

On-Site Sewage Management System

An owners reference guide



**GWINNETT COUNTY BOARD OF HEALTH
ENVIRONMENTAL HEALTH SECTION**



"Depend on Us to Protect Gwinnett's Health"

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*** Some Pictures Courtesy of The National Small Flows Clearing
House at West Virginia University**



You're Not Alone!

Gwinnett County is considered to have one of the greatest concentrations of septic systems in the U.S.A. Over 75,000 home and business addresses use septic systems for domestic waste disposal. That is nearly 30 million gallons of wastewater entering the soil daily from septic systems and returning to the natural water table.

More than 25 million homes, encompassing almost 25 percent of the U.S. population, dispose of domestic wastewater through septic systems. It's important for all of us to know what a septic system is, how it works, and what our responsibility is in making sure it works effectively.

In areas where sanitary sewer is not available, wastewater must be disposed of on the property. Every drop of water that goes down the drain or toilet carries with it contaminants, chemicals, and bacteria or viruses that we want to remove. The water from washing machines, baths, toilets and other uses must go somewhere. That is where your septic system comes into play. It is your personal wastewater treatment system.

What Is An On-Site Sewage Management (Septic) System?

A typical septic system contains two major components: a septic tank that collects solids, and the absorption field or drainfield that disposes of the liquid waste. The tank and lines are buried under the ground and help disperse the wastewater we create into the soil. If designed, installed, and maintained properly, a septic system can be a cost effective, efficient way of disposing of wastewater on your property (Figure 1).

Figure 1 shows a typical household system for wastewater generation, collection, treatment and disposal.

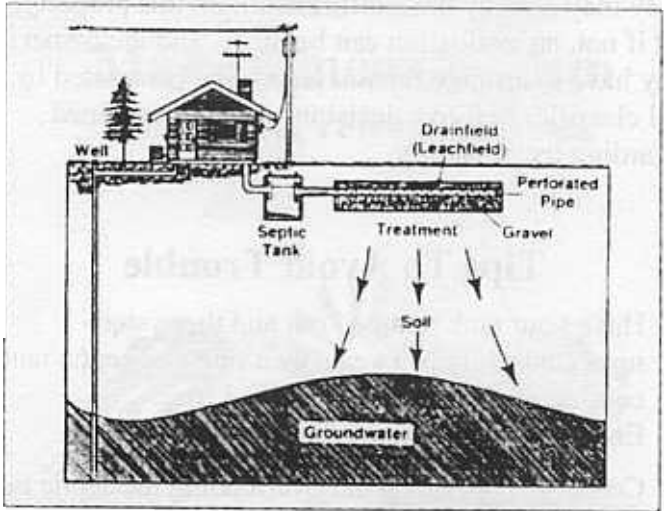


Figure 1. Farmstead or Home Septic Tank System (Adapted from Arkansas Farm*A*Syst)

Septic Tank:

The septic tank is an underground watertight container built to receive sewage and retain the liquid portion for approximately 24 hours before sending it to the absorption field. The tank typically is made of concrete but fiberglass and plastic are also used. Baffles (or Tees) are placed on the inlet and outlet to insure proper flow of waste. Current requirements call for a two-compartment tank (Figure 2) but older tanks still may have a single compartment. While typically designed to hold a minimum of 1,000 gallons of sewage, the size of the tank may vary depending upon the number of bedrooms, and use of a garbage disposal.

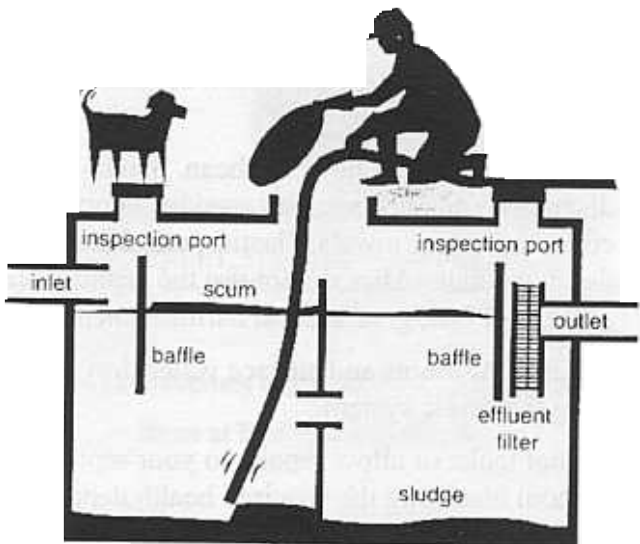


Figure 2: Cross-section of a two-compartment septic tank being pumped

The primary purpose of the septic tank is to separate the solids from the liquids and to promote partial breakdown of contaminants by microorganisms naturally present in the wastewater. The solids, known as sludge, collect on the bottom of the tank, while the scum floats on the top of the liquid. An effluent filter can be used to help prevent small particles from entering the drainfield. The sludge and scum remain in the tank and should be pumped out every 3-5 years.

