



The **SEPTIC SYSTEM** Owner's Manual

**A Guide to the Proper Care and Maintenance
of Your Onsite Wastewater Treatment System**

*Courtesy of
Infiltrator Systems, Inc.*

What's Inside...

The Residential Septic System: Your Onsite Wastewater Treatment PlantPage 1



The Infiltrator Chamber System: Today's Modern SolutionPage 4



Care and Maintenance of Your Infiltrator Chamber SystemPage 8



Dear Septic System Owner,

Clean water is our heritage – it's also our responsibility. As the population grows and more land is developed, we must all find new ways to safeguard our environment for future generations.

At Infiltrator, we're doing our part by using science to design better performing septic systems. We manufacture reliable products from recycled material. We've developed installation methods that minimize disruption of the environment. All this provides septic system owners with a product they can trust for superior performance, ease of maintenance, and long-term value.

What started in my own backyard as an idea for a better leach-field, is now a worldwide company with more than 1.5 million Infiltrator systems in service in the U.S. and 24 other countries. Today, one in every four systems installed is an Infiltrator system.

This Septic System Owner's Manual explains how septic systems work, describes the benefits of the Infiltrator system, and provides valuable tips for proper system maintenance. This is part of our commitment to making sure that clean water is everyone's business.



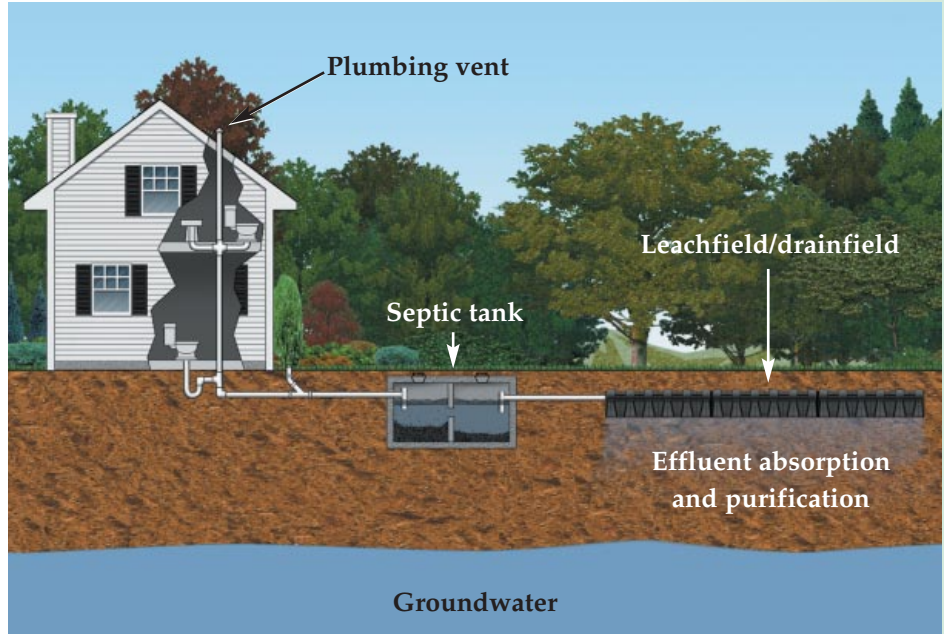
**Jim Nichols, President & CEO
Infiltrator Systems Inc.**

The Residential Septic System: Your Onsite Wastewater Treatment Plant.

What is a Septic System?

A septic system is an onsite wastewater treatment system that processes and purifies household waste (effluent). The effluent consists of blackwater (toilet wastes) and greywater (kitchen sink, bathtub and laundry wastes).

A septic system has two components: a septic tank and a leachfield or drainfield. Primary treatment occurs in the septic tank, where bacteria digest organic materials in the wastewater. The effluent then flows into the leachfield for secondary treatment. Here, bacteria complete the digestion and purification process as the wastewater slowly leaches or infiltrates into the soil.



