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CITY OF BANKS

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FIELD SERVICES  
DRINKING WATER PROGRAM

ORDINANCE NO. 2007-11-04

AN ORDINANCE AMENDING THE CODE OF THE CITY OF BANKS CHAPTER 51:

Whereas, the City's backflow prevention and testing programs benefits the entire drinking water public of the City of Banks.

Whereas, the Oregon Administrative Rules have been amended in regards the requirements for municipal backflow prevention programs; Now therefore the City ordains as follows:

**Chapter 51. Cross Connection Control Program Ordinance**

**Section 51.01 Purpose**

1. The purpose of the ordinance is:

- a. to develop and manage a cross connection control program to protect the city water system from pollution and contamination due to any existing or potential cross connections;
- b. to have a city water system cross connection control program that meets the minimum requirements set forth in the Oregon Administrative Rules Chapter 333-061-0070-0073, cross connection control requirements, or as that Chapter is amended.

**Section 51.02 Definitions**

Definitions. As used in this ordinance, unless the context indicates otherwise:

- 1. "Approved Air Gap (AG)" means a physical separation between the free-flowing discharge end of a potable water supply pipeline and an open or non-pressurized receiving vessel. An "Approved Air Gap" shall be at least twice the diameter of the supply pipe measured vertically above the overflow rim of the vessel and in no case less than 1 inch (2.54 cm), and in accord with Oregon Plumbing Specialty Code.
- 2. "Atmospheric Vacuum Breaker (AVB)" means a non-testable device consisting of an air inlet valve or float check, a check seat and an air inlet port(s). This device is designed to protect against a non-health hazard or a health hazard under a backsiphonage condition only. Product and material approval is under the Oregon Plumbing Specialty Code.
- 3. "Backflow" means the flow of water or other liquids, mixtures, or substances into the distributing pipes of a potable supply of water from any sources other than its intended source, and is caused by backsiphonage or backpressure.

4. "Backflow Preventer" means a device, assembly or method to prevent backflow into the potable water system.
5. "Backflow Prevention Assembly" means a backflow prevention assembly such as a Pressure Vacuum Breaker Backsiphonage Prevention Assembly, Spill-Resistant Pressure Vacuum Breaker Backsiphonage Prevention Assembly, Double Check Valve Backflow Prevention Assembly, Double Check-Detector Backflow Prevention Assembly, Reduced Pressure Principle Backflow Prevention Assembly, or Reduced Pressure Principle-Detector Backflow Prevention Assembly and the attached shutoff valves on the inlet and outlet ends of the assembly, assembled as a complete unit.
6. "Backpressure" means an elevation of pressure downstream of the distribution system that means a drop in distribution system pressure below atmospheric would cause, or tend to cause, water to flow opposite of its intended direction.
7. "Backsiphonage" pressure (partial vacuum), that would cause, or tend to cause, water to flow opposite of its intended direction.
8. "Check Valve" means a valve, which allows flow in only one direction.
9. "Contaminant" means any physical, chemical, biological, or radiological substance or matter in water that creates a health hazard.
10. "Contingency Plan" means a document setting out an organized, planned and coordinated course of action to be followed in the event of a loss of capacity to supply water to the distribution system or in case of a fire, explosion or release of hazardous waste which could threaten human health or the environment.
11. "Cross Connection" means any actual or potential unprotected connection or structural arrangement between the city or user's potable water system and any other source or system through which it is possible to introduce into any part of the potable system any used water, industrial fluid, gas, or substances other than the intended potable water with which the system is supplied. 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 are considered to be cross connections.
12. "Degree of Hazard" means either pollution (non-health hazard) or contamination (health hazard) and is determined by an evaluation of hazardous conditions within a system.
13. "Department" means the Oregon Department of Human Services (DHS).
14. "Double Check-Detector Backflow Prevention Assembly (DCDA)" means a specially designed assembly composed of a line size approved double check valve assembly assembled with a bypass containing a specific water meter and an approved double check valve assembly. The meter shall register accurately for only very low rates of flow up to three gallons per minute and shall show a registration for all rates of flow. This assembly is designed to protect against a non-health hazard.
15. "Double Check Valve Backflow Prevention Assembly (DC)" means an assembly of two independently acting approved check valves, including tightly closing resilient seated shutoff valves attached at each end of the assembly and fitted with properly located resilient seated test cocks. This assembly is designed to protect against a non-health hazard.



