

# Pipeline

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Small Community Wastewater Issues Explained to the Public

## MAINTAINING YOUR SEPTIC SYSTEM—A GUIDE FOR HOMEOWNERS

**O**ut of sight and out of mind—does this describe your relationship with your septic system? If you are like most homeowners, you probably never give much thought to what happens to what goes down your drain. But if you rely on a septic system to treat and dispose of your household wastewater, what you don't know can hurt you. Proper operation and maintenance of your septic system can have a significant impact on how well it works and how long it lasts, and in most communities, septic system maintenance is the responsibility of the homeowner.

### Why Maintain Your System?

There are three main reasons why septic system maintenance is so important. The first reason is money. Failing septic systems are expensive to repair or replace, and poor maintenance is a common cause of early system failures. The minimal amount of preventative maintenance that septic systems require costs very little in

comparison. For example, it typically costs from \$3,000 to \$10,000 to replace a failing septic system with a new one, compared to approximately \$50 to \$150 to have a septic system inspected, and \$150 to \$250 to have it pumped.

The second and most important reason to maintain your system is to protect the health of your family, your community, and the environment. When septic systems fail, inadequately treated household wastewater is released into the environment. Any contact with untreated human waste can pose significant health risks, and untreated wastewater from failing septic systems can contaminate nearby wells, groundwater, and drinking water sources.

Chemicals improperly released through a septic system also can pollute local water sources and can contribute to system failures. For this reason it is important for homeowners to educate themselves about what should and should not be disposed of through a septic system.

Finally, the third reason to maintain your septic system is to protect the economic health of your community.

Failed septic systems can cause property values to decline. Sometimes building permits cannot be issued or real estate sales can be delayed for these properties until systems are repaired or replaced. Also, failed septic systems can contribute to the pollution of local rivers, lakes, and shorelines that your community uses for commercial or recreational activities.

### SEPTIC SYSTEM QUIZ

Can you answer the following questions?

- Where is your septic tank located? (see page 6)
- How often should you have your septic system inspected? (see page 4)
- Does it help to add yeast to your system? (see page 4)
- Do you know the last time your septic tank was pumped? (see page 6)
- How do household cleaners affect your system? (see page 6)
- How can you tell if your septic system has failed? (see page 2)

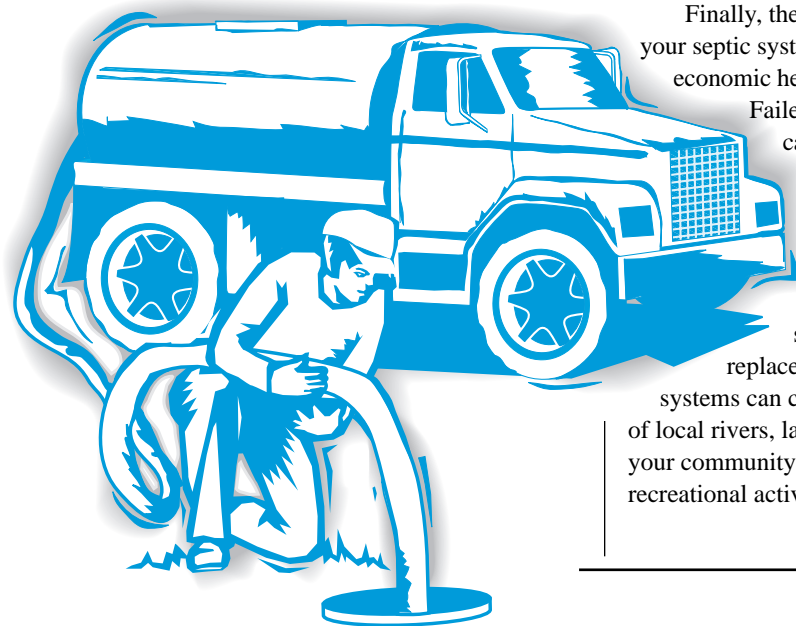
Even if you think you know the answers to all of these questions, you can probably learn something new about septic system maintenance in this issue of *Pipeline*. For a quick reference, see the list of do's and don'ts for septic system owners on page 5. 💧

### Why Many Systems Fail

Improper siting, construction, or design often contribute to septic system failures. But if your septic system has been properly designed, constructed, and installed, then you are the most likely remaining threat to the health and longevity of your septic system. Fortunately, it is easy to learn how to properly operate and maintain a septic system.

