

EMERGENCIES & DISASTERS AND WELLS

Natural disasters and emergencies such as flood, fire, hurricanes, tornados, and windstorms affect thousands each year. If you are a private well owner, and a natural disaster has occurred on or near your property, there are some things you need to know about your drinking water supply.

Concerns and Advisories

If in doubt about your water supply, follow local or state health department drinking and bathing advisories.

Remember that there is 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 electrical shock.

Septic systems should not be used immediately after floods. Drain fields will not work until underground water has receded. Septic lines may have been broken during flooding or other storms. Contact a local plumber or septic service immediately.

For information on long-term water quality conditions in the area or information on home water treatment devices contact your local or state health department, the wellcare® Hotline at 888-395-1033, or the Water Quality Association (WQA) at 630-505-0160 for assistance.

Conditions at the Well

Moving flood water or high winds can carry large debris that could loosen well hardware, dislodge well construction materials or distort casing. Coarse sediment in flood waters could erode pump components. If the well is not tightly capped, sediment, debris, and flood water could enter the well and contaminate it. Wells that are more than ten years old or less than 50 feet deep are likely to be contaminated, even if there is no apparent damage. Floods or heavy debris may cause some wells to collapse.

IMPORTANT!

DANGER OF ELECTRICAL SHOCK MAY OCCUR.

DO NOT turn on the equipment until the wiring system has been checked by a qualified electrician, well or pump contractor.

Electrical System and Pump Operation

After flood waters have receded and the pump and electrical system have dried, do not turn on the equipment until the wiring system has been checked by a qualified electrician, well or pump contractor. If the pump's control box was submerged or damaged during flood or other storms, all electrical components must be dry before electrical service can be restored. Get assistance in turning the pump on from a well or pump contractor.

All pumps and their electrical components can be damaged by sediment and flood water. The pump 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 well or pump contractor who will be able to clean and repair different types of pumps.

Treatment Options for Safe Drinking Water

In most emergency situations, obtaining bottled water is the most commonly promoted way to access safe drinking water. However, there are treatment methods you can use when the quality of water is compromised during an emergency, and it is not possible to obtain bottled water. But before considering such an approach contact the local health authorities to assure yourself that the emergency has not introduced any chemical contaminants of concern into your well system. If the water only needs to be disinfected to be potable, there are 4 main options to treat water to make it safe for consumption:

- Boiling
- Chlorination
- Distillation
- Water treatment devices certified for microbial reduction of bacteria, cysts, and viruses

Do not rely on water treatment filters or devices that are NOT certified for microbial reduction as they may not provide the protection necessary for emergency situations. Consult a water professional or manufacturer for more information. (Visit www.wqa.org to learn more about the different kinds of home water treatment systems that are available.)

For any of the disinfection options listed above and described in more detail below, begin by preparing a clean storage container. You will need a little treated water to do these steps, so keep in mind this can be done simultaneously while disinfecting water. Use food-grade storage containers when possible, or re-use plastic 2-liter soda containers.

1. Wash the container thoroughly with dish soap and clean water first, especially when re-using soda or other containers.
2. Disinfect by mixing 1 teaspoon unscented chlorine bleach into ¼ gallon of water and pour it into the storage container.
3. Agitate the liquid by swishing the mixture around inside the container to ensure that it hits every surface.
4. Rinse thoroughly with disinfected water.

Disinfection Option 1: Boiling

Bring the water to a rolling boil and allow this to occur for 1 minute. This will successfully inactivate pathogenic microorganisms and make the water safe for human consumption. This method is commonly recommended by State Health Departments whenever community water has been contaminated. Boiling can also release some Volatile Organic Compounds (VOCs) of concern that may be present.

Disinfection Option 2: Chlorination

Chlorinate the water with unscented chlorine bleach which contains the disinfecting agent sodium hypochlorite (NaClO). Use a new bottle of bleach, if possible, to ensure the potency of the chlorine. Stir 16 drops of bleach for every gallon of water and let stand for 30 minutes. You can monitor the effectiveness of treatment by smelling a slight chlorine odor from the water. If you cannot identify a slight chlorine odor after 1 or 2 doses, find a new source of water.

Disinfection Option 3: Distillation

Distillation is a very effective treatment option for all types of contaminants. Even if the authorities are not sure about what contaminants may be present. Distillation can be used for removing microbiologics, metals, salts, and other contaminants of concern. It involves boiling the source water and collecting the vapor that condenses back to water. You can make one of these yourself or purchase one from a water treatment professional. Visit www.fema.gov to learn more about how to make one yourself or contact a water professional (www.WQA.org) to purchase a distillation system for your home.

Disinfection Option 4: Water Treatment Device Certified for Microbial Reduction

Many water treatment devices have been certified to the USEPA microbiological guide, NSF P231, or other standard for the reduction of microorganisms. To find a certified device, contact a water treatment professional or search product listings at www.wqa.org or www.nsf.org.

If well or tap water is not accessible in the home, as a last resort, water can be collected from an outdoor surface water, strained with a clean towel or coffee filter to help remove other naturally-occurring contaminants and treated with one of the above methods.

