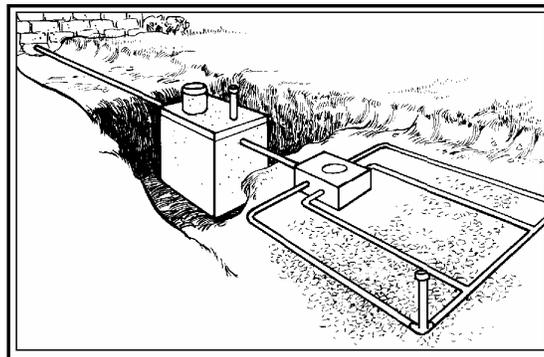


# This OLDS HOUSE

## Managing Your On-lot Disposal System (OLDS) for Realtors



Prepared by  
York County Conservation District  
In Partnership with  
Penn State Cooperative Extension  
York County Sewage Enforcement Officers

*Conservation ♦ Stewardship ♦ Education*

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## **PREFACE**

### **With country living, comes responsibility...**

Chances are that you have chosen to live in the country because you cherish the peace and quiet, the wide open spaces, and the beauty of nature. However, with this enjoyment and independence often comes responsibility. Most drinking water supply and sewage disposal in rural areas of York County is done on-lot. As a property owner, you are responsible for maintaining your drinking water well and septic systems. Understanding how they are built, work and how to keep them operating effectively and efficiently is good for your family's health, your household budget, and the environment. Replacing these systems can be expensive.

### **What you can do for failing septic systems...**

If you own one of the thousands of septic systems in this county, someday you may have problems with it. Effluent (wastewater from the septic tank) may back up into your plumbing or pond on your lawn. Besides being unsightly, a nuisance, and the cause of health problems, failing systems are often difficult and costly to fix. This booklet describes two proven methods that may be effective in restoring failing septic systems: 1) water conservation and 2) absorption-area resting. While the initial cost of either method may be slightly greater than the cost of reconstructing a system, both methods have benefits that will, in the long run, save money.

### **A note about terminology**

This publication is a collection of information from various sources. As a result, a variety of terms may be used to mean the same thing. For example, all the drains in your house are connected to a tank. Traditionally called a septic tank, it is also called a treatment tank. A septic system and an on-lot disposal system (OLDS) both refer to the collection of parts that is used to treat and release wastewater within your property. A glossary of terms used is provided at the end of this publication.

## ACKNOWLEDGEMENTS

The York County Conservation District gratefully acknowledges the following individuals and members of the District's OLDS Education Team who helped review this document and provided comments and suggestions for improving this publication.

- Bradley Hengst, Sewage Enforcement Officer, York County
- Mark Kimmel, District Manager, York County Conservation District
- Thomas McCarty, PhD, Water Resources Specialist, Penn State Cooperative Extension
- Gary R. Peacock, Watershed Specialist, York County Conservation District
- Tony Williams, Retired Septic System Services Professional

Financial and other support for this project is provided by the Pennsylvania Association of Conservation Districts, Inc. and the Pennsylvania Department of Environmental Protection's Chesapeake Bay Program.

## TABLE OF CONTENTS

1. We All Live Downstream
2. Understanding On-Lot Disposal Systems (OLDS)
3. Understanding the Importance of Soils in Siting an On-lot System
4. Sales Contract Requirements under Act 537
5. Act 537 Planning Module Review Fees
6. Home Buyer's/Builders Guide

### BIBLIOGRAPHY

### GLOSSARY

### APPENDICES

- A. Sewage Enforcement Officers of York County
- B. Offices of Pennsylvania Department of Environmental Protection
- C. Other Resource Contacts

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# 1. We All Live Downstream

The Chesapeake Bay -- the largest estuary in the U.S. -- is an incredibly complex ecosystem that includes important habitats and food webs. The Bay itself, its rivers, wetlands, trees and land all provide homes, protection or food for complex groups of species. Fish of all types and sizes either live in the Bay and its tributaries or they use the waters as they migrate along the East Coast. Young crabs hide from predators in underwater grasses, while oysters filter water as they feed on plankton. The intertwined combinations of relationships are countless.

