

# **SHELTER BAY COMMUNITY**

# **CROSS CONNECTION CONTROL PROGRAM**



# SHELTER BAY COMMUNITY CROSS CONNECTION CONTROL PROGRAM

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## **A. OVERVIEW OF SYSTEM**

Shelter Bay Community is located in Skagit County, west of the Town of La Conner, across the Swinomish Channel and lies within the Swinomish Indian Reservation.

Shelter Bay purchases treated water from the town of La Conner and receives it through a 8" water main which is located under the Swinomish Channel supplied from a 1.5 million gallon reservoir located within the town of La Conner. The town of La Conner receives water from the city of Anacortes water treatment facility which draws its water from the Skagit River.

Shelter Bay Community does not have a second source of water. However there is an "emergency only" inter-tie connection with the Swinomish Tribal Community. The Swinomish Tribal Community purchases its water directly from the Anacortes water treatment facility.

Shelter Bay water system is comprised of approximately 60,000 linear feet of ¾", 1", 2", 4", 6" and 8" piping which has two distinct pressure zones (lower and middle). The lower pressure zone (primarily below thirty feet in elevation (AGL)) is supplied a nominal pressure of 65 to 80 psi from the La Conner reservoir. The middle pressure zone is supplied pressurized water supply via the community booster station at a nominal 135 psi.

The community's booster station located within the community's maintenance building (located on the corner of Shoshone and Shelter Bay Drive) houses three variable speed centrifugal booster pumps. Normally one pump can supply the community but in high demand situations the secondary pump will assist maintaining system pressure at a predetermined value.

To provide additional water for fire fighting the community has a 147,000 gallon water storage tank which is located on Muckleshoot circle. The storage facility is also equipped with two booster pumps to aid in supplying system pressure at higher elevations.

Presently the community water system has 978 service connections serving a total population of approximately 1850 people.

Additionally, Shelter Bay Community supplies water to Eagle Nest Community through a single 6" water main via 6" DVCA and compound water meter housed within a concrete vault at Eagles Nest Community entrance. The Eagles Nest Community owns and operates its water system through a contracted operator/manager and Cross Connection specialist.

## **B. REQUIREMENTS FOR PROGRAM**

The Shelter Bay Community, hereinafter referred to as the Purveyor, has the responsibility to protect public water systems from contamination due to cross connections. A cross connection may be defined as *"Any actual or potential physical connection between a potable water line and any pipe, vessel, or machine that contains or has a probability of containing a non-potable gas or liquid, such that it is possible for a non-potable gas or liquid to enter the potable water system by backflow"*.

## **C. PROGRAM OBJECTIVES**

The objectives of the cross connection control program are to:

- 1) Reasonably reduce the risk of contamination of the public water distribution system, and
- 2) Reasonably reduce the Purveyor's exposure to legal liability arising from the backflow of any contaminant originating from the customer's plumbing system and then supplied to other customers.
- 3) Provide utility customers with educational media on backflow/backsiphonage hazards and identification.

## **D. REQUIRED ELEMENTS OF PROGRAM**

The following are excerpts from the Washington Administrative Code (WAC) 246-290-490:

### Element 1:

The purveyor shall adopt a local ordinance, resolution, code, bylaw, or other written legal instrument that:

- a) Establishes the purveyor's legal authority to implement a cross-connection control program;
- b) Describes the operating policies and technical provisions of the purveyor's cross-connection control program;
- c) Describes the corrective actions used to ensure that consumers comply with the purveyor's cross-connection control requirements.

### Element 2:

The purveyor shall develop and implement procedures and schedules for evaluating new and existing service connections to assess the degree of hazard posed by the consumer's premises to the purveyor's distribution system and notify the consumer within a reasonable time frame of the hazard evaluation results. At minimum, the program shall meet the following:

- a) For new connections made on or after the effective date of these regulations, procedures shall ensure that an initial evaluation is conducted before service is provided;
- b) For existing connections made prior to the effective date of these regulations, procedures shall ensure that an initial evaluation is conducted in accordance with a schedule acceptable to the department {WA DOH}; and
- c) For all service connections, once an initial evaluation has been conducted, procedures shall ensure that periodic reevaluations are conducted in accordance with a schedule and whenever there is a change in the use of the premises.

### Element 3:

The purveyor shall develop and implement procedures and schedules for ensuring that:

- a) Cross-connections are eliminated whenever possible;
- b) When cross-connections cannot be eliminated, they are controlled by installation of approved backflow preventers commensurate with the degree of hazard; and
- c) Approved backflow preventers are installed in accordance with the requirements of subsection (6) of this section {of WAC 246-290}.

#### Element 4:

The purveyor shall ensure that personnel, including at least one person certified as a CCS, are provided to develop and implement the cross-connection control program.

#### Element 5:

The purveyor shall develop and implement procedures to ensure that approved backflow preventers are inspected and/or tested (as applicable) in accordance with subsection (7) of this section {of WAC 245-290}.

#### Element 6:

The purveyor shall develop and implements a backflow prevention assembly testing quality control assurance program including, but not limited to documentation of tester certification and test kit calibration, test report contents, and time frames for submitting completed test reports.

#### Element 7:

The purveyor shall develop and implement (when appropriate) procedures for responding to backflow incidents.

#### Element 8:

The purveyor shall include information on cross-connection control in the purveyors existing program for educating consumers about water system operations. Such a program may include periodic bill inserts, public service announcements, pamphlet distribution, notification of new consumers and consumer confidence reports.