This issue of *Pipeline* focuses on educating homeowners about proper septic system operation and maintenance. Some of the topics include groundwater pollution, system inspections, and the use

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# Groundwater Pollution

## IS YOUR SEPTIC SYSTEM FAILING?

Septic system owners should be alert to the following warning signs of a failing system:

- Slowly draining sinks and toilets
- Gurgling sounds in the plumbing
- Plumbing backups
- Sewage odors in the house or yard
- Ground wet or mushy underfoot
- Grass growing faster and greener in one particular area of the yard
- Tests showing the presence of bacteria in well water

None of these warning signs can be considered a sure indication that a system has failed, but the appearance of one or more of them should prompt homeowners to have their systems inspected. Septic system failures also can occur without any of these warning signals. For this reason, yearly inspection of your septic system is recommended and even required by some communities.

For more information about septic system inspections, see the article beginning on page 6. 💧

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Preventing groundwater pollution from failing septic systems should be a priority for every community. Contamination of the groundwater source can lead to the pollution of local wells, streams, lakes, and ponds—exposing family, friends, and neighbors to waterborne diseases and other serious health risks.

When a septic system fails, inadequately treated domestic waste can reach the groundwater. Bacteria and viruses from human waste can cause dysentery, hepatitis, and typhoid fever. Many serious outbreaks of these diseases have been caused by contaminated drinking water.

Nitrate and phosphate, also found in domestic wastewater, can cause excessive algae growth in lakes and streams called algae blooms. These blooms cause aesthetic problems and impair other aquatic life. Nitrate is also the cause of methemoglobinemia, or blue baby syndrome, a condition that prevents the normal uptake of oxygen in the blood of young babies.

In addition, hazardous household chemicals like paints, varnishes, waste oils, and pesticides pollute the groundwater and should never be disposed of through a septic system. They can also kill the microorganisms in the system that break down the waste.

See the list of do's and don'ts for septic system owners on page 5 for more about what should and should not be disposed of in a septic tank system. 💧

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## FREE POSTER!

A new poster titled, "Groundwater Protection Begins at Home," is available free from the National Drinking Water Clearinghouse (NDWC). The poster lists sources of hazardous waste in the home and includes guidelines for their safe disposal in an easy-to-read format. The importance of groundwater pollution prevention is also explained. The poster is a great reference source for every home with a septic system.

To order "Groundwater Protection Begins at Home," call the NDWC at (800) 624-8301, and order Item #DWBLPE40. A shipping and handling charge will apply. 💧



## MAINTAINING YOUR SEPTIC SYSTEM—A GUIDE FOR HOMEOWNERS

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of additives and cleaners. The issue also includes a handy reference list of important septic system do's and don'ts for homeowners.

You are encouraged to share, copy, or distribute any information in *Pipeline* with others in your community. The articles can be reprinted in local newspapers or included in flyers, newsletters, and educational presentations. We ask only that you send us a copy of the reprinted article for our files.

If you have any questions or require further information about any of the topics in this newsletter, please contact the National Small Flows Clearinghouse at (800) 624-8301. 💧

# HOW TO MAINTAIN YOUR SEPTIC SYSTEM

Septic systems are a very simple way to treat household wastewater and are easy to operate and maintain. Although homeowners must take a more active role in maintaining septic systems, once they learn how their systems work, it is easy for them to appreciate the importance of a few sound operation and maintenance practices.

## How Septic Systems Work

There are two main parts to the basic septic system: the septic tank and the drainfield.

### The Septic Tank

Household wastewater first flows into the septic tank where it should stay for at least a day. In the tank, heavy solids in the wastewater settle to the bottom forming a layer of sludge, and grease and light solids float to the top forming a layer of scum (*refer to the graphic on this page*).

The sludge and scum remain in the tank where naturally occurring bacteria work to break them down. The bacteria cannot completely break down all of the sludge and scum, however, and this is why septic tanks need to be pumped periodically.

The separated wastewater in the middle layer of the tank is pushed out into the drainfield as more wastewater enters the septic tank from the house. If too much water is flushed into the septic tank in a short period of time, the wastewater flows out of the tank before it has had time to separate. This can happen on days when water use is unusually high (laundry day, for example), or more often if the septic tank is too small for the needs of the household.