16. "Person" means any individual, corporation, association, firm, partnership, municipal, state or federal agency, or joint stock company and includes any receiver, special master, trustee, assignee, or other similar representative thereof.

17. "Point of Delivery (POD)" means the point of connection between the city water system and the user's water system. Beyond the point of delivery, the Oregon Plumbing Specialty Code applies. See "Service Connection."

18. "Pollutant" means a substance that creates an impairment of the quality of the water to a degree which does not create a hazard to the public health, but which does adversely affect the aesthetic qualities of the water.

19. "Potable Water" means water which has sufficiently low concentrations of microbiological, inorganic chemical, organic chemical, radiological or physical substances so that individuals drinking such water at normal levels of consumption, will not be exposed to disease organisms or other substances which may produce harmful physiological effects.

20. "Potential Cross Connection" means a cross connection that would most likely occur, but may not be taking place at the time of an inspection.

21. "Premise" means real estate and the structures on it.

22. "Premise Isolation" means the practice of protecting the city water supply from contamination or pollution by installing backflow prevention assemblies at, or near, the point of delivery where the water supply enters the premise. Premise isolation does not guarantee protection to persons on the premise.

23. "Pressure Vacuum Breaker Backsiphonage Prevention Assembly (PVB)" means an assembly consisting of an independently operating, internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve. This assembly is to be equipped with properly located resilient seated test cocks and tightly closing resilient seated shutoff valves attached at each end of the assembly. This assembly is designed to protect against a non-health hazard or a health hazard under backsiphonage conditions only.

24. "Public Water System" means the city water system.

25. "Reduced Pressure Principle Backflow Prevention Assembly (RP)" means 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 resilient seated test cocks and tightly closing resilient seated shutoff valves at each end of the assembly. This assembly is designed to protect against a non-health hazard or a health hazard.

26. "Reduced Pressure Principle-Detector Backflow Prevention Assembly (RPDA)" means a specifically designed assembly composed of a line size approved reduced 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 three gallons per minute and shall show a registration for all rates of flow. This assembly is designed to protect against a non-health hazard or a health hazard.

27. "Service Connection" means the piping connection by means of which water is conveyed from a distribution main of the city system to a user's premise. For the city, the portion of the service connection that conveys water from the distribution main to the user's property line, or to the service meter, where provided, is under the jurisdiction of the city.

### **Section 51.03 Application and responsibilities**

1. The ordinance codified in this chapter applies throughout the city and to every premise and property served by the city water system. It applies to all premises, regardless of the date of connection to the city water system. Every owner, occupant or person in control of any concerned premise is responsible for the terms and provisions contained in this ordinance codified in this chapter. No water service connection to any premise shall be installed or maintained by the city unless the public water supply is protected as required by State laws and regulations and this Ordinance.
2. The city's responsibility for cross connection control shall begin at the water supply source, including all city treatment, storage, and distribution facilities under the city's control, and end at the point of delivery to the water user's premise.
3. The city shall require approved air gaps, the use of only approved devices, and inspections and tests of approved backflow prevention assemblies protecting the city water system inspections to be conducted: (a) at the time of any service installation, repair, or relocation; (b) again at least annually; (c) or more frequently than annually for approved backflow prevention assemblies that repeatedly fail, or are protecting health hazard cross connections, as determined by the city; (d) after a backflow incident; or (e) after an approved air gap is re-plumbed. The result of the test of a backflow prevention device assembly required under this chapter shall be forwarded to the city within ten (10) days of the date of the test. If the city has not received the result of a test required under this chapter within thirty (30) days of the required date of the test, the city may order a test and add the cost of the test to the property owner's water bill.
4. The water department shall supply a list of approved devices and have available contractors or staff to install the device for a fee that shall be published prior to service.
5. A water user or premise owner who obtains water from the city must notify the city if they add any chemical or substance to their water.
6. Those water users or premise owners with premises identified in Exhibit 1 (Premises Requiring Isolation), must have an approved backflow prevention assembly or an approved air gap installed.
7. The city shall require the installation of an approved backflow prevention assembly or an approved air gap commensurate with the degree of hazard on the premise, as defined in Exhibit 2 (Backflow Prevention Methods). Also, the city requires the installation of an approved backflow prevention assembly or an approved air gap commensurate with the degree of hazard on the premises where there is intricate plumbing that makes it impractical to ascertain whether a cross connection exists.
8. In lieu of premise isolation, the city may accept an in-premise approved backflow prevention assembly as protection for the city water system when the approved backflow prevention assembly is installed, maintained and tested in accordance with the Oregon Plumbing Specialty Code and the Oregon Administrative Rules.