Absorption Field:

The wastewater that exits the septic tank may contain many potentially disease-causing microorganisms and pollutants. The absorption field is the most critical part of the septic system for reducing these contaminants and dispersing the effluent (outflow).

A conventional absorption field consists of trenches where perforated pipe is laid over a bed of aggregate. This aggregate may consist of stone, tire chips, styrofoam chips or other approved material. Other alternative systems and high capacity chambers are available for installation, but please refer to the Gwinnett County Environmental Health Section for details.

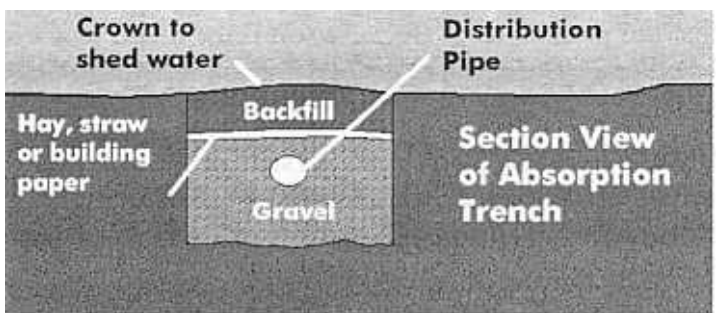


Figure 3: Cross-sectional view through trench

The effluent is distributed through the perforated pipe and exits at the holes along the bottom. The liquid then trickles through the aggregate where it is stored until absorbed by the soil. The absorption field uses nature's physical, chemical, and biological processes to clean the wastewater.

The soil acts as a natural buffer to filter out many of the harmful bacteria, viruses, and excessive nutrients that are still present in the wastewater. Then, the water continues down and eventually enters the water table.

The soil can only drain or percolate a limited amount of water at a time and not all soils are suitable for septic absorption fields. (Refer to the Soil section). Using excessive amounts of water can flood the system and cause effluent to surface on top of the ground.

The number of bedrooms in the home determines the length of absorption line. They can only hold enough water to accommodate average water consumption. (See Septic folder for averages) Excessive water use can cause system failure.



When Should I Pump The Tank And Will Additives Help Breakdown The Solids?

Pump the tank every 3-5 years and do not use septic tank additives, commercial septic tank cleaners, yeast, sugar, etc. These products are not necessary and some may be harmful to your system. Only pumping and cleaning routinely can insure a happy septic tank.

Solids that build up in the tank and are allowed to pass from the septic tank may clog the absorption field, and cause permanent damage and premature failure. Keeping solids out of the field not only prevents clogging, but also reduces potential expensive repairs or replacement costs and helps ensure the ability of the soil to effectively treat the wastewater.

How Do I Know My System Is Failing?

Even the best-designed and maintained system will eventually fail. They cannot be made to last forever. Soil type, water conservation, and quality of maintenance will determine the life expectancy of any septic tank system.

Follow your nose. The most obvious evidence is wet areas on your property having a sewage odor that are located above the absorption field. This will occur for many reasons and indicates that the system needs replacement. Other premature indicators are water backing up in the house or slow flushing toilets. If you have concerns that your system is having problems, contact a licensed septic tank contractor.

Who Is Responsible For Maintenance And Repairs Of My System?

It is the responsibility of the homeowner to maintain, repair, or replace all components of the septic system so that it protects the environment and public health.

Just like all major systems in your home including the air conditioner, electric wiring, and dishwasher, if you own the home you own those items also. If it breaks you fix it. The same is true with your septic system. This major component of your home should be of highest priority.

Once failure is identified, repairs must be made in a timely manner. Failure to do so can result in upset neighbors, endangering public health and the environment, and legal action being taken against you.

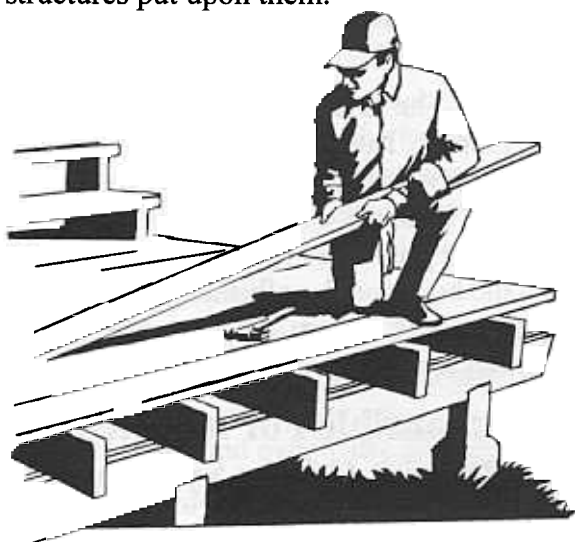
Treatment and disposal of wastewater should be one of the primary concerns for any homeowner. It's important, so don't ignore it.

