

## **What are Cross-Connections?**

Technically, a *cross-connection* is defined as an actual or potential connection between a public water supply and a source of possible contamination or pollution. A cross-connection can result in chemicals, microorganisms, or other contaminants finding their way into the water you consume if steps are not taken to prevent it.

## **How is my water protected against Cross-Connections?**

Providing safe, potable drinking water to our customers is of utmost importance to the Johnson City Water and Sewer Services Department. Protecting the water we supply to our customers from contamination due to cross-connections is the goal of the Cross-Connection Control Program of the City of Johnson City. Through careful monitoring of the City water supply system and the installation of backflow prevention assemblies, the risk of cross-connections can be dramatically reduced.

The Division of Water Supply of the Tennessee Department of Environment and Conservation requires that all public water systems maintain an active program to identify and control cross-connections. On November 02, 1978, the Board of Commissioners of the City of Johnson City passed Ordinance #2207. This ordinance regulates the construction and maintenance of cross connections affecting the City water supply and is the basis for the City's Cross-Connection Control Program. City of Johnson City Cross-Connection Inspectors monitor the City water supply system daily for potential cross-connection hazards and annually inspect backflow prevention assemblies to ensure they are in working order. Any backflow prevention assembly that fails an annual inspection is required to be repaired or replaced so as to safeguard the public water supply.

## **What is backflow and how can it be prevented?**

Water pressure can suddenly drop because of heavy usage, firefighting activity in the area, water line maintenance activities, or a broken water main. When that happens, contaminated water could be siphoned back into the public water supply from unprotected cross connections at homes or businesses. This reverse flow of water is referred to as backflow.

A reduced pressure principle backflow prevention assembly (RPZ) can be installed between the water meter and the first branch of your private water line. An RPZ is the highest level of protection that can be used to protect against both backpressure and backsiphonage. When working properly, an RPZ will not allow water to backflow. This protects the public water supply from contamination due to backflow. An RPZ must be tested annually to insure it is working properly.

## **Why are private wells a cross-connection concern?**

Whenever two sources of water exist on a property and the two are cross-connected, the potential exists for the pressure in one to be greater than the other. For example, a private well operating at 80 psi could force water of unknown quality back into the public water system operating at 60 psi. For this reason, piping from a well should never be physically connected to piping carrying water from the public water supply. Separating a private water supply such as a well or spring from the public water supply with a shutoff valve is prohibited. A leaking or improperly closed shutoff valve could cause backflow to occur from the private water supply into the public water supply. The customer's internal plumbing must be permanently disconnected from any secondary water source as this would represent a cross-connection to the public water supply.

## **Why is a lawn irrigation system a cross-connection concern?**

Contaminated lawn surface water can be siphoned back into your plumbing system through an automated lawn irrigation system unless a proper backflow device is attached to that system. This can contaminate the public water supply with disease-causing microorganisms and/or lawn chemicals. The City of Johnson City requires an RPZ to be installed between the water meter and the lawn irrigation system to prevent backflow. The RPZ should be installed as close to the meter as possible and there shall be no unprotected branches or sprinkler heads located between the meter and the RPZ. Please refer to the Installation Criteria for Backflow Prevention Devices tab for more information on requirements for RPZ installation.