9. It is the responsibility of the water user or premise owner to repair, replace or re-plumb approved air gaps, approved devices, or approved backflow prevention assemblies found not to be functioning properly.

10. Where premise isolation is used to protect against a cross connection, the following requirements

apply: a. The city shall: (i) ensure the approved backflow prevention assembly is installed at a location adjacent to the service connection or point of delivery; (ii) ensure any alternate location used must be with the approval of the city and must meet the city's cross connection control requirements; and (iii) notify the premise owner and water user, in writing, of thermal expansion concerns.

b. The premise owner shall: (i) ensure no cross connections exist between the point of delivery from the city water system and the approved backflow prevention assemblies, when these are installed in an alternate location; and (ii) assume responsibility for testing, maintenance, and repair of the installed approved backflow prevention assembly to protect against the hazard.

c. Where unique conditions exist, but not limited to, extreme terrain or pipe elevation changes, or structures greater than three stories in height, even with no actual or potential health hazard, an approved backflow prevention assembly may be required at the point of delivery; and

d. Where the city chooses to use premise isolation by the installation of an approved backflow prevention assembly on a one-or two-family dwelling under the jurisdiction of the Oregon Plumbing Specialty Code and there is no actual or potential cross connection, the city shall:

(1) Install the approved backflow prevention assembly at the point of delivery;

(2) Notify the premise owner and water user in writing of thermal expansion concerns; and

(3) Take responsibility for testing, maintenance and repair of the installed approved backflow prevention assembly.

11. If an actual or potential cross connection exists within any premise, the property owner will be required by letter from the City of Banks Water Department to install and test an approved backflow prevention assembly as required by OAR 333-61-0070 (1)(a)(H) (Cross Connection Control Requirements) at the service connection to the premises within 90 days at owners expense.

12. Installation, repair, disconnection or other modification of a backflow prevention device assembly or air gap separation shall be at the sole expense of the property owner or the owner of the mobile apparatus on which the assembly or separation is located. If modification of the city's water system is required to allow compliance with the requirements of this section, the costs of such modifications may be added to the property owner's bill or may be billed directly to the property owner.

13. On new construction, the city water department will inspect the site to determine if a potential cross connection exists and if so a double check valve assembly (DCVA) has been properly installed

and tested.

14. On existing homes the water department will perform on site inspections and notify the owner by letter if any corrective action is necessary.

15. The owner/user shall be responsible for the cost and elimination or isolation of all cross connections on their property.

16. All threats will be classified by degree of hazard. Where a threat is identified, the city will require the installation of approved backflow prevention device at least commensurate with the degree of hazard that exists.

#### **Section 51.04 Existing in-use Backflow Prevention Devices**

A backflow prevention device assembly installed before the effective date of this section shall be permitted to remain in service regardless of whether the device is currently approved by the city, so long as the device:

- a. was an approved device by the State Health Division at the time of installation; and
- b. was properly installed at the time of installation;
- c. is: (1) properly maintained;  
(2) commensurate with the degree of hazard;  
(3) tested annually as required by this section; and  
(4) performs satisfactorily.

