

Chester County Health Department Bureau of Environmental Health Protection

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Well Water Disinfection Procedure

The water in a domestic well is vulnerable to contamination because it is obtained directly from the environment. In most cases this water is of good quality, however, external factors can affect this water. Wells constructed in accordance with current Chester County Health Department regulations will meet specific water quality standards before they are approved for use. There are some factors that can affect the quality of well water that cannot be anticipated when the well is constructed. The well construction standards in the regulations are intended to protect the well from surface contaminants. The most common type of well water contamination is bacterial. Well water is tested for the presence of coliform bacteria. The presence of coliform bacteria is used as an indicator of the possible presence of other harmful organisms. Fortunately, water containing coliform bacteria and most other harmful strains of bacteria can be treated so that the water is safe for human consumption.

The following chlorination process is usually effective in treating bacterial contamination in well water. You will not be able to use your water supply for 12-24 hours. Do not drink the water or bathe with the water until the entire disinfection procedure has been completed. This process could be done overnight or on a day when no one is home.

Chlorination

1. You will need the following items to complete this process:
 - chlorine test kit from a local pool supply store
 - 2-gallon plastic bucket
 - measuring cup
 - garden hose that will reach to the top of the well
 - ½ gallon or more of household bleach (½ gallon will effectively treat up to 200 feet of water in a 6" well casing)
 - clear glass
2. Bring all of the above materials to the well. Remove the well cap.
3. Mix one cup of bleach with 2 gallons of water and pour this mixture into the well. Flush it gently around the sides of the well casing pipe in order to clean the inside of the casing. Repeat this process until you have mixed and poured all of the bleach solution into the well.
4. Turn on the garden hose and run water into the well for about 5 minutes. This will mix the

bleach and run it into your water system.

5. Run some water from the hose into the clear glass. Put a drop or two of the chlorine test chemical into the glass. If you see a yellow color (orange if the chlorine concentration is very strong) the chlorine is in the water system. Turn off the hose and replace the well cap. Drain the garden hose because the chlorine can damage the rubber hose. If you have more than one outside faucet, run water through all of them. As soon as chlorine is detected, turn faucets off.

Be careful not to overtax a low-yielding well.

6. Go into the house to the kitchen sink. Run the hot (The hot water is not hot enough to kill bacteria) water until you detect chlorine (using the test kit). This may take awhile because you are draining the hot water heater. Now run the cold water until you detect chlorine. This should only take a few minutes. Turn off the sink faucet.
7. Turn on all the faucets (including laundry tub, bathtub and shower) in the home one at a time, until you detect chlorine in both the hot and cold water. Once you detect chlorine in all the water, turn off all the faucets.
 - If you have an automatic icemaker, discard the ice in the bin and make a new batch of ice, which later you will also discard.
 - Run a complete cycle in the dishwasher with no dishes and the clothes washer with no clothes because the water may have been discolored or contain sediment as a result of the disinfection process. If water is clear use the dishwasher as you normally would and use the clothes washer to wash a load of white clothes.
 - Run a small amount of water out of your hot water heater.
 - Flush each toilet in the house once.

This process will disinfect the plumbing system in addition to the well water.

8. Now the water must not be used until the chlorine has done its job. This takes at least 12 to 24 hours. Then follow the dechlorination process.

After the chlorine has been in the system and the system has not been used for 12 to 24 hours (except to flush toilets) you are ready to flush it out of the well and your water system.

Dechlorination

1. Run water from your garden hose, out onto the ground. Make sure that it will not run over your sewage absorption area (drainfield) or a neighboring absorption area, or form a puddle on a neighboring property. Avoid discharging the water into storm drains, waterways, creeks, etc. Fish and aquatic animals are very sensitive to chlorinated water and may be killed. Run the hose, and sample for chlorine until the test shows that there is no chlorine in the water. If you get an indication of chlorine, continue to run the hose until you no longer see any

indication of chlorine left in the water. Be careful not to overtax low-yielding wells.

2. Run a complete cycle in the dishwasher with no dishes and the clothes washer with no clothes because the water may have been discolored or contain sediment as a result of the disinfection process. If the water is clear use the dishwasher as you normally would and use the clothes washer to wash a load of white clothes.
3. Flush all of the toilets once.
4. Run all the faucets in the house for about a minute, starting with the faucet farthest from the pressure tank.

This should remove almost all of the remaining chlorine from the water system. You can now begin to use the water again. After several days of normal use, have the water sampled and tested again for coliform bacteria. If there is still coliform bacteria (but much less than the previous sample) you may want to repeat the chlorination process. If chlorination has not significantly reduced the amount of coliform bacteria in your well water, you should consider installing a continuous disinfection device (ultraviolet light or chlorine injection system) or, if available, connect to public water.

If you have any questions about this process or other well water quality concerns, please contact the Chester County Health Department at 610-344-6526.