

ATTACHMENT I
Cross Connection Control Plan

PURPOSE

The Cougar Creek Water Users Association (CCWUA) is responsible for planning, operating, sampling, maintaining and protecting the owned public drinking water systems and water supply connections to meet the requirements of IDAPA 58.01.08 Chapter 543 and Chapter 552.06. The authority having jurisdiction over the enforcement and management of IDAPA 58.01.08, and consequently the management of water systems in Idaho is the Idaho Department of Environmental Quality (IDEQ). CCWUA is also responsible for helping to ensure that the quality of water provided by the water system meets state and federal requirements.

AUTHORITY AND RESPONSIBILITY

The CCWUA Board has the ultimate authority and responsibility for the water system to meet all applicable regulations. The CCWUA Board is also responsible for planning, constructing and repairing, operating, sampling, maintaining, and protecting the public drinking water system and water supply connections throughout the CCWUA service area to meet the requirements in IDAPA 58.01.08 and 40 CFR Part 141.

The CCWUA Board must develop all policies, procedures, and this Cross Connection Control and Water Conservation Program document (hereinafter referred as the Program document) for more specific information. This Program document provides detailed planning, development, construction and repair, maintenance, sampling, monitoring, and operating procedures to ensure the drinking water system is maintained and operated in a safe and cost-effective manner.

The CCWUA Board must coordinate with local administrative authorities in all matters concerning cross-connection control (and other drinking water issues). The CCWUA Board must document and describe such coordination, including delineation of responsibilities, in this Program document.

The Board is comprised of the following positions:

CCWUA Board President: Alan Ameche

In addition to CCWUA Board members, the Board hires an Idaho-licensed Water System Operator and an Idaho-licensed Water Engineer. The Water Engineer assists the Board by providing planning, design, and construction phase services on an as-needed contract basis. The engineer's services address public health, facility operational health and safety, and capital planning and development.

The CCWUA Board

- Develops all drinking water programs, policies and procedures.

- Helps protect drinking water systems and water supply connections.
- Performs and enforces corrective actions.
- Ensures that qualified personnel are provided to develop and implement all applicable programs.
- Develops schedules for performing risk assessments.
- Develops a quality assurance program for backflow prevention assembly testing.
- Develops procedures for responding to water quality and backflow incidents.
- Provides educational programs for consumers about drinking water systems, conservation, cross-connection controls, etc.
- Coordinates with and notifies IDEQ, local administrative and/or health authorities of any incidents, and documents the incidents.

Facilities Operations by Water System Operator

- Operates and maintains the water system.
- Conducts limited monitoring of the drinking water system.
- Coordinates master planning with the CCWUA Board
- Is responsible, along with the CCWUA Board, for the design, plan and specification review, and construction of additions, modifications and new construction to the drinking water system.
- Provides bacteriological and chlorine disinfection water sampling for construction and repairs (or oversees the contractor that performs the sampling) and must provide the results to IDEQ.
- Prior to water being used for drinking purposes, Water System Operator must test all new backflow prevention assemblies and obtain satisfactory bacteriological sample results.
- Provides alternative drinking water sources if construction and/or maintenance require disruption of water services on a case-by-case basis.
- Prepares the annual Cross-connection control summary report and assists with the development and preparation of other regulatory reports as required.

Facilities Operations representative:

- A certified Drinking Water Distribution Operator is responsible for the daily operational activities of the water system that directly impact water quality and/or quantity of water.
- Conducts bacteriological and chemical sampling for the water system required by federal and state regulations and assists Facilities Operations with sampling responsibilities. Any required sampling for construction and repairs must be performed by the department or contractor making the repair.
- Investigates concerns regarding drinking water quality and performs sanitary surveys of drinking water systems, including the well.
- Reviews plans and specifications for new construction and remodels.
- Evaluates current and new regulations to help ensure the system remains in compliance and maintains safe and healthy drinking water.

- Acts as the liaison with IDEQ and the EPA regarding regulatory compliance.
- Assists Facilities Operations with the development and preparation of various regulatory reports as required.

