

McKinleyville Community Services District Cross-Connection Control Plan

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Acronyms and Abbreviations

As used in this plan, acronyms and abbreviations reference the following:

<i>Acronym or Abbreviation</i>	<i>Meaning</i>
AB	Assembly Bill
AG	Air Gap separation
BAT	Best Available Technology
BPA	Backflow Prevention Assembly
Bus. & Prof. Code	Business and Professional Code
CA	California
CBSC	California Building Standards Commission
CCCP	Cross Connection Control Plan
CCCPH	Cross-Connection Control Policy Handbook
CCR	California Code of Regulations
C.F.R.	Code of Federal Regulations
CHSC	California Health and Safety Code
Civ. Code	Civil Code
DC	Double Check valve backflow prevention assembly
DCDA	Double Check Detector backflow prevention Assembly
DCDA-II	Double Check Detector backflow prevention Assembly – type II
District	McKinleyville Community Services District
Division	Division of Drinking Water
EPA	Environmental Protection Agency
Gov. Code	Government Code
MCL	Maximum Contaminant Level
Pen. Code	Penal Code
PVB	Pressure Vacuum Breaker backsiphonage prevention assembly
PWS	Public Water System
RP	Reduced Pressure principle backflow prevention assembly
RPDA	Reduced Pressure principle Detector backflow prevention Assembly
RPDA-II	Reduced Pressure principle Detector backflow prevention Assembly – type II
RW	Recycled Water
SB	Senate Bill
SDWA	Safe Drinking Water Act
State Water Board	State Water Resources Control Board
SVB	Spill-resistant Pressure Vacuum Breaker backsiphonage prevention assembly
U.S.	United States

Article I. Cross Connection Overview

1.1 Introduction

A cross-connection is an interconnection between a potable water supply and a non-potable source via any actual or potential connection or structural arrangement between the District and any source or distribution system containing liquid, gas, or other substances not from an approved water supply. Bypass arrangements, jumper connections, removable sections, improperly installed 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. The CCCP includes acceptable installation criteria for swivel-ell and other types of backflow prevention assemblies (BPAs) to prevent backflow.

Backflow is the undesired or unintended reversal of flow of water and/or other liquids, gases, or other substances into the District's distribution system or approved water supply.

The presence of a cross-connection represents a location in a distribution system through which backflow of contaminants or pollutants can occur. Backflow occurs when a non-potable source is at a greater pressure than the potable water distribution system. Backflow can occur from either backsiphonage or backpressure. Backsiphonage occurs when a non-potable source enters the drinking water supply due to negative (i.e., sub-atmospheric) distribution system pressure. Backpressure occurs when the pressure from a non-potable source exceeds the pressure in the potable water distribution system.

Backsiphonage may be caused by a variety of circumstances, such as main breaks, flushing, pump failure, or emergency firefighting water demand. Backpressure may occur when heating, cooling, waste disposal, or industrial manufacturing systems are connected to potable supplies and the pressure in the external system exceeds the pressure in the distribution system. Both situations act to change the direction of water, which normally flows from the distribution system to the customer, so that non-potable substances from industrial, commercial, or residential premises flows back into the distribution system through a cross-connection. Cross-connections are not limited to industrial or commercial facilities. Submerged inlets are found on many common plumbing fixtures and are sometimes necessary features of the fixtures if they are to function properly. Examples of this type of design are siphon-jet urinals or water closets, flushing rim slop sinks, and dental cuspidors.

Older bathtubs and lavatories may have supply inlets below the flood level rims, but modern sanitary design has minimized or eliminated this cross-connection in new fixtures. Chemical and industrial process vats sometimes have submerged inlets where the water pressure is used as an aid in diffusion, dispersion and agitation of the vat contents. Even though a supply pipe may be

installed above a vat, backsiphonage can still occur. Siphon action has been shown to raise a liquid in a pipe such as water almost 34 feet. Some submerged inlets are difficult to control, including those which are not apparent until a significant change in water level occurs or where a supply may be conveniently extended below the liquid surface by means of a hose or auxiliary piping. A submerged inlet may be created in numerous ways, and its detection may be difficult. Chemical and biological contaminants have caused illness and deaths during known incidents of backflow, with contamination affecting several service connections, and the number of incidents reported is believed to be a small percentage of the total number of backflow incidents that actually occur. The public health risk from cross-connections and backflow is a function of a variety of factors including cross-connection and backflow occurrence and type and amount of contaminants.

1.2 Purpose

The purpose of the cross-connection control program is to prevent the occurrence of backflow into the District's distribution system in order to protect customers from contamination or pollution from any on-site hazards. Properly installed and maintained BPAs, devices or methods provide protection against the threat posed by many conditions typically found on a user's premise.

The use of approved BPAs ensures that the appropriate performance evaluation of the assembly was conducted. It is important and required by the CCCPH to select and properly install an approved BPA that is capable of protecting the distribution system from the hazard identified. The success of a program depends on individuals that are knowledgeable about cross-connection control to identify actual and potential hazards, apply principles of backflow protection and prevention, and implement cross-connection control policies and procedures. A successful program will have ongoing surveillance of the District's water system to ensure BPAs, devices or methods are working, and identify new hazards or changes in the distribution system. Certified specialists are needed to properly evaluate the degree of hazard that exists in the distribution system. Hazards typically identified in distribution systems along with the required level of protection are specified in Article 5 of the CCCPH.

Article II. Definitions

The following definitions apply to the terms used in the CCCP:

“Air-gap separation” or **“AG”** means a physical vertical separation of at least two (2) times the effective pipe diameter between the free-flowing discharge end of a potable water supply pipeline and the flood level of an open or non-pressurized receiving vessel, and in no case less than one (1) inch.

“Approved water supply” means a water source that has been

approved by the State Water Board for domestic use in a public water system and designated as such in a domestic water supply permit issued pursuant to section 116525 of the CHSC.

“Auxiliary water supply” means a source of water, other than an approved water supply, that is either used or equipped, or can be equipped, to be used as a water supply and is located on the premises of, or available to, a water user.

“Backflow” means an undesired or unintended reversal of flow of water and/or other liquids, gases, or other substances into a public water system’s distribution system or approved water supply.

“Backflow prevention assembly” or **“BPA”** means a mechanical assembly designed and constructed to prevent backflow, such that while in-line it can be maintained and its ability to prevent backflow, as designed, can be field tested, inspected and evaluated.

“Backflow prevention assembly tester” means a person who is certified as a backflow prevention assembly tester.

“Community water system” means a public water system that serves at least 15 service connections used by yearlong residents or regularly serves at least 25 yearlong residents of the area served by the system.

“Contact hour” means not less than 50 minutes of a continuing education course.

“Continuing education course” means a presentation or training that transmits information related to cross-connection control programs and backflow prevention and protection.

“Cross-connection” means any actual or potential connection or structural arrangement between a public water system, including a piping system connected to the public water system and located on the premises of a water user or available to the water user, and any source or distribution system containing liquid, gas, or other substances not from an approved water supply.

“Cross-connection control specialist” means a person who is certified as a cross- connection control specialist.

“Distribution system” has the same meaning as defined in section 63750.50 of CCR, Title 22, Division 4, Chapter 2.

“District” McKinleyville Community Services District

“Double check detector backflow prevention assembly” or **“DCDA”** means a double check valve backflow prevention assembly that includes a bypass with a water meter and double check backflow prevention assembly, with the bypass’s water meter accurately registering flow rates up to two gallons per minute and visually showing a registration for all rates of flow. This type of assembly may only be used to isolate low hazard cross-connections. See Diagram 1, Appendix B.

“Double check detector backflow prevention assembly – type II” or **“DCDA-II”** means a double check valve backflow prevention assembly that includes a bypass around the second check, with the bypass having a single check valve and a water meter accurately registering flow rates up to two gallons per minute and visually showing a registration for all rates of flow. This type of assembly may only be used to isolate low hazard cross-connections. See Diagram 2, Appendix B.

“Double check valve backflow prevention assembly” or **“DC”** means an assembly consisting of two independently-acting internally-loaded check valves, with tightly closing shut-off valves located at each end of the assembly (upstream and downstream of the two check valves) and fitted with test cocks that enable accurate field testing of the assembly. This type of assembly may only be used to isolate low hazard cross- connections. See Diagram 3, Appendix B.

“Existing public water system” or **“existing PWS”** means a public water system initially permitted on or before July 1, 2024 as a public water system by the State Water Board.

“Hazard Assessment” means an evaluation of a user premises designed to evaluate the types and degrees of hazard at a user’s premises.

“High hazard cross-connection” means a cross-connection that poses a threat to the potability or safety of the public water supply. Materials entering the public water supply through a high hazard cross-connection are contaminants or health hazards. See Appendix C for some examples.

“Isolation” post-meter protection, at each individual point of use. Assembly is installed on-site, within user premises, also referred to as internal protection.

“Low hazard cross-connection” means a cross-connection that has been found to not pose a threat to the potability or safety of the public water supply but may adversely affect the aesthetic quality of the potable water supply. Materials entering the public water supply

through a low hazard cross-connection are pollutants or non-health hazards.

“Premises containment” means protection of a public water system’s distribution system from backflow from a user’s premises through the installation of one or more air gaps or BPAs, installed as close as practical to the user’s service connection, in a manner that isolates the water user’s water supply from the public water system’s distribution system.

“Pressure vacuum breaker backsiphonage prevention assembly” or **“PVB”** means an assembly with an independently-acting internally-loaded check valve and an independently-acting loaded air inlet valve located on the discharge side of the check valve; with test cocks and tightly closing shutoff valves located at each end of the assembly that enable accurate field testing of the assembly. This type of assembly may only be used for protection from backsiphonage and is not to be used to protect from backpressure. See Diagram 4, Appendix B.

“Public water system” or **“PWS”** has the same meaning as defined in section 116275(h) of the CHSC.

“Recycled Water” is a wastewater which as a result of treatment is suitable for uses other than potable use.

“Reduced pressure principle backflow prevention assembly” or **“RP”** means an assembly with two independently acting internally-loaded check valves, with a hydraulically operating mechanically independent differential-pressure relief valve located between the check valves and below the upstream check valve. The assembly shall have shut-off valves located upstream and downstream of the two check-valves, and test cocks to enable accurate field testing of the assembly. See Diagram 5, Appendix B.

“Reduced pressure principle detector backflow prevention assembly” or **“RPDA”** means a reduced pressure principle backflow prevention assembly that includes a bypass with a water meter and reduced pressure principle backflow prevention assembly, with the bypass’s water meter accurately registering flow rates up to two gallons per minute and visually showing a registration for all rates of flow. See Diagram 6, Appendix B.

“Reduced pressure principle detector backflow prevention assembly – type II” or **“RPDA-II”** means a reduced pressure principle backflow prevention assembly that includes a bypass around the second check, with the bypass having a single check valve and a water meter accurately registering flow rates up to two gallons per minute

and visually showing a registration for all rates of flow. See Diagram 7, Appendix B.

“Spill-resistant pressure vacuum breaker backsiphonage prevention assembly” or “SVB” means an assembly with an independently-acting internally-loaded check valve and an independently-acting loaded air inlet valve located on the discharge side of the check valve; with shutoff valves at each end and a test cock and bleed/vent port, to enable accurate field testing of the assembly. This type of assembly may only be used for protection from backsiphonage and is not to be used to protect from backpressure. See Diagram 8, Appendix B.

“State Water Board”, unless otherwise specified, means the State Water Resources Control Board or the local primacy agency having been delegated the authority to enforce the requirements of the CCCPH by the State Water Resources Control Board.

“Swivel-Ell” means a reduced pressure principle backflow prevention assembly combined with a changeover piping configuration (swivel-ell connection) designed and constructed pursuant to this Chapter. See design and construction criteria, as well as Diagram 9, Appendix B.

“Transient noncommunity water system” means a noncommunity water system that does not regularly serve at least 25 of the same persons over six months per year.

“User premises” means the property under the ownership or control of a water user and is served, or is readily capable of being served, with water via a service connection with a public water system.

“User’s service connection” means either the point where a water user’s piping is connected to a water system or the point in a water system where the approved water supply can be protected from backflow using an air gap or backflow prevention assembly.

“User Supervisor” means a person designated by a water user to oversee a water use site and responsible for the avoidance of cross-connections.

“Water supplier” means a person who owns or operates a public water system.

“Water user” means a person or entity who is authorized by the PWS to receive water.

Article III. Operating Rules

The following sections are summarized from Regulation 7 & 10 of the Rules and Regulations approved by the District Board of Directors pertaining to Cross-Connections within the Districts users premises. Please see Appendix K for the applicable sections of the MCSD Rules & Regulations.

3.1 Cross-Connections

The customer must comply with State and Federal laws governing the separation of dual water systems or installations of back flow protective devices to protect the public water supply from the danger of cross-connections. Backflow protective devices must be installed as near the service as possible and shall be open to test and inspection by the District. Plans for installation of back flow protective devices must be approved by the District prior to installation.

3.2 Special Cases

In special circumstances, when the customer is engaged in the handling of especially dangerous or corrosive liquids or industrial or process waters, the District may require the customer to eliminate certain plumbing or piping connections as an additional precaution and as a protection to the back flow preventive devices.

3.3 Relief Valves

As a protection to the customer's plumbing system, a suitable pressure relief valve must be installed and maintained by them, at their expense, when check valve or other protective devices are used. The relief valve shall be installed between the check valves and the water heater.

3.4 Back Flow Device

Whenever back flow protection has been found necessary on a water supply line entering a customer's premises, then any and all water supply lines from the District's mains entering such premises, buildings or structures shall be protected by an approved back flow device, regardless of the use of the additional water supply lines. The District shall charge each water customer with a device a monthly charge to be collected on the District's bill.