#### Element 9:

The purveyor shall develop and maintain cross connection control records including, but not limited to, the following:

- a) A master list of service connections and/or consumer's premises where the purveyor relies upon approved backflow preventers to protect the public water system from contamination, the assessed hazard level of each, and the required backflow preventer(s);
- b) Inventory information on:
  - i. Approved air gaps installed in lieu of approved assemblies including exact air gap location, assessed degree of hazard, installation date, history of inspections, inspection results, and person conducting inspections;
  - ii. Approved backflow assemblies including exact assembly location, assembly description (type, manufacturer, model, size, and serial number), assessed degree of hazard, installation date, history of inspections, tests and repairs, test results, and person performing tests;
  - iii. Approved AVB's used for system applications including location, description (manufacturer, model, and size), installation date, history of inspection(s), and person performing inspection(s). "Cross-Connection Program Summary Reports" and "Backflow section {of WAC 246-290}.

### Element 10:

Purveyors who distribute and/or have facilities that receive reclaimed water within their water service area shall meet any additional cross-connection control requirements imposed by the department under a permit issued in accordance with chapter 90.46 RCW.

## **E. PROGRAM OPERATION**

### Authority

The attached resolution establishes the authority for the program. The attached service contract referred to in the resolution shall be the primary enforcement authority for all new customers.

For customers supplied prior to the adoption of the attached resolution, an implied service contract allows the Purveyor to protect the distribution system from contamination through a Purveyor installed backflow preventer on a customer's service.

The written and implied contract terms are discussed further hereinafter under the section "Policy".

### Program Administration

The responsibility for administration rests with the board of directors, either as a body or to an individual director or employee, hereinafter referred to as the Director.

The administration of the program shall be periodically audited by a WA Department of Health certified cross connection control specialist (CCS) employed by the Purveyor. At a minimum, the audit will occur every six years. For systems required to update a water system plan, the audit should be part of water system plan update. When requested, the CCS shall also advise the Director on cross connection control matters.

The current CCS employed by the Purveyor is: Mr. Robert Connolly

### Policy

The following service policy shall apply to all new and existing customers:

- 1) Water services to all non-single family or duplex residential customers, hereinafter referred to as "commercial customers", shall be isolated at the meter by a Purveyor approved double check valve assembly (DCVA) or reduced pressure backflow assembly (RPBA). All customers described in Table 9 of WAC 246-290-490 shall be isolated with a RPBA.
- 2) Water services to all single family or duplex residential customers, hereafter referred to as "residential customers", shall be isolated at the meter by a Purveyor installed meter check valve (single or dual), except where the customer has special plumbing that increases the risk to the Purveyor's distribution system, such as, but not limited to, the following:
  - a. Lawn irrigation system

- b. Solar heating system
  - c. Auxiliary source of supply, e.g., well
  - d. Piping for livestock watering, hobby farming, etc.
  - e. Residential fire sprinkler system
  - f. Heating systems requiring boiler operations
  - g. Property containing a small boat moorage
- 3) All residential customers described in Table 9 of WAC 246-290-490 shall be isolated with a RPBA. All other residential customers with special plumbing as described in "2", above, shall be isolated with a DCVA. For all customers that have a written service contract with the Purveyor, the premises isolation DCVA or RPBA required above shall be:
- a. Purchased and install by the customer (at the customer's expense) immediately downstream of the water meter in accordance with the Purveyor's standards described hereinafter;
  - b. Maintained, repaired, tested, and inspected in accordance with the Purveyor's standards (at the customer's expense) described hereinafter;

For new customers, water shall not be turned on at the meter until the customer complies with the above requirements.

The failure of the customer to comply with the above installation and maintenance requirements shall constitute the customer's breach of contract. The Purveyor may then proceed with corrective action provisions stipulated in the contract.

The Purveyor has no regulatory responsibility or authority over the installation and operation of the customer's plumbing system. The customer is solely responsible for compliance with all applicable regulations and for prevention of contamination of his plumbing system from sources within his premises. Any action taken by the Purveyor to survey plumbing, inspect or test backflow prevention assemblies, or to require premises isolation (installation of DCVA or RPBA on service) is solely for the purposes of reducing the risk of contamination of the Purveyor's distribution system.

No action by the Purveyor shall be construed by the customer to provide guidance to the customer on the safety or reliability of the plumbing system. Other than the general public education program discussed hereinafter, the Purveyor will provide no advice to the customer on the design and installation of plumbing.

Except for easements containing the Purveyor's distribution system, the Purveyor will not undertake work on the customer's premises.

## Cross Connection Surveys

The procedures for evaluating the backflow prevention requirements for new and existing customers are:

- 1) For all new commercial services, the customer shall submit with the application for water service an evaluation by a purveyor pre-approved, WA Department of Health certified cross connection control specialist (CCS) of the hazard posed by the proposed plumbing system, with recommendations for the installation at the meter of either a DCVA or RPBA. The Purveyor, at the discretion of the Director, may accept the recommendation or submit the recommendations to a CCS employed by the Purveyor for peer review and concurrence, before acceptance.
- 2) For all new residential services, the customer shall submit with the application for water service a completed "Water Use Questionnaire", copy attached hereto.

If the customer's reply indicates special plumbing the customer shall submit an evaluation by a purveyor pre-approved, WA Department of Health certified cross connection control specialist (CCS) of the hazard posed by the proposed special plumbing system, with recommendations for the installation at the meter of either a DCVA or RPBA.

As an alternative to the above requirement for a survey by a CCS, at the discretion of the Director, the Purveyor may specify the backflow preventer required to be installed as a condition of service.

- 3) For all existing commercial services, the customer shall be requested to submit within six months an evaluation by a purveyor pre-approved, WA Department of Health certified cross connection control specialist (CCS) of the hazard posed by the proposed plumbing system, with recommendations for the installation at the meter of either a DCVA or RPBA. The Purveyor, at the discretion of the Director, may accept the recommendation or submit the recommendations to a CCS employed by the Purveyor for peer review and concurrence, before acceptance.
- 4) For all existing residential services, the customer shall be requested to submit within six months a completed "Water Use Questionnaire". If the customer's reply indicates special plumbing, the customer shall submit an evaluation by a purveyor pre-approved, WA Department of Health certified cross connection control specialist (CCS) of the hazard posed by the proposed special plumbing system, with recommendations for the installation at the meter of either a DCVA or RPBA.