#### **Section 51.05 Annual Testing**

All testable backflow devices shall be tested and inspected yearly by a certified tester at the owner's expense. The owner shall provide a copy of that report to the city water department within 10 days of receiving it.

#### **Section 51.06 Records and Reports**

1. The city water department will maintain master files on customer's cross connection installation, inspection, testing, applications and listings of high and low hazard cross connections.

2. An annual summary of cross connection inspections will be submitted to the Oregon Health Department on forms supplied by the Department before the last working day of March each year or as required by the Department.

3. The city water department will maintain:

- a. A current list of certified cross connection control staff members (at least one person must be certified unless specifically exempted by the Department);
- b. A list of the procedures for evaluating the degree of hazard posed by a water user's premise;
- c. A list of procedures for notifying the water user if a non-health hazard or health hazard is identified; and for informing the water user of corrective action required;
- d. A description of the type of protection required to prevent backflow into the public water supply, commensurate with the degree of hazard that exists on the water user's premise, as



defined in Exhibit 2;

- e. A description of what corrective actions will be taken if a water user fails to comply with the city's cross connection control requirements;
- f. Records of verifications of Backflow Assembly Tester certifications.

**Section 51.07 Violations of Cross Connection Program Resulting in Discontinuing Water Service to User Premises**

1. The following actions by water users will result in discontinuation of water service to the premise:
  - a. Failure to remove or eliminate an existing unprotected or potential cross connection within 30 days of notice;
  - b. Failure to install a required approved backflow prevention assembly within 30 days of notice;
  - c. Failure to maintain an approved backflow prevention assembly within 30 days of notice;
  - d. Failure to conduct the required testing of an approved backflow prevention assembly within 60 days of notice.

**Section 51.08 Emergency Response Plan and Water System Operations Manual**


1. The city shall maintain a current emergency response plan as required by OAR 333-061-0064 as shown in Exhibit 4 incorporated herein by this reference.

Brought before Banks City Council October 9, 2007.

Passed by Banks City and effective as of November 13, 2007.

  
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Mayor Teri Branstitre

Attest:

  
City Recorder: Jolynn Becker

Summary of Votes:

Brian Biehl  Yes/No  
Pete Edison  Yes/No  
Dan Keller  Yes/No  
Craig Stewart  Yes/No  
Jason Short  Yes/No  
Ron Kemper  Yes/No

EXHIBIT 1  
 PREMISES REQUIRING ISOLATION\* BY  
 AN APPROVED AIR GAP OR  
 REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY

1. Agricultural (e.g. farms, dairies)
2. Beverage bottling plants **
3. Car washes
4. Chemical plants
5. Commercial laundries and dry cleaners
6. Premises where both reclaimed and potable water are used
7. Film processing plants
8. Food processing plants
9. Medical centers (e.g., hospitals, medical clinics, nursing homes, veterinary clinics, dental clinics, blood plasma centers)
10. Premises with irrigation systems that use the water supplier's water with chemical additions (e.g., parks, playgrounds, golf courses, cemeteries, housing estates, installed lawn sprinkler systems)
11. Laboratories
12. Metal plating industries
13. Mortuaries
14. Petroleum processing or storage plants
15. Radioactive material processing plants and nuclear reactors
16. Wastewater lift stations and pumping stations
17. Wastewater treatment plants
18. Premises with piping under pressure for conveying liquids other than potable water and the piping is installed in proximity to potable water piping
19. Premises with an auxiliary water supply that is connected to a potable water supply
20. Premises where the water supplier is denied access or restricted access for survey
21. Premises where the water is being treated by the addition of chemical or other additives

\* Refer to OAR 333-61-0070(8) Premise Isolation Requirements

\*\* A Double Check Valve Backflow Prevention Assembly could be used if the water supplier determines there is only a non-health hazard at a beverage bottling plant



