DISINFECTING FLOODED WELLS

If a well casing has been submerged in flood water, the well should be considered contaminated by bacteria or viruses, which can make you ill. Any water used for drinking or cooking **must be boiled at a rolling boil for at least five minutes** (or bottled water used) until the well and entire plumbing system have been disinfected and tested. If you are uncertain about any o the procedures described below, contact a well driller or pump installer. (See the Yellow Pages under *Well Drilling and Service.*)

IMPORTANT! READ ALL THE INSTRUCTIONS BEFORE STARTING

STEP 1:
Disconnect any household water filters or water softeners. Make certain that it is safe to turn the electricity back on. Turn on the electricity and check to see if the well pump will run. Turn the electricity off again. Open the well either by:
1) removing the well cap or a threaded plug in the cap; or
2) disconnecting a shallow well jet pump. You will have to contact a well driller or pump installer to disinfect a well with a "packer-type" jet pump.

Caution: If you must enter a well pit to do this work, you should know that people die every year from asphyxiation or electrocution in well pits. Seek professional help or guidance on proper safety precautions before entering any well pit.

STEP 2:

Mix up a solution of 1 part common laundry bleach (Chlorox, Hylex, etc.) to 10 parts of water. Don't use bleach with scent added or swimming pool bleach. The correct amount of bleach to use is listed in a table on the back of this sheet. Be careful mixing the bleach; eye protection and protective clothing are suggested.

STEP 3:

Pour the bleach and water solution into the well. Avoid pouring directly onto the pump wiring. Reconnect a shallow well jet pump if you had to remove it. After turning on the electricity, circulate the solution in the well either by placing a garden hose into the top of the well and running the water for 15 minutes (the best way) or by starting and stopping the pump several times.

STEP 4:
Open every water outlet on the system, one at a time, run the water until you can smell the chlorine, and then close the faucet. Allow the chlorine solution to remain in the system for at least 12 hours.

STEP 5:
After 12 hours, flush the system by connecting a garden hose to an outside faucet, and discharge the water on the ground until the chlorine smell is gone. Drain the water heater. Avoid running the chlorinated water into a septic system or onto lawns or gardens. Then flush the remaining chlorine from the plumbing by opening the rest of the faucets. The small amount of chlorinated water flushed from the water pipes can be run into a septic tank.

STEP 6:
After all the chlorinated water has been flushed from the system, wait 48 hours, and then have the water tested for bacterial safety. Obtain a water test kit from a certified water testing laboratory, and follow the instructions that come with the kit. **You must continue to boil your water until the laboratory reports that the water is safe.**

NOTE: IF YOUR WELL HAD AN INADEQUATE WELL SEAL OR COVER, DEBRIS OR SEDIMENT MAY HAVE ENTERED THE WELL. THE WELL SHOULD BE CLEANED OUT BY A LICENSED

WELL CONTRACTOR. DO NOT USE THE WATER FOR DRINKING OR COOKING UNTIL THE WELL HAS BEEN PROPERLY CLEANED, DISINFECTED AND TESTED SAFE.

Amount of Laundry Bleach for Well Disinfections

(NOTE: The amounts listed below must be mixed with 10 times as much water before use.)

Well Casing Diameter	0’ -50’	50’ - 100’	100’ - 200’	200’ - 300’	300’ - 400’	400’ - 500’
up to 2”	1 oz.	2 oz.	4 oz.	6 oz.	8 oz.	11 oz.
2” - 4”	4 oz.	8 oz.	½ qt.	1 qt.	1 ¼ qt.	1 ½ qt.
4” - 6”	8 oz.	½ qt.	1 qt.	1 qt.	¾ gal.	¾ gal.
6” - 8”	½ qt.	1 qt.	¾ gal.	1 gal.	1 ¼ gal.	1 ½ gal.
8” - 12”	½ gal.	¾ gal.	1 ¼ gal.	1 ¾ gal.	2 ½ gal.	3 gal.
12”-16”	½ gal.	1 gal.	2 gal.	3 gal.	4 gal.	5 gal.
16” - 20”	¾ gal.	1 ½ gal.	3 gal.	5 gal.	6 gal.	8 gal.
20” - 24”	1 gal.	3 gal.	5 gal.	7 gal.	9 gal.	11 gal.
24” - 30”	2 gal.	4 gal.	7 gal.	11 gal..	14 gal.	18 gal.
30” - 36”	3 gal.	5 gal.	10 gal.	15 gal.	20 gal.	25 gal.

EXAMPLE 1:

The well is 4 inches in diameter, and the depth of the well is 400 feet. The water level is 100 feet.

400’ - 100’ = depth of water in the well (300’). From the table, a 4-inch well with 300 feet of water takes 1 quart of bleach.

EXAMPLE 2:

The well is 1 ½” in diameter, and the depth of the well is 42 feet. The water level is 19 feet. 42’ - 19’ = 23 feet of water in the well. From the table, a 1 ½-inch well with 23 feet of water takes 1 ounce of bleach.

In the case of large diameter dug wells, a greater quantity of chlorine solution will be required to accomplish the disinfection. As a general rule, 1 gallon of laundry bleach will be necessary for every 1,000 gallons of water in the well.

Source: Minnesota Department of Health, Division of Environmental Health.