As an alternative to the above requirement for a survey by a CCS, at the discretion of the Director, the Purveyor may specify the backflow preventer required to be installed as a condition of service. Guidance on the type of backflow preventer shall be provided by the Purveyor's CCS.

For existing services, should the customer fail to supply the requested information for a hazard assessment, the Director may have the assessment made by a CCS employed by the Purveyor, require the installation of an RPBA, or take other such actions consistent with the previously stated policies.

For subsequent cross connection surveys, procedures for evaluating the backflow prevention requirements are:

- 5) For residential services not required to have a DCVA or RPBA, every two years and/or at the time of a change in ownership of the premises, the customer shall be requested to submit within two months a completed "Water Use Questionnaire". The procedure for evaluating the need to change the hazard assessment, and thus require a DCVA or RPBA shall be the same as the procedure for the initial assessment.
- 6) For residential services with a DCVA or RPBA, and for all commercial services, the customers shall be required to submit with the annual report on the testing of the DCVA or RPBA, a reevaluation of the hazard assessment. To facilitate the reevaluation, the customer should employ for testing the DCVA or RPBA a Purveyor pre-approved, WA DOH certified CCS (dual CCS and BAT certification). Alternatively, the customer may employ a CCS to accompany the BAT.

### Testing of Assemblies

The following requirements apply to all backflow prevention assemblies and air gaps relied upon by the Purveyor to protect its public water system.

The DCVA or RPBA installed on the service for premises isolation shall be inspected and tested by a WA DOH certified backflow assembly tester (BAT) upon installation and at least annually thereafter, after repair, replacement or relocation, and upon the specific request of the Purveyor as a spot quality assurance check. As previously noted, the BAT shall also retain WA DOH certification as a CCS.

For customer-owned assemblies, the customer shall employ a Purveyor pre-approved BAT to complete the inspection and test within 30 days of date of mailing by the Purveyor of a notification to test the assembly. The test report shall be completed and signed by the BAT, then countersigned and returned by the customer to the Purveyor within 45 days of the date of mailing of the notification to test the assembly. A request for an extension of the completion time for the return of a test report may be made in writing by the customer to the Purveyor. An extension up to 90 days may be granted at the discretion of the Director.

The DCVA, DCDA, RPBA and RPDA, shall be tested in accordance with the test performance criteria outlined in Chapter 8 "Assembly Test Procedures" in the PNWS-AWWA *CROSS CONNECTION CONTROL MANUAL (current addition)*.

The test report form supplied by the Purveyor, copy attached hereto, shall be completed and returned.

### Quality Assurance

The following requirements apply to all backflow prevention assemblies and air gaps relied upon by the Purveyor to protect its public water system.

The test report forms submitted by the customer shall be reviewed upon receipt by the Director, and periodically by a CCS employed by the Purveyor to audit the cross connection control program. Test reports should be reviewed by the CCS at least annually.

To ensure that the equipment used to test assemblies has been checked for calibration within the last year, the Purveyor shall list as pre-approved those BATs listed by another water utility with greater than 1,000 connections that has a quality assurance program. Alternatively, the BAT may submit with a test report a report on the verification of the calibration of his test equipment and current certification status.

### Approved Backflow Assemblies

The Purveyor shall rely upon the Washington Department of Health's published list of "Approved" backflow prevention assemblies. This list shall be obtained from the State of Washington annually.

### Records

The Director shall maintain copies of all records, including but not limited to, correspondence, survey results, and backflow assembly test reports. The record form "Record of Backflow Prevention Assemblies" (Form B-1), included herewith, shall be used to record the location of all backflow prevention assemblies required by the Purveyor.

### List of Certified Testers

The list of local certified backflow assembly testers (BAT) and cross connection control specialists (CCS) approved by the Purveyor is included herewith. Others may be added to this list upon written request. A list of all certified tester may be obtained from the WA Department of Health.

## Coordination with Plumbing Authority

A copy of this cross connection control program is provided to Shelter Bay Community Maintenance Department, hereinafter referred to as the local administrative authority, via a copy of the Purveyor's water system plan.

The Director shall provide information to the local administrative authority in a timely manner of:

- 1) Any requirement imposed on a residential customer for the installation of a DCVA or RPBA on the service, with a description of the cross-connection hazard identified,
- 2) Any upgrade of the premises isolation from a DCVA to a RPBA,
- 3) Any action taken to discontinue water supply, and
- 4) Any backflow incident.

The Purveyor's survey of a customer's premises, whether by a representative of the Purveyor or through the evaluation of a questionnaire completed by the customer, is for the sole purpose of establishing the Purveyor's minimum requirements for the protection of the public water supply system, commensurate with the Purveyor's assessment of the degree of hazard. It shall not be assumed by the customer or any regulatory agencies that the Purveyor's survey, requirements for the installation of backflow prevention assemblies, lack of requirements for the installation of backflow prevention assemblies, or other actions by Purveyor personnel or agent constitutes an approval of the customer's plumbing system, or an assurance to the customer or any regulatory agency, of the absence of cross connections therein.

## Backflow Incident Response

The Purveyor's emergency procedures (cross connection control section attached hereto) include a backflow incident response plan. The response plan is supplemented by the PNWS-AWWA *BACKFLOW INCIDENT INVESTIGATION PROCEDURES*, (current addition).

