



Public Health and Safety Guidelines For Residents Affected by Wildfires June 2016

Private Domestic Water Wells

Perform a visual inspection of your well and all other pipes and appurtenances which work together to bring water into your household. The things you should look for include:

- Damage to electrical wires and connectors which supply power to your well.
- Damage to above ground PVC pipes used with the well to bring water to your home.
- Damage to well houses and equipment such as chlorinators, filters and electronic controls.
- Damage to pressure tanks which could have been caused by exposure to excessive heat.
- Damage to storage tanks, vents and over- flow pipes.

If any damage is found, you should contact the appropriate licensed contractor or trade worker to repair the damage.

You should check to see if your well and piping system maintained positive pressure during the fire. This can be done by turning on a faucet in the household to see if water comes out. You should not hear any air being released from the faucet. The flow of water should be steady and uninterrupted. If you do hear air escaping from the faucet with water intermittently spurting out when it is turned on, that is an indication that your well and household plumbing had a loss of pressure.

If your visual inspection shows that there was a loss of pressure, it is likely that your water may have become contaminated. You should test for the presence of bacteria or disinfect the system, or both, before it is used for drinking or cooking. To obtain instructions for testing the water contact a local environmental testing laboratory. Instructions on disinfecting the system are attached.

If you notice that your water tastes or smells earthy, smokey, or burnt. You should flush your water system for five minutes or until the water appears acceptable, whichever is longer. If flushing does not resolve the issue, conduct another visual inspection of the systems and test the water for bacteriological contamination.

To protect against possible post-fire flooding, the wellhead should have a water-tight cap firmly attached to the top of the casing and in good condition.

Public Drinking Water Systems

When wildfire burns through an area that contains a public or regulated drinking water system, NMED will assist the system in determining if water is safe to drink. NMED and local authorities will work to identify damaged facilities which may impact the quality or quantity of drinking water. If the system has been damaged, bacteriological sampling will be conducted to determine if the drinking water has been contaminated. If contamination has occurred NMED will issue a "boil water advisory" in the local papers and on its website. If your water system is listed on an NMED boil water advisory, you should follow the instructions included in the advisory and seek an alternate source of drinking water, such as bottled water, or boil the water for five minutes before drinking, cooking, and dishwashing. If your public water system is not listed in an advisory, the water is considered safe to drink.

If you are on a public or regulated system and your property has been affected by the fire you may wish perform a visual inspection of any above ground pipes and appurtenances on your property which bring water into your household. If any damage is found, you should contact the appropriate licensed contractor or trade worker to repair the damage.

You should check to see if your piping maintained positive pressure during the fire. This can be done by turning on a faucet in the household to see if water comes out. You should not hear any air being released from the faucet. The flow of water should be steady and uninterrupted. If you do hear air escaping from the faucet with water intermittently spurting out when it is turned on, that is an indication that plumbing on your property had a loss of pressure. If it appears a loss of pressure has occurred you should run your water for 5 minutes prior to using for cooking or drinking. If the pressure is not restored or remains low you should contact your local authority and seek an alternate source of drinking water, such as bottled water, or boil the water for five minutes before drinking, cooking, and dishwashing.

If you notice that your water tastes or smells earthy, smokey, or burnt. You should flush your faucet for five minutes or until the water appears acceptable, whichever is longer prior to using for cooking or drinking. If the issue is not resolved you should contact your local authority and seek an alternate source of drinking water, such as bottled water, or boil the water for five minutes before drinking, cooking, and dishwashing.

Please remember to conserve water if your public or regulated drinking water system has been affected by the fires because there may be a limited supply of drinking water until repairs can occur.

Septic or other Liquid Waste Systems

If the property was not burned, the onsite wastewater system should be OK. The system might have been damaged, however, if a firefighting truck, bulldozer, or other heavy equipment was driven over the tank or drain field. Look for tire tracks or other such evidence and have a qualified person inspect the system if it may have been damaged. To protect against possible

post-fire flooding, septic tanks and other treatment units should have watertight risers or lids to prevent sewage from escaping from the tank and comingling with floodwater.

