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Septic System Savvy

How to keep your sanitary drain field working the way it should.

By Courey Tournet

With all due respect to the late beloved Erma Bombeck, author of *The Grass is Always Greener Over the Septic Tank*, the grass actually is greener over the *drain field*—which lies just beyond the septic tank. Like her, most people have little idea of how a septic system works, which is why failing sanitary systems are a serious environmental, health, and economic problem all over the U.S. today.

Unfortunately, nobody gives you an owner's manual when a septic system is installed. In fact, some people don't even know they have a system. As a result, many septic systems fail prematurely and unneces-

sarily. And the price for failure is steep: About 1,200 people die each year from contaminated water; failing septic systems are the leading source of waterborne disease outbreaks in the country today. Moreover, septic system replacement can be expensive, with costs running from \$3,000 to more than \$20,000 in worst-case scenarios.

The septic system, being the mystery that it is, is not always easy to comprehend. Here's the short explanation: the domestic water that comes into the house is used for cooking, washing, showering, and flushing. Both the drained and flushed water goes through the

household waste pipes and out a four-inch line to the septic tank, buried about ten feet from the house. The container may hold between 1,000 and 3,000 gallons and is designed to separate solids from liquids while, over time, encouraging the bacterial decomposition of the solid material.

The liquid, by this time mostly watery effluent, flows out of the tank into a drain field—a series of perforated pipes buried in a bed of gravel and covered with earth. Microorganisms in the surrounding soil eliminate pathogens in the water that were not destroyed by the bacterial digestion process in the tank.

Septic system failure is actually very simple to understand. When a well-designed septic system fails, it's usually the soil, not the tank, that is at fault because it won't allow liquid to pass through. In most cases, the soil fails when it becomes plugged with solids.

Fortunately, there are simple steps you can take to ensure that your everyday actions are part of the solution and not part of the problem—read on.

Avoid Excessive Water Use

You can easily damage your septic system by doing a large number of laundry loads in a short period of time. In standard septic systems, solid materials settle in the tank while effluent flows out into the soil to be filtered and cleansed. If you put more water into the septic system than it is built to handle, the high volume of water will flood the system and may flush solids out of the tank into the drain field. A typical washing machine can use up to 62 gallons of water per wash load. On a heavy wash day you can easily put 400 or more gallons of water down the drain in a few hours. The solution is to spread out your water use. Do one or two loads of laundry per day, rather than a dozen loads on Saturday morning.

Mechanical water softeners can also damage your system by putting too much water through the septic

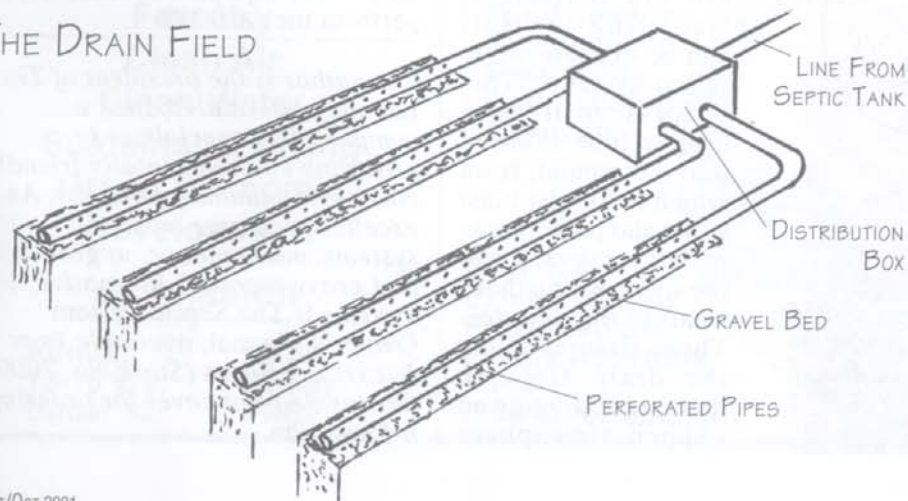
system. These devices can put down the drain every week several hundred gallons of water that are not contaminated and do not need to go through the treatment process. Fortunately, there are a couple of solutions to this problem. You can upgrade your softener with a newer efficient model that uses less water and regenerates on demand. You can also install a separate mini-septic system for your softener.

Prevent Solids From Leaving the Tank

First of all, you should get your tank pumped at regularly scheduled intervals to prevent excessive accumulation of solids in the tank. Under normal conditions, you should have the tank inspected and pumped at least every couple of years, and in some cases more frequently. *Very important:* Tanks should be pumped and inspected through the manhole cover, not the inspection pipe.

Effluent filters, about \$70, are installed—by a contractor—in the exit baffle of the tank; they prevent the larger solids from getting out to the drain field. These filters are cleaned every few years when you have your tank pumped. They are cheap insurance and, along with a washing machine filter, one of the best things you can do to protect your system. Two manufacturers are Orenco Systems Inc., 800-348-9843, www.orenco.com/ and Zabel Environmental Products, 800-221-5742, www.zabel.com/.

THE DRAIN FIELD



Be Conservative With Household Cleaning Products

Excessive use of chlorine bleach, detergents, and lye-based cleaners can contribute to septic system failure. If you do more than five loads of laundry a week using bleach, problems could arise. Avoid powdered detergents, as they contain nonbiodegradable fillers that can plug up your system. Also, be careful with harsh automatic toilet bowl cleaners, which have put quite a few septic systems out of commission.

