

ANR-790-1.2.5

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Protecting Water Quality Understanding Your Septic System And Water Quality

As a homeowner, you can have a significant impact on how well your septic system works by the way you maintain it. A well-maintained system will function without problems for many years. A failing septic system, on the other hand, is a nuisance and a health hazard that can result in pollution of wells, lakes, and streams.

By understanding your septic system—what it is, how it works, and how to properly maintain it—you can avoid septic system failures.

What Is A Septic System?

There are a number of different septic systems, each with its own design. The conventional system is the one most commonly used in Alabama. It consists of two main parts: the septic tank and the soil absorption system.

What Takes Place In The Septic Tank?

The septic tank is simply a container usually prefabricated from concrete. The tank's primary purpose is to retain and digest or decompose the solid wastes while releasing liquid sewage effluent to the absorption field.

All of the wastewaters from the home should flow into the septic tank, even waters from the shower, bathtub, and washing machine, which can contain disease-causing germs or environmental pollutants. As wastewater flows into the tank, the heavier solid materials settle to the bottom (forming a sludge layer), the lighter greases and fats float to the top (forming a scum layer), and the liquid (sewage effluent) flows out of the tank. An outlet baffle (or a sanitary tee at the outlet end) prevents solids from flowing out with the liquids.

What Happens In The Absorption System?

The soil absorption system consists of a distribution box and up to 300 feet or more of tile or plastic drain lines buried in the soil. The real treatment of the wastewater occurs in the absorption field—the soil beneath the drain lines.

Sewage effluent flows out of the tank as a cloudy liquid that still contains many disease-causing germs

and environmental pollutants. Effluent flows into the perforated drain lines, passes through the holes in the pipe, and then trickles down through the gravel to the soil. As effluent enters and flows through the soil, many of the bacteria that can cause diseases are filtered out. Some of the smaller germs, such as viruses, are adsorbed by the soil until they are destroyed. The soil can also retain many chemicals including phosphorus and some forms of nitrogen.

What Maintenance Is Needed?

With conscientious maintenance, a septic system should work correctly for many years. Such maintenance begins with water use and waste disposal habits. Since your family will determine which materials enter the system, you should establish rules for proper use and maintenance. Some suggestions follow.

Water Conservation. Each gallon of water that flows into the drain must be treated and disposed. Typical indoor water use is about 50 to 70 gallons per day for each person in the family. A number of water-saving devices and just plain water conservation techniques may double the life of your system. Repair all leaky plumbing fixtures, and, if possible, reduce the amount of water used for bathing, doing laundry, and flushing the toilet.

Proper Disposal Of Household Wastes. Avoid pouring liquid fats, grease, or oils down the kitchen sink drain. Fats and greases solidify and can block parts of the system. Do not deposit coffee grounds, wet-strength towels, disposable diapers, facial tissues, feminine hygiene products, cigarette butts, and similar nondecomposable materials into the house sewer. None of these materials will decompose, and they will cause a rapid accumulation of solids in the septic tank.

Most septic tanks can handle normal amounts of detergent, but some drain cleaners, bleaches, organic solvents, oven cleaners, paints, paint thinners, pesticides, and a variety of other petroleum products may be harmful. They can kill the bacteria that help break down the solids in the septic tank and may also enter groundwater.

ANR-790

Water Quality 1.2.5

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Restrict the use of your garbage disposal if you have a septic tank system. Garbage disposers can overload the system with solids which may spill over into the absorption lines and clog the soil.

Regular Pumping. Pump the system regularly. If a septic tank is not pumped out regularly, solids build up until they are carried along with the wastewater into the absorption field where they clog soil pores. When this happens, the system fails and a new absorption field must be built.

Conclusion

You are a key factor in how well your septic system functions. The old adage “out of sight, out of mind” is not applicable to septic systems. Any time and money you spend to properly maintain your system will be returned in the long run as you avoid the headaches and expenses associated with trying to remedy a failing septic system.

Reference

Hoover, Michael T. 1990. Soil Facts: Septic Systems And Their Maintenance. AG-439-13. North Carolina Cooperative Extension Service. North Carolina State University. Raleigh, NC.

Tips For Maintaining Your Septic System

- Make a diagram showing the location of your septic tank, absorption field, and repair area.
- Install a watertight concrete riser over the septic tank to simplify access.

- Maintain adequate vegetative cover over the absorption field.
- Keep surface waters away from the tank and absorption field.
- Keep automobiles and heavy equipment off the system.
- Keep any building additions, pools, driveways, or other construction work away from the septic system or the repair area.
- Plant trees or shrubs away from drain lines.
- Use water conservatively. Typical indoor water use is about 50 to 70 gallons per day for each person in the family.
- Avoid pouring grease or cooking oils down the sink drain.
- Put only domestic wastewater into the system. Adding other materials (special additives, chemicals, sanitary napkins, and so on) may harm the system.
- Restrict the use of your garbage disposal.
- Have the solids pumped out of the septic tank periodically.

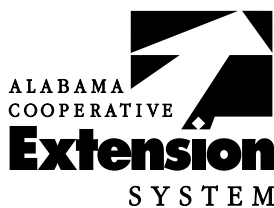
The following articles in Chapter 3 of the Water Quality series may be helpful:

On-Site Sewage Treatment

Planning For A Septic System

Understanding Septic System Design And Construction

Maintaining A Septic System



ANR-790-1.2.5

This publication, supported in part by a grant from the Alabama Department of Environmental Management and the Tennessee Valley Authority, was prepared by James E. Hairston, *Extension Water Quality Scientist*, assisted by Leigh Stribling, *Technical Writer*.

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UPS, **New June 1995**, Water Quality 1.2.5