

On-Site Wastewater Systems: Be prepared for next winter

To people living in colder climates and people new to rural living, on-site wastewater treatment systems can be a bit of a mystery. Most of the time the systems are not visible, and as long as the toilet flushes everything is fine. On-site wastewater systems can freeze, partially and entirely, causing malfunctions.

The following are examples of events that can cause on-site wastewater systems in cold climates to malfunction and even freeze due to cold weather:

Lack of snow cover: Snow works as insulation material, helping to hold in heat from sewage and preventing septic tanks, pipes and drain fields from freezing. It also insulates the system from the cold surface air, preventing frost from penetrating down to the septic system. Compacted snow on top of a septic system greatly lessens the insulating effect, so vehicles, equipment and even foot traffic should always be routed around the system location.

Irregular use: If homes or vacation cabins are unoccupied for long periods of time, the lack of water and sewage entering the system does not supply sufficient heat or aerobic activity for the system to resist freezing.

Furnace condensation can freeze system: Small amounts of water can lead to big problems in cold weather. A high-efficiency furnace or humidifier system releases a trickle of water into the septic system pipes, which can collect in the pipes and freeze, eventually blocking the system. Regular household water use will normally prevent this condition, as water from sinks, bathtubs, laundry and dishwashers helps keep the temperature in the septic system warm enough to prevent freezing.

Leaking fixtures: A leaking shower head or toilet can release a thin trickle of water into the system, which can cause a build-up of ice and eventually freeze sewer lines/piping. Regular household water use will normally prevent this condition, as water from sinks, bathtubs, laundry and dishwashers helps keep the temperature in the septic system warm enough to prevent freezing.

Improper drainage: If sewer pipes and pump lines are not installed with the proper rate of fall (insufficient change of elevation), water and sewage will not fully drain out of the system and can freeze inside the pipes.

Cold air exposure: If the outside riser cap is open, broken or cracked, cold outside air can be drawn into the system, causing the pipes and tank to freeze.

Hydraulic overload: If water is coming to the surface around the septic tank, or leaking from the side of a mound-type system, freezing is very likely as temperatures fall.

Do's and Dont's

If a septic system freezes, the best recourse is to contact a professional on-site technician who can diagnose the problem and provide an effective and safe solution. A pumper truck may be required to empty the septic tank, and specialized equipment such as steam hoses and other devices may have to be employed. The University of Minnesota Onsite Program has a website to help in locating professionals who specialize in these problems. They can be contacted at <http://septic.umn.edu>.

Do not attempt to introduce antifreeze, salt or other system additives into a frozen septic system. Building a fire over a frozen system is also not a good idea, nor is continually running water an effective remedy. Also, never run raw sewage onto the ground in an effort to bypass a frozen system.

Preventative Measures

Before cold weather arrives, a layer of up to 12 inches of mulch over the septic tank and pipes will provide effective insulation for the system. This can include hay, straw, leaves or other loose materials. Letting the grass grow longer over the system late in the summer is also an effective means of adding insulation.

Use more and warmer water when possible. Plan laundry and dishwasher use to spread out the time between applications. Fix any leaking connections before cold weather sets in, and consider adding heating tape to vulnerable pipes. Keep vehicles and foot traffic away from buried pipes and septic tanks, and check all risers, inspection covers and manhole covers to ensure access to cold air is blocked.

If leaving home for an extended period, consider having the septic tank pumped out to prevent freezing of the effluent inside. Another option is to have someone come into the home and use sufficient amounts of warm water to make the system function properly.

Other measures include replacing system pipes with insulated versions, adding Styrofoam over the septic tank, and adding more soil cover over the tank and pipes.

For more information, contact RJ Inskeep, Midwest Assistance Program, by phone at 605-391-3279 or email at rinskeep@map-inc.org.