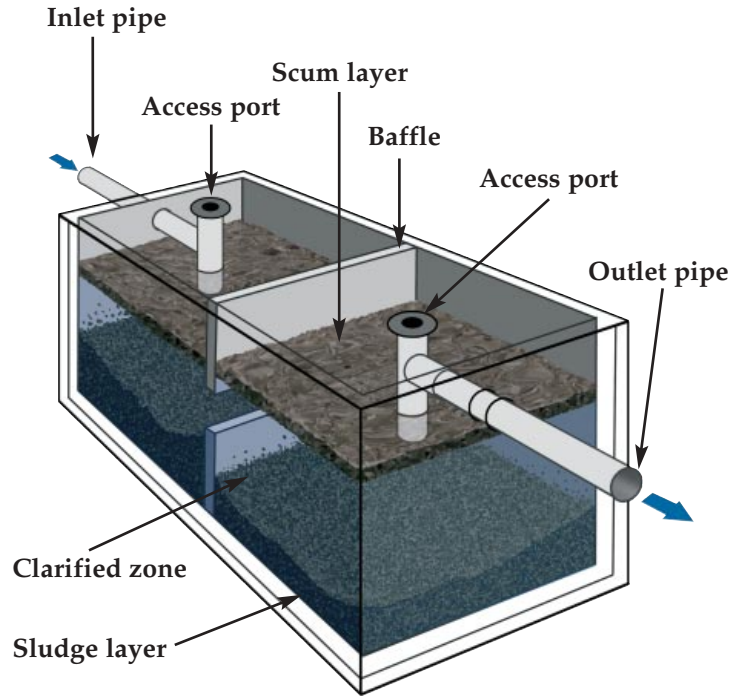
A standard septic system has two components: a septic tank and a leachfield.

System Components: The Septic Tank.

The septic tank is a “watertight” underground box, usually concrete, about eight feet long, four feet wide, and five feet deep. It has at least a 1,000-gallon capacity for retaining, storing, and treating solids, in addition to releasing effluent into the leachfield, sometimes called a drainfield.

As wastewater flows into the tank, heavy solids settle to the bottom into a sludge layer, while grease fats float to the top forming a layer of scum. Between these two layers is a clear zone of liquid called the clarified zone.

Found in all three of these layers are billions of bacteria that live naturally in the tank and perform the first phase of treatment to break down solid matter. They digest the solid materials. In the process, gases are produced, which are vented from the septic tank through the plumbing vent on your rooftop.

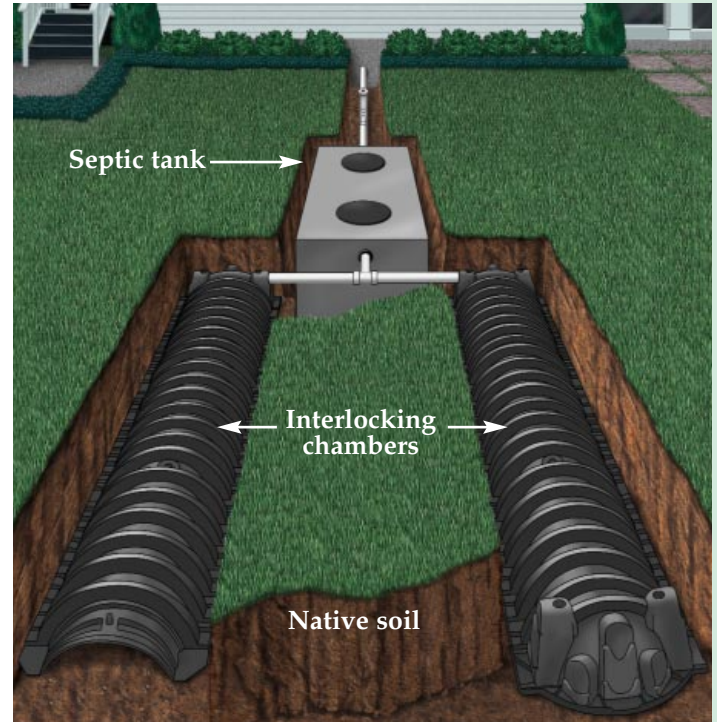


The septic tank retains, stores and treats solids before releasing effluent into the leachfield.