If the property was burned, the septic tank or other treatment unit may pose a hazard of entrapment, asphyxiation and drowning, especially if the tank and/or risers are constructed of plastic. Extreme caution should be exercised when walking near the tank. Plastic risers may have melted or burned creating an open hole into the tank. Also the roof of the tank may have been compromised by the heat, even if made of concrete, and could pose a danger of collapse if a person walks on it. If there is any possibility of damage, the tank should be inspected by a qualified person.

Hazardous Materials

Burned structures may contain asbestos, which does not burn, in the ash and debris. Older buildings may have been constructed with asbestos in the furnace and water heater closets, around pipes and exhaust vents, and in the ceiling or among the joists under the floor. Asbestos also may have been in tar based floor tiles or linoleum or roofing material where the tar was burned away leaving behind asbestos. Extreme caution is urged not to enter the debris area of burned structures where asbestos may exist until the presence or absence of asbestos has been determined.

Fire debris may be off-gassing hazardous vapors, such as from burned or partially burned plastic, even after the flames have been extinguished. When in doubt, stay away. Other hazardous materials that may exist in the debris of a burned structure include unexploded ammunition, gas cylinders, pesticides, pool chemicals, lubricants, and residues of other solid or liquid household hazardous materials.

Spoiled Food

If the power to a home was turned off for several days, all food that was in refrigerators and freezers should be thrown away to avoid possible food poisoning.

Burned Forest Areas

Burned trees pose a hazard of falling onto people, particularly when it is windy. Posting of signs in areas with numerous dead trees standing is recommended. Additionally, tree roots can burn underground leaving voids that can collapse when stepped on. Having one or both feet suddenly fall into one of these voids can cause injuries to the leg, ankle, knee, hip, and back. In high intensity burn areas, there may be nothing left on the surface of the trees that once stood there, but there may be numerous unstable voids ready to collapse when stepped on.

Potential Flooding

Storm water runoff from burned areas may create severe flooding, possibly surpassing any historical maximum flow record. In addition to floodwater, highly destructive and dangerous debris flows may occur, especially during the first several intense rainfall events after the fire. Debris flows can include ash, soot, denuded soil and rock from the burn area, burned or dislodged trees and vegetation, and debris from structures either burned by the fire or destroyed by the debris flow itself.

The hazards of flooding and debris flows also may occur at downstream locations miles away from burned areas. Watersheds and watercourses in the burn area and downstream from the burn area should be evaluated for risk of flash flooding and debris flows.

People who live near rivers, creeks and normally dry washes that are downstream from burned areas need to anticipate possible inundation with floodwaters possibly reaching higher elevations than in previous floods. Larger watercourses, with larger drainage of burned areas, have higher risks of debris flows. Flash flooding should be expected, and will pose a danger to people, pets and livestock who are in or near watercourses. Motor vehicles and other moveable property should be taken to higher ground when monsoonal storms are in the area. Posting of signs in areas at risk of flash flooding is recommended.

If water wells are inundated, they should be disinfected as described in the attached procedures, after the floodwaters recede, and tested for bacteria.

Contact NMED For Questions or Additional Info

NMED Main Office: 1-800-219-6157 (toll free)

Environmental Emergencies: 505-827-9329 (24 hours)

Disinfecting a Domestic Well with Shock Chlorination

Cooperative Extension Service
College of Agriculture and
Home Economics



Guide M-115

Marsha Wright, Extension Water Quality
and Pesticides Specialist

This publication is scheduled to be updated and reissued 10/02.

Shock chlorination is a disinfection treatment recommended when a domestic drinking water system is contaminated with bacteria. Contamination can occur when the well is installed or when repairs are made to the pump or plumbing. Shock chlorination should take care of contamination that is introduced during these activities.

If the groundwater itself is the source of bacteria, the system will be contaminated again when that water is pumped into the plumbing. In that case, continuous chlorination or other disinfection methods will be necessary to ensure the safety of the water supply.