Water Engineer:

- Delegated to a consulting licensed water engineer who coordinates with and receives approval from the CCWUA Board and consults with the Cross-connection Control Specialist and Drinking Water Distribution Operator on water line maintenance and installation, backflow prevention assembly testing, connection of new equipment, etc.
- Prior to water being used for drinking purposes, the water engineer must obtain satisfactory bacteriological sample results and must have Facilities Operations tests backflow prevention assemblies from new construction or repairs. For new construction, the contractor must test backflow prevention assemblies prior to water being used for drinking purposes. The contractor must provide bacteriological sample results to IDEQ and the contractor must provide backflow prevention assembly test results, certified Backflow Assembly Testers (BATs) names, certification and telephone numbers to Facilities Operations.

Water System Users

Any person that connects equipment, installs piping, or makes changes to water systems must receive prior approval from Facilities Operations. Changes to water systems include tying into any fire hydrant (refer to Fire Hydrant / Water Line Use and Backflow Prevention by Contractors below).

PROGRAM ELEMENTS

Construction, Cross-connection Control, Plan Review and Related Programs

Construction and Repair

CCWUA Board must submit project reports and construction documents for the construction of the water system and improvements to IDEQ for approval prior to commencing construction. Project reports and construction documents prepared by a licensed water engineer will be reviewed by CCWUA Board, and new water mains, water supply, treatment, or storage improvements will be forwarded to IDEQ for review prior to issuance of construction documents to contractors. Any required bacteriological sampling for construction and repairs must be performed prior to commencing construction.

Cross-connection Control

By elimination or control of existing cross-connections between potable and non-potable water systems, plumbing fixtures, and industrial piping systems (including reclaimed and/or reuse water), CCWUA can maintain safe drinking water supplies. Establishment of a Cross-connection Control Program ensures CCWUA complies with IDAPA 58.01.08.543, 58.01.08.552.06, and Uniform Plumbing Code (UPC) regulations.

Required Personnel and Responsibilities:

Water Distribution Operator:

- Responsible for the daily operational activities of the water systems, treatment facilities and distribution systems that directly impact water quality and/or quantity of water.

Cross-connection Control Specialist (CCS):

- Develops and implements the cross-connection control program. If existing cross connections are not located, shall be responsible for the implementation of an inspection program to locate cross connections and determine required suitable protection. (IDAPA 58.01.08.552.06.a).
- Ensures that adequate backflow prevention assemblies are installed and operated for each potential connection to the water supply. If existing cross connections are not located, shall be responsible for the implementation of an inspection program to locate cross connections and determine required suitable protection. (IDAPA 58.01.08.552.06.b).
- Possesses a license issued by an IDEQ recognized licensing authority to test and operate backflow prevention assemblies and to implement the cross-connection control program (IDAPA 58.01.08.552.06.c).

- Performs annual inspection of backflow preventer assemblies to ensure that protection is provided commensurate with the assessed degree of hazard (IDAPA 58.01.08.552.06.c).
- Performs the discontinuance of service to any structure, facility, or premises where suitable backflow protection has not been provided for a cross connection (IDAPA 58.01.08.552.06.d).
- Performs the necessary isolation, repair, or replacement of any assembly that cannot pass annual tests within ten (10) business days (IDAPA 58.01.08.552.06.e.).

CCWUA Board:

- Per IDAPA 58.01.08.543, develops this Program document that establishes legal authority to implement a cross-connection control program, describes operating policies, develops and implement procedures for responding to backflow incidents and educates consumers on cross-connection control.

Definitions:

Approved backflow prevention means an approved air gap, an approved backflow prevention assembly, or an approved atmospheric vacuum breaker. All new backflow prevention assembly models that are installed must be used either from the current approved backflow prevention assemblies list developed by the University of Southern California Foundation for Cross-connection Control and Hydraulic Research, the Uniform Plumbing Code, or the AWWA Recommended Practice for Backflow Prevention and Cross Connection Control (M14). Such models are considered approved by IDEQ.

Backflow means the reverse from normal flow direction in a plumbing system or water system caused by back pressure or back siphonage.

Backpressure means a pressure (caused by a pump, elevated tank or piping, boiler, or other means) on the consumer's side of the service connection that is greater than the pressure provided by the public water system, and which may cause backflow.

Backsiphonage means backflow due to a reduction in system pressure in the purveyor's distribution system and/or consumer's water system.

Community Water System means a public water system which serves at least fifteen (15) service connections used by year-round residents or regularly serves at least twenty-five (25) year-round residents.