EXHIBIT 2  
 BACKFLOW PREVENTION METHODS  
 USED FOR PREMISE ISOLATION

DEGREE OF IDENTIFIED HAZARD

Non-Health Hazard (Pollutant)	Health Hazard (Contaminant)
BACKSIPHONAGE OR BACKPRESSURE	BACKSIPHONAGE OR BACKPRESSURE
Air Gap(AG)	Air Gap(AG)
Reduced Pressure Principle Backflow Prevention Assembly (RP)	Reduced Pressure Principle Backflow Prevention Assembly (RP)
Reduced Pressure Principle-Detector Backflow Prevention Assembly (RPDA)	Reduced Pressure Principle-Detector Backflow Prevention Assembly (RPDA)
Double Check Valve Backflow Prevention Assembly (DC)	
Double Check-Detector Backflow Prevention Assembly (DCDA)	

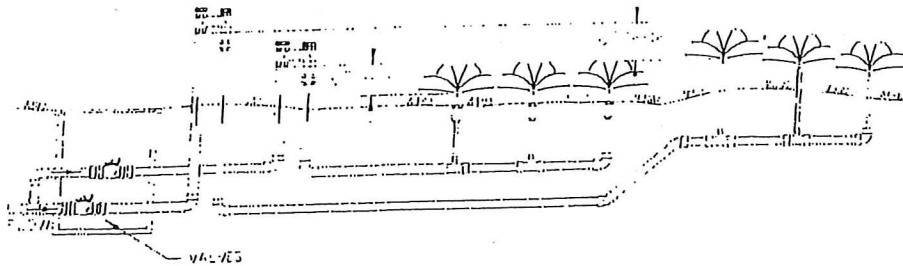
Statutory Authority: ORS 431 & ORS 448  
 Stats. Implemented: ORS 431.110, ORS 431.150, ORS 448.131, ORS 448.150, ORS 448.268, ORS  
 448.271, ORS 448.273, ORS 448.279, ORS 448.295 & ORS 448.300

Exhibit 3

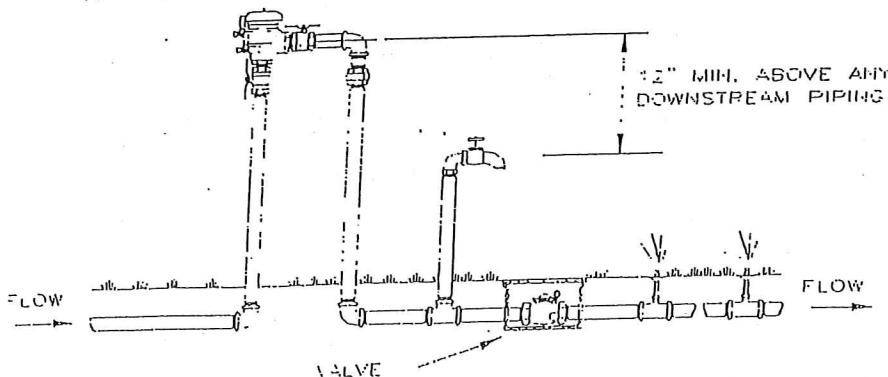
333-061-0071 Backflow Prevention Assembly Installation and Operation Standards

