.
- (7) For assemblies larger than three (3) inch, the minimum clearance shall be thirty (30) inches free space on the testable side and twelve (12) inches on the opposite

side, eight (8) inches from the last flange on each end, and six (6) inches above the highest point.

- (8) For assemblies less than three (3) inch, the minimum clearance shall be thirty (30) inches free space between the testable side and twelve (12) inches on the opposite side, four (4) inches on each end and six (6) inches above the highest point.

(e) Cold water application required; exception. Unless otherwise specified by the manufacture, all assemblies are to be installed on cold water applications below 110 degrees Fahrenheit.

(f) Device location and orientation.

- (1) Backflow prevention assemblies installed on the service line to the user's water system shall be located on the user's side of the water meter, as close to the meter as is reasonably practical, and prior to any other branch connection on the user side of the water meter.
- (2) Backflow prevention assemblies shall be located so as to be readily accessible for maintenance, testing, and protected from freezing.
- (3) All backflow prevention assemblies shall be installed in a horizontal orientation unless specifically noted on the "list of approved backflow prevention assemblies" established by the Foundation for Cross Connection Control and Hydraulic Research of the University of Southern California and adopted by Missouri Department of Natural Resources.

(g) Test water discharge procedure. An adequate and permanent method of handling test water discharge shall be provided.

(h) Support of assembly valves. Adequate support, excluding water lines, shall be provided under assembly valves for assemblies that are three (3) inches or larger.

Sec. 90-279. Inspection, testing and maintenance.

(a) User responsibilities. It shall be the responsibility of the user at any premise where a backflow prevention assembly is required by this division, to have inspections, tests, and maintenance performed, at the user's expense, by a Certified Backflow Assembly Tester in accordance with the following schedule or more often where inspections indicate a need.

(b) Inspection schedule. Air gap separations shall be inspected at the time of installation and at least annually thereafter. DCVA and RP assemblies shall be inspected and tested at the time of installation and at least annually thereafter. Backflow prevention assemblies on irrigation systems shall be inspected and tested annually during startup of the irrigation system or by June 1st, whichever occurs first.

(c) Performance testing schedule; report of noncompliance. Annual performance testing shall be conducted on DCVA and RP assemblies no later than thirty (30) days past the anniversary date of installation or last inspection. The city shall notify the Missouri Department of Natural

Resources if a performance test and inspection is not conducted on a user's backflow assembly within sixty (60) days of the established anniversary date.

(d) *Repair or replacement of defective devices; retesting.* Any backflow prevention assembly which fails or is found to be non-operable during a test shall be immediately repaired or replaced by the user. Upon completion of any repair or replacement the assembly shall be retested to insure correct operation.

Sec. 90-280. Records and reporting.

(a) *User information to be maintained by department.* The utilities department shall maintain a data base of all user information requiring backflow prevention. The data shall include information pertaining to type, installation dates, repairs, inspections and testing of each backflow prevention assembly as required under this division.

(b) *Certificates of inspection and testing to be provided by user.* The user shall cause a certified backflow assembly tester to provide to the city a copy of a certified performance test and inspection on a form approved by the utilities department within ten days after the completion of any the test or inspection but not more than thirty (30) days past the anniversary date of any assembly.

(c) *Types of assemblies requiring multiple certificates.* Detector double check valve assemblies and detector reduced pressure principal backflow prevention assemblies are composed of two unique assemblies, each requiring separate certificate submission.

Sec. 90-281. Discontinuance of water service for noncompliance.

(a) If any violation of this division is not corrected within fourteen (14) calendar days following certified notification to the user, the city shall discontinue water service to the premises wherein the cross-connection control violation exists. Other than water required for testing of an assembly, the water service to such premises shall not be restored until the user has corrected or eliminated such conditions or defects creating violation of this division.

(b) Water service shall be completely severed if a user is causing or maintaining an unprotected cross connection, refuses to proceed without delay to correct any violation of this division or if so ordered by the Missouri Department of Natural Resources the water service to such premises shall not be restored until the user has corrected or eliminated such conditions or defects creating violation of this division.

(c) Nothing in this section shall be construed to interfere with any additional penalty(s) that may be imposed as set forth in Sec. 90-1 of this chapter.

NOTE: LANGUAGE WHICH IS **BOLD, UNDERLINED** HAS BEEN ADDED; LANGUAGE WHICH IS [~~BRACKETE~~, ~~STRICKEN~~] HAS BEEN REMOVED.

Section 2: This ordinance shall be in full force and effect from and after its passage and approval.

Read, this first time on this 8th day of January, 2013.

Read this second time, passed and truly agreed to by the Board of Aldermen of the City of Branson, Missouri on this 22nd day of January, 2013.

Raeanne Presley
Mayor

ATTEST:

APPROVED AS TO FORM:

Lisa K Westfall
City Clerk

William T. Duston
City Attorney