### The Drainfield

When wastewater leaves a septic tank too soon, solids can be carried with it to the drainfield. Drainfields provide additional treatment for the wastewater by allowing it to trickle from a series of perforated pipes, through a layer of gravel, and down through the soil. The

soil acts as a natural filter and contains organisms that help treat the waste. Solids damage the drainfield by clogging the small holes in the drainfield pipes and the surrounding gravel, and excess water strains the system unnecessarily.

## How To Care for Your System

Septic system maintenance is often compared to automobile maintenance because only a little effort on a regular basis can save a lot of money and significantly prolong the life of the system.

Sound septic system operation and maintenance practices include conserving water, being careful that nothing harmful is disposed of through the system, and having the system inspected annually and pumped regularly.

By educating everyone in your household about what is and what isn't good for septic systems, they can begin to develop good maintenance habits.

### Use Water Wisely

Water conservation is very important for septic systems because continual saturation of the soil in the drainfield can affect the quality of the soil and its ability to naturally remove toxins, bacteria, viruses, and other pollutants from the wastewater.

The most effective way to conserve water around the house is to first take stock of how it is being wasted. Immediately repair any leaking faucets or running toilets, and use washing machines and dishwashers only when full.

In a typical household, most of the water used indoors is used in the bathroom, and there are a lot of little things that can be done to conserve water there.

For example, try to avoid letting water run while washing hands and brushing teeth. Avoid taking long showers and install water-saving features in faucets and shower heads. These devices can reduce water use by up to 50 percent. Low-flush toilets use one to two gallons per flush compared to the three to five gallons used by conventional toilets. Even using a toilet dam or putting a container

filled with rocks in the toilet tank can reduce water use by 25 percent (*refer to the graphic on page 4*).

It is also important to avoid overtaxing your system by using a lot of water in a short time period, or by allowing too much outside water to reach the drainfield. Try to space out activities requiring heavy water use (like laundry) over several days. Also, divert roof drains, surface water, and sump pumps away from the drainfield.

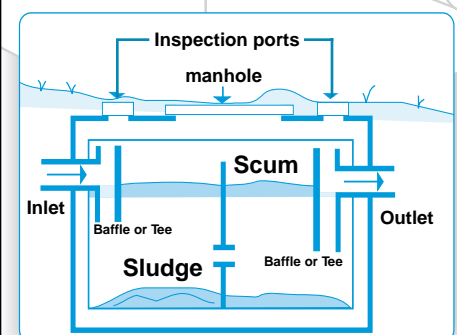
### Know What Not To Flush

What you put into your septic system greatly affects its ability to do its job. As a general rule of thumb, do not dispose of anything in your septic system that can just as easily be put in the trash. Remember that your system is not designed to be a garbage disposal, and that solids build up in the septic tank and eventually need to be pumped out.

In the kitchen, avoid washing food scraps, coffee grinds, and other food items down the drain. Grease and cooking oils contribute to the layer of scum in the tank and also should not be put down the drain. Garbage disposals can increase the amount of solids in the tank up to 50 percent and are not recommended for use with septic systems.

The same common-sense approach used in the kitchen should be used in the bathroom. Don't use the toilet to dispose

Continued on page 4





# Q&A

## Do I need to add anything to my septic system to keep it working properly?

While many products on the market claim to help septic systems work better, the truth is there is no magic potion to cure an ailing system. In fact, most engineers and sanitation professionals believe that commercial septic system additives are, at best, useless, and at worst, potentially harmful to a system.

There are two types of septic system additives: biological (like bacteria, enzymes, and yeast) and chemical. Most biological additives are harmless, but some chemical additives can potentially harm the soil in the drainfield and contaminate the groundwater.

While there hasn't been extensive study on the effectiveness of these products, the general consensus among septic system experts is that septic system additives are unnecessary. 💧

## What type of toilet paper is best for septic tanks?

Contrary to popular belief, it is not necessary to sacrifice personal comfort to protect your septic tank. There are many types of toilet paper on the market that are perfectly safe for septic systems.

According to the National Sanitation Foundation (NSF), a nonprofit organization that tests products relating to health and the environment, the thickness and color of toilet tissue does not necessarily affect its biodegradability.

NSF subjects the toilet papers it certifies to rigorous testing, and the brands that pass carry the NSF mark stating that they are safe for use with septic systems. However, there probably are many brands without the NSF mark that are also safe. 💧

## HOW TO MAINTAIN YOUR SEPTIC SYSTEM

Continued from page 3

of plastics, paper towels, tampons, disposable diapers, condoms, kitty litter, etc. The only things that should be flushed down the toilet are wastewater and toilet paper. (For a list of items, see "Do Not Flush" on page 5.)