- (1) An approved backflow prevention assembly shall be installed in a manner that:
  - (a) Facilitates its proper operation, maintenance, inspection, and in-line testing using standard installation procedures approved by the Department, such as, but not limited to, University of Southern California, Manual of Cross-Connection Control, 9<sup>th</sup> Edition, the Pacific Northwest Section American Water Works Association, Cross Connection Control Manual, 6<sup>th</sup> Edition, or the local administrative authority having jurisdiction;
  - (b) Precludes the possibility of continuous submersion of an approved backflow prevention assembly, and precludes the possibility of any prevention assembly; and
  - (c) Maintains compliance with all applicable safety regulations and the Oregon Plumbing Specialty Code.
- (2) For premise isolation installation:
  - (a) The approved backflow prevention assembly shall be installed at a location adjacent to the service connection or point of delivery; or
  - (b) Any alternate location must be with the advance approval of the water supplier and must meet the water supplier's cross connection control requirements; and
  - (c) The premise owner shall ensure no cross connections exist between the point of delivery from the public water system and the approved backflow prevention assembly.
- (3) Bypass piping installed around any approved backflow prevention assembly must be equipped with an approved backflow prevention assembly to:
  - (a) Afford at least the same level of protection as the approved backflow prevention assembly being bypassed; and
  - (b) Comply with all requirements of these rules.
- (4) All Oregon Plumbing Specialty Code approved residential multi-purpose fire suppression systems constructed of potable water piping and materials do not require a backflow prevention assembly.
- (5) Stand-alone fire suppression systems shall be protected commensurate with the degree of hazard, as defined in Exhibit 2 (Backflow Prevention Methods).
- (6) Stand-alone irrigation systems shall be protected commensurate with the degree of hazard, as defined in Exhibit 2 (Backflow Prevention Methods).
- (7) An Atmospheric Vacuum Breaker (AVB) shall:



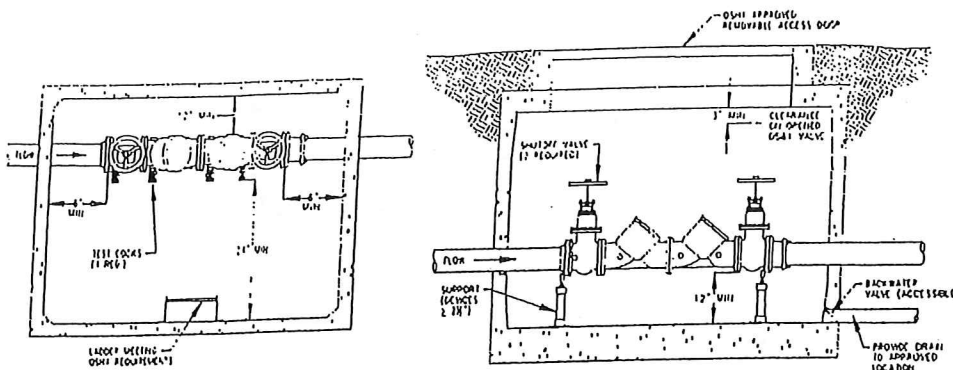


- (a) Have absolutely no means of shut-off on the downstream or discharge side of the atmospheric vacuum breaker;
  - (b) Not be installed in dusty or corrosive atmospheres;
  - (c) Not be installed where subject to flooding;
  - (d) Be installed a minimum of 6 inches above the highest downstream piping and outlets;
  - (e) Be used intermittently;
  - (f) Have product and material approval under the Oregon Plumbing Specialty Code for non-testable devices.
  - (g) Not be pressurized for more than 12 hours in any 24-hour period; and
  - (h) Be used to protect against backsiphonage only, not backpressure.
- (8) A Pressure Vacuum Breaker Backsiphonage Prevention Assembly (PVB) or Spill-Resistant Pressure Vacuum Breaker Backsiphonage Prevention Assembly (SVB) shall:



- (a) Be installed where occasional water discharge from the assembly caused by pressure fluctuations will not be objectionable;
- (b) Have adequate spacing available for maintenance and testing;
- (c) Not be subject to flooding;
- (d) Be installed a minimum of 12 inches above the highest downstream piping and outlets;

