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Backflow Prevention Information & Education

City of Munroe Falls
A Great Place to Call Home

Backflow Prevention, Information & Education

Every time you fill a glass with water from the tap, prepare a meal, or take a bath, you take for granted that the water will always be clean, pure and healthy.

Occasionally, situations occur outside of our control that can jeopardize the quality of your drinking water. A very common occurrence in a water distribution system is the temporary loss of pressure due to the breakage of a water supply pipe or water main.

When these situations occur, conditions are present that can allow the backflow of pollutants or contaminants into the water system and threaten the purity of our drinking water system.

Hopefully this information will help you understand how this can happen and why it is vital to the health of our drinking water and the public we serve that backflow devices are installed, tested and properly maintained.

What is Backflow?

Simply stated backflow is the unwanted reverse flow of fluids, chemicals, or any other foreign material into the public drinking water system. It can come from chemicals and fertilizers used on lawns and gardens, pool chemicals, manufacturing chemicals used by businesses, and any other substance that connects by way of a connection to the water system. This is known as a cross connection.

Backflow can happen when there is a loss of pressure in the water system, from something like a water main break or use of a fire hydrant, when water at a cross connection is suddenly sucked back into the system thereby causing contamination.

There are federal, state and city regulations that require the water department to ensure that:

- there are no cross connections;
- those places where actual or *potential* cross connections exist are protected with backflow preventers, and
- installed backflow preventers are maintained and tested annually.

Why do I have to have the same test every year?

Because water contamination could pose a serious public health risk. Our laws require annual inspections and tests to ensure your backflow prevention device is working as it should. Backflow preventers have springs, rubber seals and other moving parts that wear out over time and it's important that they receive the same regular maintenance that your car or HVAC system gets to keep the community water clean and safe.

This is true even if you don't think there is a hazard at your home or business. There are plenty of recorded instances that show how a danger was present even though there didn't seem to be an obvious risk. A few examples are even cited in this pamphlet.

When it comes to your drinking water it is always better to err on the side of caution.

"An ounce of prevention is worth a pound of cure."

- Benjamin Franklin

One example of a backflow preventer

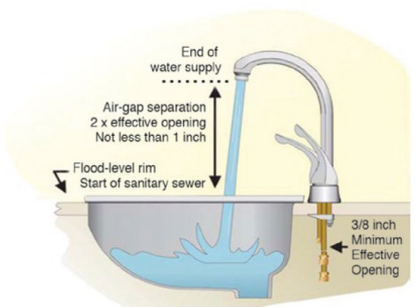
Our Backflow program

The Munroe Falls Water Department requires inspections of all commercial and industrial properties to ensure no actual or potential cross connections exist and that the proper backflow preventer is being used for the type of situation if one does exist. This includes ALL businesses in the City and residences where potential conditions exists. If you would like to schedule an inspection, please contact the water department.

For those customers who have a testable backflow device, an passing test must be provided to the water department between January and July 1st annually. The City mails reminder notices to those customers with tests still due around the 1st of April each year, but if a passing test in not received, the water service may be disconnected.

Air gap

The best backflow prevention is a separation between the water and the source of contamination. This is called an "air gap" and it exists in your home or business already. The air gap separation is the distance between where the water comes out of the faucet and the top flood level rim of the sink, tub or basin.



Typical "Air Gap" separation

Actual Backflow Instances

Here are some examples of actual occurrences:

BACKFLOW AT AN INDUSTRIAL FACILITY WITH A PROCESS WATER SYSTEM

DATE OF BACKFLOW INCIDENT: 1992
LOCATION OF BACKFLOW INCIDENT: Edmonton, Alberta, Canada
SOURCE(S) OF INFORMATION:
- Pacific Northwest Section of the American Water Works Association, Summary of Backflow Incidents, Fourth Edition, 1995