Improvement/Additions To My Home Or Property: Will My Septic System Be Affected?

As a matter of fact, yes. Your septic system was designed to fit your property and the particular house you bought. Before you consider adding an extra bedroom or office, swimming pool or other addition, consult your septic inspection report and the local health department.

Any foundational structure including decks, pools and garages must not cover or interfere with the septic system. The tank and lines must be accessible for maintenance and repairs.

There is an area on your property reserved for future repair. Both the area where the system is now and the future repair area must not be disturbed nor have any structures put upon them.



If you are thinking of any improvements or additions please come by the Gwinnett County Environmental Health Section for consultation and permitting.

Why Are Soils So Important To A Septic System?

Soil is the most important factor in determining whether a septic system will work properly and protect the environment. As in Figure 1, the soil acts as a filter, which cleans all the wastewater you generate before it enters the ground water. Physical, biological, and chemical processes occur in the soil to treat the waste.

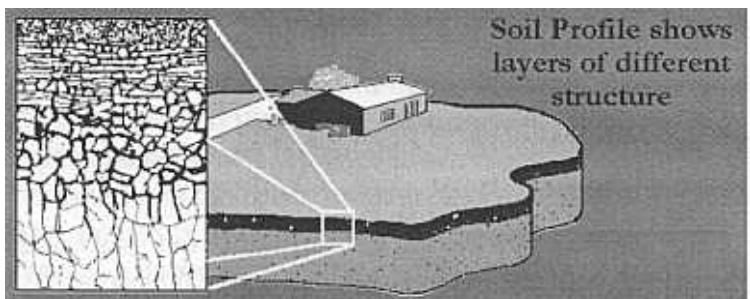
Not all soils are good for septic absorption fields and only a soil report will determine suitability.

A licensed and certified soil classifier performs a soil report.

When a soil classifier takes core samples of the ground, he/she can give a good assessment of what the soil characteristics are down to six feet. Is there bedrock, or a water table that will interfere with a septic system? Will the ground properly drain (percolate) at 3-4 ft.? Is this type of soil adequate for installing septic absorption fields? These questions must be answered before any construction can take place on a non-sewered property.

Since 1990, all newly developed non-sewered lots must have a soil analysis performed before permitting. This requirement has drastically reduced the amount of systems that fail prematurely. Because soil is the major factor in whether a system works properly, a soil report can detect problems that may arise.

If you intend to repair a septic system, a soil report is strongly recommended and may be required by Environmental Health. Soil characteristics can change from one location or depth to another.



Buyer Beware!

If you are about to purchase a lot to construct a home in an area, which is not served by a public sanitary sewer system, contact the county health department to find out if that lot

has been approved for development using a septic tank system.

Not all lots can be developed for septic system use. They may already have information on this property, but if not, an evaluation can be made, and the owner may have to arrange for soil tests to be completed by a soil classifier before a decision can be determined regarding its suitability.

Tips To Avoid Trouble

Have your tank pumped out and the system inspected every 3-5 years by a licensed septic tank contractor (a list can be obtained from Environmental Health).

Conserve water to avoid overloading the septic tank system. Be sure to repair any leaky faucets or toilets. Use low-flow fixtures.

Do not use septic tank additives, commercial septic tank cleansers, yeast, sugar, etc. These products are not necessary and some may be harmful to your system.

Learn the location of your septic tank and absorption field. Keep a sketch of it handy for service visits.

Don't allow anyone to drive/park over any part of the system or put any foundational structures on the septic tank or field. The area over the absorption field and tank should be left undisturbed with only mowed grass cover. Roots from nearby trees or shrubs may clog and damage your drain line.

Check with the Gwinnett County Health Department if you have a garbage disposal to make sure that your septic system can accommodate this additional waste.

Your septic tank is not a trashcan. Do not put disposable diapers, sanitary napkins tampons, condoms, paper towels, plastics, etc. down the drain or toilet. Also, do not use the septic system to dispose of fats, greases, and harmful chemicals.

Divert roof drains and surface water flow away from the septic system.

Do not make or allow repairs to your septic system without obtaining the required health department permits. Use licensed septic contractors only.