

Disaster Relief: Flooded Private Sewage Systems

Safety, Sanitation, and Clean-up Concerns

Flooded on-site wastewater disposal systems, which include private septic tanks, can be hazardous. Sewage may back up into the home, contaminate drinking water, and prevent proper sanitation until the system is fixed. You can't control rainfall or flooding in your area, but you can prepare for high-water problems and respond appropriately to emergency flooding.

How Problems Occur

When flooding or saturated soil conditions persist, an on-site wastewater disposal system cannot function properly. Soil treatment systems for wastewater rely on aerobic (with oxygen) regions with sufficient soil permeability to reduce the amounts of chemicals and living organisms (viruses, bacteria, and protozoa). When the soil is saturated or flooded, those hazardous materials can enter nearby surface waters, the groundwater, and your drinking water supply.

An on-site wastewater disposal system that is properly constructed and maintained will be able to better handle the stresses of heavy rainfall or flooding. On-site wastewater disposal systems should be installed by a licensed contractor and inspected annually to monitor the scum level and ensure the internal structure is intact. In addition, tanks should be pumped out every 2 to 5 years, depending on the tank size, volume of wastewater being discharged from the home, and amount of solids entering the tank.

Preparing for Flooding

If you are prepared when flooding occurs, your family can be safe, and your system should survive. To prepare for a flood:

- Make sure all tanks are full of liquid. The high-water season is not the time to have tanks pumped; empty tanks become buoyant during flooding and may “pop” out of the ground, damaging inlet and outlet pipes.
- Plug floor drains, if necessary, to keep sewage from backing up into the basement. Floodwaters

may still enter the basement through cracks and seams, however.

- Seal any openings to the tank (manhole, riser, and/or inspection port) to keep floodwater from entering the tank.
- If your system has a lift pump or requires electricity, turn off the power at the circuit box before flooding occurs. Waterproof electrical connections and remove mechanical components that should not be submerged to prevent damage to wiring, pumps, and the electrical system.

During a Flood

- Stop all water use in the home, if possible, including dishwashing, flushing toilets, showering, and washing clothes. Use portable prefabricated chemical toilets, if possible, or use any large container with a tight-fitting lid for a temporary toilet. Line the container with a plastic bag. After each use, add chlorine bleach or disinfectant to stop odor and kill germs. If necessary, bury wastes on high ground far away from any drinking water wells.
- Remember that a drinking water well may become contaminated during a flood. Therefore, **DO NOT DRINK THE WATER**. Drink bottled water, or disinfect water before drinking. Contact your [local MSU Extension office](#) or the [Mississippi State Department of Health \(MSDH\)](#) for disinfection instructions.
- Do not bathe or swim in floodwater. It may contain harmful organisms.

After the Flood

- Be cautious—floodwater may contain sewage.
- Do not drink well water until it has been tested. Contact MSDH or your local MSU Extension office to obtain a drinking water test kit.
- Do not use the on-site wastewater disposal system if the soil is still saturated and until water in the disposal field is lower than the water level around the house.
- Avoid contact with electrical components until they are dry, and check for damage before restoring electricity. If any components were removed before flooding, they must be replaced and the power connected before using the on-site wastewater disposal system.

- After the flood, pump the tank as soon as possible, but not before the soil absorption field has dried. Pumping the system will help remove any silt and debris that may have washed into the tank.
- Check to ensure the inspection ports and manhole cover(s) are secure and have not been damaged.
- If you suspect damage to your tank, have it professionally inspected and serviced. Signs of damage include settling or inability to accept water. Most tanks are not damaged by a flood since they are belowground and completely covered. However, sometimes tanks or pump chambers become filled with silt and debris and must be professionally cleaned. In addition, flooding inside the tank may lift the floating crust of fats and grease, causing the outlet tee to become plugged with scum. If tile lines in the soil absorption field are filled with silt, a new system may have to be installed in new trenches.
- Discard any items that are damaged by contaminated water and cannot be steam cleaned or adequately cleaned and disinfected.
- Do not pump water out of basements too quickly. Exterior water pressure could collapse the walls.
- If sewage has backed up into the basement, clean the area and disinfect the floor with a chlorine solution of 1/2 cup of chlorine bleach to 1 gallon of water.

Additional Resources

- Your local MSU Extension agent
- Your county code administrator
- MSDH

References

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- U. S. Environmental Protection Agency. (n.d.). *Ground water and drinking water: Septic systems—What to do after the flood*. <https://www.epa.gov/ground-water-and-drinking-water/septic-systems-what-do-after-flood>
- U. S. Environmental Protection Agency. (2001). *Source water protection practices bulletin: Managing septic systems to prevent contamination of drinking water* (EPA 816-F-01-021). Office of Water (4606).

A permit is not required to repair or pump out a tank, or to replace the tank with the same type of treatment or disposal system, but MSDH does require a permit if the homeowner wants to change the type of treatment or disposal system. For example, if a tank pops up during a flood, the homeowner can replace the tank and connect it to the existing disposal lines without obtaining a permit. However, if the homeowner wanted to replace the tank with an aerobic treatment system, a permit from MSDH would be required. In addition, MSDH can provide the homeowner with guidelines for cleaning and repairing tanks. To seek professional assistance, visit www.HealthyMS.com/wastewater for help locating a certified installer or certified pumper.

- Do not drive or operate equipment in the area over the soil absorption field. Saturated soil may become compacted and reduce the soil absorption field's permeability and ability to treat wastewater.
- Repair any erosion damage near the tank. Sod or reseed nearby areas as needed to ensure adequate vegetative cover over the tank and soil absorption field.

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