## Public Education

The public education program for the Purveyor shall consist mainly of the distribution with water bills of information brochures describing the cross connection hazards in homes and the recommended devices that should be installed by the homeowner to reduce the hazard. The education program emphasizes the responsibility of the customer in preventing the contamination of his water supply. The information brochures may be obtained from Environmental Protection Agency, Washington State Department of Health, Pacific Northwest Section, American Water Works Association and other backflow prevention associations and other water utilities.

Information brochures shall be periodically distributed to all customers; the period between distribution of a brochure on the topic of cross connection control should not exceed three years.

Copies of all of the brochures distributed by the Purveyor within the last six years shall be provided to all new customers at the time the new customer signs a service agreement. Additional copies will be provided to customers upon request.

### Installation Standards

All DCVA and RPBA on the customer's service shall be installed in accordance with the recommendations outlined in the PNWS-AWWA *CROSS CONNECTION CONTROL MANUAL (current addition)*, Washington State plumbing codes and Purveyor's "standard" installation guidelines.

## F. PROGRAM SCHEDULE

The following is the schedule for program implementation and operation:

TASK	SCHEDULE
Adoption of policy and administrative authority	November, 2015
Assess purveyors system hazards	February, 2014
BPA's installed on water system hazards	February, 2002
New customer hazard assessment	upon application
BPA's installed on new customers	before service
Existing customer hazard assessment: a) Single family – questionnaire b) Commercial - survey	February, 2015 February, 2015
Notification of assessment: a) High hazard (table 9) b) All others	April, 2015 April, 2015
BPA's installed on existing customers: a) High hazard (table 9) b) Commercial c) Residential d) Commercial/residential fire	Within 1 year Within 2 years Within 5 years Within 5 years
Re-assessment of hazard: a) Commercial b) Residential	Every 2 years Every 4 years
Distribution of education brochures	Every spring with water bill or with change of property ownership or new service connection.
Annual BPA testing notification	Annually
CCS review of program	Annually

**NOTE:** Installation of backflow prevention assemblies on existing customers shall be required when there is change in ownership of property, or the customer's water plumbing use changes or major system changes occur.

## **G. PROGRAM REFERENCE DOCUMENTS**

The following publications shall be utilized for the operation of the program:

- EPA *CROSS CONNECTION CONTROL MANUAL (current addition)*.
- WA DOH *CROSS-CONNECTION CONTROL GUIDANCE MANUAL FOR SMALL WATER SYSTEMS, (current addition)*.
- PNWS-AWWA *CROSS CONNECTION CONTROL MANUAL (current addition)*.
- PNWS-AWWA *BACKFLOW INCIDENT INVESTIGATION PROCEDURES (current addition)*.

# RESOLUTION

## SHELTER BAY COMMUNITY CROSS CONNECTION CONTROL POLICY

### FINDING OF FACT:

Whereas it is the responsibility of water purveyor to provide water to the customer that meet State water quality standards;

Whereas it is the water purveyor's responsibility to prevent the contamination of the public water supplies system from the source of supply to the customer's connection to the service pipe or meter;

Whereas it is a requirement of the Washington Department of Health for the purveyor to establish a cross connection control program satisfactory to the Department of Health, and

Whereas cross connections within the customer's plumbing system pose a potential source for the contamination of the public water supply system;

Now be it resolved that the *SHELTER BAY COMMUNITY*, hereinafter referred to as the Purveyor, establishes the following service policy to protect the Purveyor owned water supply system from the risk of contamination. For public health and safety, this policy shall apply equally to all new and existing customers.

### PREVENTION OF CONTAMINATION:

The customer's plumbing system, starting from the termination of the Purveyor's water service pipe, shall be considered a potential high health hazard requiring the isolation of the customer's premises by a Purveyor approved, customer installed and maintained reduced pressure backflow assembly (RPBA) or detector derivative thereof. The RPBA shall be located at the end of the Purveyor's water service pipe (i.e., immediately downstream of the meter). Water shall only be supplied to the customer through a Purveyor an approved and customer installed and maintained RPBA.

Notwithstanding the aforesaid, the Purveyor, upon an assessment of the risk of contamination posed by the customer's plumbing system and use of water, may allow:

- A) A single family or duplex residential customer to connect directly to the water service pipe, i.e., without a Purveyor approved DCVA or RPBA.
  
- B) Any customer other than a single family or duplex residential customer, as a

minimum, to be supplied through a Purveyor/WA DOH approved, customer installed and maintained double check valve assembly (DCVA) or double check detector assembly (DCDA).

## **CONDITIONS FOR PROVIDING SERVICE:**

Water service is provided based on the following terms and limitations:

- 1) The customer agrees to take all measures necessary to prevent the contamination of the plumbing system within his premises and the Purveyor's distribution system that may occur from backflow through a cross connection. These measures shall include the prevention of backflow under any back pressure or backsiphonage condition, including the disruption of supply from the Purveyor's system that may occur by reason of routine system maintenance or during emergency conditions, such as a water main break.
- 2) The customer agrees to install, operate and maintain at all times his plumbing system in compliance with the current edition of the Plumbing Code having jurisdiction as it pertains to the prevention of contamination, and protection from thermal expansion due to a closed system that could occur with the present or future installation of backflow preventers on the customer's service and/or at plumbing fixtures.
- 3) For cross connection control or other public health related surveys, the customer agrees to provide free access for the employees or agents of the Purveyor to all parts of the premises during reasonable working hours of the day for routine surveys, and at all times during emergencies.

Where agreement for free access for the purveyor's survey is denied, water service may be supplied by the Purveyor, provided premises isolation is provided through a Purveyor/WA DOH approved reduced pressure backflow assembly (RPBA).