### Avoid Hazardous Chemicals

To avoid disrupting or permanently damaging your septic system, do not use it to dispose of hazardous household chemicals. Even small amounts of paints, varnishes, thinners, waste oil, photographic solutions, pesticides, and other organic chemicals can destroy helpful bacteria and the biological digestion taking place within your system. These chemicals also pollute the groundwater.

Some septic system additives that claim to help or clean your system also contain hazardous chemicals and should be avoided. (See the Q&A on septic system additives at left.)

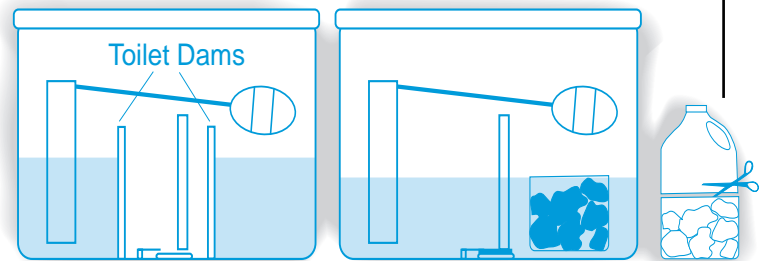
Household cleaners, such as bleach, disinfectants, and drain and toilet bowl cleaners should be used in moderation and only in accordance with product labels. Overuse of these products can harm your system. It makes sense to try to keep all toxic and hazardous chemicals out of your septic tank system when possible. (For more about the use of household cleaners, refer to the article on page 6.)

To help prevent groundwater pollution, be sure to dispose of leftover hazardous

chemicals by taking them to an approved hazardous waste collection center. For locations and more information, contact your local health department.

### Pump Your Tank Regularly

Pumping your septic tank is probably the single most important thing you can do to protect your system. If the buildup of solids in the tank becomes too high and solids move to the drainfield, this could clog and strain the system to the point where a new drainfield will be needed.



A toilet dam (above left) or a rock filled milk container (above right) can reduce the amount of water flowing out of the toilet by up to 25 percent. (Reproduced with permission from Massachusetts Cooperative Extension)

### Inspect Your System Annually

Inspecting your septic system annually is a good way to monitor your system's health. Inspections can reveal problems before they become serious, and by checking the levels of sludge and scum in your tank, you can get a more accurate idea of how often it should be pumped.

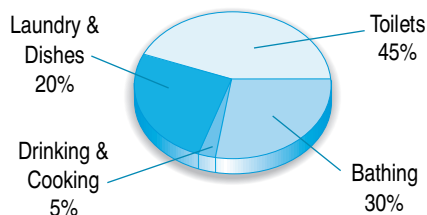
For a more detailed discussion of septic system inspections and recommended pumping frequencies and procedures, read the article "Pumping and Inspecting Your System—What To Expect" on page 6.

### Protect Your System

Finally, it is important to protect your septic system from potential damage.

Don't plant anything but grass near your septic system—roots from shrubs and trees can cause damage—and don't allow anyone to drive or operate heavy machinery over any part of the system. Also, don't build anything over the drainfield. Grass is the most appropriate cover for the drainfield. 💧

### Water use around the home



# SEPTIC SYSTEM DO'S AND DON'Ts

**DO's** **Do** learn the location of your septic tank and drainfield. Keep a sketch of it handy with your maintenance record for service visits.

**Do** have your septic system inspected annually.

**Do** have your septic tank pumped out regularly by a licensed contractor. (See the table on page 6 for estimated pumping frequencies.)

**Do** keep your septic tank cover accessible for inspections and pumpings. Install risers if necessary.

**Do** call a professional whenever you experience problems with your system, or if there are any signs of system failure.

**Do** keep a detailed record of repairs, pumpings, inspections, permits issued, and other maintenance activities.

**Do** conserve water to avoid overloading the system. Be sure to repair any leaky faucets or toilets.

**Do** divert other sources of water, like roof drains, house footing drains, and sump pumps, away from the septic system. Excessive water keeps the soil in the drainfield from naturally cleansing the wastewater.

