

Private Well Emergency Preparedness & Climate Resiliency

The logo for RCAP (Resilient Communities and Private Water Wells) features the letters 'RCAP' in white, bold, sans-serif font. The letters are set against a background of two overlapping curved shapes: a light green one on the left and a light blue one on the right.

Natural disasters are occurring more and more frequently across the country due to climate change (Climate Risk and Private Water Wells (psu.edu)) and they may strike when least expected, or when you are not prepared. As a well owner, it is important to take proper precautions to ensure you are ready for a potential threat to your drinking water well. It is important to learn what hazards are prevalent in your area when preparing for a disaster. Information can usually be found on your local Emergency Management Agency or local Health Department websites.

Natural disaster threats include wildfires, hurricanes, tropical storms, winter weather, tornadoes, extreme heat, drought, flooding, landslides, mudslides, and earthquakes.

A photograph showing a white pickup truck parked on a paved road. In the foreground, there is a concrete wellhead structure with two openings. Water is flowing out of these openings into a small stream or ditch. The background consists of a steep, green hillside with some trees and a utility pole.

Creating a Pre-Disaster Checklist

- If you can safely get to the drinking water well before a disaster occurs, **evaluate the well to ensure it is properly secured and that there are no visible openings.***
- Well pumps are run by electricity so if you lose power, you may want to consider **investing in a generator** that can carry some or all your household power load—they make both manual and automatic models. Depending on the emergency, you will need to know how to disconnect the power prior to evacuation or how to provide additional power during an outage. It is highly recommended that you consult with a licensed electrician or water well professional to discuss and learn how to quickly and safely stop power flow to your system or switch to back up power supply before you are in the dark or under water. Check FEMA's website for more information.
- **Purchase bottled water** for an emergency kit for consumption and ensure that it is rotated with new stock per the manufacturers recommendations to keep the kit in good useable order.
- To prevent wildfires, **clear brush and easily burnable items** away from your well head to ensure it is safer from fire damage.
- For snow and blizzard preparation, **ensure that your well head is properly marked** above the snowpack to ensure that plows do not impact during snow removal.

* If you are unsure of how to evaluate a well, hire a licensed water well driller to inspect your well if it hasn't been inspected by a driller within the last 5 years. The water well driller will ensure the well is properly sealed. Water should not be standing near the well. If there are cracks in the pad at the base of the wellhead (not all wells have a pad), the concrete pad needs to be repaired. If cracks in the casing are present below the surface, you would not be able to see them, but positive bacterial test results would indicate the possible presence of a contamination pathway caused by a crack(s). Strongly consider hiring a licensed water well driller/pump installer to extend the well casing to 12 inches above any previous flood levels. Also, verify that water cannot seep into the well through the top of the wellhead or well cap. If a well is in a flood prone area, it should have a watertight sanitary well seal.

Creating a Post Disaster Checklist

- The area may be classified as safe to reenter but your property may have damage, so it is very important to ensure that it is safe to begin your recovery phase. **Structural and electrical integrity and safety should be investigated by a licensed professional** before you start any disaster recovery efforts.
- Disasters can have unseen consequences. Even if you believe that your well was not impacted, **testing your water quality after a disaster is highly recommended**. For example, a coliform bacteria test can highlight unseen below grade well casing damage or aquifer changes that would otherwise go unnoticed.

If you live within the disaster impact area:

1. Use bottled water or boiled water for drinking or cooking until you have properly disinfected and tested the well to confirm it is safe to drink. The standard recommendation is to boil water for at least 1 minute at a rolling boil. (<https://www.cdc.gov/healthywater/emergency/drinking/drinking-water-advisories/boil-water-advisory.html>)
2. It is highly recommended that you have a licensed well contractor inspect the well for damage or at a minimum have any visible damage to the well head corrected first. In certain disaster situations like flooding, once the well is considered safe to bring back into service, it should be pumped to waste until the water runs clear before testing.
3. Ensure that you have water test results from a certified drinking water lab showing that your water is safe for consumption prior to consuming your water. Testing for Total Coliform and Nitrates is recommended.

Disinfecting a Well

For complete step-by-step instructions on how to properly disinfect a well, visit:



Owning a Septic System

If preparing for a disaster, EPA and the National Environmental Health Association have useful information to prepare you for emergencies.**



This facts sheet was developed by RCAP through funding provided by the Environmental Protection Agency. RCAP is an Equal Opportunity Employer.



**If your septic system is impacted by a disaster, it could contaminate the local groundwater. This impact may not be immediately noticeable and could cause water quality issues in wells up to 3 weeks after the disaster event. It is very important to have the septic system inspected by a licensed septic professional as soon as possible after the disaster, even if you think that it is functioning properly. Testing should be completed after the disaster and any time the drinking water changes in taste, odor, color, or there is an unexplained sickness in the household.