- 4) The customer agrees: (a) to have tested upon installation, annually thereafter or when requested by the Purveyor, after repair and after relocation his RPBA or DCVA installed to protect the Purveyor's distribution system, (b) to have all testing done by a Purveyor approved and State Department of Health currently certified Backflow Assembly Tester (BAT) with certification as a Cross Connection Control Specialist (CCS), (c) to have the RPBA or DCVA tested following the procedures approved by the WA DOH **with** the recommended additional procedures in the "*Cross Connection Control Manual, (current addition)* and (d) to submit to the Purveyor the results of the test(s) on the Purveyor supplied test report form within the time period specified by the Purveyor.

The customer agrees to bear all costs for the aforementioned installation, testing, repair, maintenance and replacement of the RPBA or DCVA or derivative thereof

installed to protect the Purveyor's distribution system.

- 5) At the time of application for service, if required by the Purveyor, the customer agrees to submit plumbing plans and/or a cross connection control survey of the premises by a Purveyor approved and Washington Department of Health certified Cross Connection Control Specialist (CCS).

The survey shall assess the cross connection hazards and list the backflow prevention provided within the premises. The results of the survey shall be submitted prior to the Purveyor turning on water service to a new customer. The cost of the survey shall be borne by the customer.

- 6) For classes of customers other than single family residential, when required by the Purveyor, the customer agrees to submit a cross connection control re-survey of the premises by the persons described above. The Purveyor may require the re-survey to be performed in response to changes in customer's plumbing, or performed periodically (annual or less frequent) where the Purveyor considers the customer's plumbing system to be complex or subject to frequent changes in water use. The cost of the re-survey shall be borne by the customer.
- 7) Within 30 days of a request by the Purveyor, a residential customer shall agree to complete and submit to the Purveyor a "Water Use Questionnaire" for the purpose of surveying the health hazard posed by the customer's plumbing system on the Purveyor's distribution system. Further, the residential customer agrees to provide with 30 days of a request by the Purveyor a cross connection control survey of the premises by a Purveyor approved and Washington Department of Health certified Cross Connection Control Specialist (CCS).
- 8) The customer agrees to obtain the prior approval from the Purveyor for all changes in water use, and alterations and additions to the plumbing system, and shall comply with any additional requirements imposed by the Purveyor for cross connection control.
- 9) The customer agrees to immediately notify the Purveyor and the local public health inspection jurisdiction of any backflow incident occurring within the premises, (i.e., entry into the potable water of any contaminant or pollutant) and shall cooperate fully with the Purveyor to determine the reason for the incident.
- 10) The customer acknowledges the right of the Purveyor to discontinue water supply within 72 hours of giving notice, or a lesser period of time if required to protect the public health, if the customer fails to cooperate with the Purveyor in the survey of premises, in the installation, maintenance, repair, inspection or testing of backflow prevention assemblies or air gaps required by the Purveyor, or in the Purveyor's effort to contain a contaminant or pollutant that is detected in the customer's system.

Without limiting the generality of the foregoing, in lieu of discontinuing water service

the Purveyor may install a reduced pressure backflow assembly (RPBA) on its service pipe to provide premises isolation, and recover all of its costs for the installation and subsequent maintenance and repair of the assembly, appurtenances and enclosure from the customer as fees and charges for water. The failure of the customer to pay these fees and charges may result in termination of service in accordance with the Purveyor's water billing policies.

- 11) The customer agrees to indemnify and hold harmless the Purveyor for all contamination of the customer's plumbing system or the Purveyor's distribution system that results from an unprotected or inadequately protected cross connection within his premises. This indemnification shall pertain to all backflow conditions that may arise from the Purveyor's suspension of water supply or reduction of water pressure, recognizing that the air gap separation otherwise required would require the customer to provide adequate facilities to collect, store and pump water for his premises.
- 12) The customer agrees that, in the event legal action is required and commenced between the Purveyor and the customer to enforce the terms and conditions herein, the substantially prevailing party shall be entitled to reimbursement of all its costs and expenses including but not limited to reasonable attorney's fees as determined by the Court.
- 13) The customer acknowledges that the Purveyor's survey of a customer's premises is for the sole purpose of establishing the Purveyor's minimum requirements for the protection of the public water supply system, commensurate with the Purveyor's assessment of the degree of hazard.

It shall not be assumed by the customer or any regulatory agency that the Purveyor's survey, requirements for the installation of backflow prevention assemblies, lack of requirements for the installation of backflow prevention assemblies, or other actions by Purveyor personnel constitutes an approval of the customer's plumbing system, or an assurance to the customer of the absence of cross connections therein.

- 14) The customer acknowledges the right of the Purveyor, in keeping with changes to State regulations, industry standards, or the Purveyor's risk management policies, to impose retroactive requirements for additional cross connection control measures.

The Purveyor shall record the customer's agreement to the above terms for service on an "Application for Water Service", "Application for Change of Water Service" or other such form prepared by the Purveyor and signed by the customer.

The definition of technical terms given in the "*Cross Connection Control Manual, Accepted Procedures and Practice*", (current addition) by the Pacific Northwest Section, American Water Works Association, or latest edition thereof, shall apply herein.

**SHELTER BAY COMMUNITY  
APPLICATION FOR WATER SERVICE**

OWNER'S/RENTER'S NAME: \_\_\_\_\_

TELEPHONE: \_\_\_\_\_

MAILING ADDRESS: \_\_\_\_\_

LOCATION ADDRESS: \_\_\_\_\_

LEGAL DESCRIPTION: \_\_\_\_\_

The undersigned applicant hereby applies for a water connection to the above described property. The applicant is the owner of the described property or the authorized agent of the owner. By signing this application, the property owner agrees, as a condition of the **Shelter Bay Community Water Utility**, hereinafter referred to as the Purveyor, providing and continuing service to the above described property, to comply with all provisions of the attached current Ordinance, Resolution and/or By-laws of the Purveyor, or latest revision thereof, and other such attached rules and regulations now existing or which may be established from time to time governing the Purveyor's water system. The property owner specifically agrees:

a) to install and maintain at all times his plumbing system in compliance with the most current edition of the Island County Plumbing Code as it pertains to the prevention of potable water system contamination, prevention of pressure surges and thermal expansion in his water piping (for thermal expansion, it shall be assumed that a check valve is installed by the Purveyor on the water service pipe);

b) within 30 days of the Purveyor's request, to install, test, maintain, and repair in accordance with the Purveyor's cross connection control standards a reduced pressure backflow assembly or double check backflow assembly, or detector derivative thereof, on the customer's service pipe immediately downstream of the Purveyor's meter, or other Purveyor approved location; and to report to the Purveyor within 30 days of obtaining the results of all tests and repairs to aforementioned backflow prevention assemblies, and of making any change to the plumbing system.