## WARNING

Be sure to exercise appropriate caution when inspecting a septic tank. Never allow anyone to inspect a septic tank alone or go down into a septic tank. Toxic gases are produced by the natural treatment processes in septic tanks and can kill in minutes—even just looking in the tank can be dangerous.

**DON'Ts** **Don't** go down into a septic tank. Toxic gases are produced by the natural treatment processes in septic tanks and can kill in minutes. Extreme care should be taken when inspecting a septic tank, even when just looking in.

**Don't** allow anyone to drive or park over any part of the system.

**Don't** plant anything over or near the drainfield except grass. Roots from nearby trees or shrubs may clog and damage the drain lines.

**Don't** dig in your drainfield or build anything over it, and don't cover the drainfield with a hard surface such as concrete or asphalt. The area over the drainfield should have only a grass cover. The grass will not only prevent erosion, but will help remove excess water.

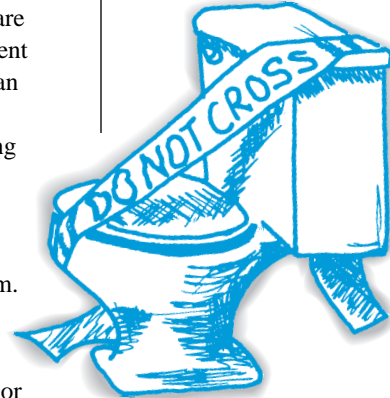
**Don't** make or allow repairs to your septic system without obtaining the required health department permit. Use professional licensed septic contractors when needed.

**Don't** use septic tank additives. These products usually do not help and some may even be harmful to your system.

**Don't** use your toilet as a trash can or poison your septic system and the groundwater by pouring harmful chemicals and cleansers down the drain. Harsh chemicals can kill the beneficial bacteria that treat your wastewater.

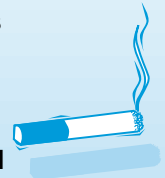
**Don't** use a garbage disposal without checking with your local regulatory agency to make sure that your septic system can accommodate this additional waste.

**Don't** allow backwash from home water softeners to enter the septic system. 💧



## Do not flush

coffee grinds  
dental floss  
disposable diapers  
kitty litter  
sanitary napkins  
tampons  
cigarette butts  
condoms  
fat, grease, or oil  
paper towels



and hazardous chemicals, such as:  
paints  
varnishes  
thinners  
waste oils  
photographic solutions  
pesticides



These items can overtax or destroy the biological digestion taking place within your system.

# Pumping and Inspecting Your System—What To Expect

Annual inspections of your septic system are recommended to ensure that it is working properly and to determine when the septic tank should be pumped. By inspecting and pumping your system regularly, you can prevent the high cost of septic system failure.

## Inspecting Your System

Although a relatively simple inspection can determine whether or not your septic tank needs to be pumped, you should consider calling your local health department or hiring a professional contractor. A professional can do a thorough inspection of the entire system and check for cracked pipes and the condition of the tees or baffles and other parts of the system.

A thorough septic system inspection will include the following steps:

**1. Locating the system**—Even a professional may have trouble locating your system if the access to your tank is buried. One way to start looking is to go in your basement and determine the direction the sewer pipe goes out through the wall. Then start probing the soil with a thin metal rod 10 to 15 feet from the foundation. Once your system is found, be sure to keep a map of it on hand to save time on future service visits.

**2. Uncovering the manhole and inspection ports**—This may entail some digging in your yard. If they are buried, try to make access to the ports easier for future inspections. Install risers (elevated access covers) if necessary.

**3. Flushing the toilets**—This is done to determine if the plumbing going to the system is working correctly.

**4. Measuring the Scum and Sludge Layers**—There are two frequently used methods for measuring the sludge and scum layers inside your tank. The contractor may use a hollow clear plastic tube that is pushed through the different layers to the bottom of the tank. When brought back up, the tube retains a sample showing a cross section of the inside of the tank.

The layers can also be measured using a long stick. To measure the scum layer using a stick, a three-inch piece of wood

is attached across the end of the stick to form a “foot,” and the stick is pushed down through the scum to the liquid layer. When the stick is moved up, the foot meets resistance on the bottom of the scum layer, and the contractor marks the stick at the top of the layer to measure the total thickness. As a general guideline, if the scum layer is within three inches of the bottom of the inlet baffle, the tank should be pumped.