Cross-connection means an actual or potential connection or piping arrangement between a drinking water system and another source that could introduce contamination into the potable water system through backflow, backsiphoning, or backpressure

Cross-connection control program means the administrative and technical procedures the purveyor implements to protect the public water system from contamination via cross connections.

Potable water means water for human consumption. Also referred to as Water for Human Consumption or Drinking Water.

Public Drinking Water System (PWS) means a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such a system has at least fifteen (15) service connections, regardless of the number of water sources or configuration of the distribution system, or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days out of the year. Such term includes: any collection, treatment, storage, and distribution facilities under the control of the operator of such system and used primarily in connection with such system; and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. Such term does not include any "special irrigation district." A public water system is either a "community water system" or a "non-community water system".

Service Connection means each structure, facility, or premises which is connected to a PWS water source, and which is or may be used for domestic purposes.

Inspections and Surveys:

All backflow prevention assemblies and air gaps must be tested and/or inspected annually by an IDEQ Certified Backflow Prevention Assembly Tester using approved field-testing procedures. All new backflow prevention assemblies that have been installed must be tested prior to being placed into service.

When annual testing and documentation of backflow prevention assemblies show consistent annual failures, semi-annual tests to verify the assemblies meet design standards must be performed.

Fire Hydrant / Water Line Use and Backflow Prevention by Contractors:

Prior to contractors connecting to fire hydrants or other water lines and using any water, they must install an approved and tested backflow prevention assembly. The contractor must 1) install their own backflow prevention assembly and have Facilities Operations personnel inspect the assembly or; 2) check out an approved and tested assembly from Facilities Operations.

Signage of Non-Potable Water:

As required by the latest edition of the Uniform Plumbing Code (UPC), all faucets, hose bibs, etc., that supply non-potable water must have signs posted adjacent to them that state:

CAUTION: NONPOTABLE WATER
DO NOT DRINK

Per IDAPA REQUIREMENT all emergency showers and eyewashes using non-potable water must have signs posted adjacent to them that state water is non-potable.

Backflow Prevention Assembly Recordkeeping:

The Water Board must keep complete records on all dates of installations, inspections and results, recommended protection, locations of backflow prevention assemblies and air gaps in systems, testing and maintenance reports. Records must be available to be provided to IDEQ upon request.

Plan Review and Design Standards

All plan reviews and design standards for new or remodeled construction involving water systems must be submitted to and reviewed by Facilities Operations, the Certified Cross Connection Control Specialist, or the certified Water Distribution Manager. All plans and work prepared must meet IDAPA 58.01.08 water system engineering requirements and design standards, as well as the local administrative authority if applicable. Plans must be prepared under the direction of a professional engineer licensed in Idaho.

Well Construction, Decommissioning, Maintenance, Source Approval and Interties

Facilities Operations must be responsible for obtaining source water approval, interties with other water systems, water rights, and the construction and decommissioning of all wells.

Water System Modifications or Additions

Contact the CCWUA Board regarding all modifications or additions to CCWUA drinking water systems.

- Connections to water lines. All new water system point of use connections must have a service meter and premises isolation or in-premises isolation (backflow prevention assemblies) as determined by the Cross Connection Control Specialist. The Water System Operator will only turn on the system water to new services after receiving certification of backflow prevention testing, and verifying the installation of appropriate metering and backflow prevention assemblies.
- Connecting equipment to water lines,

- Repairing or maintaining piping,
- Drilling a well, or
- Making any changes to water systems.

Sampling, Monitoring, Repairs, Emergency Procedures, Reporting and Recordkeeping Requirements

Sampling, Monitoring, Repairs and Emergency Procedures

Sampling and Monitoring:

The CCWUA Board must be responsible for all bacteriological and chemical sampling (excluding construction and repair sampling). For installation of new lines and systems, and repairs, the Water Board is responsible for ensuring that chlorination meets the most recent AWWA standards, and that adequate bacteriological sampling results are obtained. All bacteriological sampling results from construction or repair projects must be submitted to the Water System Operator and the CCWUA Board prior to use of the water for drinking purposes. See below for bacteriological sampling procedures.

Repairs:

Required bacteriological sampling for repairs must be performed prior to making the repair. Depending upon the type of repair, the following procedures must be followed:

Repair where water pressure not lost:

In these cases (such as a hole in a line) where only a patch is needed, the patch and hole must be properly disinfected first; however bacteriological sampling is not required.

