

## ***Health Department of Northwest Michigan*** **Instructions for Simple Chlorination of Residential Wells**

Simple chlorination is the process of adding relatively small volumes of a chlorine solution into a well, accompanied by the circulation of the chlorinated water through the distribution system and back into the well. As the pump is activated the chlorinated water is drawn up through the pump into the distribution system and deposited back into the well casing through a clean garden hose.

Prior to beginning the process, the well record should be reviewed to determine if the well is a flowing well, is equipped with a draw down seal, or is located in a pit. If any of these are characteristic of the well, a professional well driller, licensed by the State of Michigan should be contracted to perform the chlorination. The depth of the well should also be noted for the proper mixture of the chlorine solution.

The homeowner can perform simple chlorination, but the Health Department of Northwest Michigan recommends contracting a professional well driller, licensed by the State of Michigan, to perform any repair, maintenance or treatment of your well. Should you choose to attempt Simple Chlorination of your well, we strongly recommended the use of an NSF approved sodium hypochlorite solution (liquid bleach) that contains 5.25% to 6% available sodium hypochlorite. Do not use swimming pool chorine, scented bleach solutions, or bleaches with other additives. We advise against the use of a solid calcium hypochlorite powder, granule, tablet or HTH. The chlorine solution may not be premixed ahead of time, as the chlorine concentration will deteriorate.

The following are step by step instructions for conducting the simple chlorination of your well. Read all instructions through carefully prior to starting procedure.

1. Bypass all water treatment systems, filters and apparatus.
2. Turn off the power to the well.
3. Prepare the chlorine solution according to the following chart. Remember to use an unscented liquid bleach that contains a minimum of 5.25% to 6% available sodium hypochlorite.

<b>Well Diameter</b>	<b>Amount of Bleach per 25 feet of Well Depth</b>
4 inch	1 cup
5 inch	1 ½ cups
6 inch	2 cups

Example: A 4-inch diameter well, 150 feet deep would require 6 cups of bleach to treat the well.

4. Mix the required bleach from the chart above with 4 gallons of water in a clean plastic or glass container. Add an additional 2 cups of bleach to mixture. The additional cups of bleach are to ensure there is sufficient chlorine to disinfect the pressure tank and distribution system.

Example: A 4-inch diameter well, 150 feet deep would require 6 cups of bleach to treat the well, plus 2 cups of bleach to treat the distribution system and the pressure tank. Therefore a total of 8 cups should be mixed with the 4 gallons of water.

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5. Slowly pour the bleach mixture into the top of the well.
6. Attach a clean garden hose to an outside hose bib.
7. Turn on the power to the well and turn on the hose bib.
8. Circulate the water until it runs clear through the garden hose. Do not flush water into septic system, onto flowerbeds or lawn. The chlorine can damage the septic system and plants.
9. Place the clean end of the hose approximately 1 foot into the top of the well casing and recirculate the chlorinated water back into the well for 30 minutes to one hour.
10. Turn off the power to the well, turn off the hose bib, remove the hose from the well, and replace the well cap.
11. Turn on the power to the well and run the faucets in the house, one at a time, starting closest to the pressure tank. Run the water until a strong chlorine odor is present. Turn off the faucets.
12. Contact Time is very important. Allow the chlorine to stand in the well and plumbing for 4 to 12 hours, preferably overnight. The longer the chlorine is in contact with the system, the greater the probability of successful chlorination.
13. During the entire chlorination procedure, an alternate water source for drinking and cooking must be used. Water usage in the home during chlorination must be limited to toilet flushing only, and this must be restricted as much as possible. Water contact with the skin should also be avoided during this time.
14. After the contact time has elapsed, turn on the outside faucets and flush the system through garden hoses until there is no smell or taste of chlorine present. This may take as much as 8 hours, dependent upon the amount of chlorine used and the rate of flushing. It is desirable to keep the pump motor running, use as many hose bibs as needed. Pumping to small a volume of water causes the pump to turn on and off, increasing pump wear.  
NOTE: When flushing the water through the garden hoses, ensure that the water is discharge away from the area of the septic system, foundation, flowerbeds, and lawn. Do not run the chlorinated water into the household plumbing and subsequently into the septic system. Do not run the chlorinated water into a lake, stream or other body of water.
15. Once there is no taste or smell of chlorine, the interior plumbing may be flushed for 5 or 10 minutes until no chlorine odor is present.
16. Once all the chlorine is flushed from the system, place treatment units, filters and other apparatus back into service.
17. Water sample(s) may be taken at this point to confirm that proper water system disinfection has been accomplished.