



Disinfecting Flooded Private Water Wells

Minnesota Department of Health

Well Management Section
625 North Robert Street, P.O. Box 64975
St. Paul, Minnesota 55164-0975
651-201-4600 or 800-383-9808
www.health.state.mn.us/divs/eh/wells

Environmental Health Division

If your well has been flooded, it may be contaminated with bacteria, viruses, or parasites which can make you ill. For more information, a companion brochure on “Bacterial Safety of Well Water” is available by contacting the Minnesota Department of Health (MDH) Well Management Section at 651-201-4600 or 800-383-9808 or visit our website at: www.health.state.mn.us/divs/eh/wells/waterquality/bacteria.html. Water from a flooded well cannot be regarded as safe for drinking or food preparation until the well and plumbing system have been flushed and disinfected, and a water test shows that it is safe. If you must use the well water for drinking or food preparation before the well has been disinfected and tested, the water must be **brought to a full rolling boil, and then boiled for at least one more minute**. Bottled water is another option.

You can perform a simple disinfection of most types of private wells yourself by following the step-by-step instructions below. If you are uncertain about any of the instructions, you can contact a well specialist at the MDH (see locations on back) or your local health department. If you prefer to have the well professionally cleaned and disinfected, contact a licensed well contractor or pump installer, listed in the Yellow Pages under *Well Drilling and Service*. The MDH also has a list of licensed well contractors on the MDH Well Management Section website at: www.health.state.mn.us/divs/eh/wells/lwc.

IMPORTANT! READ ALL THE INSTRUCTIONS BEFORE STARTING

Caution: WELL PITS can be very hazardous – people have died from asphyxiation or electrocution in well pits. Before entering any well pit, please obtain professional help or guidance on proper safety precautions.

STEP 1. Make sure the electricity to the well pump is OFF. Inspect the well and pumping system for any visible damage or missing parts. If the well cap is missing or is not watertight, or the well casing (pipe) is damaged, debris or sediment may have entered the well. Starting the pump under such circumstances could damage the pump. If the well appears damaged, if electrical controls have been under water, or if you suspect that debris or sediment has entered the well, contact a licensed well contractor for a professional evaluation of the system. If the well appears to be undamaged, proceed to STEP 2.

STEP 2. The electricity to the well pump should be OFF. If the outside of the well is covered with debris or sediment, remove as much sediment from around the well casing as possible, and clean the well cap and the outside of the casing with a solution of 1/8 cup (1 ounce) of laundry bleach in 2 gallons of clean water. Then rinse with clean water. Make sure that the casing and pumping system are completely dry before proceeding to STEP 3.

STEP 3. Once you are certain that it is safe to do so, turn on the electricity to the well pump. If the pump works, open an outside faucet and run the water onto the ground for 15 minutes to an hour, or until the water runs clear. If contaminated water has entered the plumbing system, run water from each faucet until it also runs clear. Close all the faucets, and turn off the electricity to the pump.

STEP 4. Disconnect any household water filters or water softeners. If the filters or softener have been exposed to flood water, consult with your dealer for instructions on disinfecting them. Make sure that the gas or electricity to the water heater is OFF, and then drain the water heater, being careful to avoid injury from the hot water.

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STEP 5. 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.

Note: If the water discharge pipe extends through a sanitary well seal in the top of the well casing, and there is no threaded removable plug, **or** if the well has a “packer-type” jet pump, you should contact a licensed well contractor or pump installer to perform the disinfection.

STEP 6. Prepare a solution of common laundry bleach (Clorox, Hilex, etc.) and water. Bleach should be unscented and nondetergent. Do not use swimming pool bleach. Be careful mixing the bleach; eye protection and rubber gloves are recommended. Prepare the solution as follows:

If your well casing diameter is:

2 inches or less, mix 1/4 cup of bleach in 1 gallon of clean water.

3 to 4 inches, mix 1 cup of bleach in 1 gallon of clean water.

5 to 6 inches, mix 2 cups of bleach in 1 gallon of clean water.

If the well casing diameter is greater than 6 inches or the well is greater than 100 feet deep, increase the amount of bleach proportionately and mix with 2 gallons of clean water. If you know that your well was submerged by flood waters, use up to 4 times the amount of bleach shown above. If you have a dug well with a diameter greater than 18 inches, use 2 to 4 gallons of bleach added directly to the well. (Please note that many dug wells are difficult or impossible to disinfect due to their unsanitary construction).

STEP 7. Pour the diluted bleach solution into the well. Avoid pouring directly onto the pump wiring. Reconnect and prime 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 2 hours (the best way) or by starting and stopping the pump several times. Check the water coming out of the hose periodically. If the water appears cloudy, has dislodged encrusted materials from the well, or sediment; discharge the water to waste until the water is clear rather than continuing to circulate this material within the well as it can interfere with well disinfection and can damage pumps and water system components.

STEP 8. 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. Flush the toilets. Refill the water heater. Allow the chlorine solution to remain in the system for at least 8 hours.

STEP 9. After 8 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. 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 10. After all the chlorinated water has been completely flushed from the system, 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.**

Once you receive a safe test result, the water can be consumed, but it's a good idea to have the water tested one more time, in two weeks, to assure that the disinfection has been completely effective.

Minnesota Department of Health District Offices:

Bemidji: 218-308-2100

Duluth: 218-302-6166

Fergus Falls: 218-332-5150

Mankato: 507-344-2700

Marshall: 507-476-4220

Rochester: 507-206-2700

St. Cloud: 320-223-7300

St. Paul: 651-201-4600 or 800-383-9808

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