## Water Quality

All living things need water. In the Chesapeake Bay region, waterways support more than 3,000 species of plants and animals. Healthy water contains a balanced amount of nutrients and normal fluctuations in salinity and temperature. It also has plenty of oxygen and little sediment so that underwater living resources can breathe or receive enough sunlight to grow. Monitoring the changes to the Bay's waterways is important, and the data that is collected can help scientists make determinations about water quality.

Water quality factors:

- *Nutrients* are essential for plants and animals, but too much can cause harmful effects.
- *Sediments* can cloud the water which can hamper the growth of aquatic plants.
- *Water temperature* affects when animals and plants feed, reproduce, and migrate.
- *Salinity* greatly determines where plants and animals live within the Bay.
- *Dissolved oxygen* is essential for animals living within the Bay.
- *Chemical contaminants* can affect the growth, survival and reproducibility of benthic organisms.

## Land and People

More than 64,000 square-miles of land drains into creeks, streams, rivers and, eventually, the Chesapeake Bay. The Bay watershed includes all types of land uses, from intensely urban areas, spread out suburban development and diverse agricultural practices. Human activities on the land within the Bay watershed affect the quality of the Chesapeake's water.

There are countless opportunities to improve local waterways and the Chesapeake Bay by improving the way we use the land.

## Watersheds

A watershed is the total land area that drains water into a given river, lake, estuary or other body of water. A watershed can be quite large (figure 1. the Chesapeake Bay watershed) or small (e.g., the watershed of a local stream).

The Chesapeake Bay watershed, stretches across six states - New York, Pennsylvania, Maryland, Delaware,

Virginia and West Virginia - and the District of Columbia. Threading through the Bay watershed are several "subwatersheds," smaller systems that drain into the streams and rivers that flow into the Chesapeake.



**Figure 1. Chesapeake Bay Watershed**

## What's the Problem?

To survive, the Chesapeake Bay and its rivers must endure an array of assaults from air, water and land. The watershed's worst problem is nutrient pollution, which is caused by the overabundance of the nutrients, nitrogen and phosphorus. Other problems are related to toxic chemicals, air pollution and landscape changes, along with sedimentation and the over-harvesting of living resources.

## **What Are Nutrients?**

Nutrients, like nitrogen and phosphorus, occur naturally in water, soil and air. Just as the nitrogen and phosphorus in fertilizer aids the growth of agricultural crops, both nutrients are vital to the growth of plants within the Bay and rivers.

## **How are nitrogen and phosphorous used in the ecosystem?**

Nitrogen is essential to the production of plant and animal tissue. It is used primarily by plants and animals to synthesize protein. Nitrogen enters the ecosystem in several chemical forms and also occurs in other dissolved or particulate forms, such as tissues of living and dead organisms.

Some bacteria and blue-green algae can extract nitrogen gas from the atmosphere and transform it into organic nitrogen compounds. This process, called nitrogen fixation, cycles nitrogen between organic and inorganic components. Other bacteria release nitrogen gas back into the atmosphere as part of their normal metabolism in a process called de-nitrification.

Phosphorus is another key nutrient in the Bay's ecosystem. Phosphorus occurs in dissolved organic and inorganic forms, often attached to particles of sediment. This nutrient is a vital component in the process of converting sunlight into usable energy forms for the production of food and fiber. It is also essential to cellular growth and reproduction for organisms such as phytoplankton and bacteria. Phosphates, the inorganic form are preferred, but organisms will use other forms of phosphorus when phosphates are unavailable.

In the presence of oxygen, high concentrations of phosphates in the water will combine with suspended particles. These particles eventually settle to the Bay bottom and are temporarily removed from the cycling process. Phosphates often become long-term constituents of the bottom sediments. Phosphorus compounds in the Bay generally occur in greater concentrations in less saline areas, such as the upper part of the Bay and tributaries. Overall, phosphorus concentrations vary more in the summer than winter

## **How can nutrients become pollutants to the Bay and its rivers?**

Although nutrients are essential to all plant life within the Bay, an excess of these same nutrients can be harmful. This is called "nutrient pollution".

