

WWQ-PCA Conference

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Loss of Pressure in Drinking Water Systems in Wyoming

What is a Loss of Pressure?

- Distribution systems can lose pressure for various reasons that include water main breaks, equipment failures, losses of power, etc.
- Loss of pressure may cause a net movement of water and contaminants from outside the pipe to the inside through cracks, breaks, or joints in the distribution system.
- Backsiphonage is also a condition resulting from low or no pressure.



<https://www.wyomingnewsnetwork.com/content/news/Water-Main-Breaks-411978615.html>



<https://www.wyomingnewsnetwork.com/content/news/Water-Main-Breaks-411978615.html>

What is a Loss of Pressure continued?



<https://www.woodtv.com/news/kent-county/waterline-blows-12-foot-deep-crater-into-44th-st/>

- Such system failures carry a high potential for fecal contamination or other disease-causing organisms to enter a distribution system and can cause serious health concerns for people who drink the contaminated water.
- Pressure loss is defined as a distribution system pressure of less than 20 pounds per square inch (psi).

Measures to Take in the Event of Pressure Loss



If the area of lost pressure can be valved off and contained, you should isolate this area from the rest of the system. This may limit the degree of contamination and the number of service connections affected by the loss of pressure.

Immediately notify the EPA Region 8 Drinking Water Program

- Public Water Systems (PWS) in Wyoming:
call 303-312-6791
- Tribal PWS in Utah, Wyoming, or Colorado:
call 406-457-5009
- If outside of normal business hours, call the
after-hours emergency and holiday
number: 303-312-6327
- Be prepared to describe: what happened,
when, where, and the scope of the
problem (if known).



<https://www.westfortworthplumbing.com/what-to-do-if-there-is-a-water-main-break/>

Notify Laboratory of Emergency Analysis

We recommend that you notify the laboratory that you use to alert them regarding the emergency and to obtain bacteriological sampling bottles, materials, and instructions (for taking Special bacteriological samples).



40 C.F.R. § 141.201

40 C.F.R. § 141.202

Issue Tier 1 Public Notice

In order to protect your customers, immediately issue a Tier 1 Public Notice (PN) that includes a Loss of Pressure Boil Water Advisory. If boiling the water is a hardship for customers, consider providing bottled water or another alternate water supply to customers.

DRINKING WATER WARNING

water system lost pressure in the distribution system

BOIL YOUR WATER FOR THREE MINUTES BEFORE USING

The _____ water system was shut down on _____ due to _____ This led to a loss of pressure in the distribution system, which may cause backpressure, backsiphonage, or a net movement of water from outside the pipe to the inside through cracks, breaks, or joints in the distribution system that are common in all water systems. Such a system failure carries with it a high potential that fecal contamination or other disease-causing organisms could enter the distribution system. These conditions may pose an imminent and substantial health endangerment to persons served by the system.



Restore the Pressure to Normal Operating Conditions

Locate/identify and fix the problem that caused the pressure loss.

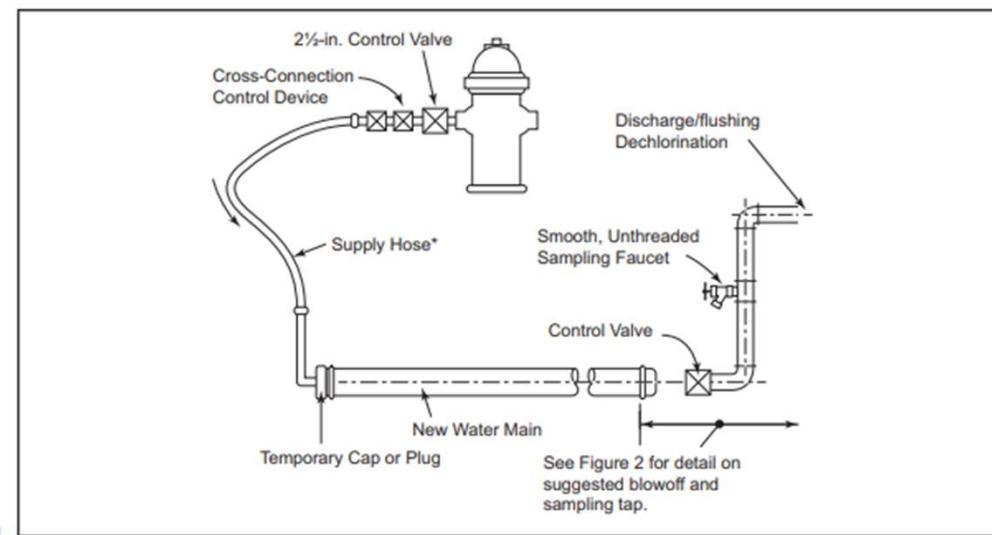


Disinfect and Flush

When system pressure is restored to normal, disinfect and flush the affected distribution system in accordance with American Water Works Association (AWWA) Standard C651 as necessary.

Consider:

- Type of disinfection
- Required flow and openings to flush
- Methods of Disinfection
 - Slug
 - Spray
 - Basic

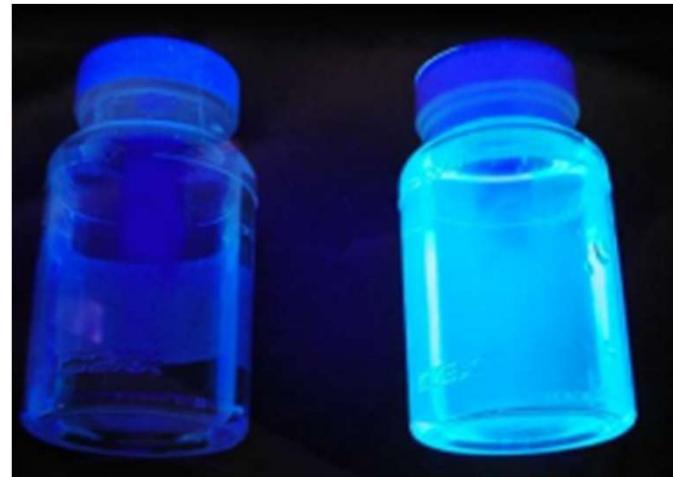


Collect Bacteriological Samples

- After the excess chlorine has been flushed out of the water supply, ensure that chlorine residuals have returned to normal levels.
- Collect and submit to the lab a Total Coliform (TC) bacteriological sample from both upstream and downstream of the affected area of the distribution system.
- Maintain the boil water advisory until two consecutive days of “safe” TC samples have been collected, or until EPA notifies you that the boil order can be lifted.

Collect Bacteriological Samples

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- These samples should be designated marked as “special” samples on the lab slip.



https://cdn.ymaws.com/www.vwea.org/resource/resmgr/Conference_Proceedings/2016/LPC/5._Microbiology_Methods_for_.pdf

Formal Enforcement

- The EPA may issue an Emergency Administrative Order (EAO) for incidents that can result in contamination in or near a public water system that may pose an “imminent and substantial” endangerment to human health.
- If an EAO is issued to the system owner, the operator must follow all the requirements listed within it.

Prepare for the Unexpected



Every water utility should have an Emergency Response Plan (ERP) that addresses emergencies, such as loss of pressure, with a checklist of steps to take. The ERP must be exercised periodically in order for all utility personnel to be familiar with it. Regular maintenance and timely implementation of sanitary survey recommendations may also help in preventing or reducing emergencies.



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**U.S. EPA Region 8
Water Division
Drinking Water Program**

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**ANY
QUESTIONS?**