System Components: The Leachfield.

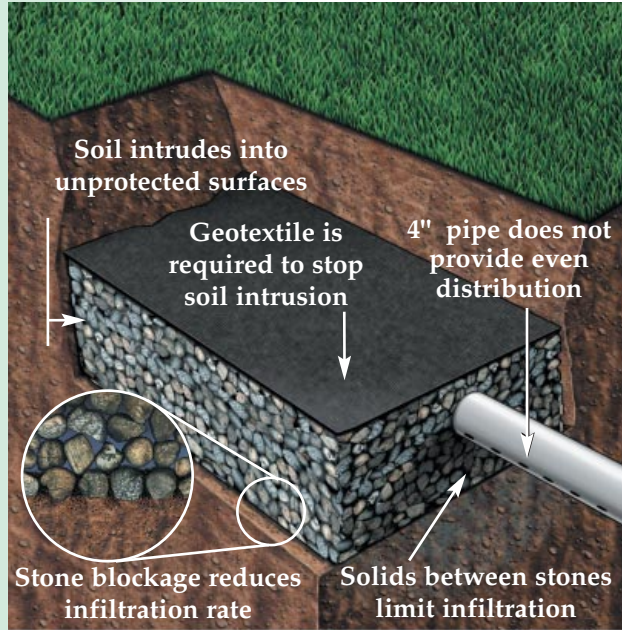
From the septic tank, partially treated effluent flows into a leachfield, which typically has two or more trenches. This is where effluent is naturally purified as it percolates down through the soil.

For proper effluent purification, the distance between the trench bottom and the water table should be equal to or greater than the minimum distance allowed by your local health department. The soil acts as a biological filter, removing harmful substances before the effluent reaches the groundwater.



Effluent flows into the leachfield where it is naturally purified as it percolates down through the soil.

The Infiltrator Chamber System: Today's Modern Solution.

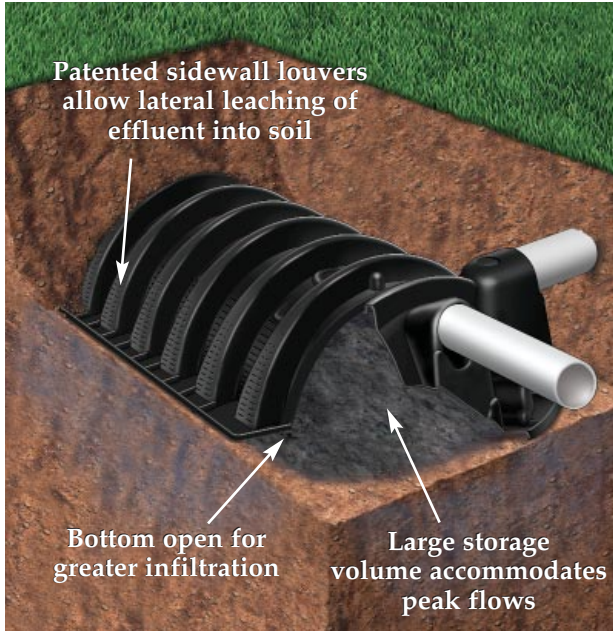


Stone and pipe systems can fail because solid matter clogs the space around the stone.

Stone and Pipe Systems.

Old-fashioned systems use gravel or crushed stone in the leaching trenches to create void space to store the effluent and release it slowly. However, such systems are prone to eventual failure as the voids (empty spaces) around the gravel become plugged. This phenomenon occurs over time as solids build up between the stones, limiting infiltration of water into the soil. As the gravel settles, it also tends to compact and accumulate fines (small soil particles), further reducing the infiltration rate.

Your leachfield system is constructed with Infiltrator leaching chambers. These units, manufactured of PolyTuff™, a proprietary blend of polyolefin plastic, interlock together to form a continuous drainage area. This state-of-the-art system offers many advantages over old-fashioned stone and pipe systems. The chambers treat more effluent, more efficiently, in a smaller area. They also have a much greater storage volume than a gravel-filled trench and offer a very large surface area for effluent infiltration into the soil.



