



Disinfection Fact Sheet for Drinking Water Wells That Have Been Flooded

Simple procedures for homeowners.

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The following well disinfection procedures may be carried out by homeowners on an existing well after flooding. During flooding, water enters the well casing and forces flood water out into the geologic formations providing the water supply. This water will need to be removed from the well and then the well must be disinfected. A total coliform bacteria sample is used as an indicator of unsanitary conditions. If coliform positive samples persist, then an experienced registered private water systems contractor should be contacted to professionally disinfect your well using superchlorination methods. (See Superchlorination Disinfection Fact Sheet)

Step 1.

Turn on as many faucets in the home as possible, and run the water for several hours. The well should be heavily pumped to remove as much flood water as possible. When a well is flooded, the contaminated water enters the well and can move out into the geologic materials that supply water to the well. Overpumping well help remove flood water from the ground water supply.

Step 2.

If the volume of the well is know then the amount of chlorine to be used can be calculated based on the following tables.

Table 1. Volume of water in well	
Diameter of well (inches)	Gallons per foot of water
3	0.37
4	0.65
5	1.0
6	1.5
8	2.6

Table 2. Amount of chlorine added to 100 gallons of water for disinfection			
Chlorine concentration (parts per million)	Gallons of 5.25% sodium hypochlorite - liquid bleach	Pounds of dry calcium hypochlorite	Minimum contact time
250	0.5 gallons	0.38	8 hours
500 ppm	1 gallons	0.75 pounds	8 hours

If the total volume of the drilled well is unknown then add two gallons of fresh 5.25 % unscented laundry bleach, also called sodium hypochlorite, to five gallons of water. Laundry bleach loses its' effectiveness the longer it sits on the self in the store or in your home. Solid chlorine pellets, which is 65% to 70% calcium hypochlorite, should be dissolved in a five gallon bucket of water. Be aware that some solid chlorine products used for swimming pools may have additional chemicals, such as algaecides, in them and should not be used for well disinfection.

Step 3.

Remove the cap from the well. Pour this solution directly into the well.

Step 4.

Add 1 quart of white vinegar to a five gallon bucket of water. Add this solution to the well.

Step 5.

With a garden hose, re-circulate this solution back into the well washing down the sides of the casing for about ten minutes. Debris may begin to slough off the side of the casing and iron in the water may begin to turn solid as the chlorine reacts with it.

Turn on **all** faucets connected from the well throughout the house and outside the house. Make sure to turn on faucets that rarely or never get used. Remember to run water into the washing machine and flush all toilets. Run the water until the chlorine smell is detected. **Do not** by-pass the water softener or the water heater. The water softener and water heater must be disinfected also. The resin bed of the water softener can provide a place for bacteria to grow. Remove and discard any carbon filters or cartridge filter elements and thoroughly clean the inside of the filter housing.

Step 6.

Once the odor of chlorine is detected then shut off the faucets and let the water sit in the plumbing for at least 24 hours.

Step 7.

After 24 hours run the water to waste until the entire odor of chlorine is gone.

Step 8.

Wait a few days, then have another sample collected for coliform bacteria. Make sure that the water is checked for chlorine before collecting the water sample. If there is any indication of chlorine in the water, the sample should not be collected. This helps avoid getting an indication of a safe sample that may be due only to the continuing activity of leftover chlorine and may not reflect the true condition of the water. Do not replace carbon filters or filter elements until a coliform negative sample has been achieved.

There are many instances where the previously described disinfection procedures may not work in making a water well bacteria free. In some cases the pH of the water may need adjustment in order to get the optimum disinfection from the added chlorine. The well casing may also need a thorough scrubbing or removal of flood sediment that can only be done by a registered contractor. If coliform bacteria persist in water samples then contact an experienced registered private water systems contractor to professionally disinfect your well.