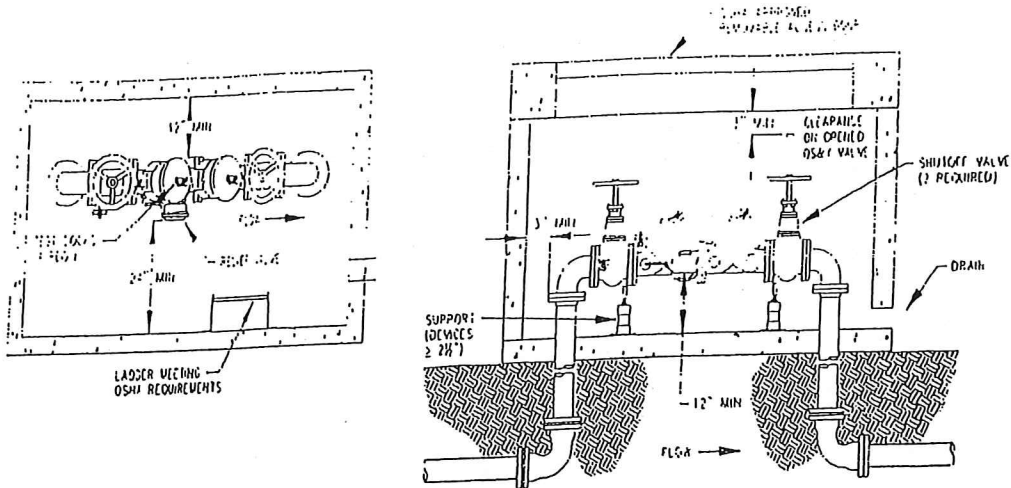
- (c) Have absolutely no means of imposing backpressure by a pump or other means. The downstream side of the pressure vacuum breaker backsiphonage prevention assembly or spill-resistant pressure vacuum breaker backsiphonage prevention assembly may be maintained under pressure by a valve; and
  - (f) Be used to protect against backsiphonage only, not backpressure.
- (9) A Double Check Valve Backflow Prevention Assembly (DC) or Double Check Detector Backflow Prevention Assembly (DCDA):



- (a) Shall conform to bottom and side clearances when the assembly is installed inside a building;
- (b) May be installed vertically as well as horizontally provided the assembly is specifically listed for that orientation in the Department's Approved Backflow Prevention Assembly List.
- (c) May be installed below grade in a vault, provided that water-tight fitted plugs or caps are installed in the test cocks, and the assembly shall not be subject to continuous immersion;
- (d) Shall not be installed at a height greater than 5 feet unless there is a permanently installed platform meeting Oregon Occupational Safety and Health Administration (OR-OSHA) standards to facilitate servicing the assembly;
- (e) May be installed with reduced clearances if the pipes are 2 inches in diameter or smaller, provided that they are accessible for testing and repairing, and approved by the appropriate local administrative authority having jurisdiction;
- (f) Shall have adequate drainage provided except that the drain shall not be directly connected to a sanitary or storm water drain. Installers shall check with the water supplier and appropriate local administrative authority having jurisdiction for additional requirements;



- (g) Shall be protected from freezing when necessary; and
  - (h) Be used to protect against non-health hazards under backsiphonage and backpressure conditions.
- (10) A Reduced Pressure Principle Backflow Prevention Assembly (RP) or Reduced Pressure Principle-Detector Backflow Prevention Assembly (RPDA):



- (a) Shall conform to bottom and side clearances when the assembly is installed inside a building. Access doors may be provided on the side of an above-ground vault;
- (b) Shall always be installed horizontally, never vertically, unless they are specifically approved for vertical installation;
- (c) Shall always be installed above the 100-year (1%) flood level unless approved by the appropriate local administrative authority having jurisdiction;
- (d) Shall never have extended or plugged relief valves;
- (e) Shall be protected from freezing when necessary;
- (f) Shall be provided with an approved air gap drain;
- (g) Shall not be installed in an enclosed vault or box unless a bore-sighted drain to daylight is provided;
- (h) May be installed with reduced clearances if the pipes are 2 inches in diameter or smaller, are accessible for testing and repairing, and approved by the appropriate local administrative authority having jurisdiction;
- (i) Shall not be installed at a height greater than 5 feet unless there is a permanently installed platform meeting Oregon Occupational Safety and Health Administration (OR-OSHA) standards to facilitate servicing the assembly; and

- (a) Be used to protect against a non-health hazard or health hazard for backsiphonage or backpressure conditions.

Statutory Authority: ORS 431 & ORS 448

Stats. Implemented: ORS 431.110, ORS 431.150, ORS 448.131, ORS 448.150, ORS 448.268 & ORS 448.273