



County of Santa Cruz

Health Services Agency - Environmental Health

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GUIDANCE FOR FLOOD IMPACTS ON WATER WELLS

ELECTRICAL HAZARD WARNING- DO NOT TURN OFF THE PUMP

This poses an electrical shock hazard and may result in damage to your well or pump if they have been flooded.

DO NOT USE WATER FROM FLOODED WELLS

Using water from a flooded well for drinking, brushing teeth, washing dishes, making ice, food preparation, or bathing may pose a health hazard due to contamination by toxic substances which may be present in flood water.

WELL AND PUMP INSPECTION

Wellhead: Swiftly moving floodwater can carry large debris that could loosen well hardware, dislodge well construction materials or distort casing. Coarse sediment in the flood waters could erode pump components. If the well is not tightly capped, sediment and flood water could enter the well and contaminate it. Floods may cause some wells to collapse.

Electrical System: After flood waters have receded and the pump and electrical system have dried, the system should be checked. Do not turn on the equipment until the wiring system has been checked by a qualified electrician or licensed pump installer. If the pump's control box was submerged during the flood all electrical components must be dry before electrical service can be restored. Get assistance in turning the pump on from a licensed pump installer or licensed electrician.

Pump Operation: All pumps and their electrical components can be damaged by sediment and floodwater. The pump including the valves and gears will need to be cleaned of silt and sand. If pumps are not cleaned and properly lubricated, they can burn out. Get assistance from a licensed well driller or pump installer who will be able to clean, repair or maintain different types of pumps.

CLEANING THE WELL:

Drilled, driven or bored wells:

To repair damage to the well, contact a licensed well driller or licensed pump installer to remove mud, silt, and other debris from around the top of the well. If you suspect excessive mud, silt or sediment has entered the well, consult with a licensed well driller or pump installer on the situation. If there are voids around the well casing, you should contact a licensed water well driller to backfill with cement grout into the area where backfill has been removed from around the well casing. The pump may need to be removed for bailers to remove mud and silt from the bottom of the well. A listing of licensed water well drillers and pump installers can be found on our website:

https://scceh.com/Portals/6/Env_Health/Land%20Use/Land%20Use%20Documents/2021/Water%20Well%20Drilling%20Services.pdf

Dug wells: It is not recommended to attempt to disinfect or use a dug well that has been flooded.

PUMPING THE WELL:

After the well has been cleaned, pump the well until the water runs clear to rid the well of flood water. Depending on the size and depth of the well and extent of contamination, pumping times will vary. If the water does not run clear, contact our office.

EMERGENCY DISINFECTION OF WELLS THAT HAVE BEEN FLOODED:

It is best to have your well disinfected by a licensed water well driller or pump contractor to ensure thorough disinfection. However, one method that can be used is described below:

1. After you are sure that the pump and electrical components are in operating order, pump the well for several hours to reduce cloudiness and contaminant levels in the water. The amount of time you pump the well depends on the yield and depth of the well. You may need to pump the well off and on at 45-

minute intervals to reduce the potential of running the well out of water and damaging your pump motor.

2. Turn the power off from to your pumping system and pour into the well 1 gallon of standard chlorine bleach or 1 ounce of HTH super-chlorinated solution for every 50 feet of water in the well. Use containers of chlorine bleach that have not been previously opened.

To safely chlorinate your well, you should use safety goggles, gloves, and appropriate clothing. Follow chlorine product manufacturer's instructions. Concentrated chlorine can produce holes in clothes and skin burns. Use chlorine in a well-ventilated area.

With one end of a garden hose attached to a nearby facet, place the other end of the garden hose so the discharging water will flow into the well through the top of the well casing. This will allow water being pumped from the well to be circulated back into the well as an aid to dissolve the chlorine solution in the well and pump intake.

Introduce the chlorine solution through the access port at the wellhead by using a funnel. The garden hose may be placed on top of the funnel or access port to circulate water into the top of the well. Pump water through all outlets in the plumbing by opening faucets until water smells of chlorine. If it does not, add more chlorine bleach to the well. Shut the power off to the well system and remove the garden hose from the system and replace the access port plug or vent. Turn the power back on to the pumping system.

3. With all faucets off, let the system sit for 24 hours.
4. Turn on the pump by running water from all faucets until the chlorine odor disappears. You may wish to pump the well periodically to limit the potential of pumping the well dry and damaging the pump. Do not run heavily chlorinated wastewater through a septic tank system or discharge it to a surface water body. Chlorine may also damage vegetation so select an area away from any trees or shrubbery which may be impacted by the water.
5. If the well water is not continuously disinfected by a water treatment unit, wait approximately 10 days to have the water tested by a state-certified laboratory.

Your water should not be considered safe for drinking until laboratory results indicates it is safe. If continuous disinfection is used, have the water tested after the heavily chlorinated water is removed from the well. A list of state-certified laboratories can be found on our website:

https://scceh.com/Portals/6/Env_Health/water_resources/DrinkingH2O/2021-10_State%20Approved%20Laboratory%20List.pdf

Well disinfection will not provide protection from pesticides, heavy metals, or other types of non-biological contamination. If such contamination is suspected due to the nearness of these contaminant sources, special treatment is required. Contact our office for additional guidance.

If testing indicates bacteriological contamination, do not use the water for any purpose unless the water is first disinfected. This water can be used for drinking or cooking only if it is disinfected. To do this, boil the water for one minute, or add 10 drops of bleach to one gallon of water (Mix and let stand for 30 minutes before drinking).

CAUTION: Your well may not be a safe source of water for many months after a flood, especially if the flooded area was extensive. Contaminated flood water may have impacted the groundwater in your area, depending on the speed and direction of groundwater flow. The well can become contaminated with bacteria or other contaminants. Wastewater from malfunctioning septic tanks or chemicals seeping into the ground can contaminate the ground water even after the water was tested and found to be safe. It may be necessary to take long-term precautions, including repeat testing, to protect the safety of your drinking water.

SAMPLING AND TESTING THE WELL WATER

Contact the County of Santa Cruz Water Quality Laboratory at WaterLab@santacruzcounty.us or (831) 454-4624 to have your well water tested for contamination. Sample containers and instructions must be picked up from the lab prior to sampling, and samples must be collected in accordance with sampling instructions. There may be a nominal fee for this service.

After the pump is back in operation, you should have the well sampled and tested at regular intervals unless the water is continuously disinfected.

Remember that there is a danger of electrical shock from any electrical device that has been flooded; consult a certified electrician. Rubber boots and gloves are not adequate protection from electric shock.