Septic Tank Systems

Most people don't really think much about the wastewater created in the home from kitchen, bathroom, or laundry areas. Out of sight and out of mind is what happens in most cases with septic systems until problems occur. However, failing septic systems are more than a nuisance - they are a health hazard and can cause significant problems in the coastal environment.

Maintaining a septic tank system is more than pumping the tank after the system has started failing. Instead, it will usually be necessary to install a new drain field. This can cost quite a lot of money and will result in a major disturbance to your landscape from digging up your yard.

A septic system is an efficient, inexpensive, convenient, and safe method for treating and disposing of household wastewater before it is recycled back to the groundwater system. However, the system must be properly installed and maintained. A conventional septic system consists of four main parts.

1. The **source** is where the wastewater is generated.
2. The **septic tank** collects and stores the solids that come from the house.
3. The **drain field** is made from pipe and gravel that are installed as trenches in the soil. The drain field delivers wastewater to the soil.
4. The **soil beneath the drain field** purifies the wastewater before it flows to the underlying groundwater.

Knowing the general condition of your septic system can give you a better grip on potential maintenance issues for your system. It will also help you keep up to date on the latest state rule changes and how it may affect you and your system. Your local Cooperative Extension Center can help you with the new information from the state as it becomes available.

Once the purified wastewater drains through the soil, it enters the water table and becomes part of the groundwater. One way to help protect your drinking water and other water resources from your septic system is to separate the two. North Carolina law requires that septic system be placed at least 100 feet away from a well or water source.

Trees or shrubs located closer that 100 feet from septic systems may cause problems. Roots from plants sometimes enter the septic tank drain field, the tank, or the pipes, preventing the proper working of the septic system. Do not plant water-loving trees or shrubs near the septic system.

The soil drain field is designed for no more than 120 gallons per bedroom per day. Most people use about 50 gallons per day of water. Therefore, a family of four will typically use about 200 gallons per day of water. The soil and the drain field may not be able to handle the volume of wastewater produced in your home if your family uses more than 50 gallons a day per person. When the amount of water entering the septic system nears design capacity, your septic system may fail.

Reduce your water use by doing the following:

- Periodically check the toilets and faucets to make sure they are not leaking; fix immediately if they are leaking.
- Use 1.6 gallon (or less) per flush toilets.
- Use faucet aerators in sinks and flow reducer nozzles in showers.
- Limit the length of your shower to 10 minutes or less.
- Do not fill bathtubs with more than 6 inches of water.
- Do not wash more than 1 or 2 loads of laundry per day.
- Adjust the water level in the washing machine so it matches the size of the load you are washing.
- Do not run the dishwasher until it is full.
- Do not overuse large garden tubs, Jacuzzis, or other high volume tubs.

To reduce the possibility of septic system failure, restrict the use of the garbage disposal unit. Put most of your table scraps into the trash rather than down the drain. Garbage disposals usually double the amount of solids added to your septic tank and can cause poor performance of the drain field. If you use a garbage disposal, you should increase the frequency of having the tank pumped due to the buildup of solids.

Do not pour grease, creams, butter, cheeses, or cooking oils down the sink drain. Grease can harden in the septic tank and/or drain field or clog the soil so that no water can flow through the soil. If that happens you will need a new drain field.

Use moderate amounts of cleaning products and do not pour solvents or

other chemicals down the drain. Do not dispose of extra cleaning products or pain products by pouring them down the drain. Do not use toilet cleaners that are meant to be placed in the toilet tank. These chemicals can kill the good bacteria in your septic tank and in the soil beneath your drain field.

Do not put items down the sink drain or toilet that may build up the solids level in the septic tank or clog the septic system. These items include cigarette butts, sanitary napkins, tampons, condoms, disposable diapers, paper towels, cat litter, egg shells, coffee grounds and facial tissues.

Do not cover the tank or drain field with asphalt or concrete. Do not build any additions to your house, install an above or below the ground swimming pool, or put a driveway over the drain field. Before any construction in the area adjacent to the drain field, first check with the Craven County Health Department for any permits that may be needed. A River Bend zoning permit and a Craven County building permit is also required. For proper function and maintenance, your entire septic system must be accessible. Air must be able to get into the soil so that the proper sewage treatment occurs. Use a property layout sketch to help you place new structures on your property away from the septic system.

After a few years, the solids and greases that collect in your septic tank should be pumped out by a professional septic tank pumper and disposed of at an approved location. If not removed, these solids will eventually block the soil in your system and cause sewage to back up into your home or come to the ground surface in your yard. If that happens it is too late to solve the problem by just pumping the tank and you will have to build a new drain field on a different part of your lot.

How often your septic tank needs to be pumped depends on three things:

- The size of your tank.
- The amount of wastewater you produce.
- The solids content of your wastewater.

For example, 4 persons in the household with a 1000 gallon septic tank, the tank should be inspected and pumped at least every three years. Septic tanks installed since 1999 are required to have an outlet filter that must be cleaned periodically by a certified professional or you could have a sewage back up into your home.

For additional information contact Craven County Cooperative Extension Service at 252-633-1477 or River Bend Water Resource Dept. at 252-638-3540.

Typical Septic Tank System Layout