CASE HISTORY

In 1992, a plastics manufacturing plant in Edmonton, Alberta, telephoned the City Water Department complaining about sudsy water in their hot and cold water lines. An investigation revealed that plant process water had backflowed into the plant's potable water system.
To prime a process water pump at the plant, workers connected a hose between the pump and a potable water hose bibb. A vacuum breaker was originally installed at this hose bibb when the plant was constructed. However, workers considered the vacuum breaker to be a nuisance because it sprayed water every time they turned on the process water pump. Therefore, they removed the vacuum breaker and connected the priming hose directly to the hose bibb. This solved the water spraying problem but created a direct cross-connection. The process water pump produced a pressure greater than the pressure in the City's public water system and forced process water, containing potassium hydroxide and calsolene oil, back through the priming hose and into the plant's potable water system.
Workers that were drinking water during the day of the backflow incident complained about raw throats. But, fortunately, no one became seriously ill.

BACKFLOW AT A PREMISES WHERE THE CONSUMER'S WATER SYSTEM SUPPLIES AN IRRIGATION PIPING SYSTEM

DATE OF BACKFLOW INCIDENT: October 1991 LOCATION OF BACKFLOW INCIDENT: Southgate, Michigan SOURCE(S) OF INFORMATION: - Drinking Water & Backflow Prevention, Volume 9 Number 6 (June 1992)
- Pacific Northwest Section of the American Water Works Association, Summary of Backflow Incidents, Fourth Edition, 1995
- Watts Industries, Inc.; Watts Regulator News/Stop Backflow

CASE HISTORY

On October 1, 1991, two homeowners in the City of Southgate, Michigan, found parasitic worms, or nematodes, in their water. One homeowner found the worms swimming around in his bathtub when he started filling the tub for his child. He also found rust and other debris in his water. The Wayne County Health Department determined that water had backflowed through a residential irrigation system into the public water system.
An atmospheric vacuum breaker on the residential irrigation system had malfunctioned because the device's air inlet valve had stuck to the device's air inlet port. There was a water main break, which caused a vacuum in the public water system. The vacuum in the public water system sucked some water--and some nematodes--from the irrigation system into the public water system.
Crews from the City's Department of Public Services opened fire hydrants and flushed all the water mains located three blocks north and south of where the backflow incident occurred. Analysis of subsequent water samples collected by the Department of Public Services showed no detectable coliform bacteria.
The County cited the owner of the irrigation system for improper installation of the system. The contractor that this resident employed to install the irrigation system did not have a City permit and used a "cheap" atmospheric vacuum breaker.

BACKFLOW AT A PREMISES WHERE THE CONSUMER'S POTABLE WATER SYSTEM SUPPLIES A SPACE HEATING HOT-WATER BOILER

DATE OF BACKFLOW INCIDENT: January 1990
LOCATION OF BACKFLOW INCIDENT: Brighton, Colorado
SOURCE(S) OF INFORMATION:
- Pacific Northwest Section of the American Water Works Association, Summary of Backflow Incidents, Fourth Edition, 1995
- Watts Industries, Inc.; Watts Regulator News/Stop Backflow

CASE HISTORY

On January 30, 1990, authorities closed Overland Middle School in Brighton, Colorado, after an antifreeze-like chemical was found in the school's potable water system. They sent nine students complaining of flu-like symptoms to an area hospital for treatment. The hospital released the students after treating them for ethylene glycol poisoning. Ethylene glycol had backflowed into the school's potable water system from the school's hot-water heating system.
During a routine maintenance check of the Overland Middle School's hot-water heating boiler, maintenance workers left open a valve on the potable water line feeding the boiler. This allowed boiler water containing the antifreeze ethylene glycol to backflow into the school's potable water system. There was no backflow preventer on the feed line to the boiler.
The Overland Middle School was closed for an additional day while workers flushed the potable water piping at the school and "repaired the hot-water heating system leak." Presumably workers installed a proper backflow preventer in the potable water line feeding the hot-water heating boiler.