Repair where water pressure was lost:

In these cases (such as a broken line) proper disinfection of lines per the most current AWWA standards and bacteriological sampling must be required. Water service to buildings can be resumed prior to obtaining satisfactory bacteriological sampling results.

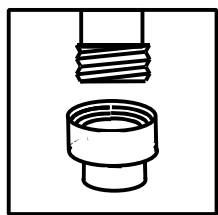
NSF-approved temporary hoses may also be used when service to a building is needed as soon as possible. The temporary hose must be properly disinfected before use. After repairs have been completed, the repaired section of waterline must be disinfected according to the most current AWWA standards, flushed and a satisfactory bacteriological sample results obtained prior to placing the line back into service.

In cases where unsatisfactory sample results are obtained, the disinfection procedure, flushing and bacteriological sampling must be repeated until satisfactory results are obtained.

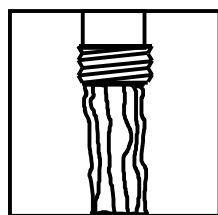
Bacteriological Sampling Procedures:

Samples must be delivered ASAP, but no later than 24 hours after being collected.

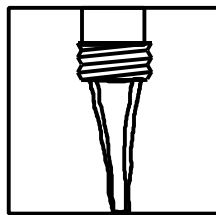
- Select a faucet or hose bib that is furthest from the point where chlorine was added to the line for disinfection.
- Remove any attachment from the faucet, including aerators, screens, washers, hose, and water filters. Once all attachments are removed, dry off the inside of the tap with paper towels.
- Disinfect the tap using a lighter, matches or bleach.
- Ensure a steady stream of cold water only has been running for at least five minutes. Before collecting the sample, turn the water down to a thin stream (about the width of a pencil) and let the water run one minute.
- With a black permanent marker fill out the sample bottle label with building name and tap location, room #, date and time.
- Remove the plastic seal on the cap.
- To avoid contamination while taking the sample, hold the bottle near the bottom with one hand, hold the top of the cap with the other and then unscrew the cap. Do not invert the cap, set the cap down, or touch any part of the cap that touches the bottle, or let anything touch the rim or inside of the cap. Do not touch the rim or inside of the bottle.
- There may be some liquid or powder in the sample bottle to neutralize the chlorine in the sample. Do not rinse it out.
- Hold the bottle under the constant stream of water, being careful not to touch the tap with the bottle.



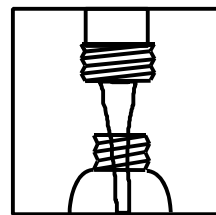
Remove Attachments



Run 5 Minutes



Reduce Flow 1 Minute



Fill Bottle to Line

- Fill the bottle to the neck or indicated fill line, but do not dump any water out or allow the bottle to overflow.
- Remove the bottle from the water flow and replace the cap.
- Turn off the water and replace any attachments.
- If you feel the sample may have been contaminated, resample with a new bottle.

- If the sample(s) will not be delivered to the lab for more than three hours, store sample bottle(s) in a refrigerator or in a cooler with blue ice.

Emergency Procedures:

Departments must follow their emergency response plans and procedures.

Reporting, Public Notification and Recordkeeping

The CCWUA Board is responsible for all regulatory reporting and recordkeeping (excluding cross-connection control), and public notification in cases of water quality violations with assistance from the Water Distribution Operator. The CCWUA Board is additionally responsible for all cross-connection control recordkeeping.

Sanitary Surveys, Vulnerability Assessments, Emergency Response Plans and Wellhead Protection

Sanitary Surveys

A Qualified Sanitary Surveyor is required to perform public water system surveys. For community systems using groundwater, a survey may be performed every five (5) years if the system has a record of outstanding performance as determined by IDEQ, otherwise surveys are required every three (3) years.

Wellhead Protection and Sanitary Control Areas

The CCWUA Board is responsible for maintaining wellhead protection sanitary control areas around wellheads serving the public water system. The CCWUA Board must ensure that all existing uses, new construction, or proposed activities in proximity to the wellhead are evaluated for potential sources of contamination. Potential sources of contamination include bulk chemical storage, septic systems, or industrial activities. The CCWUA Board shall maintain an inventory of contamination sources if applicable.

Operating Permits and Water Works Operator Certification

The public water system is required to possess an operating permit issued by IDEQ. The system must have a certified operator in responsible charge of the daily operational activities of the system.