The sludge layer is measured by wrapping cloth around the bottom of the stick and lowering it to the bottom of the tank. This should be done either through a hole in the scum layer or through the baffle or tee, if possible, to avoid getting scum on the cloth. The sludge depth can be estimated by the length of sludge sticking to the cloth. If the sludge depth is equal to one third or more of the liquid depth, the tank should be pumped.

**5. Checking the Tank and the Drainfield**—The contractor will check the condition of the baffles or tees, the walls of the tank for cracks, and the drainfield for any signs of failure. If your system includes a distribution box, drop box, or pump, the contractor will check these too.

## How do household cleaners and detergents affect my system?

When used as recommended by the manufacturer, most household cleaning products will not adversely affect the operation of your septic tank. Drain cleaners are an exception, however, and only a small amount of these products can kill the bacteria and temporarily disrupt the operation of the tank.

If you are concerned about the effect of cleaning products on your septic system and the environment, there are some safe alternatives. Penn State University has developed a fact sheet listing alternative cleansers and their uses. The fact sheet is included in the septic system information packet for homeowners, described on page 8. 💧

## Inspections from the State Regulations

Septic system inspection regulations vary from one state to the next. Do you know what the laws are in your state?

A new report from the National Small Flows Clearinghouse (NSFC) provides this information in a single 128-page document, “*Inspections from the State Regulations*.” It is a compilation of regulations for septic system inspections from the 23 states that have them on the books. This report includes a complete list of state regulatory contacts and references for all 50 states. The cost is \$11.35. To order, call NSFC at (800) 624-8301 and request Item #WWPCRG40. 💧

Tank size (gals.)	Household size (number of people)					
	1	2	3	4	5	6
500	5.8	2.6	1.5	1.0	0.7	0.4
750	9.1	4.2	2.6	1.8	1.3	1.0
900	11.0	5.2	3.3	2.3	1.7	1.3
1000	12.4	5.9	3.7	2.6	2.0	1.5
1250	15.6	7.5	4.8	3.4	2.6	2.0
1500	18.9	9.1	5.9	4.2	3.3	2.6
1750	22.1	10.7	6.9	5.0	3.9	3.1
2000	25.4	12.4	8.0	5.9	4.5	3.7
2250	28.6	14.0	9.1	6.7	5.2	4.2
2500	31.9	15.6	10.2	7.5	5.9	4.8

*Estimated septic tank pumping frequencies in years. These figures assume there is no garbage disposal unit in use. (Source: Pennsylvania State University Cooperative Extension Service)*

## When To Pump

How often your tank needs to be pumped depends on the tank size, the number of people living in your home, and the habits of your particular house-

Continued on next page

## What some communities are doing

To protect public health and the environment, some communities are working to promote septic system maintenance through public education and the formation of septic system maintenance districts.

Septic system maintenance districts are areas in which local governments and health agencies monitor and regulate privately-owned septic systems on a regular basis. In a maintenance district, all residents must comply with the maintenance standards and must help pay for the cost of administration.

One of the advantages to this type of system is, because detailed records are kept on the condition of the individual

systems, communities can identify problem areas and work with homeowners to develop solutions.

Another advantage is the opportunity to educate septic system owners individually about the proper operation and maintenance of their systems. Maintenance districts also make it easier to arrange inspections and pumpings at several houses in a neighborhood at one time, which can save money.

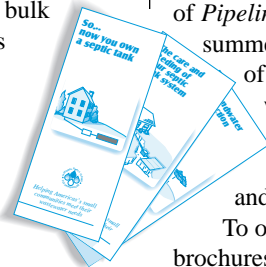
*For more information about maintenance districts and other strategies for controlling septic system failures in your community, contact the National Small Flows Clearinghouse's technical assistance department at (800) 624-8301. 💧*

## Septic system information available in bulk from NSFC

A series of educational materials that explain the operation and maintenance of septic systems are available in bulk from the National Small Flows Clearinghouse (NSFC). These materials are written for homeowners and would be useful for any community education program.

The NSFC's series of three septic system brochures has recently been revised, updated, and reprinted. The brochures include:

- So . . . now you own a septic tank,
- The care and feeding of your septic tank system, and



- Groundwater protection.
- This issue and the summer 1995 issue of *Pipeline* are also available in bulk. The summer issue explains the advantages of septic tank systems, how they work, the importance of site evaluations, alternative septic system and drainfield designs, and resources for more information.