c) not to make a claim against the Purveyor or its agents or employees for damages and/or loss of production, sales or service, in case of water pressure variations, or the disruption of the water supply for water system repair, routine maintenance, power outages, and other conditions normally expected in the operation of a water system.

d) to pay their water billing within thirty (30) days from the date of billing.

## APPLICATION FOR SERVICE

After thirty (30) days of the Purveyor mailing a written notice to the property owner of his breach of this agreement, the Purveyor may terminate water service. In the event legal action is required and commenced between the parties to this agreement to enforce the terms and conditions herein, the substantially prevailing party shall be entitled to reimbursement of all its costs and expenses including but not limited to reasonable attorney's fees as determined by the Court.

\_\_\_\_\_  
Applicant's Signature

\_\_\_\_\_  
Date

Attachments received:

Water rates & charges  
Water service connection information  
Water Service Policy

### PURVEYOR USE ONLY:

\_\_\_/\_\_\_/\_\_\_ Date connection fee received  
\_\_\_/\_\_\_/\_\_\_ Date Water Use Survey questionnaire received  
\_\_\_/\_\_\_/\_\_\_ Date risk assessment completed; by \_\_\_\_\_  
\_\_\_/\_\_\_/\_\_\_ Date customer notified of requirement for BPA  
\_\_\_/\_\_\_/\_\_\_ Date BPA installation approved  
\_\_\_/\_\_\_/\_\_\_ Date BPA test report accepted  
\_\_\_/\_\_\_/\_\_\_ Date BPA information entered into database  
\_\_\_/\_\_\_/\_\_\_ Date water service installed  
\_\_\_/\_\_\_/\_\_\_ Date meter installed and water turned on

SHELTER BAY COMMUNITY  
**BACKFLOW INCIDENT RESPONSE PLAN**

**A. General**

This backflow incident response plan is a supplement to the Emergency Plan of the Shelter Bay Community, hereinafter referred to as the Purveyor.

Whenever the initial evaluation of a water quality complaint indicates that a backflow incident has occurred (potable water supply has been contaminated/polluted), may have occurred, or the reason for the complaint can not be explained as a "normal" aesthetic problem, a backflow incident investigation should be immediately initiated. Whenever a water main break or power outage (pumped systems) causes a widespread loss of water pressure (backsiphonage conditions) it is prudent to initiate a check of distribution water quality as a precursor to the need for a backflow incident investigation. It is wise to be conservative when dealing with public health matters.

Within 24 hours of knowledge of any incident of possible contamination of the potable water supply, both in the distribution system and/or in the customer's plumbing system, the state and local county personnel should be notified (see list of emergency telephone numbers at the beginning of the M. & O. Manual).

A backflow incident investigation is often a team effort. The investigation should be made or (initially) lead by the certified Cross Connection Control Specialist employed by the Purveyor. The investigation team should include local health and plumbing inspectors.

General guidance on how to respond to a backflow incident may be obtained from the manual *BACKFLOW INCIDENT INVESTIGATION PROCEDURES*, (*current addition*) published by the Pacific Northwest Section, American Water Works Association, P. O. Box 19581, Portland, Oregon, 97280, telephone (877) 767-2992 (toll free).

## B. Short-List of Tasks

The following points are included for initial guidance for dealing with a backflow incident; the above referenced manual *BACKFLOW INCIDENT INVESTIGATION PROCEDURES* should be consulted as soon as possible.

- 1) As soon as possible, notify customers not to consume or use water. Start the notification with the customers nearest the assumed source of contamination.

The customer should be informed about the reason for the backflow incident investigation, and the Purveyor's efforts to restore water quality as soon as possible. State that the customer will be informed when he may use water, the need to boil water used for consumption until a satisfactory bacteriological test result is obtained from the lab, etc.

Where a customer cannot be contacted immediately, the Purveyor shall place a written notice on the front door handle, and a follow-up visit will be made to confirm that the customer received notice about the break and possible contamination of the water supply.

- 2) Give consideration to the distribution system as a potential source of the contaminant (e.g., air valve inlet below ground).
- 3) Do not start flushing the distribution system until the source of contamination is identified. Flushing may aggravate the backflow situation, and will likely remove the contaminant before a water sample can be collected to fully identify the contaminant.
- 4) Conduct a house-to-house survey to search for the source of contamination and the extent that the contaminant has spread through the distribution system. A check of water meters may show a return of water (meter running backward).
- 5) Isolate the portions of the system that are suspected of being contaminated by closing isolating valves; leave one valve open to ensure that positive water pressure is maintained throughout the isolated system.
- 6) Be sure to notify all affected customers in the isolated area, then the other customers in the system.
- 7) The public health and plumbing authorities should deal with all customers that may have consumed the contaminant, or had their plumbing systems contaminated.
- 8) Develop and implement a program for cleaning the contaminated distribution system.

- 9) For the customer where a cross-connection responsible for the system contamination is located, the Purveyor should discontinue water service until the Purveyor ordered corrective action is completed by the customer.

Identification of the source and type of contaminant, and cleaning of a distribution system could take several days.

