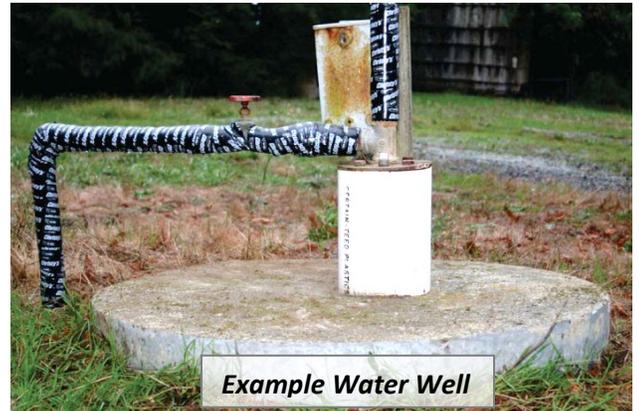


FLOOD PROTECTION AND RESPONSE GUIDANCE FOR YOUR PRIVATE WELL

Flood waters often carry various contaminants including raw sewage, animal waste, and chemicals such as oil, gasoline, solvents, pesticides, and fertilizers. Flood water can enter and contaminate your private water well.

IF FLOOD IS IMMINENT, THE FOLLOWING MAY HELP REDUCE WELL CONTAMINATION RISKS:

1. Make sure the well has a tight-fitting waterproof cap. Most wells have caps with vent holes which are required for proper operation. If the well will not be used for the duration of the flood event, vent holes should be plugged.
2. Carefully wrap the cap and well casing with durable sheet plastic and duct tape to form as tight a seal as possible. When sealing the well cap and protecting the well, remember that any sealing material will need to be removable in order to allow future servicing of the well.
3. Sand bags can be placed around the well to protect the well and plastic from debris.
4. Remove livestock wastes, fertilizers, pesticides, and household hazardous wastes from the flood-prone area.
5. If possible, raise or remove any non-submersible mechanical or electrical equipment that may be at risk from flooding. If the electrical box for the pump may become flooded, you can use a duct seal compound to seal off the electrical conduit that goes to the well head.
6. Do not use the well until the electrical components have been determined safe by a qualified person and the well has been flushed, disinfected, and tested for bacterial contamination.



IF YOUR WELL HAS BEEN FLOODED:

1. Do not drink or wash with your well water. You could get sick from contaminants washed into the well by the flood.
2. Boil water for at least one minute or use bottled water until the well water has been determined safe.
3. Do not turn on the well pump until a qualified well contractor or pump installer has helped you determine that the pump and electrical are safe for use. Danger of electrical shock can harm you, the well, or the pump. See contractor list at http://www.emd.sacounty.net/EH/Documents/WP_WellDrillersList.pdf
4. Purge water from the well until any sedimentation (cloudiness or silt) has been cleared.

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916-875-8400

- Disinfect the well using the below recommended procedure (“Private Well Disinfection Steps”) after the pump and electrical have been determined safe to use.
- Test your well for bacterial contamination (total coliform and E. coli) using a state certified water testing laboratory. See water testing laboratory list at: http://www.emd.saccounty.net/EH/Documents/WP_WaterTestingLabs.pdf
- You can resume using your well water once test results come back negative for bacterial contamination.

PRIVATE WELL DISINFECTION STEPS:

A licensed well contractor or certified water system operator can assist you with well disinfection. If you decide to disinfect your own well using this procedure (from the federal Centers for Disease Control and Prevention), it is important that each step is followed closely.

- Determine the well casing diameter (width of the well) and well depth. Calculate how much bleach is needed for 50 parts per million concentration (use the below table). If you do not know how deep your well is, you can use one gallon of household bleach for the next step.
- Using unscented household bleach and a funnel, carefully pour the needed quantity of bleach into the well. Some well caps have either an air vent or a plug that can be removed to allow access. Otherwise, the entire cap must be lifted off the well to provide a space for pouring bleach into the well (this may require well contractor assistance).
- Run water from an outdoor hose until you smell chlorine in the water, then turn off the outside hose.
- Turn on all inside and outside cold water faucets until you smell chlorine from each faucet then shut off all faucets.
- Wait 24 hours before turning the faucets back on. Do not use water during this period for any purpose because it contains high amounts of chlorine.
- After the 24 hour waiting period, turn on an outdoor hose and run water into a safe area where it will not disturb plants, lakes, streams, or septic systems. Run the water until you no longer smell chlorine in the water and then turn the water off.
- The system should now be disinfected. Take an initial bacteriological sample within 24 hours of disinfection using a state certified water testing laboratory.
- Have the well water re-tested for bacteria 7 to 10 days after disinfection.

Disinfection of Well Casing or Pipe

Chlorine required to dose 100 feet of pipe at 50 ppm

Diameter of Pipe or Casing (inches)	65% Available Chlorine (Calcium Hypochlorite or HTH)	25% Available Chlorine (Chloride of Lime)	5% Available Chlorine (Household Bleach)
2	¼ ounces	½ ounces	2 fl. ounces
4	1 ounce	2 ounces	9 fl. ounces
6	2 ounces	4 ounces	20 fl. ounces
8	3 ounces	7 ounces	2 ½ pints
10	4 ounces	11 ounces	3 ½ pints
12	6 ounces	1 pound	5 pints
16	10 ounces	1 ¾ pounds	1 gallon
20	1 pound	3 pounds	1 2/3 gallons
24	1 ½ pounds	4 pounds	2 1/3 gallons

For solids and powders: 1 ounce = 28 grams



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