While we're on the subject, there are other things you should never flush or put down the drain. These include motor oil, paint thinner, and photo chemicals; oven-cleaning agents, fats, and pesticides; and certainly not kitty litter, coffee grounds, and disposable diapers and sanitary napkins. Root inhibitors and similar products containing copper sulfate meant to destroy invasive growth also kill the beneficial organisms that break down waste in the system. And even septic tank additives containing enzymes are not particularly beneficial. They tend to break down standing sludge into smaller particles that are then flushed out into the drain field, where they can clog the system.

Use a Washing Machine Filter

Did you know that washing machines are one of the leading causes of septic system failure? The primary

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Septic System Savvy

culprit is lint generated in the washing cycle, which clogs the soil in drain fields. The typical family washing machine produces enough lint every year to carpet an entire living room floor. Lint screens and nylon socks trap less than 5 percent of the lint fibers. These minute particles, because they are so small and light, do not settle in the septic tank. Instead, they stay in suspension and are flushed out to the drain field where they plug up the pores of the soil bed.

To compound the problem, much of our clothing and other washable items are now manufactured with synthetic materials such as polyester and nylon. These substances are not biodegradable and will not break down in a septic system. Instead, particles accumulate and clog the soil. Once these materials enter the drain field, there is no way to remove them. Lint, however, can be prevented from entering the septic system through the use of a reusable in-line filter, which attaches to your washing machine discharge hose.

The filter, called the Septic Protector, sells for about \$150 from The Laundry Alternative Inc., 888-813-9559, www.laundry-alternative.com/

Don't Use a Garbage Disposal

Food and kitchen-waste disposal can usually be handled by outdoor composting or through your garbage service. The convenience of an in-sink garbage disposal can increase the volume of solids in the system by as much as 50 percent. Undigested food scraps take considerably longer to break down than food that's been consumed, so the solids build up and must be pumped from the tank more frequently.

When It's Too Late

If your system should fail—signaled by sluggish flushing, backup, or “daylighting” of liquid effluent—all may not be lost. In quite a few cases, a tune-up can resolve certain problems and you can avoid the high costs of replacing the system. This tune-up includes properly pumping the tank, cleaning or jetting the drain field lines, and installing washing machine and effluent filters. Problems caused by pipe and root blockage or high water tables are not always directly related to the septic system.

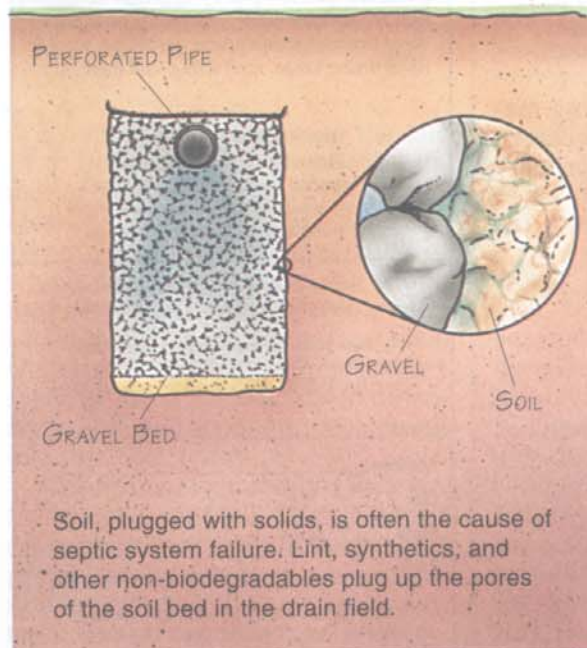
If these measures are not sufficient, fracturing the soil can rejuvenate some failed systems. This process utilizes a hollow tube inserted into the ground, from which a 300-psi blast of air and polystyrene pellets is injected into the soil creating thousands of tiny fissures. These fissures allow the drain field to drain, encouraging an oxygen atmosphere

The Field of Dreams

Here are a few things to keep in mind to encourage the health of your septic system in general and the drain field in particular:

- * Discharge only biodegradable wastes into system.
- * Divert surface runoff water from roofs, patios, driveways, and other “hardscape” areas away from your drain field.
- * Keep your septic tank cover accessible for routine maintenance.
- * Have your septic tank pumped regularly. It should also be inspected for leaks and cracks and to make sure the exit baffle is in place.
- * Don't dig in your drain field or build anything over it.
- * Don't drive over your drain field or compact the soil in any way.
- * Don't plant trees or shrubbery in the absorption field area, because the roots can get into the lines and plug them. Grass is the only thing that should be planted on or near a drain field.
- * Don't cover the absorption field with hard surfaces such as concrete or asphalt.

TRENCH & SOIL DETAIL



ILLUSTRATIONS BY DON OSBY

and allowing the aerobic bacterial colonies to repopulate. This process can be performed in a matter of hours with no digging or damage to the yard. The cost will range from \$1,000 to \$2,000, which is less expensive than a replacement septic system. A company called Terralift International (www.terraliftinternational.com/) specializes in the equipment necessary to perform the work. 🏠

The author is the president of The Laundry Alternative, Inc., a company that specializes in providing environmentally friendly, cost-saving laundry products. An excellent resource on septic systems, maintenance, upgrades, and graywater and alternative systems is The Septic System Owner's Manual, available from BACKHOME BOOKS (Stock No. 7009). See inside front cover for ordering information.