3.5 Inspection

The double check valve or other better approved back flow protection devices may be inspected and tested periodically for water tightness by the District. The devices shall be serviced, overhauled, or replaced whenever they are found defective and all costs of repair and maintenance shall be borne by customer. The District shall charge each water customer with a device a monthly charge to be collected on the District's bill.

3.6 Discontinued Service

The service of water to any premises may be immediately discontinued by the District if any defect is found in the check valve installations or other protective

devices, or if it is found that dangerous unprotected cross-connections exist. Service will not be restored until such defects are corrected.

Article IV. Cross Connection Control Coordinator

4.1 Responsibility

The District is responsible for the protection of the water distribution system from contamination or pollution that may result from the backflow of contaminants or pollutants through the water service connection. The District's Operations Director or designee will serve as the coordinator for the plan and ensure its waters system is following the appropriate measures through specialist training to avoid backflow into the system. The coordinator will be responsible for reporting, tracking and other stated duties pertaining to the CCCP.

Name	Position	Cell Number	Email
James Henry	Coordinator & Specialist	(707)-496-2295	Jhenry@mckinleyvillecsd.com
Kyle Stone	Specialist & Tester	(707)-496-9208	kstone@mckinleyvillecsd.com
Ryan DeSmet	Tester	(707)-499-5841	Rdesmet@mckinleyvillecsd.com

Article V. Hazard Assessments

The District will evaluate the degree of potential health hazard to the potable water distribution system, which may result from conditions existing on a water user's premises. As a minimum, the evaluation will consider the existence of cross-connections, the nature of materials handled on the property, the probability of a backflow occurring, the degree of piping system complexity and the potential for piping system modification. The Hazard Assessment will consider:

(a) To evaluate the potential for backflow into the District, each community water system must conduct an initial hazard assessment of the user premises within its service area. The hazard assessment must consider:

- The existence of cross-connections;
- the type and use of materials handled and present, or likely to be, on the user premises;
- the degree of piping system complexity and accessibility;
- access to auxiliary water supplies, pumping systems, or pressure systems;
- distribution system conditions that increase the likelihood

of a backflow event (e.g., hydraulic gradient differences impacted by main breaks and high water- demand situations, multiple service connections that may result in flow-through conditions, etc.);

- user premises accessibility;
- any previous backflow incidents on the user premises; and
- the requirements and information provided in the CCCPH.

(b) Each hazard assessment must identify the degree of hazard to the District's distribution system as either a high hazard cross-connection, a low hazard cross-connection, or having no hazard. Examples of some high hazard cross-connection activities may be found in Appendix C.

(c) The hazard assessment must determine whether an existing BPA, if any, provides adequate protection based on the degree of hazard. A specialist will complete a cross-connection survey to assist with this determination. The survey consists of a survey checklist and a survey report which can be found in Appendix J.

(d) Hazard assessments completed prior to the adoption of the CCCPH will be considered as an initial hazard assessment provided that such hazard assessments and associated backflow protection provide protection consistent with the CCCPH. The initial hazard assessments for each BPA assembly are on the test sheet which is in Appendix G.

(e) Subsequent to the initial hazard assessment described in subsection (a), the District must perform a hazard assessment under the following criteria:

- if a user premises changes account holder, excluding single-family residences;
- if a user premises is newly or re-connected to the District's water system;
- if evidence exists of changes in the activities or materials on user's premises;
- if backflow from a user's premises occurs;
- periodically, as identified in the District's Cross-Connection Control Plan required pursuant to CCCPH section 3.1.4.;
- if the State Water Board requests a hazard assessment of a user's premises; and
- if the District concludes an existing hazard assessment may no longer accurately represent the degree of hazard.

(f) The District's cross-connection control specialist will review or conduct each initial and follow-up hazard assessment pursuant to this section and make a written finding that, in the specialist's judgment based on cross-connection control principles, the District's hazard assessment properly identified all hazards at the time of the assessment, the appropriate degree of hazards, and the corresponding backflow protection. The survey from subsection (c) will aid in the specialists determination of the hazard assessment.

5.1 Backflow Protection Required

(a) The District must ensure its distribution system is protected from backflow from identified hazards through the proper installation, continued operation, and field testing of an approved BPA. When a DC is required or referenced in the CCCPH, a DCDA or DCDA-II type of assembly may be substituted if appropriate. When an RP is required or referenced in the CCCPH, an RPDA or RPDA-II type of assembly may be substituted if appropriate.

(b) The BPA installed must be no less protective than that which is commensurate with the degree of hazard at a user premises, as specified in this Article and as determined based on the results of the hazard assessment.

(c) Unless specified otherwise in this Section the District must, at all times, protect its distribution system from high hazard cross-connections (see Appendix C for examples), through premises containment, through the use of AG(s) or RP(s).

- Following State Water Board review and approval, the District may implement an alternate method of premises containment in lieu of a required AG provided that the proposed alternative would not increase the level of risk to protection of public health.

(d) Except as otherwise allowed or prohibited in statute or in CCR Title 22, Division 4, Chapter 3, a swivel-ell may be used instead of an AG for premises containment protection, when temporarily substituting tertiary recycled water use areas with potable water from the District, if all the following criteria are met:

- (1)** The swivel-ell is approved by the State Water Board;
- (2)** The District has a cross-connection control program and the use and operation of the swivel-ell is described in the Cross-Connection Control Plan;
- (3)** the design and construction-related requirements of the swivel-ell adheres to the criteria in Appendix B, Diagram 9;

(4) At least every 12 months, inspections are performed and documented to confirm ongoing compliance with the design and construction-related requirements in Appendix B, Diagram 9;

(5) The RP used in conjunction with the swivel-ell is field tested and found to be functioning properly:

- immediately upon each switchover to potable water use, a visual inspection of the RP must be completed
- within 72 hours of each switchover to potable water use, a field test must be completed, and
- at least every 12 weeks the use site is supplied with potable water; and

(6) There is a legally binding agreement between the District and the entity supplying the recycled water, signed by those with relevant legal authority, that includes the following requirements:

- the State Water Board will be notified within 24 hours of all switchovers to or from potable water, will be given an estimate of the timeframe until the next switchover, and will be provided the results of the field testing;
- a trained representative of the District be present to supervise each switchover; and
- within seven days of each switchover, if requested by the State Water Board, the District will submit a written report describing compliance with this subsection, as well as potable and recycled water usage information.

(e) Except as noted below, the District must ensure its distribution system is protected with no less than DC protection for a user premises with a fire protection system within ten years of adoption of the CCCPH.

(1) A high hazard cross-connection fire protection system, including but not limited to fire protection systems that may utilize chemical addition (e.g., wetting agents, foam, anti-freeze, corrosion inhibitor, etc.) or an auxiliary water supply, must have no less than RP protection.

(2) For existing fire protection systems that do not meet Section 5.1(e)(3) or cannot install DC protection within ten years of adoption of the CCCPH, the District may propose:

- (A) an alternative date; or
- (B) an alternative method of backflow protection that provides at least the same level of protection to public health.

(3) A BPA is not necessary for a low hazard fire protection system on a residential user premises if the following criteria are satisfied:

- (A) A single, water industry standard, water meter is provided to measure combined domestic flow and fire protection system flow;
- (B) The fire protection system is constructed of piping materials certified as meeting NSF/ANSI Standard 61; and
- (C) The fire protection system's piping is looped within the structure and is connected to one or more routinely used fixtures (such as a water closet) to prevent stagnant water.

(f) The State Water Board and District may, at their discretion, require a water user to designate a user supervisor when the user premises has a multi-piping system that conveys various types of fluids and where changes in the piping system are frequently made. If a user supervisor is designated the following is required:

- (1) The user supervisor is responsible for the avoidance of cross-connections during the installation, operation and maintenance of the water user's pipelines and equipment. The user supervisor must be trained on the fluids used and backflow protection for the premise, and must inform the District of changes in piping, and maintain current contact information on file with the District; and
- (2) The District must include the training and qualification requirements for user supervisors, identify the entity that will provide the user supervisor training, and frequency of any necessary recurring training. The training must adequately address the types of hazards and concerns typically found.

(g) Facilities producing, treating, storing, or distributing drinking water that are an approved water supply or water recycling plants as defined by CCR Title 22, Section 60301.710 must have proper internal protection from cross-connections to ensure that all drinking water produced and delivered to customers and workers at those facilities is free from unprotected cross-connections.

Article VI. Backflow Prevention

6.1 Standards for Types of Backflow Protection

(a) The District must ensure that each replaced or newly installed PVB, SVB, DC, and RP for protection of the Districts water system is approved through both laboratory and field evaluation tests performed in accordance with at least one of the following:

(1) Standards found in Chapter 10 of the *Manual of Cross-Connection Control, Tenth Edition*, published by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research; or

(2) certification requirements for BPAs in the Standards of ASSE International current as of 2022 that include ASSE 1015-2021 for the DC, ASSE 1048-2021 for the DCDA & DCDA-II, ASSE 1013-2021 for the RP, and ASSE 1047-2021 for the RPDA & RPDA-II and must have the 1YT mark.

(b) BPAs must not be modified following approval granted under CCCPH section 3.3.1 (b). The District will require BPA testers to notify them if a water user or District-owned BPA has been modified from the CCCPH section 3.3.1 (b) approval.

6.2 Installation Criteria for Backflow Protection

(a) For AGs, the following is required:

(1) The receiving water container must be located on the water user's premises at the water user's service connection unless an alternate location has been approved by the District;

(2) All piping between the water user's service connection and the discharge location of the receiving water container must be above finished grade and be accessible for visual inspection unless an alternative piping configuration is approved by the District;

(3) The District must ensure that each AG used for its Cross-Connection Control Program meets the requirements in Table 1, Minimum Air Gaps (See Appendix A).

(4) Any new air gap installation at a user's service connection must be reviewed and approved prior to installation.

(b) DCs installed or replaced must be installed according to section 6.2 (c). Below ground installation can be considered if approved by the District where it determines no alternative options are available.

(c) RPs must be installed such that the lowest point of an assembly is a minimum of twelve inches above grade, and a maximum of thirty-six inches above the finished grade, unless an alternative is approved by the District.

(d) A PVB or SVB must be installed a minimum of twelve inches above all downstream piping and outlets.

(e) SVBs may not be used for premises containment. PVBs may only be used for roadway right of way irrigation systems as premises containment where there is no potential for backpressure.

(f) A RP or DC installed must have a minimum side clearance of twelve inches, except that a minimum side clearance of twenty-four inches must be provided on the side of the assembly that contains the test cocks. The District may approve alternate clearances providing that there is adequate clearance for field testing and maintenance.

(g) Backflow protection must be located as close as practical to the water user's service connection unless one or more alternative locations have been approved by the District. If internal protection is provided in lieu of premises containment, the District must obtain access to the user premises and must ensure that the on-site protection meets the requirements of this Article for installation, field testing, and inspections.

(h) Each BPA and air gap separation must be accessible for field testing, inspection, and maintenance.

Article VII. Certified Backflow Assembly Testers

7.1 Testing Certification

(a) The District must ensure that each BPA required by this section to protect the public water system is field tested by a person with a valid certification from a certifying organization recognized by the State Water Board pursuant to this Article.

(b) A State Water Board-recognized organization certifying backflow prevention assembly testers is one that has a certification process that, at a minimum, includes the following:

(1) A timed and proctored written exam, using a closed-book, objective grading format, consisting of no less than 100 questions for initial certification and no less than 50 questions for recertification. A passing score must be achieved by an

examinee as a requirement for certification.

(A) Written exam proctors must:

- not provide an examinee any assistance in answering exam questions, verbal or otherwise; and
- be impartial.

(B) Passing scores for the written exams are to be determined prior to exam sessions, such that passing a written exam demonstrates sufficient knowledge of subjects associated with the proper field testing of BPAs, including but not limited to:

- the hydraulics and theory of backflow;
- California's laws, regulations, and requirements related to cross-connection control;
- types of BPA field test equipment and the need to verify accuracy, at least annually and when otherwise necessary, to ensure accuracy of field test results;
- field test procedures for an RP, RPDA, RPDA-II, DC, DCDA, DCDA-II, PVB, and SVB using the procedures provided in the *Manual of Cross-Connection Control, Tenth Edition*, published by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research or equivalent;
- identification of improperly functioning BPAs (i.e., diagnostics or troubleshooting); and
- recordkeeping and safety.

(2) A performance (i.e., hands-on) exam, using a closed-book, objective grading process and the field test procedures in paragraph (1)(B)(4), designed such that passing the performance exam demonstrates proficiency in accurately determining the operating condition of an RP, DC, PVB, and SVB, when properly or improperly functioning, including but not limited to BPAs with leaks in shutoff valves, and failures in check valves, air inlet valves, or relief valves.

(3) A passing score must be achieved by an examinee as a requisite for certification. The performance exam process must include the following:

(A) Performance exam proctors must:

- be certified as a backflow prevention assembly

tester pursuant to this Article;

- evaluate no more than one examinee at a time;
- not provide an examinee any assistance in answering exam questions, verbal or otherwise;
- provide no indication an examinee has erred until completion of a BPA field test, at which time only the fact the examinee has erred may be indicated (i.e., not the nature of the error);
- be impartial and not affiliated with the certifying organization's preparation of, or preparatory course for (if applicable), the performance exam; and
- not evaluate an examinee who was trained by the proctor during the six-month period prior to the exam or other conflict of interest.