Most chemical or physical contaminants can be flushed from the water distribution system or customer's plumbing system with adequate flushing velocity. This may not be the case where scale and corrosion deposits (e.g., tuberculation on old cast iron mains) provides a restriction to obtaining adequate flushing velocity, or a chemical deposit or bacteriological slime (bio-film) on which the chemical contaminant may adhere.

To remove a chemical or physical contaminant, it may be necessary to provide a physical cleaning, using foam swabs (pigs), and/or to alter the form or the chemical contaminant, e.g., through oxidation using chlorination, or addition of detergents.

When adding any chemical (including chlorine) to remove a contaminant, it is essential that the chemistry of the contaminant is fully understood. **The wrong chemical reaction could make the contaminant more toxic, more difficult to remove, or both.**

Where both a chemical and bacteriological contamination has occurred, disinfection should follow the removal of the chemical contaminant.

Where any bacteriological contamination is suspected, field disinfection should be done. To disinfect water mains using the "slug" or "continuous flow" method, field units should be used for chlorine injection, such as a chemical feed - metering or proportioning pump for sodium hypochlorite.

SHELTER BAY COMMUNITY  
**CROSS CONNECTION CONTROL**  
**SURVEY REPORT FOR COMMERCIAL CUSTOMERS**

Date of Survey: \_\_\_\_\_

CUSTOMER INFORMATION

Name/Premises: \_\_\_\_\_, Telephone: \_\_\_\_\_

Address: \_\_\_\_\_

ZIP: \_\_\_\_\_

Contact person: \_\_\_\_\_ Title: \_\_\_\_\_

Description of customer: \_\_\_\_\_

Description of water use: \_\_\_\_\_

Water Service and Backflow Prevention Assembly (BPA) Size / Type:

	Service Size	Meter Size	BPA Size	BPA Type
Domestic				
Fire line				
Irrigation				
Other				

CROSS CONNECTION CONTROL SPECIALIST (CCS) INFORMATION

Name: \_\_\_\_\_ Telephone: \_\_\_\_\_

Company's Name: \_\_\_\_\_

Address: \_\_\_\_\_

ZIP: \_\_\_\_\_

WA DOH Certif. #: \_\_\_\_\_

### SURVEY RESULTS

Item	Location & Description of Cross Connection	Backflow Prevention Provided/Required

Attach additional sheets if needed

**SURVEYOR'S COMMENTS:**

**SURVEYOR'S RECOMMENDATIONS:**

I certify that this survey accurately reflects the overall risk posed to the Purveyor's distribution system by the customer's plumbing system and that the backflow prevention assembly is properly installed. Based on the above survey, I find that (check one):

- The backflow prevention assembly(s) is properly installed, commensurate with the degree of hazard and approved for use in Washington State.
- The premises isolation assembly or assemblies should be changed for the reasons stated under "Surveyor's Comments", above.

\_\_\_\_\_  
Signature of CCS

\_\_\_\_\_  
Date

This certifies receipt of this completed survey report and its submittal to the SHELTER BAY COMMUNITY MAINTENANCE DEPARTMENT.

\_\_\_\_\_  
Signature of the Customer or  
Authorized agent

\_\_\_\_\_  
Date

It shall not be assumed by the customer or any regulatory agencies that this requirement by the Purveyor for this survey, or for the installation of a specific backflow prevention assembly on a service pipe constitutes an approval of the customer's plumbing system, compliance with the customer's plumbing system with the plumbing code, or an assurance to the customer of the absence of cross connections therein.

The completed survey report shall be first signed by the CCS conducting the survey, and then counter-signed by the owner of the premises surveyed or his agent.

The survey shall include the inspection of the assembly installed on a service for premises isolation to verify its correct installation and status as a currently listed Approved assembly by the WA DOH.

SHELTER BAY COMMUNITY  
**CROSS CONNECTION CONTROL**  
**SURVEY REPORT FOR RESIDENTIAL CUSTOMERS**

TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

The attached brochure describes a "cross connection" and the potential for contamination of the water system through unprotected cross connections. The purpose of this questionnaire is to help determine if you have any special plumbing or activities that may pose an increased risk of contamination of the water distribution system. Please respond by checking the appropriate circle below:

YES    NO

- |                       |                       |  |
|-----------------------|-----------------------|--|
| <input type="radio"/> | <input type="radio"/> | Residential fire sprinkler system                    |
| <input type="radio"/> | <input type="radio"/> | Radiant heating system (i.e., boiler heating system) |
| <input type="radio"/> | <input type="radio"/> | Water supply to dock or boat moorage                 |
| <input type="radio"/> | <input type="radio"/> | Underground lawn sprinkler system                    |
| <input type="radio"/> | <input type="radio"/> | Water treatment system (i.e., water softener)        |
| <input type="radio"/> | <input type="radio"/> | Solar heating system                                 |
| <input type="radio"/> | <input type="radio"/> | Grey water system or cistern for irrigation water    |
| <input type="radio"/> | <input type="radio"/> | Grinder sewage pump                                  |

Completed by: \_\_\_\_\_  
Customer or Authorized agent

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

- Please return the completed questionnaire to the address on the letterhead.
- If you have checked any of the above, we will contact you to request further information. Your cooperation in completing this questionnaire is most appreciated.
- If you have any questions, please contact the undersigned.