Infiltrator chamber systems' design eliminates the need for stone. The entire trench bottom is open for unobstructed infiltration.

The Infiltrator Chamber System.

In 1987, Infiltrator Systems introduced an innovative new technology in septic leachfields, which is now the number one choice in the United States. Infiltrator® chambers are hollow structures that attach end-to-end. They are installed in trenches or beds without gravel (except where local codes require the use of gravel). The entire bottom of the trench is open for unobstructed infiltration of water. The large storage volume within the hollow chambers accommodates peak flows of effluent from the home. Infiltrator chambers also feature patented sidewall louvers that allow lateral leaching of effluent into the soil.

The Advantages of Infiltrator Chambers Over Stone and Pipe Systems.

Infiltrator chambers are today's superior alternative to old-fashioned stone and pipe because they:

- Provide long-term savings due to longer life and greater operating efficiency
- Offer worry-free, long-term service with only simple, routine maintenance
- Protect valuable trees and plantings from damage caused by heavy trucks hauling stone
- Provide greater treatment area to handle more wastewater with higher efficiency
- Offer a "greener" approach utilizing recycled plastic resins to manufacture the chambers
- Are backed by a minimum 1-year warranty and a reputable, service-oriented company
- Can be installed in tight, sloped and curved areas creating less site disruption
- Eliminate the destruction of natural resources and the cost of hauling stone



Infiltrator chamber systems are designed to safeguard our environment for future generations.

The Advantages of Septic Systems Over Sewer Systems.

Another alternative for septic treatment is sewer systems, which pipe waste to a centralized treatment plant, typically near a river or other body of water for disposal after treatment. Besides avoiding the high cost of sewer lines, septic systems are environmentally superior to sewers because they:

- Provide simple, effective onsite wastewater treatment
- Allow the groundwater to be recharged onsite, which makes more clean water available for use
- Avoid contamination of local groundwater caused by ageing sewer lines, which leak untreated effluent into the soil.
- Avoid the environmental disaster of raw sewage discharges from treatment plants during floods or processing accidents.



Infiltrator chambers can be installed in curved, sloped and small areas allowing for optimal land use.

Care and Maintenance of Your Infiltrator Chamber System.

A septic system may be out of sight, but it definitely should not be out of mind. With proper standard maintenance and by being more aware of your daily living habits, you will greatly improve the life and health of your system. Here are some guidelines to help you protect your septic system investment.

Why the Tank Needs Pumping Periodically.

About 95 percent of the sludge and scum that is in your septic tank is broken down by bacteria. The other 5 percent remains in the tank and builds up in the sludge layer. Consequently, your septic tank must be pumped out regularly. Otherwise, solids would eventually fill the tank and wash out into the leachfield. This is detrimental to the overall health and longevity of your system.

CAUTION: If solids do overflow from the septic tank into the leachfield, they will prematurely clog the soil pores (openings). Pumping out the septic tank at that point will not restore the system. The most likely solution would be installing a new leachfield in a different area, which is very expensive and disruptive to your property. This will allow the old system to rest for several years.

Although your tank may be big enough to accumulate solids for several years, you shouldn't take a chance on it. Have it checked by a septic system contractor every two to three years. If you have high water usage or a garbage disposal, the inspections should be more frequent. Use the septic system maintenance record on page 9 to enter and date each inspection and pumping.

Septic System Maintenance Record.

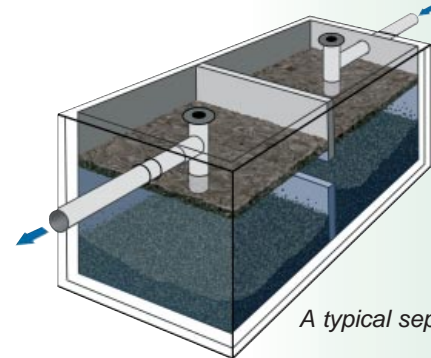
Use the chart below to record standard system maintenance such as the dates the tank was pumped.

Date	Procedure

Locating the Septic Tank.

It's very important to know where the tank is in order to have it inspected and pumped. Here are three different ways to find your septic tank.