(B) An examinee is considered to have failed a performance exam if the examinee:

- makes a field test procedure or recording error that could impact an accurate determination of the operating condition of a BPA,
- completes the BPA performance exam form with an error,
- is informed of making an error (see subparagraph (A)(4)) and begins the procedure a second time, and
- errs a second time and completes the BPA performance exam form accordingly.

(4) Recertification requirements of no less frequently than every three years which includes both a written and performance exam;

(5) Provisions for revocation of a backflow prevention assembly tester's certification, including but not limited to, revocation for falsifying field test results or field test reports;

(6) A website providing public access to the most recent list of backflow prevention assembly testers:

(A) Who hold a valid certification from the certifying organization. At a minimum, the list is to include each backflow prevention assembly tester's last name, first name, certification number, and the date on which each backflow prevention assembly tester's certification expires; and

(B) Whose certification was revoked, pursuant to

paragraph (4), in the three years preceding the date of the list. At a minimum, the list is to include each backflow prevention assembly tester's last name, first name, revoked certification number, the date on which each backflow prevention assembly tester's certification was revoked, and the reason for revocation.

(7) As a prerequisite to sections 7.2(b)(1) and (b)(2), completion of an instructional training course accepted by the certifying organization that covers the subjects in subsection (1)(B) and is no less than 30 hours in length over no fewer than four days for:

- (A)** A backflow prevention assembly tester's initial certification;
- (B)** A backflow prevention assembly tester's recertification as a result of revocation; or

(8) In lieu of compliance with section 7.2(b)(6) a certifying organization may accept two years prior experience in backflow prevention assembly testing.

(c) To be recognized by the State Water Board as a certifying organization for backflow prevention assembly testers, a certifying organization shall:

(1) Submit an application with the following information to the State Water Board for review:

- (A)** Written documentation of a certification program that includes a process that is no less stringent than the criteria in subsection (b);
- (B)** Evidence that the organization's certification program and exam process has been reviewed, with concerns adequately addressed, by a credentialed psychometrician proficient in the design of objective exams, experienced in the assessment of certification or licensing organizations, and familiar with the application of the requirements of *ISO/IEC 17024: Conformity Assessment- General Requirements for Bodies Operating Certification of Persons*.

(d) A written statement, signed by the certifying organization's representative(s) having the authority and legal responsibility for operation of the certifying organization, attesting that the certifying organization will implement its certification program in a manner meeting or exceeding the criteria in subsection (b) and consistent

with the application submitted to the State Water Board.

- (1) Adequately address each State Water Board comment and/or question concerning the application, and
- (2) Receive written acknowledgment from the State Water Board that the application is complete.

- (e) An American National Standards Institute (ANSI)-accredited certifying organization, accredited in accordance with subsection (b) and ISO/IEC 17024, will be considered to be a State Water Board-recognized certifying organization. Beginning three years after the effective date of the CCCPH, only those testers with a valid certification from an ANSI-accredited certifying organization shall satisfy subsection (a) and certifications obtained by organizations in accordance with subsection (c) will be invalid.
- (f) This Article does not preclude a local health agency from maintaining a backflow prevention assembly tester certification program for the field testing of BPAs within the local health agency's jurisdiction. Accepting a tester certified by a local health agency does not relieve the District from meeting the requirements of this Article.
- (g) This Article does not preclude the District from disallowing the use of an individual tester certified pursuant to this Article if the District has reason to believe a certified tester may not be proficient in accurately determining the operating condition of BPA, or for any other reason (e.g., fraud, deceit, negligence, misconduct, etc.). The District must report any evidence of a tester falsifying reports to that tester's certifying organization.

7.2 Specialist Certification

- (a) The District will ensure that cross-connection control specialists, have valid certification from a certifying organization recognized by the State Water Board pursuant to this Article.
- (b) A State Water Board-recognized organization certifying cross-connection control specialists is one that has a certification process that, at a minimum, includes the following:
- (1) A timed and proctored, written exam, using a closed-book, objective grading format, consisting of no less than 100 questions for certification. A passing score must be achieved by an examinee as a requirement for certification.

(A) Written exam proctors must:

1. Not provide an examinee any assistance in answering exam questions, verbal or otherwise; and
2. Be impartial.

(B) Passing scores for the exams are to be determined prior to exam sessions, such that passing an exam demonstrates sufficient and comprehensive range of knowledge of the subjects provided in Appendix D, as they may relate to cross-connection control and the causes, effects, and prevention of backflow.

(2) Recertification requirements of no less frequently than every three years. Recertification may be done through at least one of the following:

- (A)** an exam as required by section 7.1 (a)(1),
- (B)** through 12 contact hours from continuing education courses covering material in Appendix D or,
- (C)** a combination of exam and continuing education contact hours equivalent to (A) or (B);

(3) Provisions for revocation of a specialist's certification, including but not limited to, falsifying information or providing negligent recommendations inconsistent with industry-standard cross-connection control guidelines;

(4) A website providing public access to the most recent list of cross-connection control specialists:

(A) Who holds a valid certification from the certifying organization. At a minimum, the list is to include each specialist's last name, first name, certification number, and the date on which each specialist's certification expires; or

(B) Whose certification was revoked, in the three years preceding the date of the list. At a minimum, the list is to include each specialist's last name, first name, revoked certification number, the date on which each specialist's certification was revoked, and the reason for revocation.

(5) Initial certification requirements:

(A) A valid backflow prevention assembly tester

certification from a certification organization recognized by the State Water Board pursuant to section 3.4.1 of the CCCPH; and

(B) Completion of an instructional training course (acceptable to the certifying organization) that covers the subjects in Appendix D and is no less than 30 hours in length over no fewer than five days (inclusive of an exam, if provided). This paragraph does not preclude a certification organization from providing the instructional training course to the public, including certified specialists.

(C) As an alternative to (A) the certifying organization may accept additional instruction in the subject areas of testing, maintaining and repairing BPAs equivalent in length and scope to the requirements in 3.4.1(b)(6) of the CCCPH.

(D) As an alternative to (A) the certifying organization may accept a minimum of five (5) years documented experience performing cross-connection control specialist duties, as outlined in Appendix D.

(c) To be recognized by the State Water Board as a certifying organization for cross-connection control specialists, a certifying organization shall:

(1) Submit an application with the following information to the State Water Board for review:

- (A)** Written documentation of a certification program that includes a process that is no less stringent than the criteria in subsection (b);
- (B)** Evidence that the organization's certification program and exam process has been reviewed, with concerns adequately addressed, by a credentialed psychometrician proficient in the design of objective exams, experienced in the assessment of certification or licensing organizations, and familiar with the application of the requirements of *ISO/IEC 17024: Conformity Assessment- General Requirements for Bodies Operating Certification of Persons*; and
- (C)** Written statement, signed by the certifying organization's representative(s) having the authority and legal responsibility for operation of the certifying organization, attesting that the certifying organization will implement its certification program in a manner

meeting or exceeding the criteria in subsection (b) and consistent with the application submitted to the State Water Board.

- (2) Adequately address each State Water Board comment and question concerning the application, and
- (3) Receive a written acknowledgment from the State Water Board that the application is complete:

(d) A certifying organization, accredited by the American National Standards Institute (ANSI) in accordance with ISO/IEC 17024, which complies with subsection (b), will be a State Water Board-recognized certifying organization. Beginning three years after the effective date of the CCCPH, only those specialists with a valid certification from an ANSI-accredited certifying organization shall satisfy subsection (a) and certifications obtained by organizations in accordance with subsection (c) will be invalid.

(e) This Article does not preclude a local health agency from maintaining a cross-connection control specialist certification program for specialists within the local health agency's jurisdiction. Using a specialist certified by a local health agency does not relieve the District from meeting the requirements of this Article.

This Article does not preclude the District from disallowing the use of an individual cross-connection control specialist certified pursuant to this Article if the District has reason to believe a certified specialist may not be proficient in their knowledge of cross-connection control and the causes, effects, and prevention of backflow, or for any other reason (e.g., fraud, deceit, negligence, misconduct, etc.). The District must report any evidence of a specialist falsifying reports to that specialist's certifying organization.

Article VIII. Backflow Prevention Assembly Testing

8.1 Testing Procedures

A description of the process and timeframes for ensuring each BPA is inspected and field tested, and AG is inspected, at a frequency no less than required by this Article;

- (a) The District will ensure that all BPAs installed for its Cross-Connection Control Plan are field tested following installation, repair, depressurization for winterizing, or permanent relocation. All required field testing must be performed by certified backflow prevention assembly testers.
- (b) BPAs must be field tested at least annually. The CCCPH does not preclude the District, the State Water Board, or a local health agency from requiring

- more frequent field testing for premises with high hazard cross-connection or BPA at increased risk of testing failure.
- (c) Air-gap separations must be visually inspected at least annually to determine compliance with this Chapter by persons certified as backflow prevention assembly testers or certified as a cross-connection control specialist pursuant to this Chapter.
 - (d) The District must receive passing field tests before providing continuous service to a water user with a newly installed BPA.
 - (e) The District must ensure that BPAs that fail the field test are repaired or replaced within 30 days of notification of the failure. Extensions will be allowed by the District in the following manner:
 1. 30 day letter notice to repair/replace BPA
 2. 10 day letter notice prior to board meeting addressing the failed BPAs
 3. Automatic 30 day extension granted to customers with a failed BPA from the prior month
 4. If the customer hasn't repaired/replaced the BPA following the 30 day extension, the water will be shut off to customer the Monday following the 30 day extension expiration.
 - (f) The District will require backflow prevention assembly testers to notify the District as soon as possible within 24 hours if a backflow incident or an unprotected cross-connection is observed at the BPA or prior to the user premises during field testing. The District must immediately conduct an investigation and discontinue service to the user premises if a backflow incident is confirmed, and water service must not be restored to that user premises until the District receives confirmation of a passing BPA field test from a backflow prevention assembly tester and the assembly is protecting the District's water distribution system.

Article IX. Record Keeping & Reporting

- (a) The District will maintain the following records:
 - The two most recent hazard assessments for each user premise, conducted pursuant to Article 5;
 - For each BPA, the associated hazard or application, location, owner, type, manufacturer and model, size, installation date, and serial number;
 - For each AG installation, the associated hazard or application and the location, owner, and as-built plans of the AG;
 - Results of all BPA field testing, AG inspection, and swivel-ell inspections and field tests for the previous three calendar years, including the name, test date, repair date, and

certification number of the backflow prevention assembly tester for each BPA field test and AG and swivel-ell;

- Repairs made to, or replacement or relocation of, BPAs for the previous three calendar years;
- The most current cross-connection tests (e.g. shutdown test, dye test);
- If a user supervisor is designated for a user premise, the current contact information for the user supervisor and water user, and any applicable training and qualifications as described by CCCPH section 3.2.2(f);
- Descriptions and follow-up actions related to all backflow incidents;
- If any portion of the cross-connection control program is carried out under contract or agreement, a copy of the current contract or agreement;
- The current Cross-Connection Control Plan; and
- Any public outreach or education materials issued as required in Article 11 for the previous three calendar years.

(b) All information in subsection (a) will be available to the State Water Board upon request.

Article X. Backflow incident Response

The District will include backflow incident response procedures in the Cross-Connection Control Plan required in CCCPH section 3.1.4. The District will describe its procedures for investigating and responding to suspected backflow incidents including, but not limited to, the following:

(a) Consideration of complaints or reports of changes in water quality as possible incidents of backflow;

(b) Water quality sampling and pressure recording; and

(c) Documentation of the investigation, and any response and follow-up activities.

In the event of a suspected incident of backflow the District's Operations Department will perform a site inspection to determine whether corrective action needs to be taken. In the event a backflow incident does occur, the incident report form found in Appendix E will be completed.

10.1 Notifications

The District will notify the State Water Board and local health agencies of any known or suspected incident of backflow within 24 hours of the determination. If required by the State Water Board, the District must issue a Tier 1 public notification pursuant to CCR, Title 22, Section 64463.1.

If required by the State Water Board, the District must submit, by a date specified by the State Water Board, a written incident report describing the details and affected area of the backflow incident, the actions taken by the District in response to the backflow incident, and the follow up actions to prevent future backflow incidents. The written report will contain at a minimum the contents of the backflow incident report form in Appendix E.

Article XI. Public Outreach

The District will implement a cross-connection control public outreach and education program element that includes educating staff, customers, and the community about backflow protection and cross-connection control. The District will implement this requirement through a variety of methods which may include providing information on cross-connection control and backflow protection in periodic water bill inserts, pamphlet distribution, new customer documentation, email, and consumer confidence reports.

The District will achieve adequate public outreach through consumer confidence reports and adding information to the quarterly newsletter to increase awareness of the importance of backflow prevention devices. The document in Appendix H will be used as the District's main public outreach information.

Article XII. Local Entity Coordination

The Humboldt County building department is responsible for informing the District of new construction plans with information pertaining to the potential need for a Cross-Connection device. It is then the responsibility of the District to ensure proper protection is installed and inspected prior to water being supplied to the new construction.

For annual testing of backflow prevention devices, the District has staff trained to perform tests on the devices. In the event one fails the customer is notified and directed to reach out to a plumber to fix the device. Due to conflicts of interest the District staff is not allowed to perform repairs on backflow prevention devices within the District's service area.