Shelter Bay Community Manager  
Telephone: (360) 466-3805

# BACKFLOW INCIDENT REPORT FORM

*There are many backflow incidents which occur that are not reported. This is usually because they are of short duration and are not detected, the customer is not aware they should be reported, or it may not be known to whom they should be reported.*

*The WA DOH and the PNWS-AWWA Cross Connection Control Committee is making an effort to bring these incidents to the attention of water purveyors and the public. If you have any knowledge regarding incidents, please fill out a copy of this form and return it to the committee, c/o the individual named on the reverse side. In addition, the WA DOH should be notified.*

## General Information

Reporting Agency: \_\_\_\_\_

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

Reported by: \_\_\_\_\_

Title: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City/State: \_\_\_\_\_

Zip Code: \_\_\_\_\_

Telephone: \_\_\_\_\_

Date of Incident: \_\_\_\_\_

Time of Occurrence: \_\_\_\_\_

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

Backflow Originated from: \_\_\_\_\_

Name of Premise: \_\_\_\_\_

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

City: \_\_\_\_\_

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

Telephone: \_\_\_\_\_

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



**Backflow Incident Report Form**

Page 3

Corrective Action Ordered to Eliminate or Protect from Cross Connection

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Previous Cross Connection Survey of Premise

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

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

Types of Backflow Preventer Isolating Premise

RPBA \_\_\_\_\_ RPDA \_\_\_\_\_ DCVA \_\_\_\_\_ DCDA \_\_\_\_\_ PVBA \_\_\_\_\_ SVBA \_\_\_\_\_

AVB \_\_\_\_\_ Air Gap \_\_\_\_\_ None \_\_\_\_\_ Other Type \_\_\_\_\_

Date of Latest Test of Assembly(s)

(1) \_\_\_\_\_

(2) \_\_\_\_\_

(3) \_\_\_\_\_

(4) \_\_\_\_\_

Notification of State [Provincial] Health Department

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

Time: \_\_\_\_\_

Person Notified: \_\_\_\_\_

Title: \_\_\_\_\_

*Attach sheets with additional information, sketches, and/or media information.*

## **DEFINITIONS FOR COMMONLY USED CROSS CONNECTION TERMS**

**Air-Gap Separation** - Unobstructed physical separations between the free flowing discharge end of a potable supply pipeline and an open or non-pressurized receiving vessel. The distance between the bottom of the feed line and top rim of the vessel (vertically measured) shall be at least double the diameter (2xD) of the supply pipe. In no case shall the air-gap be less than one (1) inch.

**Atmospheric Vacuum Breaker (AVB)** - The AVB is typically used in the supply lines to slop sinks. This assembly contains a float-check, a check seat and an air inlet port. The flow of water into the body causes the float to close the air inlet port. When the flow of water stops, the float falls and forms a check valve against backsiphonage and at the same time opens the air inlet port to allow air to enter and satisfy the vacuum. An AVB is designed to protect against backsiphonage conditions only. Therefore, an AVB shall not be used for containment backflow protection.

**Auxiliary Water Supply (System)** - Any water supply that does not contain community potable drinking water or is deemed to be non-potable. Auxiliary systems can be divided into three categories:

- A water system in which community's water is stored, transmitted or utilized for other than a potable purpose (e.g., a high pressure fire system, an industrial process, a fire sprinkler system, cooling towers or swimming pools) and is open to contamination or deterioration, thus making it non-potable.
- A water system in which community's potable water is further treated with chemicals or by other means.
- A water system in which water is derived from natural sources such as a well, river or pond.

**Backflow** - The flow of water or other liquids, mixtures, gases, or other Undesirable substances through a cross connection into the distribution pipes of a potable water supply from any source(s) other than its intended source. Backflow usually occur under two hydraulic conditions: (1) back pressure or (2) a reduced or negative supply pressure below atmospheric pressure (backsiphonage).

**Backpressure** - Elevated pressure in the downstream piping system caused by pumping, elevation head, steam pressure or air pressure that exceeds the pressure in the supply piping.

**Backsiphonage** - Is the flowing back of non-potable water from a plumbing fixture or vessel into the drinking water supply due to a negative pressure within the connected drinking water supply system.

**Certified Backflow Prevention Technician (BAT)** – A licensed tradesman who is certified for the installation, servicing and testing of backflow prevention devices.

**Cross Connection Control Specialist (CCC)** – A certified person knowledgeable in the development, review, implementation, inspection, evaluation of a water systems (public and private) Cross Connection program and Cross Connection hazards.

**Containment** - A strategic approach of applying backflow protection on the Service line to a facility, wherein contaminated water is contained within the facility and prevented from affecting other services connected to the same potable water source.

**Contamination** - This is an impairment of potable water by the introduction or admission of any foreign substance that degrades the water quality and has the potential to create a health hazard.

**Cross Connection** - Any physical connection or arrangement of pipes that allows the conveyances between potable and non-potable or questionable water source. Water may flow from one system to the other such that the potable water may become contaminated by the questionable source. Hose connections, bypass arrangements, jumper connections, removal sections, or changeover assemblies or any other temporary or permanent connecting arrangements through which backflow may occur are considered to be cross connections. The direction of flow depends on the pressure differential between the two systems.

**Double Check Valve Assembly (DCV)** - One type of backflow prevention assembly which is composed of two independently acting check valves along with tightly closing shutoff valves attached at each end of the device and fitted with test cocks. A DCV assembly is used against backpressure and backsiphonage. In general, a double check valve assembly installation is used in minimum hazard systems.

**Pressure Vacuum Breaker (PVB)** - This assembly contains an independently operating, internally loaded check valve and an independently operating, loaded air inlet valve located on the discharge side of the check valve. This assembly is equipped with test cocks and shutoff valves attached at each end of the assembly. This assembly is designed to protect against backsiphonage only. PVB assembly shall not be used for containment backflow protection.

**Reduced Pressure Zone Assembly (RPZ)** - A type of backflow prevention assembly, which contains two independently acting check valves together with a hydraulically operated, mechanically independent, pressure differential relief zone located between the check valves. The assembly includes test cocks and a tightly closing shutoff valve at each end. This assembly is effective against backflow caused by backpressure and backsiphonage. A reduced pressure valve assembly installation is used in high hazard systems.