1. Ask to see the septic system permit for your property at your local health department, town, or city hall. It will have a diagram of your system on it.
2. See where the sewer line leaves your house; the tank should be about 10 feet outside the foundation wall.
3. Have your septic contractor probe with a steel rod, taking care to avoid damaging the tank or underground utilities.



A typical septic tank.

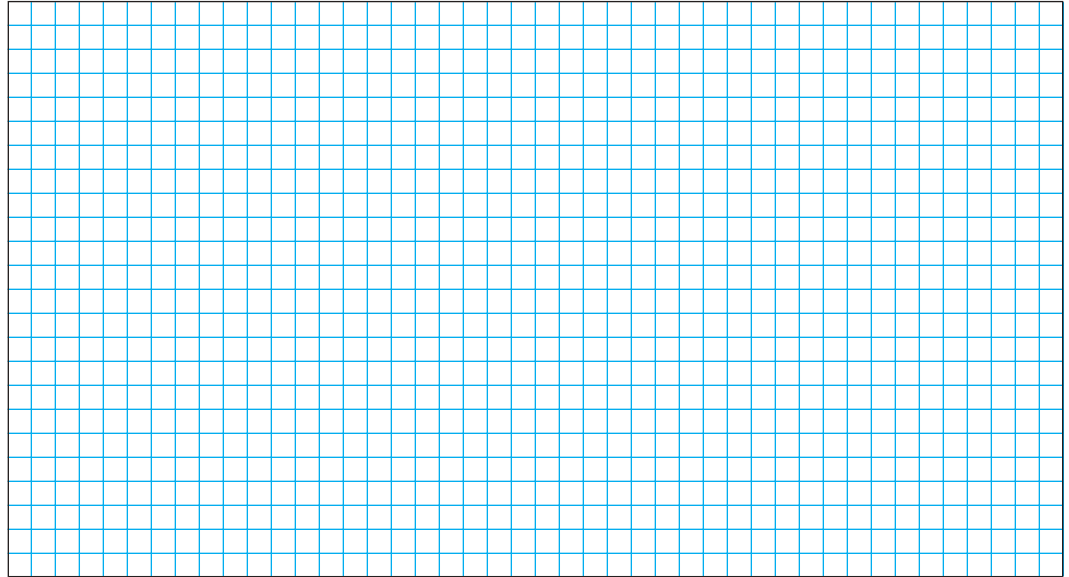
Diagramming the Location.

Once you know where the septic tank is, use the septic system layout below to sketch the location of your house, driveway, septic tank, and leachfield. Depending on your lot size, let each square on the layout equal 5 feet x 5 feet or 10 feet x 10 feet. Measure and record the exact footage from the house to each septic tank access port or cleanout spot.

Contractor

Address

Permit Number



Your septic system layout.

The Daily Ins and Outs of a Healthy Septic System.

The inside story.

You can protect the performance and life of your system by controlling what goes into and through your septic system. Here's how:

- **Conserve water.** Large volumes of water over a short period of time will flush untreated solids out of the septic tank into the leachfield.
 - Practice conservation every day by, for example, turning off the faucet while brushing your teeth.
 - Space out heavy water-using activities such as washing clothes and taking showers.
 - Repair leaky faucets and valves. Consider replacing old toilets that use 3.5 to 5 gallons per flush with new 1.6 gallon fixtures.
- **Keep your drains clean.** Remember that a septic system uses natural biological processes, so only biodegradable waste should go in it.
 - No cigarette butts, tissues, sanitary napkins, disposable diapers, catbox litter, coffee grounds, or cotton swabs. If it is not biodegradable, it doesn't belong in the system.