Appendix A

ASME A112.1.2-2012(R2017) Table 1, Minimum Air Gaps

TABLE 1
Minimum Air Gaps for Generally used Plumbing Fixtures⁴

FIXTURES	WHERE NOT AFFECTED BY SIDEWALLS ¹ (inches)	WHERE AFFECTED BY SIDEWALLS ² (inches)
Effective opening ³ not greater than ½ of an inch in diameter	1	1½
Effective openings ³ not greater than ¾ of an inch in diameter	1½	2¼
Effective openings ³ not greater than 1 inch in diameter	2	3
Effective openings ³ greater than 1 inch in diameter	Two times the diameter of effective opening	Three times the diameter of effective opening

For SI units: 1 inch = 25.4 mm

Notes:

- 1 Sidewalls, ribs, or similar obstructions do not affect air gaps where spaced from the inside edge of the spout opening at a distance exceeding three times the diameter of the effective opening for a single wall, or at a distance exceeding four times the effective opening for two intersecting walls.
- 2 Vertical walls, ribs, or similar obstructions extending from the water surface to or above the horizontal plane of the spout opening other than specified in Footnote 1 above. The effect of three or more such vertical walls or ribs has not been determined. In such cases, the air gap shall be measured from the top of the wall.
- 3 The effective opening shall be the minimum cross-sectional area at the seat of the control valve or the supply pipe or tubing that feeds the device or outlet. Where two or more lines supply one outlet, the effective opening shall be the sum of the cross-sectional areas of the individual supply lines or the area of the single outlet, whichever is smaller.
- 4 Air gaps less than 1 inch (25.4 mm) shall be approved as a permanent part of a listed assembly that has been tested under actual backflow conditions with vacuums of 0 to 25 inches of mercury (85 kPa).

¹ Reprinted from ASME A112.1.2-2012(R2017), by permission of The American Society of Mechanical Engineers. All rights reserved

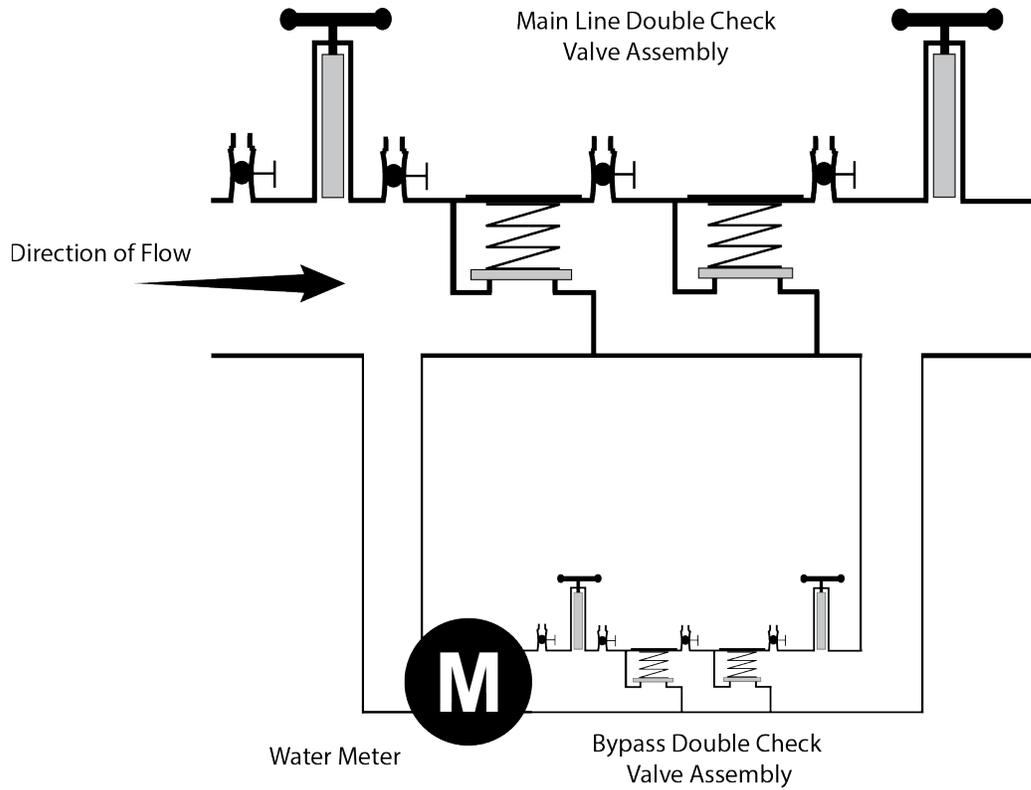
Appendix B

Backflow Prevention Assembly Diagrams

Appendix B

Diagram 1

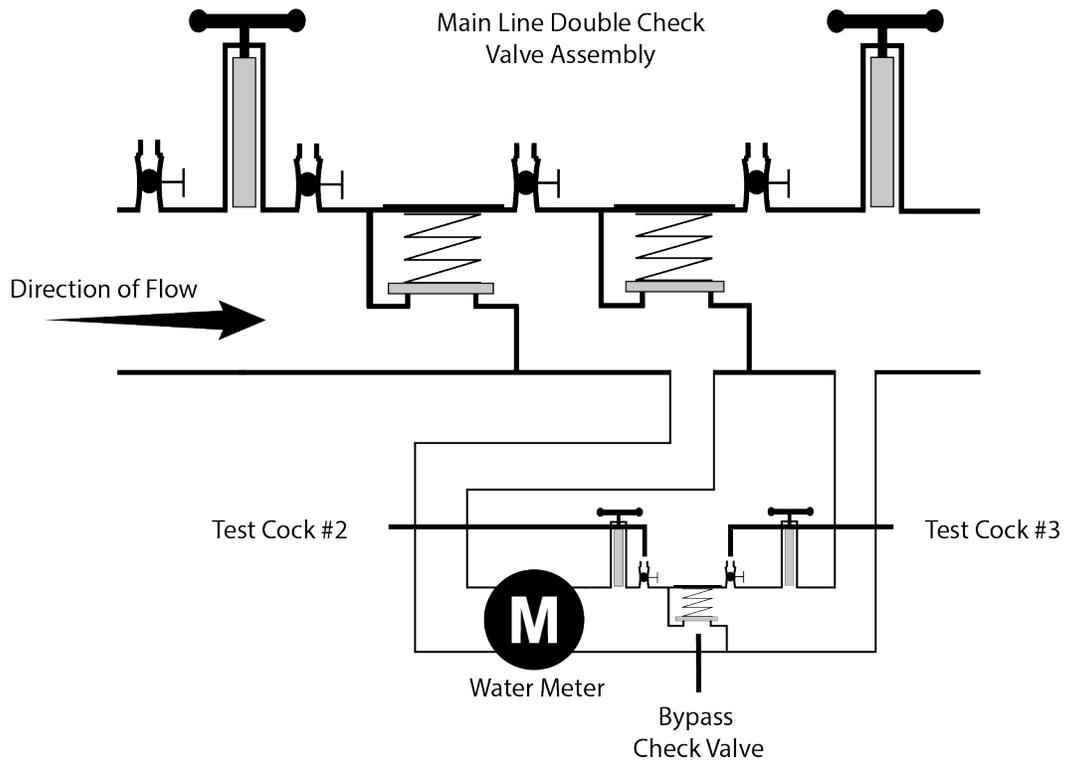
Double check detector backflow prevention assembly



Appendix B

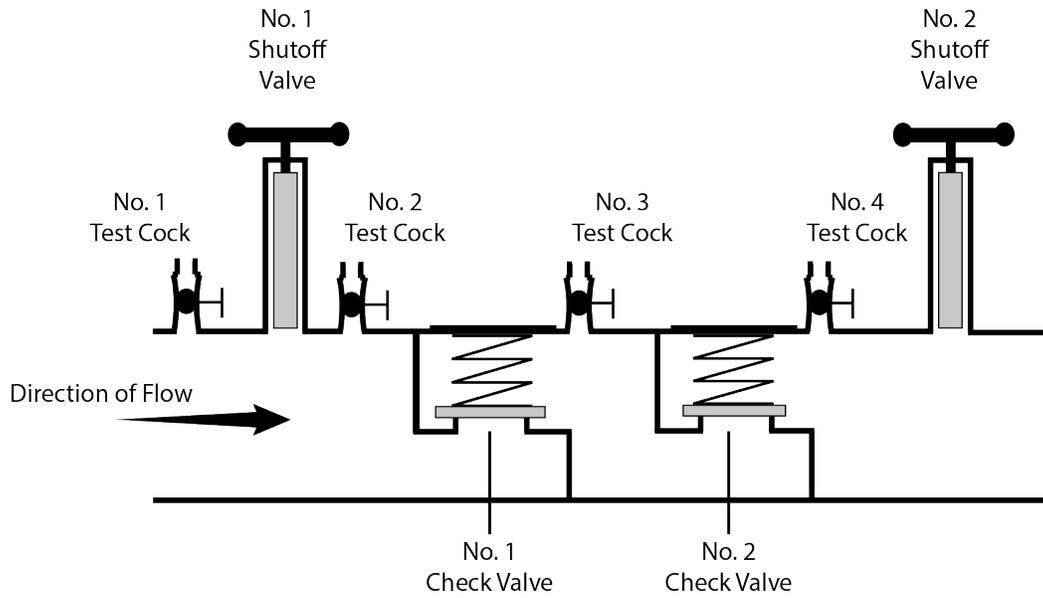
Diagram 2

Double check detector backflow prevention assembly – type II



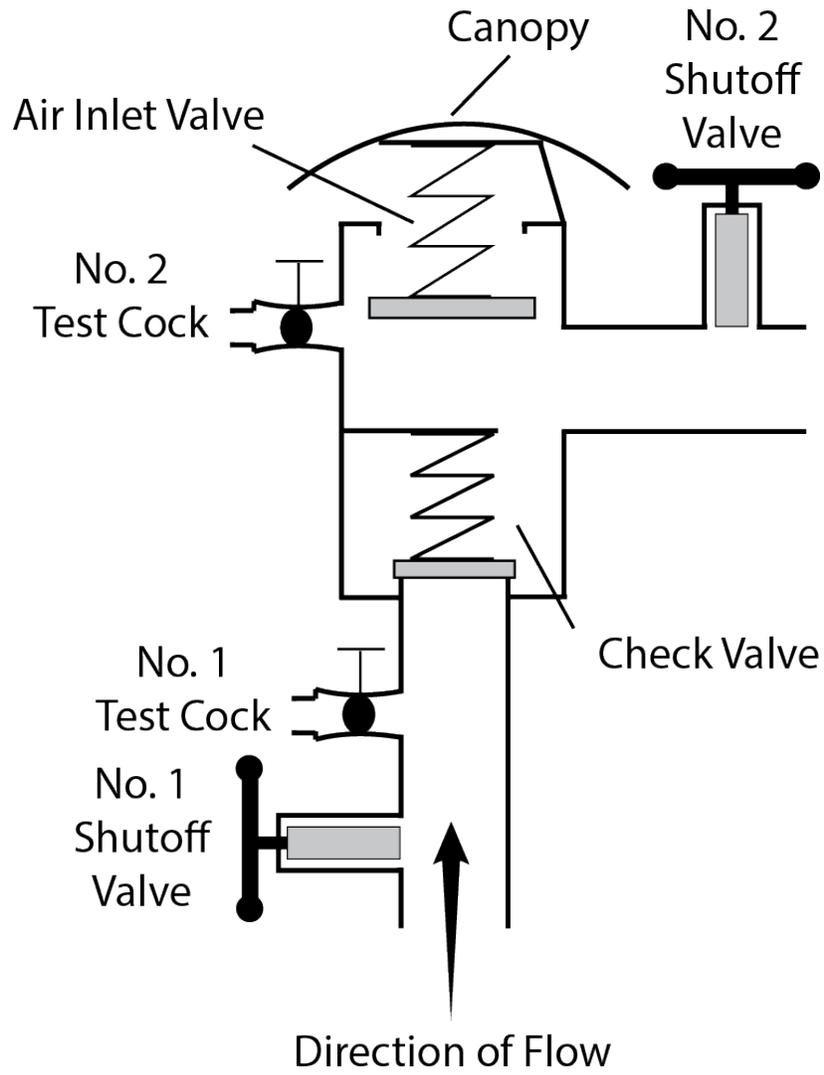
Appendix B Diagram 3

Double check valve backflow prevention assembly



Appendix B
Diagram 4

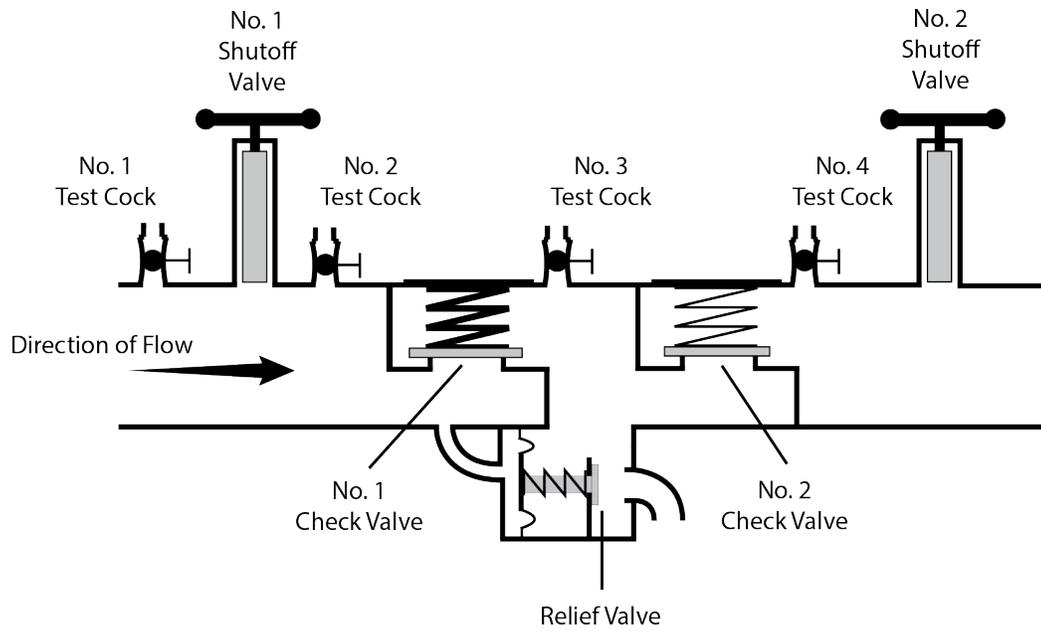
Pressure Vacuum breaker backsiphonage prevention assembly