Shock chlorination introduces very high levels of chlorine into a water system. During the disinfection process, water from the system is not suitable for consumption or extended contact by people or animals. Plan to perform the disinfection process when faucets and toilets will not be in use for at least 8 hours, preferably 12 to 24 hours.

Shock chlorination will be most effective if the chlorine reaches every part of the water system. Special precautions are needed on automatic water systems for animals and irrigation. Provide alternate water sources for pets or livestock who depend on automatic waterers, then make sure the chlorine reaches those outlets. Chlorinated water flushed out of a sprinkler or drip system should be directed away from landscaping plants and lawn areas to avoid damage to the plants.

Most water treatment equipment (such as water heaters, softeners, and pressure tanks), should also be disinfected. Some water filters, such as carbon filters, should be temporarily disconnected or by-passed during shock chlorination. Check owner's manuals or manufacturers' literature before shock chlorinating to avoid damage to components.

Use liquid household bleach containing 5.25% chlorine for the disinfection process. Do not use bleach with a "fresh scent," lemon fragrance, or other cleaners added. One gallon of bleach will treat up to an 8-inch diameter well containing 100 feet of water.

If your well is much larger, or if your distribution system is unusually large, expect to use more than 1 gallon of bleach.

Avoid direct skin contact with bleach solutions. Wear rubber gloves, goggles, and a chemical-resistant apron when handling bleach. If it accidentally gets on your skin, flush immediately with clean water. Never mix chlorine bleach with other cleaners; it may produce a toxic gas.

Disinfection Procedure

- Mix 2 quarts bleach in 10 gallons of water; pour into well.
- Connect a garden hose to a nearby faucet and wash down the inside of the well.
- Open each faucet and let the water run until a strong chlorine odor is detected, then turn it off and go to the next one. Don't forget outdoor faucets and hydrants. Drain the water heater and let it refill with chlorinated water. If a strong odor is not detected at all outlets, add more chlorine to the well.¹
- Flush the toilets.
- Mix an additional 2 quarts bleach in 10 gallons of water. Pour it into the well without pumping.
- Allow chlorinated water to stand in the well and pipes for at least 8 hours (preferably 12 to 24 hours).
- Run water from outdoor faucets to waste (away from desirable vegetation) until the chlorine odor is slight or not detected at each faucet. Then run indoor faucets until there is no chlorine odor. Minimize the amount of chlorinated water flowing into a septic tank.

¹ If you have an impaired sense of smell, use chlorine test strips sold with swimming pool supplies to detect chlorine at each outlet.

Some chlorine may persist in the system for 7–10 days. Water with a slight chlorine smell should be usable for most purposes. If the odor or taste is objectionable, simply let the water run until the chlorine dissipates.

Approximately 2 weeks after flushing the system, sample the water (according to laboratory instructions) and have it tested for biological contamination. Repeat the test in 2 to 3 months to be sure the system has not been recontaminated.

If water tests show that biological contamination has reappeared or persisted, try to locate and remove the source of bacteria. Human and animal wastes are common causes of bacterial contamination, so a nearby septic system or livestock pen could be the source.

If the follow-up water test shows no bacterial contamination, you should still test your water once a year. If there is a change in the taste or smell of your water, or if there are unexplained illnesses in the

household, test the water as soon as you notice the change.

More information about domestic drinking water wells is available in New Mexico Farm-A-Syst (Farmstead Assessment System). For more information, contact your County Extension office.

References

- Eubank, Wanda, Jerry D. Carpenter, Beverly A. Maltzberger and Nix Anderson. *Bacteria in Drinking Water*, WQ0102, University Extension, University of Missouri-Columbia.
- Mancl, Karen. *Bacteria in Drinking Water*, The Ohio State University.
- Wagenet, Linda and Ann Lemley. *Chlorination of Drinking Water*, Fact Sheet 5, Cornell Cooperative Extension, Cornell University.