- No paints, oils, chemical drain cleaners, thinners, solvents, poisons, or pesticides. These toxic chemicals not only kill helpful bacteria, they may also contaminate the groundwater.
- No grease or cooking oils. Grease may harden in the septic tank's scum layer and build up until it blocks the inlet or outlet. If you melt grease and pour it down the drain, it may run through the septic tank and then harden, clogging the soil pores.
- Go easy with your garbage disposal. Using a garbage disposal typically doubles the rate of solids buildup in the septic tank. To avoid frequent pumpouts, compost your garbage or put it in the trash.
- **Go easy with household chemicals.** Disinfectants, ammonia, bathroom cleaners, bleach, etc. can kill the bacteria your system needs in order to operate properly. Allow the system to dilute and neutralize them a little at a time.
 - Don't waste money on additives that claim to boost the bacteria count or extend septic system life. Bacteria are already present by the billions, and additives won't affect the need for periodic pumping.

The Daily Ins and Outs of a Healthy Septic System.

The outside story.

Here's how you can control what happens outside your septic system.

- **Keep surface water away.** Divert downspouts, roof drainage, driveway runoff, and sump pump discharge away from the leachfield. Landscape your yard to channel rainwater away.
- **Encourage the right plants.** Remove trees such as willows that like "wet feet." Their roots may penetrate and damage the leachfield. Grow grass or ground cover over the septic system to prevent soil erosion. Plant beneficial trees such as pines near the leachfield to absorb water.
- **Avoid physical damage.** Don't drive over the system or compact the soil with heavy equipment. Don't dig in the leachfield or build anything over it. Don't cover the tank or leachfield with concrete or blacktop.

Now you're an informed Infiltrator septic system operator.

Most problems with septic systems are due to lack of proper care. With a little attention, your Infiltrator chamber septic system can be a valuable asset to your property. It all comes down to knowing where your system is, protecting it from internal and external problems, giving it regular maintenance, and calling a professional septic contractor when you need help. Follow these simple guidelines and you'll benefit the environment, as well as yourself. Infiltrator chamber septic systems are the premier onsite wastewater system and, now, you're an informed septic system operator.

For more information on septic leaching chamber systems, call Infiltrator Systems at 1-800-221-4436 or visit our website at www.infiltratorsystems.com

Infiltrator Chamber Systems: Performance You Can Rely On.

Here's what homeowners say about Infiltrator septic systems.

"The installation was done without tearing up my whole yard and (even) left a couple of trees."

*Tim Utter
Jones, Michigan*

"No stone expense, no stone cleanup...these (chambers) are just a remarkable idea."

*Cliff Whittemore
Wells, Maine*

"The area needed was 40% less than for stone and pipe, and the chambers could be installed on a sloping site."

*Dick Gregor
Bedford, New Hampshire*

"After learning about Infiltrator chambers from my contractor, I agreed that this was the right way to go."

*Bob Larson
Tolland, Connecticut*

Ask your septic contractor about Infiltrator products and professional installation.

- Knowledgeable about local soil conditions affecting leachfield location and sizing
- Familiar with the applicable local, regional and/or state septic regulations
- Experienced in working with sanitarians, engineers and other authorities
- Skilled at Infiltrator chamber installation using factory specified procedures
- Active member of the local business community



Nearly 1.5 million homeowners in the United States depend on Infiltrator Systems' environmental leaching chambers for safe, long-lasting septic system performance.

INFILTRATOR[®]

SYSTEMS INC

Environmental Onsite Wastewater Solutions

6 Business Park Road • P.O. Box 768
Old Saybrook, CT 06475
800-221-4436 • 860-577-7000
FAX 860-577-7001

www.infiltratorsystems.com



The Quick4™ Standard Chamber



U.S. Patents: 4,759,661; 5,017,041; 5,156,488; 5,336,017; 5,401,116; 5,401,459; 5,511,903; 5,716,163; 5,588,778; 5,839,844 Canadian Patents: 1,329,959; 2,004,564 Other patents pending.
Infiltrator, Equalizer and SideWinder are registered trademarks of Infiltrator Systems Inc. Infiltrator is a registered trademark in France. Infiltrator Systems Inc. is a registered trademark in Mexico.
Contour, Contour Swivel Connection, MicroLeaching, MultiPort, PolyTuff, SnapLock, ChamberSpacer, PosiLock, Quick4, QuickPlay and QuickCut are trademarks of Infiltrator Systems Inc.
© 2005 Infiltrator Systems Inc. Printed in U.S.A.

A500305HP-7