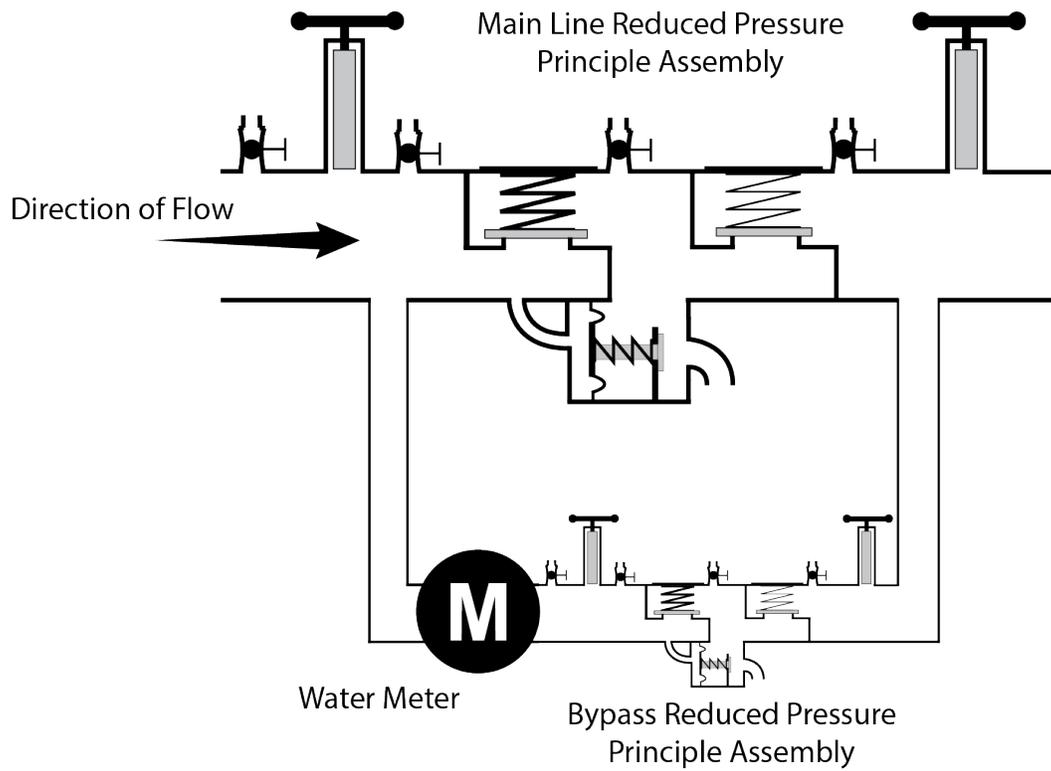
Appendix B

Diagram 5

Reduced pressure principle backflow prevention assembly

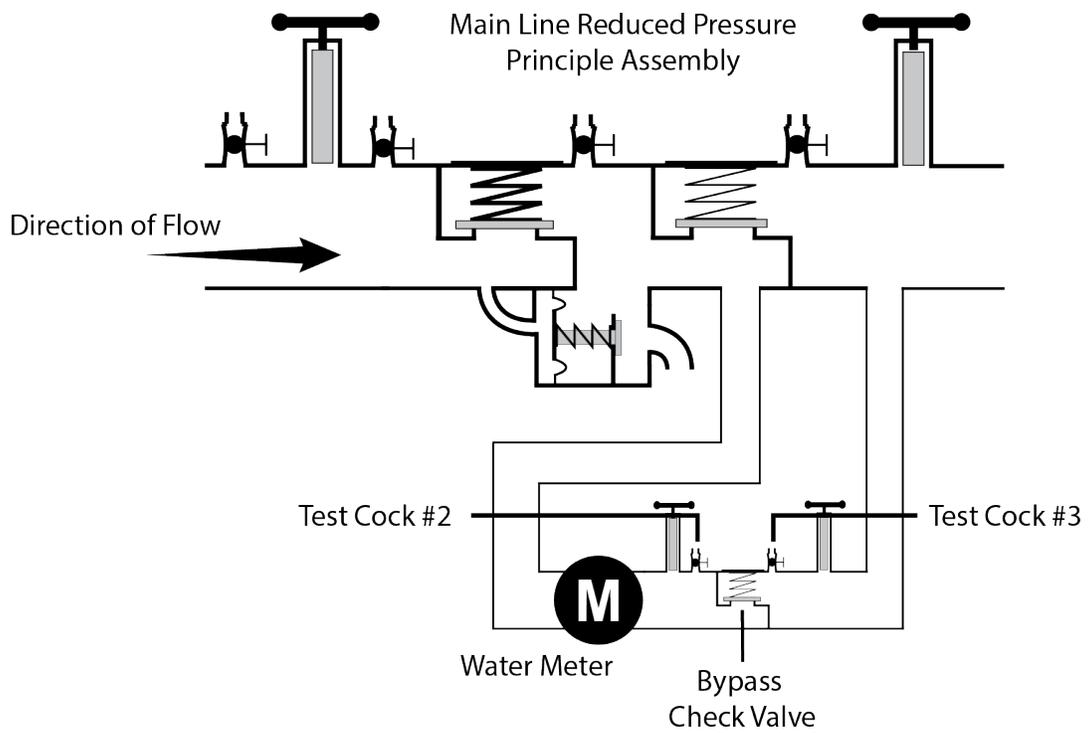


Appendix B
Diagram 6
Reduced pressure principle detector backflow prevention
assembly



Appendix B
Diagram 7

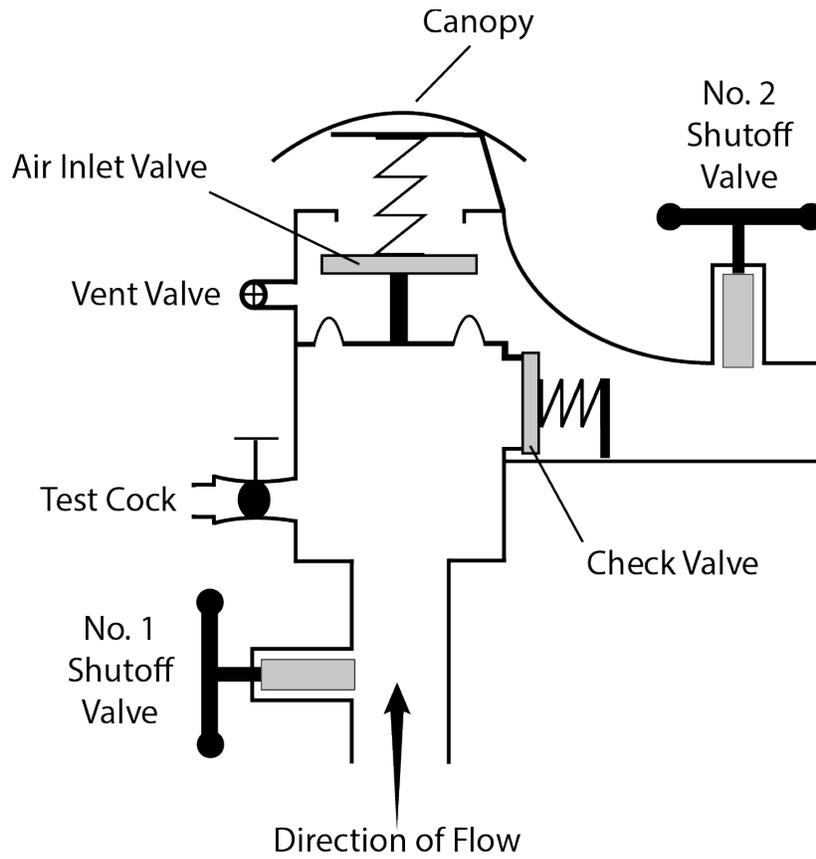
Reduced pressure principle detector backflow prevention
assembly – type 2



Appendix B

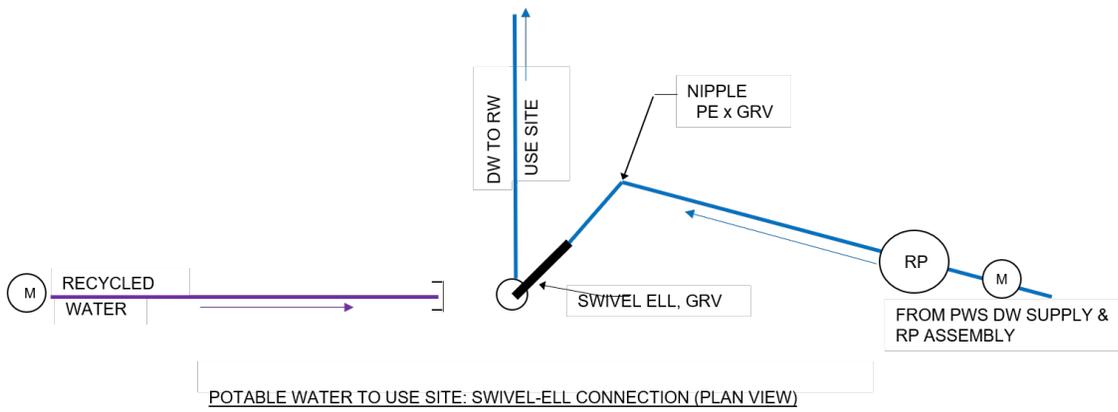
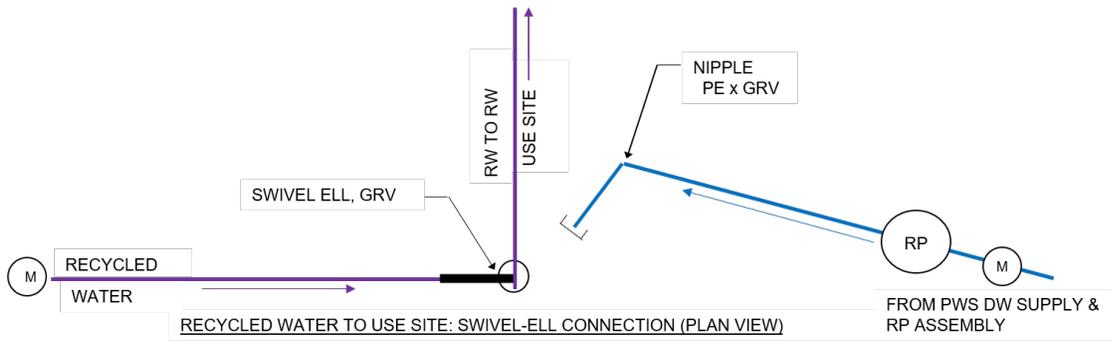
Diagram 8

Sill-resistant pressure vacuum breaker backsiphonage prevention assembly



Appendix B

Diagram 9: Swivel-Ell Typical Plan View Schematics



Appendix C

High Hazard Premises

The list below identifies premises that require backflow protection provided by an air gap or a reduced pressure principle backflow prevention assembly, unless noted otherwise. The list below is not intended to be all-inclusive. A PWS, State Water Board, or local health agency may require an AG, RP, or both to protect a PWS from other hazards not listed below and identified in premises through the hazard assessment completed in CCCPH Chapter 3, section 3.2.1. A PWS may reduce or increase the minimum protection required for a previously hazard-assessed user premise following a hazard reassessment as described in CCCPH Chapter 3, section 3.2.1.

1. Sewage handling facilities
2. Wastewater lift stations and pumping stations
3. Wastewater treatment processes, handling, or pumping equipment that is interconnected to a piping system connected to a PWS (+)
4. Petroleum processing or storage plants
5. Radioactive material storage, processing plants or nuclear reactors
6. Mortuaries
7. Cemeteries
8. Sites with an auxiliary water supply interconnected with PWS (+)
9. Sites with an auxiliary water supply not interconnected with PWS
10. Premises with more than one connection to the PWS (++++)
11. Recycled water (++)(+++)
12. Recycled water connected to piping system that contains water received from a PWS (+)
13. Graywater systems, as defined in California Water Code Section 14876, that are interconnected to a piping system that is connected to a PWS
14. Medical facilities
15. Kidney dialysis facilities
16. Dental office with water-connected equipment
17. Veterinarian facilities
18. Chemical plants
19. Laboratories
20. Biotech facilities
21. Electronics manufacture
22. Dry cleaner facilities
23. Industrial or commercial laundry facilities
24. Metal-plating facilities
25. Business park with a single meter serving multiple businesses
26. Marine-port facilities
27. Car wash facilities
28. Mobile home park, RV park, or campgrounds with RV hookups
29. Hotels/motels
30. Gas stations
31. Fire stations
32. Solid waste disposal facilities
33. Pet groomers
34. Agricultural premises

35. Hazard assessment access denied or restricted
36. Railroad maintenance facilities
37. Incarceration facilities (e.g. prisons)
38. Temporary connections to fire hydrants for miscellaneous uses, including construction
39. Private water distribution mains
40. Drinking water storage tank overflow connected to a sump or storm drain (+)
41. Airports

(+) Premise isolated by air gap only except as allowed through CCCPH Section 3.2.2(c)

(++) Dual-plumbed use areas established per CCR Title 22, Section 60313 through 60316.

