

Pipe Thawing Cross Connection/Contamination

The issue of frozen pipes is at an all-time high around the state this year. Cities are facing several issues of how to get the lines cleared and what to tell citizens on how to go about enlisting services to clear the lines. The two methods used are electrically heating the lines using welding equipment or specific line thawing equipment designed to heat the lines electrically and the second is using a hot water pulse machine to melt the ice. Both have their advantages and disadvantages. With the electric there is the possibility of stray electricity damaging the homes electrical system and or appliances or a cause of fire in the home being worked on or neighboring homes near the property. With the hot water machines there is a potential for cross connection/contamination of the domestic water system. The cross connection/contamination concern was brought up by the Owatonna Public Utilities in response to our last blog on thawing water pipes. After talking with Owatonna Public Utilities and others on the issue it was felt that other cities could benefit from some guidance and direction on the cross connection/contamination hazards and best practices.

The hazards of contamination of drinking water during the thawing process a result of the process involved in using the equipment. The jetting and hot water pulse equipment introduces a feed line directly into the water pipe and uses pressurized hot water to cut through and melt the ice. These machines have a hot water tank that recirculates the hot water from a heating tank on the machine pumping it through the feed tube to the ice blockage. The equipment needs to be properly taken care of and good housekeeping practices need to be followed by the contractors and operators of the equipment in order to reduce the potential for contamination. There is a potential for these machines to have been used to clear sewer and drain lines which can introduce bacteria in to the domestic water supply. It would be a good practice for plumbing contractors to have dedicated equipment for domestic water work and not use it for any other purpose.

Owatonna Public Utilities has put together a notice that the city plans on distributing to the contractors in the area as well as to the citizens who have frozen lines. The notice outlines the best practices which should be followed by the plumbing contractors and city utilities as well to reduce the chance of contamination. The following steps have been taken with permission from the notice being put out by Owatonna Public Utilities and are considered to be best practices for reducing contamination during the hot water thawing method and equipment. Following these recommendations will not totally eliminate the possibility of contamination but are felt to be a good practice and positive step in significantly reducing it.

1. The city utilities department should be notified prior to the work taking place to inform us that you are going to be creating a cross connection. You can call xxx-xxx-xxxx between the hours of
2. The water that is being injected into the water line must be sanitary and come from a potable water source. The water may not contain any chemicals other than a chlorine bleach solution. The water must be chlorinated to a level of 200ppm with standard 5% household bleach. The 200ppm may be achieved by using 1 gallon of household bleach to 200 gallons of water. Please

refer to manufactures directions for exact mixing directions, precautions and protective equipment that may be necessary when working with this chemical and at these elevated levels.

3. The hose and nozzles that are used for this process must be dedicated for use with water lines. The hose and nozzles must not have ever been used for other applications including sanitary and storm sewers.
4. The hose and nozzles must be sanitized with a 100% household bleach in a clean tote or tub by either a complete immersion or by a coarse spray from a pump sprayer. This hose shall be sanitized immediately. Prior to insertion into the pipe and shall remain in the tote at all times. The hose shall not be allowed to be fed from the floor or ground.
5. The technician shall wear disposable plastic gloves while handling the sanitized hose and take care in maintaining the gloves sanitary condition. New clean gloves shall be put on anytime that the technician is required to handle unsanitary tools or equipment.
6. After the line has been de-iced and the line is flowing, the water line shall be flushed for a minimum of 10 minutes to remove the concentrated chlorine solution and ice particles. The line shall be flushed before the meter is reinstalled to avoid damage to the meter and the customer equipment.

Thank you to the people at the Owatonna Public Utilities Department for their contribution to this issue. A copy of the Owatonna notice is accessible in an attachment as an example for others use in the development their own notice.