Emergency Disinfection of Your Well

After the power has been restored, you will need to disinfect your well. Clear hazards away from wells before disinfecting. It is best to have your well disinfected by a well professional. During an emergency, it may not be possible to contact a well professional. In this case, refer to our [wellcare®](#) information sheet [Disinfecting Your Well](#) for complete instructions. It is important to note that disinfection will not remove pesticides, heavy metals, and other types of non-biological contamination.

Do not drink or cook with the water until a water test is performed and confirms there are no harmful contaminants in your water.

Testing Your Well Water

You should have your well water tested after disinfecting your well to confirm bacteria is gone and other contaminants are not present. For more information on testing your water, refer to our [wellcare®](#) information sheet [Well Water Testing](#). Contact your local or state health department to have your water tested or find a state certified laboratory using our [interactive map](#) or calling the [wellcare®](#) Hotline at 888-395-1033.

Your Septic System

You should not use the septic system until water in the soil absorption field is lower than the water level around the house. Have your septic tank professionally inspected and serviced if you suspect damage.

Signs of damage include settling or an inability to accept water. Most septic tanks are not damaged by flooding since they are below ground and completely covered. However, septic tanks and pump chambers can fill with silt and debris and must be professionally cleaned. If the soil absorption field is clogged with silt, a new system may have to be installed.

Below is a checklist on caring for your septic system after flooding has occurred:

- ✓ Pump the septic system as soon as possible after the flood.
- ✓ Be sure to pump both the tank and lift station. This will remove silt and debris that may have washed into the system.
- ✓ Do not pump the tank during flooded or saturated drain field conditions. At best, pumping the tank is only a temporary solution. Under worst conditions, pumping it out could cause the tank to try to float out of the ground and may damage the inlet and outlet pipes.
- ✓ Do not compact the soil over the soil absorption field by driving or operating equipment in the area. Saturated soil is especially susceptible to compaction, which can reduce the soil absorption field's ability to treat wastewater and lead to system failure.
- ✓ Have all electrical connections inspected for damage before restoring electricity.
- ✓ Be sure the septic tank's manhole cover is secure and that inspection ports have not been blocked or damaged.
- ✓ Check the vegetation over your septic tank and soil absorption field.
- ✓ Repair erosion damage and sod or reseed areas as necessary to provide turf grass cover.

If sewage has backed up into the basement, clean the area and disinfect the floor. Use a chlorine solution of a half cup of chlorine bleach to each gallon of water to disinfect the area thoroughly.

Only trained specialists should clean or repair septic tanks because tanks may contain dangerous gases. Contact your health department for a list of septic system professionals who work in your area or use the following websites [NOWRA](#) and [NAWT](#).

Resources Available

Once the disaster is over, much of your life may have to be reconstructed. From dealing with your home, water, and sewage systems to finding important documents. There are some resources that will help you get started. Below is a list of resources:

The Water Systems Council [wellcare®](#) Hotline is a free service that can answer any questions on wells and well water. Contact us at 888-395-1033 or visit our website to ask questions and for a list of emergency agencies, licensed well contractors, water testing resources, and [wellcare®](#) information sheets at www.wellcarehotline.org.

The Centers for Disease Control and Prevention (CDC) provides food, water, sanitation, and hygiene information for use before and after an emergency or disaster. Visit their website at www.cdc.gov.

The Environmental Protection Agency (EPA) provides information on all aspects including drinking water and food, flooding and mold, protecting children, water and wastewater facilities, and private wells and septic systems. Visit their website at www.epa.gov.

The Federal Emergency Management Agency (FEMA) provides a disaster assistance website to help with everything from your home and health to your business and replacing important documents. Visit their website at www.fema.gov.

The Water Quality Association (WQA) provides water treatment resources and information for residential and commercial use. Visit their website at www.wqa.org.

This information sheet was created in collaboration with the Water Quality Association. The Water Quality Association (WQA) is a not-for-profit international trade association representing the residential, commercial, and industrial water treatment industry. For more information on WQA and their programs visit their website at www.wqa.org.

For More Information on Emergencies and Disasters & Wells

For more information on emergencies, disasters and your well, contact the well contractor who installed your well, locate a licensed well contractor in your area using our [interactive map](#), or contact the **wellcare®** Hotline at 888-395-1033.



Information to help maintain and protect your water well system:

wellcare® is a program of the [Water Systems Council \(WSC\)](#). WSC is the only national organization solely focused on protecting the health and water supply of an estimated 23 million households nationwide who depend on private wells (according to the U.S. EPA).

This publication is one of more than 100 **wellcare®** information sheets available FREE at www.watersystemscouncil.org.

Well owners and others with questions about wells and well water can contact the **wellcare®** Hotline at 1-888-395-1033 or visit www.wellcarehotline.org to fill out a contact form or chat with us live!

JOIN THE WELLCARE® WELL OWNERS NETWORK!

By joining the FREE **wellcare®** Well Owners Network, you will receive regular information on how to maintain your well and protect your well water.

Contact us at 1-888-395-1033 or visit www.wellcarehotline.org to join!