(+++ Residences using recycled water for landscape irrigation as part of an approved dual plumbed use area established pursuant to CCR Title 22, sections 60313 through 60316 shall use, at a minimum, a DC. If the water supplier is also the supplier of the recycled water, then the recycled water supplier may obtain approval of the local public water supplier or the State Water Board, to utilize an alternative backflow protection plan that includes an annual inspection of both the recycled water and potable water systems and an annual cross-connection test of the recycled water and potable water systems pursuant to subsection 60316(a) in lieu of any BPA.

(++++ All connections must receive at least the same level of protection excluding fire protection when connected to the PWS distribution system (e.g. if one connection requires an RP then all connections must have RPs installed).

Appendix D

General Range of Knowledge for CCC Specialists

General Range of Knowledge for Cross-Connection Control Specialists

To effectively prevent unintended backflow into a PWS's distribution system, it is necessary for a cross-connection control specialist to have an understanding of a range of subjects related to cross-connection control. This appendix provides a list of such subjects.

This appendix is not meant to preclude instruction of additional subjects that may be necessary or beneficial to the goal of a prospective or existing cross-connection control specialist in being proficient in protecting public health from backflow through cross-connection control measures. Emphasis on particular subjects should be in a manner that best achieves that goal.

1. GENERAL

- a. Cross-connection control terminology.
- b. The history leading to the need for cross-connection control, including causes, impacts, including but not limited to:
 - i. potable water distribution systems;
 - ii. examples of backflow incidents and actual or potential public health impacts; and
 - iii. evolution of methods of cross-connection control and backflow prevention assemblies.
- c. Hydraulics (general) – An understanding of hydraulic gradients, pressure variations, flow rates, temperature, the properties of water, backsiphonage, backpressure, and other elements necessary to understand the causes for backflow.
- d. Public outreach – How to appropriately convey the value of cross-connection control to PWS personnel and the public.

2. LAWS, REGULATIONS, AND GUIDANCE

- a. Federal – Applicable federal laws, regulations, and guidance.
- b. State – California laws and regulations, including, but not limited to, the State Water Resources Control Board's most recent edition of its *Cross-Connection Control Policy Handbook* and other requirements related to cross-connection control.
- c. Local – An understanding of the need to ensure local requirements are considered and how best to find such

requirements.

3. HAZARD ASSESSMENTS AND METHODS TO PREVENT BACKFLOW

A comprehensive understanding of how to conduct cross-connection surveys of water systems for the purpose of identifying cross-connections, assessing hazards, and identifying the most effective and legally appropriate methods for protection from backflow. At a minimum, the following topics should be considered to achieve such an understanding:

a. Surveys:

- i. Preparation (e.g., authority, notification, prioritizing customers/premises, coordinating with public water systems, etc.);
- ii. Design and as-built drawings related to water supply and cross-connection control;
- iii. Public water system schematics;
- iv. How to identify existing and new construction, with an understanding of how construction may impact backflow protection;
- v. How to identify cross-connections (actual and potential);
- vi. How to identify and differentiate between high hazard and low hazard cross-connections; and
- vii. Problems associated with multi-story buildings, multiple service connections at a premises, typical water-use equipment, etc., and varying types of water service, including irrigation, recycled water, gray water, fire prevention systems, and dual plumbed premises.

b. Assessing Hazards:

- i. Identifying and differentiating between premises activities leading to high hazard cross-connections and low hazard cross-connections (for examples of high hazard activities, see Appendix D); and
- ii. Understanding potential public health impacts from backflow associated with the problems in section (c)(1)(G) of this appendix.

c. Assemblies and Methods for Backflow Prevention:

- i. A comprehensive understanding of approved methods for cross-connection control and preventing backflow with respect to an assessed hazard;
- ii. Identifying unapproved methods for cross-connection control and preventing backflow;

- iii. An understanding of components, design and operation, proper installation and location of backflow prevention assemblies, including air gaps, and backflow prevention assembly field test methods, field test results, and the assessment of air gaps; and
- iv. Identifying unapproved assemblies, as well as those assemblies whose operation and/or state of repair necessitates replacement with an approved assembly.

4. CROSS-CONNECTION CONTROL PROGRAMS

- a. A comprehensive understanding of the development, elements, and administration of cross-connection control programs, including, but not limited to:
- b. An ability to assess the federal, state, and local requirements applicable to a public water system's cross-connection control program, such that adherence to the cross-connection control program would result in compliance with the requirements;
- c. The roles, responsibilities, and authority of individuals and entities involved in the critical elements of a successful plan for cross-connection control (see CCCPH section 3.1.4); and
- d. The ability to assess the components of a public water system's Cross- Connection Control Plan (see CCCPH section 3.1.4) that best assures the prevention of undesired backflow into the public water system's distribution system, and to communicate deficiencies to public water system personnel.

5. CROSS-CONNECTION TESTS

- a. A comprehensive understanding of:
- b. The purpose of a cross-connection test and when a cross-connection test should be performed;
- c. The ability to develop protocols and make arrangements for cross-connection tests, and subsequently oversee and/or perform such cross-connection tests, in a manner that determines whether interconnections exist between unapproved sources and approved water supplies; and
- d. Follow-up actions and notifications if a cross-connection test indicates an interconnection.

6. RECORDKEEPING AND INCIDENT RESPONSE

- A. A comprehensive understanding of:
- B. The agencies and authorities to be notified in the event of a backflow incident;

- C. How to determine the cause of a backflow incident and the actions necessary to prevent similar incidents in the future;
- D. How to properly document a backflow incident, including but not limited to the information in the example backflow incident response form in Appendix E; and
- E. How to properly document the elements associated with surveys and hazard assessments, including those identified in section (3) of this appendix.

Appendix E

Example Backflow Incident Reporting Form

BACKFLOW INCIDENT REPORT FORM

Water System: _____

Water System Number: _____

Incident Date: _____

Incident Time (if known): _____

Incident Location: _____

How was the incident discovered?

Backflow Originated from:

Premise Location: _____

Address: _____

Premise Contact Person: _____ Title: _____

Phone: _____ Email: _____

Connection Type: (please check one)

Industrial Commercial Single-Family Residential Multi-Family Residential

Irrigation Recycled Water Water System Facility

Other: _____

Description and source of backflow substance (please be as descriptive as possible):

If available, please attach an MSDS or other chemical description form

Was the backflow fluid contained within the user side? YES NO

Estimated Number of Affected Persons: _____

Number and description of consumer complaints received:

Did any consumers report illness? Please describe.

If applicable, please describe the consumer notification:

INVESTIGATION

Please describe the water system investigation including time frames:

What was the area system pressure? _____ Is

this within typical range: YES NO - typical pressure: _____

Was a sample of the water contaminated by the backflow incident collected and stored before flushing? YES NO

Please describe all sampling:

DDW recommends laboratory or field sampling for the following parameters: total coliform, E. coli, free and total chlorine residual, pH, odor, turbidity, temperature, and color. Additional sampling should be collected at the PWS and regulatory agency's discretion.

CORRECTIVE ACTIONS

Please describe the corrective actions taken by the water system:

Was the chlorine residual increased after discovery of backflow incident? YES NO

Date of the last cross-connection control hazard assessment of the premise with the backflow incident conducted: _____

Did the premise have backflow prevention assemblies? YES NO

Date of most recent backflow prevention assembly test(s): _____

When was the Division of Drinking Water or Local County Health office notified?

Date: _____ Time: _____ Contact Person: _____

Was the Division or Local County Health notified within 24 hours? YES NO

Other agencies or organizations contacted?

CERTIFICATION

Name: _____ Job Title: _____

Certification(s): _____

Please list all cross-connection control related certifications including number and expiration date

I certify that the forgoing information is true and correct to the best of my ability.

Signature: _____ Date:

Attach the following applicable documentation

1. Laboratory Test Results
2. Sketch of the cross-connection and modifications
3. MSDS or chemical information forms if chemical hazard is known
4. Applicable backflow assembly test reports including the most recent test before the incident
5. Other relevant supporting documentation

Appendix F

Related Statutes & Regulations

The following laws and regulations are considered related or tangential to the CCCPH, and are included in a descriptive format to provide additional, relevant background information

California Laws and Regulations

In addition to the California SDWA statutory requirements cited in CCCPH Chapter 1, section 1.3.1, California has statutes addressing certain authorities and requirements that may have influenced the CCCPH or may otherwise be of interest.

- Urban and community water systems must have a written policy on discontinuation of residential service for nonpayment and must not discontinue residential service for nonpayment if certain conditions are met. (CHSC sections 116900 – 116926)
- Senate Bill 1263 (2017) requires that before a person submits an application for a permit for a proposed new public water system, the person shall first submit a preliminary technical report which must include a cost comparison of a new public water system and consolidations with an existing system. (CHSC section 116527)
- Effective June 24, 2015, Senate Bill 88 (SB 88) (Statutes 2015, Chapter 27) added sections 116680-116684 to the CHSC, allowing the State Water Board to require certain water systems that consistently fail to provide safe drinking water to consolidate with, or receive an extension of service from, another public water system. The consolidation can be physical or managerial.
- Local health officers may maintain programs for the control of cross-connections by water users, within water users' premises, where public exposure to backflow may occur. Such programs may include water user premises inspections, collection of fees, certification of backflow prevention assembly¹ (BPA) testers, and other discretionary elements. Local health officer BPA tester certification standards must be consistent with the standards prescribed in the CCCPH. Water users are required to comply with all orders, instructions, regulations, and notices from the local

¹ California statutes use a variety of terms when referencing a 'backflow prevention assembly' (e.g., backflow protective device, backflow protection equipment, backflow prevention device, backflow or back siphonage protection device, backflow preventer, or backflow device). For consistency with industry terminology, 'backflow prevention assembly' is used in the CCCPH, unless directly quoted otherwise.

health officer regarding installation, testing, and maintenance of a BPA. (CHSC sections 116800 - 116820).

- Pursuant to the California Building Standards Law (CHSC sections 18901 - 18949.31), the California Building Standards Commission (CBSC) must administer the processes related to the adoption, approval, and publication of regulations referred to as the California Building Standards Code (Title 24, California Code of Regulation). Title 24 serves as the basis for the minimum design and construction of buildings in California and includes the California Plumbing Code (Part 5 of Title 24), which contains requirements pertaining to cross-connection control and backflow prevention.
- A BPA intended to convey or dispense water for human consumption via drinking or cooking must meet California’s “lead free” requirements. (CHSC section 116875)
- Limits are established for the installation of backflow protection equipment where automatic fire sprinkler systems are utilized. (CHSC section 13114.7)²
- Cross-connection control must be addressed in engineering reports that are required (CCR Title 22, section 60323) for recycled water projects. (Wat. Code section 13552.8)
- If a public agency requires the use of recycled water for toilet and urinal flushing in a structure (except certain mental health facilities), the public health agency must prepare an engineering report that addresses cross-connection control. (Wat. Code section 13554)
- Prior to indoor use of recycled water in a condominium project, the entity delivering the recycled water must submit a report, for State Water Board³ approval, and include the following related to cross-connection control (Wat. Code section 13553(d)(1)):
 - The condominium project must be provided with a backflow prevention assembly approved by the State Water Board.

² CHSC section 13114.7 historically provided potential limits for backflow prevention assemblies on fire sprinklers. Even though current standards differ from the language stated in CHSC section 13114.7, it is still being provided as a historical reference as there may still be installations with the now outdated limits established in section 13114.7

³ The California Department of Public Health’s authority and responsibility pertaining to this reference was transferred to the State Water Board via Senate Bill 861 (2014, Chapter 35). As such, applicable statutory mandates that may refer to “California Department of Public Health” or “Department” may be referred to as “State Water Board” in this document.

- The backflow prevention assembly must be inspected and tested annually by a certified tester.
- The condominium project must be tested by the recycled water agency or local agency at least once every four years for indications of possible cross-connections between the condominium's potable and non-potable systems.
- California's Department of Water Resources was required to convene a task force, known as the 2002 Recycled Water Task Force, to identify constraints, impediments, and opportunities for the increased use of recycled water and report to the Legislature by July 1, 2003. The task force was also asked to advise and make recommendations concerning cross-connection control, including the applicability of visual inspections instead of pressure tests for cross-connections between potable and non-potable water systems. (Wat. Code section 13578(b)(1). The final report⁴ provided the following recommendations to the State Water Board – Division of Drinking Water (Division):
 - Prepare guidance on dual plumbed regulations (22 CCR sections 60313-60316) consistent with Appendix J of plumbing code (Chapter 15 of 2019 California Plumbing Code, formerly Chapter 16A).
 - Support thorough assessment of risk associated with cross-connections between disinfection tertiary recycled water and potable water.
 - Ensure uniform interpretation of cross-connection control requirement of Title 22 regulations (recycled water) and Title 17 (cross-connection control regulations)
 - Recommend stakeholders to review draft Title 17 regulations.
- A person engaged in the salvage, purchase, or sale of scrap metal who knowingly possesses a backflow prevention assembly (or connections to the assembly or any part of the assembly), or who failed to report the possession of such items, which was previously owned by a utility or public agency, is guilty of a crime. (Pen. Code section 496e)
- Junk dealers or recyclers who possess a backflow prevention assembly (or connections to that assembly or any part of the assembly) without a written certification from the agency or utility owning or previously owning the assembly will be liable to the agency or utility for the

⁴ California Department of Water Resources. (2003). *Water Recycling 2030: Recommendations of California's Recycled Water Task Force*

wrongful possession. (Civ. Code section 3336.5 and, similarly, Bus. & Prof. Code section 21609.1)

Please note that a number of the codes, regulations, and statutes cited above are implemented under the authority of regulatory entities other than the State Water Board and would therefore be beyond the scope of this CCCPH. The intent of providing such citations is to increase general awareness with respect to other potential statutory requirements associated with cross-connection control. The list is not exhaustive and does not include other requirements that may exist, including those via regulations that may have been adopted by an appropriate regulatory entity.

