What is a cross-connection?

A cross-connection is a permanent or temporary piping arrangement which can allow your drinking water to be contaminated if a backflow condition occurs.

A potentially hazardous cross-connection occurs every time someone uses a garden hose sprayer to apply insecticides or herbicides to their lawn. Another cross-connection occurs when someone uses their garden hose to clear a stoppage in their sewer line.

Without a backflow prevention device between your hose and hose bibb (spigot or outside faucet), the contents of the hose and anything it is connected to can backflow into the piping system and contaminate your drinking water.

This hazardous situation sometimes can affect more than a single home. Backflows due to cross-connections are serious plumbing problems. They can cause sickness and even death. However, they can be avoided by the use of proper protection devices. Each outside spigot at your home should have a hose-bibb vacuum breaker installed. This is a simple, inexpensive device which can be purchased at any plumbing or hardware store. Installation is as easy as attaching your garden hose to a spigot.

Why do I have to do an annual test on my backflow assembly?

State and Federal laws require this in order to protect the quality of drinking water. The Federal Safe Drinking Water Act of 1974 states, "The water purveyor has the primary responsibility for preventing water from unapproved sources, or any other substances, from entering the public potable water system." According to Oregon Adminstrative Rules 333-061-0070[12] - "backflow prevention assemblies must be tested at least annually and perform satisfactorily to the testing procedures."

Does Water Ever Flow Backwards in the City's Water Line?

It is assumed that because water is always under pressure, it can only flow in one direction. However, under certain circumstances, it is possible that the flow can be reversed from its intended direction and cause disastrous results.

- If a main line in our system should break, or if a fire occurred and the fire department opened several hydrants, the pressure in the water mains could drop dramatically, causing a reversal of flow.

- If your plumbing, carrying potable water, is connected to piping carrying another fluid or gas, such as an air conditioner containing chemicals to kill algae, the contaminant could be drawn back into our water mains.

- A garden hose submerged into a hot tub or swimming pool, or inserted into your car's radiator to flush out the antifreeze, or attached to an insecticide sprayer, could siphon that material back into our water mains.

Incidents such as these have happened and have been documented throughout the country. This is why state regulations require water systems to have a cross connection control program in place for preventing backflow incidents.

What is the City's Backflow Program?

The City maintains a list of homes with approved backflow assemblies and notifies the homeowners annually of the requirement for annual testing. Additionally, as we find homes or businesses without the necessary devices, we give them notice of the need to have them installed or the water will be turned off at the meter.

Examples include the City's water line connected to a fire sprinkler system, solar heating system, irrigation system or to water-using industrial equipment.

The concern is these pipes are not approved for potable water use. The black iron pipe, sometimes with corrosion inhibitors built in, can leach out metals when the water sits stagnant for long periods.

In tests performed on the water drawn from the fire lines in several locations in Oregon, Washington and Utah, concentrations of iron, lead, cadmium and other heavy metals were found. Bacterial growth will also occur in the stagnant water.

While our goal is to always provide safe, dependable water, we cannot do it alone. We need your help to prevent contamination through backflow and to keep our water safe throughout the system.

Examples of Contamination:

- A high school in Redmond, Oregon, had ethylene glycol antifreeze from an air conditioner backflow into the water piping, sending eight teachers to the hospital.

- Several incidents have occurred where a car wash cross connected their plumbing and pumped dirty, soapy water through several city blocks.

- In a town in Arkansas, a worker hooked up a hose to a nearly empty propane tank to flush out the tank. The residual pressure of the propane was greater than the water pressure and several homes exploded and burned.

- Residents of Roanoke, Virginia, complained that their water looked milky, felt greasy, foamed and smelled like "a combination of kerosene and pesticide." Approximately three gallons of Chlordane, a highly toxic insecticide, had been backsiphoned into the city water system. The contamination occurred while the water department personnel were repairing a water main. At the same time, an exterminator was treating a nearby home with Chlordane for termite control. The workmen for the exterminating company left one end of a hose connected to an outside hose tap and left the other end in a barrel of diluted insecticide. During the water service interruption, the solution was backsiphoned into the house plumbing then into the City water main. A backflow assembly would have prevented this incident.

- The water supply to a Washington school was contaminated by a boiler cleaning compound pumped into it.

- A weed killer was backsiphoned into a Utah public water system contaminating the water in 100 homes.

- A backflow occurred when two single check valves in a series failed (unapproved backflow preventer) on an Arkansas service line to a chicken house, causing an antibiotic to contaminate the public water system.

- Ethylene glycol backflowed from the cooling system in an Indiana school, contaminating the drinking water and causing several people to become ill.

- Carbon dioxide from a soft drink dispensing machine contaminated drinking water, causing several Texas children to become ill with copper poisoning.

- Antifreeze from a fire suppression system in Oregon was backsiphoned, probably due to undersized pipes.

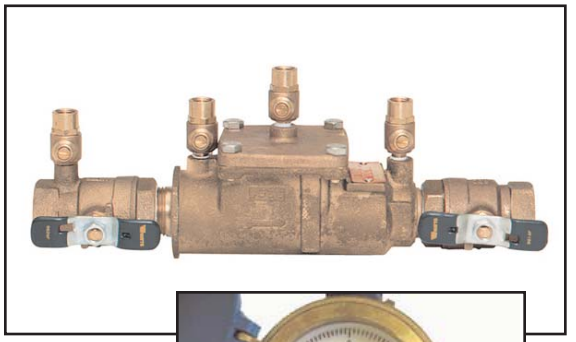
- A cross connection between potable water and non-potable process water at an Oregon lumber mill was probably responsible for several cases of Giardiasis.

- A backflow of a chemical used for boiler treatment at a North Carolina fast food restaurant caused several children to become ill.

City of Ontario
Public Works Department

BACKFLOW ASSEMBLY TESTING

Program



**The Why's,
What's and How's
of the City of Ontario's
Backflow Assembly Testing Program**

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