To order bulk copies of any of the brochures or either issue of *Pipeline*, please call the NSFC at (800) 624-8301. Up to 10 copies of each item are free except for shipping and handling charges. Orders of 11 or more will be charged a fee to cover printing and shipping. 💧

## Pumping and Inspecting Your System—What To Expect

Continued from previous page

hold. Garbage disposals and high-water-use technologies, such as a hot tub or whirlpool, also affect the pumping frequency.

To estimate how often you should have your tank pumped, refer to the table on page 6. This information combined with observations from annual inspections will help you to estimate your individual pumping schedule.

When it's time to pump out your tank, be sure to hire a licensed contractor. He or she will have the appropriate equipment and will dispose of the sludge at an

approved treatment site. You can find listings for licensed pumpers and haulers in the yellow pages, or contact your local health department for assistance.

It's a good idea to be present when your tank is being pumped. Make sure the contractor uses the manhole, not the inspection ports, to pump the tank to avoid damaging the baffles or tees. Also make sure all of the material in the tank is removed. It is not necessary to leave anything in the tank to "restart" the biological processes, but it is also not necessary to scrub or disinfect the tank. 💧



## CONTACTS

### Health Department

Homeowners with questions about regulations or requirements for septic system construction or maintenance should contact their local health department (usually listed in the yellow pages).

### National Small Flows Clearinghouse (NSFC)

The National Small Flows Clearinghouse (NSFC) located at West Virginia University, is also a good place for homeowners and community officials to contact for more information about septic systems and alternative systems. The NSFC is funded by the U.S. Environmental Protection Agency and offers technical assistance and a variety of free and low-cost products to help small communities with wastewater issues. Some of these NSFC products are listed on page 8.

### Extension Service

Many universities have U.S. Department of Agriculture cooperative state extension service offices on campus and field offices in counties and other localities. Part of the mission of these extension services is to provide access to information and assistance to the public, and to help educate the public about federal wastewater policies and requirements. To locate the extension office in your area, contact the U.S. Department of Agriculture at (202) 720-3377, or NSFC at (800) 624-8301, and ask for Crystal Stevens, the contacts and referrals assistant in the technical assistance department. 💧



# RESOURCES AVAILABLE FROM NSFC

To order any of the following products, call the National Small Flows Clearinghouse (NSFC) at (800) 624-8301, or write to NSFC, West Virginia University, P.O. Box 6064, Morgantown, WV 26506-6064.

Be sure to request each item by title and item number. A shipping and handling charge will apply.



## New NSFC Guide to Products and Services

The "National Small Flows Clearinghouse's (NSFC) 1995 Guide to Products and Services" will be available soon. The updated guide contains complete descriptions of the NSFC's nearly 300 products that range from educational videos and brochures to technical design manuals and case studies of small community and onsite wastewater treatment systems. More than 50 new products are included. However, the new guide will only be mailed to those NSFC customers who have placed product orders in the past year. It will also be available upon request. Please call the NSFC at (800) 624-8301 to reserve your copy.

## Septic System Information Packet for Homeowners

This information packet includes a variety of resources that no septic system owner should be without. The packet includes brochures, articles, and other materials on septic system design and the proper care and feeding of a septic system. The price is \$5.20. Item #WWPCPE28.

## The Care and Feeding of Your Septic Tank

This 16-minute NSFC videotape discusses the basic workings of a conventional septic system and its operation and maintenance. Steps are given that can prolong the life of septic systems, and the idea of centralized septic system management is discussed. The price is \$20.00. Item #WWVTPE18/Video.

## Septic Systems and Groundwater Protection—A Program Manager's Guide and Reference Book

Designed to provide information to officials responsible for developing state or local septic system management codes, this nontechnical photocopied book provides ideas, alternatives, and real-world examples for implementing a management plan appropriate for your community. The price is \$19.25. Item #FMBKMG03.

## Do More With Score Poster

A free poster from the U.S. Environmental Protection Agency (EPA), "Do More with SCORE: Small Community Outreach and Education Helps Solve Wastewater Problems," explains how EPA's small community outreach program can help communities solve their wastewater treatment problems. It lists national and state government agencies, public interest and advocacy groups, educational institutions, small community outreach coordinators and environmental training

centers for each state, and EPA's regional and SCORE coordinators in an attractive chart that is suitable for display. Single or multiple copies of the poster are available. Item #WWBLPE03. Shipping and handling charges still apply.

## PIPELINE

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