Federal Laws and Regulations

All suppliers of domestic water to the public are subject to regulations adopted by the U.S. Environmental Protection Agency (EPA) under the U.S. Safe Drinking Water Act (SDWA) of 1974, as amended (42 U.S.C. section 300f et seq.), as well as by the State Board under the California SDWA (Health & Saf. Code, div. 104, pt. 12, ch. 4, section 116270 et seq.). Additionally, the State Water Board has been delegated primacy - the responsibility and authority to administer U.S. EPA's drinking water regulations within California – on the condition that California adopt enforceable requirements no less stringent than U.S. EPA's.

The U.S. EPA currently has no distinct cross-connection control requirements that apply broadly to public water systems (PWS); however, the importance of cross-connection control is evident by the issue papers and guidance documents developed by U.S. EPA and their recognition that cross-connections and backflow represent a significant public health risk (see discussion in Chapter 2). Although U.S. EPA currently has no distinct cross-connection control requirements, the subject of cross-connection or backflow prevention assemblies is included in the U.S. SDWA and the Code of Federal Regulations (C.F.R.) in relation to PWS, including the following:⁵

- If used exclusively for non-potable services, a backflow prevention assembly (BPA) is exempt from the federal lead prohibitions. (42, U.S.C. section 300g)
- Allows increasing disinfectant concentrations in a PWS distribution system in the event of a cross-connection (backflow) event. (40 C.F.R. section 141.130(d))

⁵ For requirements unrelated to cross-connection control, please consult California's laws and regulations specific to the topic of interest. California may have more stringent requirements (e.g., reduced monitoring allowed via federal regulations may be prohibited in California).

- Proper maintenance of the distribution system, including cross-connection control, is identified as a best available technology (BAT) for microbial contaminant control. (40 C.F.R. section 141.63(e))
- Under the federal Revised Total Coliform Rule, a PWS having a cross-connection control program is one of the enhancements necessary to reduce monitoring for a PWS that had been under an increased monitoring frequency. (40 C.F.R. section 141.854(h)(2))
- Under the federal Revised Total Coliform Rule, a PWS having a cross-connection control program is a criterion for a state to allow a reduced monitoring frequency (40 C.F.R. section 141.855(d)(1))
- If a state allows the monitoring frequency reductions previously mentioned under the federal Revised Total Coliform Rule, a state is required to include in its primacy package to U.S. EPA how a PWS will be required to demonstrate cross-connection control. (40 C.F.R. section 142.16(q))

Appendix G

Example BPA Testing Sheet Record

ACCOUNT #

L/M #

TEST DATA
BACKFLOW PREVENTION DEVICE

SERVICE ADDRESS:

TYPE OF DEVICE: _____ SERIAL NO.: _____

LOCATION OF DCV _____

PARCEL #

METER #

DATE WATER SERVICE INSTALLED:

REMARKS	WELL LOCATION SKETCH

	Check Valve #1	Check Valve #2	Diff. Pressure Relief Valve*	PSI:
Test Before Repair	Leaked <input type="radio"/> Closed Tight <input type="radio"/>	Leaked <input type="radio"/> Closed Tight <input type="radio"/>	Opened @ Reduced Press	Tested by: Date:
Repairs Needed				
Final Test	Closed Tight <input type="radio"/>	Closed Tight <input type="radio"/>		Tested by: Date:

*Required only on reduced pressure principle (RPP) devices.

	Check Valve #1	Check Valve #2	Diff. Pressure Relief Valve*	PSI
Test Before Repair	Leaked <input type="radio"/>	Leaked <input type="radio"/>	Opened @	Tested by:
	Closed Tight <input type="radio"/>	Closed Tight <input type="radio"/>	Reduced Press	Date:
Repairs Needed				
Final Test	Closed Tight <input type="radio"/>	Closed Tight <input type="radio"/>		Tested by: Date:

*Required only on reduced pressure principle (RPP) devices.

	Check Valve #1	Check Valve #2	Diff. Pressure Relief Valve*	PSI
Test Before Repair	Leaked <input type="radio"/>	Leaked <input type="radio"/>	Opened @	Tested by:
	Closed Tight <input type="radio"/>	Closed Tight <input type="radio"/>	Reduced Press	Date:
Repairs Needed				
Final Test	Closed Tight <input type="radio"/>	Closed Tight <input type="radio"/>		Tested by: Date:

*Required only on reduced pressure principle (RPP) devices.

	Check Valve #1	Check Valve #2	Diff. Pressure Relief Valve*	PSI
Test Before Repair	Leaked <input type="radio"/>	Leaked <input type="radio"/>	Opened @	Tested by:
	Closed Tight <input type="radio"/>	Closed Tight <input type="radio"/>	Reduced Press	Date:
Repairs Needed				
Final Test	Closed Tight <input type="radio"/>	Closed Tight <input type="radio"/>		Tested by: Date:

*Required only on reduced pressure principle (RPP) devices.

	Check Valve #1	Check Valve #2	Diff. Pressure Relief Valve*	PSI
Test Before Repair	Leaked <input type="radio"/>	Leaked <input type="radio"/>	Opened @	Tested by:
	Closed Tight <input type="radio"/>	Closed Tight <input type="radio"/>	Reduced Press	Date:
Repairs Needed				
Final Test	Closed Tight <input type="radio"/>	Closed Tight <input type="radio"/>		Tested by: Date:

*Required only on reduced pressure principle (RPP) devices.

Appendix H

Public Outreach Document



What is a Cross Connection?

Cross connections are locations within the consumer's internal plumbing system where possible backflow can occur if a pressure differential exists. It is a point where non-potable water from the consumers internal plumbing system can potentially enter the public water supply. Common cross connections for residential or commercial properties include lawn irrigation systems, garden hose connections to chemical solution aspirators, chemical mixing tanks, fire sprinklers, boilers, chillers, pressure pumps, hose bibs, swimming pools, private wells and pumps submerged in creeks.



BACKFLOW PREVENTION AWARENESS

What is Backflow?

The District depends on water pressure to keep water flowing in the proper direction through the pipes. However, a sudden or unexpected change in water pressure can cause an undesirable reversal in the normal flow of water. This is called backflow. During a backflow event, potentially non-potable water flows backwards from the consumers internal plumbing system and returns to the public water supply creating a possible health risk. For example, soapy water or other cleaning compounds can backflow through a hose submerged in a laundry basin.

Backflow device

DO

- ◆ Keep the end of hoses off the ground and clear of all possible contaminants.
- ◆ Install hose bib vacuum breakers on all spigots
- ◆ Hire a licensed plumber or contractor to install an approved backflow device on a underground lawn irrigation systems
- ◆ Make sure toilets have anti-siphon ballcock assemblies
- ◆ Have your plumbing system surveyed for cross connections
- ◆ Have each backflow device tested annually by a certified backflow tester
- ◆ Contact the District if you see any suspicious or unauthorized use of a fire hydrant

DON'T

- ◆ Submerge hoses in buckets, sinks, tubs, swimming pools, ponds or standing water
- ◆ Use spray attachments without a backflow prevention device such as a hose bib vacuum breaker
- ◆ Create a cross connection between an auxiliary water system and your water system
- ◆ Use a hose to unplug blocked toilets or sewer pipes



What is a Backflow Prevention Device?

A backflow prevention device is a mechanical assembly installed in a water line to prevent backflow from occurring at cross connections. It ensures that a one-way system of flow is maintained and thus protects the public water supply. Backflow prevention devices are installed between the consumers water meter and the first branch line in their private plumbing.



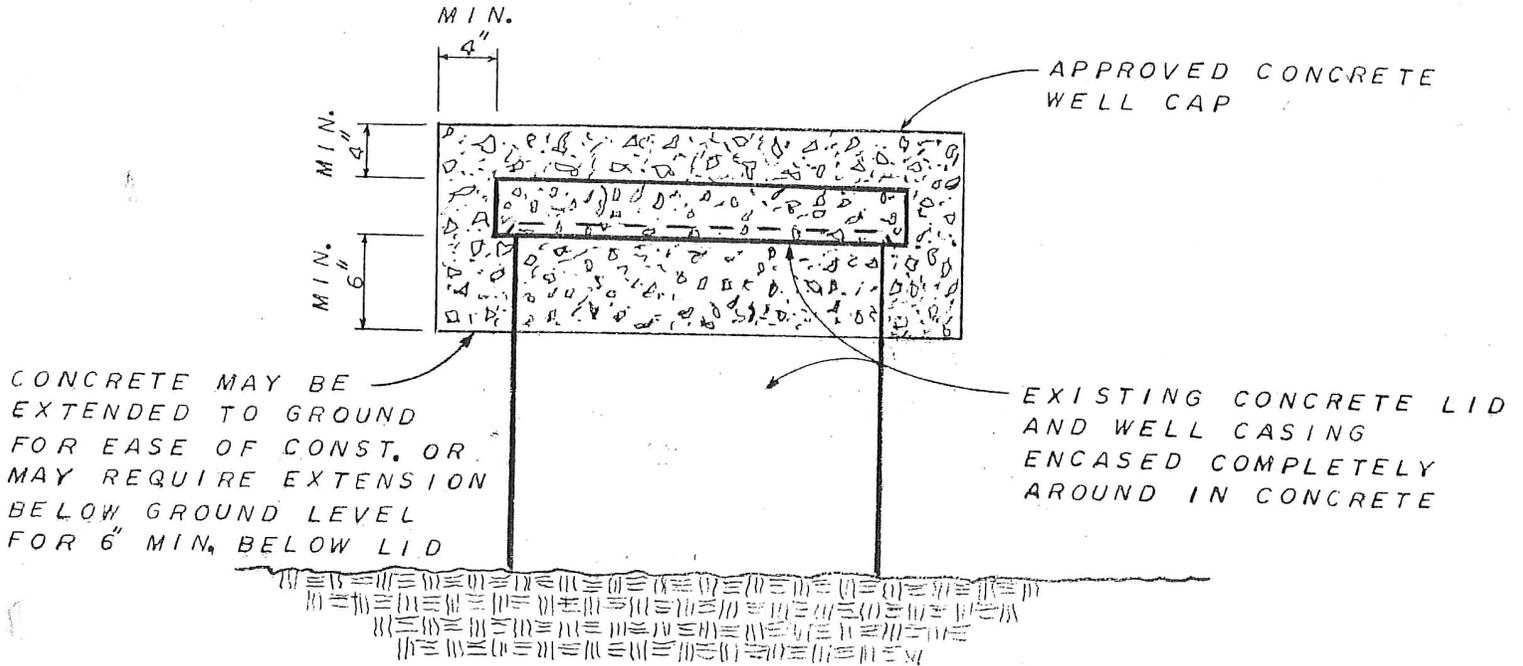
For more information on cross connection guidelines visit

https://www.waterboards.ca.gov/drinking_water/certific/drinkingwater/cccp/h.html

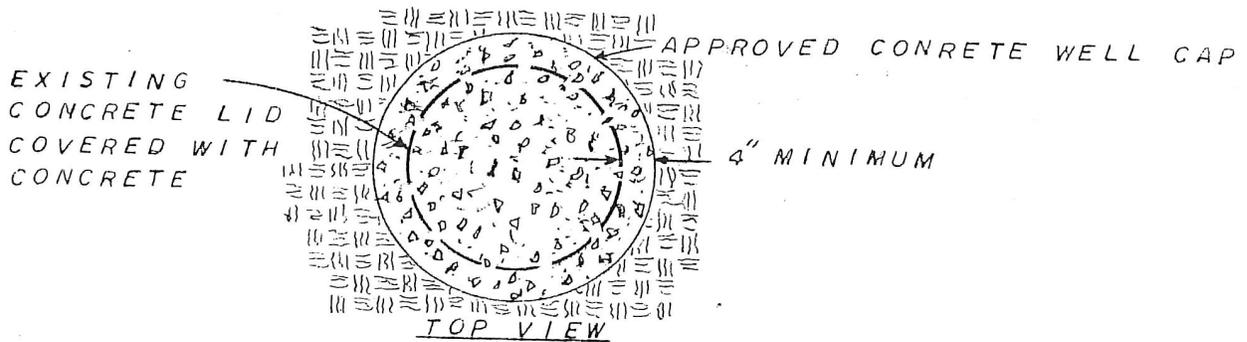
Appendix I

Well Cap Standards and Specs

MCKINLEYVILLE COMMUNITY SERVICES DISTRICT



NOTE: WELL MUST BE INSPECTED BY DISTRICT PERSONNEL BEFORE AND AFTER INSTALLING CONCRETE CAP



WELL CAPPING DETAIL

Appendix J

Hazard Assessment Survey Document Template

CCC SURVEY INSPECTION CHECKLIST

Name of Firm:

Mailing Address:

Time: _____ Date: _____ Water Pressure: _____ PH: _____ Chlorine Res:

- | | | |
|---|---|---|
| <input type="checkbox"/> Air Conditioning | <input type="checkbox"/> Air Washers | <input type="checkbox"/> Air Conditioning, Chilled Water |
| <input type="checkbox"/> Air Conditioning, Condenser Water | <input type="checkbox"/> Air Conditioning, Cooling Towers | <input type="checkbox"/> Air Compressors |
| <input type="checkbox"/> Autopsy Tables | <input type="checkbox"/> Aspirator, Medical | <input type="checkbox"/> Aspirator Weedicide and Root Feeders |
| <input type="checkbox"/> Autoclave & Sterilizer | <input type="checkbox"/> Boiler Feed Line | <input type="checkbox"/> Baptismal Fountain |
| <input type="checkbox"/> Bathtub Below Rim Filler | <input type="checkbox"/> Bedpan Washer, Flushing Rim | <input type="checkbox"/> Bidet |
| <input type="checkbox"/> Brine Tank | <input type="checkbox"/> Bottle Washer | <input type="checkbox"/> Chemical Feeder Tanks |
| <input type="checkbox"/> Chlorinator | <input type="checkbox"/> Coffee Urn | <input type="checkbox"/> Cuspidor, Dental |
| <input type="checkbox"/> Chiller Tanks | <input type="checkbox"/> Cooking Kettles | <input type="checkbox"/> Condensate Tank |
| <input type="checkbox"/> Demineralized System | <input type="checkbox"/> Dishwasher | <input type="checkbox"/> Drinking Fountain |
| <input type="checkbox"/> Degreasing Equipment | <input type="checkbox"/> Dye Vats & Tanks | <input type="checkbox"/> Developing Tanks |
| <input type="checkbox"/> Dairy Barn Equipment | <input type="checkbox"/> Etching Tanks | <input type="checkbox"/> Stills |
| <input type="checkbox"/> Starch Tanks | <input type="checkbox"/> Sitz Bath | <input type="checkbox"/> Sprinkler System, Fire Protection |
| <input type="checkbox"/> Shampoo Basin Hose, Rinse, Beauty Shop | <input type="checkbox"/> Sinks, Wash-up | <input type="checkbox"/> Serrated Faucets |
| <input type="checkbox"/> Sizing Vats & Boxes | <input type="checkbox"/> Solution Tanks | <input type="checkbox"/> Urinal, Siphon Jet Blow-out |
| <input type="checkbox"/> Urinal, Trough | <input type="checkbox"/> Fountain, Ornamental | <input type="checkbox"/> Detergent Dispenser |
| <input type="checkbox"/> Floor Drains, Flushing | | |

SURVEY INSPECTION CHECKLIST (continued)

- | | | |
|---|--|---|
| <input type="checkbox"/> Garbage Can Washer | <input type="checkbox"/> Garbage Disposers | <input type="checkbox"/> Hydro-Therapy Baths |
| <input type="checkbox"/> Humidifier Tank & Boxes | <input type="checkbox"/> Hose Faucets | <input type="checkbox"/> Hot Water Heater & Tanks |
| <input type="checkbox"/> Ice Maker | <input type="checkbox"/> Janitor Closets | <input type="checkbox"/> Lab Equipment |
| <input type="checkbox"/> Laundry Machine | <input type="checkbox"/> Lavatory | <input type="checkbox"/> Lawn Sprinkler |
| <input type="checkbox"/> Boat, Marina | <input type="checkbox"/> Make-up Tank | <input type="checkbox"/> Pump, Prime Lines |
| <input type="checkbox"/> Pump, Water Operated Ejector | <input type="checkbox"/> Photo Lab Sinks | <input type="checkbox"/> Photostat Equipment |
| <input type="checkbox"/> Pump, Pneumatic Ejector | <input type="checkbox"/> Pipette Washer | <input type="checkbox"/> Potato Peeler |
| <input type="checkbox"/> Processing Tanks | <input type="checkbox"/> Re-circulated Water | <input type="checkbox"/> Sewer, Sanitary |
| <input type="checkbox"/> Sewer, Storm | <input type="checkbox"/> Swimming Pool | <input type="checkbox"/> Sewer, Flushing Manhole |
| <input type="checkbox"/> Steam Cleaner | <input type="checkbox"/> Steam Table | <input type="checkbox"/> Digesters, Hospital |
| <input type="checkbox"/> Ultrasonic Baths | <input type="checkbox"/> Vats | <input type="checkbox"/> Showers |
| <input type="checkbox"/> Water Closets, Tank | <input type="checkbox"/> Water Closets, Flush | <input type="checkbox"/> Water for Cooling |
| <input type="checkbox"/> Water Operated Equipment | <input type="checkbox"/> Water Treatment Tanks | <input type="checkbox"/> Water Well, Secondary System |
| <input type="checkbox"/> Wash Tanks | | |

REMARKS:

CROSS-CONNECTION SURVEY FORM

Date: _____

Name of Company, Corporation, or Business: _____

Address: _____

Name of Contact: _____

Type of Use: Industrial Commercial Governmental Other _____

Location of Service: _____

Size of Service: _____ Inch(s) Metered? Yes No

Require non-interrupted water service? Yes No

Does boiler feed utilize chemical additives? Yes No

Is backflow protection incorporated? Yes No

Are air-conditioning cooling towers utilized? Yes No

Is a water saver utilized on condensing lines or cooling towers? N/A Yes No

Is the make-up supply line backflow protected? Yes No

Is process water in use, and if so, is it potable supply water or "raw" water?

N/A Potable Raw Protected Unprotected

Is fire protection water separate from the potable supply? Yes No

Are containment devices in place? Yes No

Summary

Degree of Hazard: High Low

Type of device recommended for containment: RPZ DCV None

Fixture outlet protection required? Yes No

If so, where? _____

CROSS-CONNECTION SURVEY FORM (continued)

Place: _____ Date: _____

Location: _____ Investigator(s): _____

Building Representative(s) and Title(s): _____

Water Source(s):

Piping System(s):

Points of Interconnection:

Special Equipment Supplied with Water and Source:

Remarks or Recommendations:

NOTE: Attach sketches of cross-connections found where necessary for clarity of description. Attach additional sheets for room-by-room survey under headings:

Cross Connection Sketch
(Sketch out Cross Connection Below)

Appendix K

Regulation 7 & 10 from MCSD Rules and Regulations

REGULATION 7 – GENERAL USE REGULATION

Rule 7.01. NUMBER OF SERVICES PER PREMISES - the applicant may apply for as many services as may be reasonably required for his premises provided that the pipe line system from each service be independent of the others and that they not be interconnected.

Rule 7.02. WATER WASTE - no customer shall knowingly permit leaks or waste of water. Where water is wastefully or negligently used on a customer's premises, seriously affecting the general service, the District may discontinue the service if such conditions are not corrected within five days after giving the customer written notice.

Rule 7.03. RESPONSIBILITY FOR EQUIPMENT ON CUSTOMER PREMISES

all facilities installed by the District on private property for the purpose of rendering water service shall remain the property of the District and may be maintained, replaced or repaired by the Water Department without consent or interference of the owner or occupant of the property. The property owner shall use reasonable care in the protection of the facilities. No payment shall be made by District for placing or maintaining said facilities on private property.

Rule 7.04. DAMAGE TO WATER SYSTEM FACILITIES - the customer shall be liable for any damage to the service facilities when such damage is from causes originating on the premises by an act of the customer or his tenants, agents, employees, contractors, licensees or permittees, including the breaking or destruction of locks by the customer or others on or near a meter, and any damage to a meter that may result from hot water or steam from a boiler or heater on the customer's premises. The District shall be reimbursed by the customer for any such damage promptly on presentation of a bill.

Rule 7.05. GROUND-WIRE ATTACHMENTS - all individuals or business organizations are forbidden to attach any ground- wire or wires to any plumbing which is or may be connected to a service connection or main belonging to the District. The District will hold the customer liable for any damage to its property occasioned by such ground-wire attachments.

Rule 7.06. CONTROL VALVE ON THE CUSTOMER PROPERTY - the customer shall provide a valve on his side of the service installation, as close to the meter location as practicable, to control the flow of water to the piping on his premises. The customer shall not use the service curb stop to turn water on and off for his convenience.

Rule 7.07. CROSS-CONNECTIONS - the customer must comply with State and Federal laws governing the separation of dual water systems or installations of back flow protective devices to protect the public water supply from the danger of cross-connections. Back flow protective devices must be installed as near the service as possible and shall be open to test and inspection by the Water Department. Plans for

installation of back flow protective devices must be approved by the Water Department prior to installation.

Rule 7.08. ID. – SPECIAL CASES - in special circumstances, when the customer is engaged in the handling of especially dangerous or corrosive liquids or industrial or process waters, the District may require the customer to eliminate certain plumbing or piping connections as an additional precaution and as a protection to the back flow preventive devices.

Rule 7.09. RELIEF VALVES - as a protection to the customer's plumbing system, a suitable pressure relief valve must be installed and maintained by him, at his expense, when check valve or other protective devices are used. The relief valve shall be installed between the check valves and the water heater.

Rule 7.10. BACK FLOW DEVICE - whenever back flow protection has been found necessary on a water supply line entering a customer's premises, then any and all water supply lines from the District's mains entering such premises, buildings or structures shall be protected by an approved back flow device, regardless of the use of the additional water supply lines. The District shall charge each water customer with a device a monthly charge of \$2.58 to be collected on the District's bill.

Rule 7.11. ID. – INSPECTION - the double check valve or other better approved back flow protection devices may be inspected and tested periodically for water tightness by the District. The devices shall be serviced, overhauled, or replaced whenever they are found defective and all costs of repair and maintenance shall be borne by customer. The District shall charge each water customer with a device a monthly charge of \$2.58 to be collected on the District's bill.

Rule 7.12. ID. – DISCONTINUED SERVICE - the service of water to any premises may be immediately discontinued by the District if any defect is found in the check valve installations or other protective devices, or if it is found that dangerous unprotected cross-connections exist. Service will not be restored until such defects are corrected.

Rule 7.13. INTERRUPTIONS IN SERVICE - the District shall not be liable for damage which may result from an interruption in service from a cause beyond the control of the Water Department.

Rule 7.14. INGRESS AND EGRESS - representatives from the Water Department shall have the right of ingress and egress to the customer's premises at reasonable hours for any purpose reasonably connected with the furnishing of water service.

REGULATION 10 – DISCONTINUANCE OF SERVICE

Rule 10.01. TERMINATION OF SERVICE - water service may be terminated by the District in compliance with the notice and other requirements of Chapter 9.6 of Division 1, title 6, of the California Government Code and Chapter 6 of Part 12 of Division 104 of the California Health and Safety Code.

(a) Water service may be discontinued for any one of the following reasons:

i. Delinquency in payment of any residential water service rate or charge in accordance with the District's Policy Governing the Disconnection of Residential Water Service for Nonpayment of Water Rates and Charges.

ii. Delinquency in payment of any commercial or other nonresidential water service rate or charge.

iii. The unauthorized taking of water or the taking of water in excess of the amount paid for.

iv. Failure of the customer to maintain his facilities in suitable condition to prevent waste of water.

v. The existence of an unprotected cross connection on the customer's premises or the lack of adequate backflow protection at the service connection.

vi. Any violation by the customer of any rules of the District governing water service.

(b) The process that will be followed prior to discontinuance of residential service for non-payment is set forth in the District's Policy Governing the Disconnection of Residential Water Service for Nonpayment of Water Rates and Charges.

(c) The following process will be followed prior to a discontinuance other than a discontinuance of residential service for non-payment: At least ten (10) days before discontinuing such a water service the District shall provide written notice which shall specify the reason for the proposed discontinuance and inform the customer of the procedure for and the availability of the opportunity to discuss the reason for the proposed discontinuance with the Manager, or the Manager's designee, who is empowered to review disputes and rectify errors and settle controversies pertaining to such proposed discontinuance of service. The name and phone number of the Manager, or the Manager's designee, shall be included in any such notice of proposed discontinuance given to the customer.

(d) No water service shall be discontinued to any customer because of any delinquency in payment on any Saturday, Sunday, legal holiday or at any time during which the business office of the District is not open to the public.

Rule 10.02. RECONNECTION - failure to receive bill does not relieve consumer of liability. Any amount due shall be deemed a debt to the District and any person, firm or corporation failing, neglecting or refusing to pay said indebtedness shall be liable to an action in the name of the district in any court of competent jurisdiction for the amount thereof.

Rule 10.03. RECONNECTION CHARGE - a reconnection charge plus penalties as applicable shall be made and collected prior to renewing service following an initial discontinuance or suspension. The reconnection charge for residential water service is set forth in the District's Rules and Policy Governing the Disconnection of Residential Water Service for Nonpayment of Water Rates and Charges. The reconnection charge for commercial or other nonresidential water service will be

equivalent to 2/3 (two-thirds) of an hour at the loaded Operations average hourly payroll rate as listed in the current MCSD fee schedule in Appendix A. Service reconnection shall also require the payment of all charges currently due in addition to the reconnection charges. An additional refundable deposit equivalent to 2 1/2 (two and one-half) times the monthly average for each class of customer will be required of water/sewer accounts that have begun new service, reconnected or with an outstanding balance remaining from a previous MCSD service. (See current MCSD fee schedule in Appendix A.)

Rule 10.04. UNSAFE APPARATUS - water service may be refused or discontinued to any premises where apparatus or appliances are in use which might endanger or disturb the service to other customers.

Rule 10.05. CROSS-CONNECTIONS - water service may be refused or discontinued to any premises where there exists a cross-connection in violation of State or Federal laws.

Rule 10.06. FRAUD OR ABUSE - service may be discontinued if necessary, to protect the District against fraud or abuse.

Rule 10.07. NON-COMPLIANCE WITH REGULATIONS - service may be discontinued for non-compliance with this or any other ordinance or regulation relating to the water service.

Rule 10.08. UPON VACATING PREMISES - customers desiring to discontinue service should so notify the Water Department two (2) days prior to vacating the premises. Unless discontinuance of service is ordered, the customers shall be liable for charges whether or not any water is used.

Rule 10.09. RETURNED CHECK FEE - the District shall charge the full returned payment fee or \$20 (twenty dollars), whichever is greater, each time a customer's payment is rejected by that customer's financial institution.