# BACKSIPHONAGE

An example of a cross-connection that may be present on a rural property is a freeze resistant yard hydrant that is connected to the public water supply. To avoid freezing, these hydrants are designed to drain water from the standpipe when turned off.



**Freezeless Yard Hydrant** 

#### **Problem**

If the public water main experiences negative pressure caused by a pipe failure or routine maintenance, the groundwater surrounding the hydrant could be siphoned into the customers piping and ultimately into the public water supply.

#### **Solution**

This situation is easily corrected by installing an approved sanitary yard hydrant that meets ASSE 1057 for potable use. Using hydrants that do not meet ASSE 1057 requires the installation of a backflow preventer on the water line that supplies the freezeless yard hydrant to isolate it. An additional approved backflow preventer will be required on the incoming service line as close to the meter as possible.

# DEFINITIONS

#### Isolation

Installation of a backflow preventer at the cross-connection on each piece of waterusing equipment, such as a boiler.

#### Containment

Installation of a backflow preventer on the water service line immediately following the meter.

#### **Backflow prevention device**

A mechanical device designed to prevent the backflow of used water, contaminants or pollutants from the customers' piping into the public drinking water supply.

#### Non-potable

Water that is not safe for human consumption; contaminated in some manner.

#### Potable

Water that is considered safe for human consumption

Water quality is important to all our customers and your compliance with regulations assist in maintaining a safe drinking water supply. If you have questions about cross-connection and backflow, please contact your licensed plumber or Des Moines Water Works at (515) 283-8755 or backflow@dmww.com.



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# PROTECTING OUR WATER SUPPLY

Des Moines Water Works Cross Connection Control Program



## **CROSS-CONNECTION**

Drinking water is one of our most precious resources and Des Moines Water Works is committed to providing the best water possible to our customers. Your compliance with Des Moines Water Works Rules and Regulations as well as State and local plumbing codes helps to protect the drinking water from possible contamination or pollution through cross-connections.

#### What is cross-connection?

An actual or potential connection between the public drinking water supply and a customer's plumbing system that

makes it possible for well water, livestock water, pollutants or contaminants to enter the public drinking water supply through backflow.

#### How can a cross-connection be harmful?

A pollutant or contaminant that enters the drinking water supply through a crossconnection can cause illness or spread disease.

## BACKFLOW

#### What is backflow?

The undesirable reverse flow of used water contaminants or pollutants into the public drinking water supply as a result of a crossconnection. Backflow can occur through backpressure or backsiphonage.

### BACKPRESSURE

#### What is backpressure?

Backflow caused by water pressure in a customer's plumbing system that is higher than the pressure of the public drinking water supply. This may be caused by pumps, boilers, or other sources of pressure.



#### **Problem**

If the private well pressure is higher than the public water supply and the two are interconnected, the private well water would be forced back into the public water system.

#### **Solution**

Installation of a code approved backflow preventer on the incoming public water supply line to prevent reverse flow.

# BACKSIPHONAGE

#### What is backsiphonage?

The reverse flow of used, contaminated or polluted water from a plumbing fixture or device into the public drinking water due to reduced pressure. This can be caused by nearby fire fighting, water main breaks or repairs.



#### **Problem**

If the public water supply pressure is reduced, the chemicals in the sprayer tank may be siphoned back through the hose into the customers plumbing and the public water main.

#### **Solution**

Installation of a code approved backflow preventer on the water fixture supplying the hose as well as the installation of a backflow prevention device on the incoming public supply line as close to the meter as possible.