Nutrients have always existed in the Bay, but not at the present excessive concentrations. When the Bay was surrounded primarily by forest and wetlands, very little nitrogen and phosphorus ran off the land into the water. Most of it was absorbed or held in place by the natural vegetation. Today, much of the forests and wetlands have been replaced by farms, cities, and suburbs. As the use of the land has changed and the watershed's population has grown, the amount of nutrients entering the Bay's water has increased tremendously.

Excess amounts of phosphorus and nitrogen cause rapid growth of phytoplankton, creating dense populations, or blooms. These blooms become so dense that they reduce the amount of sunlight available to submerged aquatic vegetation (SAV). Without sufficient light, plants cannot photosynthesize and produce the food they need to survive. The loss of sunlight can kill the grasses. Algae may also grow directly on the surface of SAV. Unconsumed algae will ultimately sink and be decomposed by bacteria in a process that depletes bottom waters of oxygen. Like humans, most aquatic species require oxygen. When oxygen in deep water is depleted, fish and other species will die unless they move to other areas of suitable habitat.

## **What are the Sources of Nutrients?**

The main causes of the Bay's poor water quality and aquatic habitat loss are elevated levels of two nutrients, nitrogen and phosphorus. These nutrients occur naturally in soil, animal waste, plant material, and even the atmosphere. In addition to these natural sources, sewage treatment plants, industries, vehicle exhaust, acid rain, and runoff from agricultural, residential and urban areas contribute nutrients to the Chesapeake Bay and its rivers.

Virtually all individuals and industries in the watershed, and some even beyond the watershed, contribute the nutrients that ultimately reach the Bay. In the Bay region, excess nutrients are supplied to the system through two sources: point and nonpoint sources (Figure 2).



Farmland



Urban Landscape



Wastewater Treatment Plant

## Figure 2. Common Sources of Pollution

- *Point Source* - A source of pollution that can be attributed to a specific physical location; an identifiable, end of pipe "point". The vast majority of point source discharges for nutrients are from wastewater treatment plants, although some come from industries.
- *Nonpoint Source* - A diffuse source of pollution that cannot be attributed to a clearly identifiable, specific physical location or a defined discharge channel. This includes the nutrients that runoff the ground from any land use - croplands, feedlots, lawns, parking lots, streets, forests, etc. - and enter waterways. It also includes nutrients that enter through air pollution, through the groundwater, or from septic systems.

Recent observations indicate that:

- Nutrients from septic systems are increasing throughout the watershed as development spreads farther into the countryside, beyond the reach of sewer systems.
- Stormwater runoff from urban and suburban areas is increasing as more land is developed.
- Nitrogen from wastewater treatment plants is declining in rivers where biological nutrient removal (BNR) technology is being used. It is increasing in other rivers.
- Phosphorus from sewage treatment plants has declined sharply, in large part because of the phosphate detergent ban.
- Among the major land use categories, urban and suburban lands contribute, per acre, the largest amount of nutrients to the Bay when septic and wastewater treatment plant discharges are factored in.

- Runoff from farms is generally declining as farmers adopt nutrient management and runoff control techniques, and because the overall amount of farmland is declining.

## **Chesapeake Bay Restoration**

In the mid-1970's, U.S. Senator Charles Mathias (R-MD) saw the Bay of his youth in distress and began a fact-finding tour of marine science institutions around the Bay to try to understand the Chesapeake's decline. His efforts eventually resulted in formation of the Chesapeake Bay Program - a multi-jurisdictional partnership that's working successfully to restore and protect the Bay and its resources. Since the Bay Program's inception, the federal and state partners have met many goals and worked toward others in the effort to restore the Bay.

## **Get Involved**

Besides plants, fish, animals and other living resources, humans also are part of the Chesapeake Bay's ecosystem. Although a single individual may think he or she has very little effect on the Bay with more than 15.1 million people living in the Chesapeake Bay watershed, people have a very significant impact on the Chesapeake Bay ecosystem.

So whether you are an on-lot disposal system homeowner, local government official, or realtor, YOU can make a difference.

## **2. Understanding On-Lot Disposal Systems (OLDS)**

### **What is a septic system?**

Septic systems (also called ‘on-lot disposal systems’ or OLDS) are sewage systems located on the property of the homeowner. They treat and dispose of domestic sewage through natural processes. Liquid waste from a treatment tank percolates through the soil, where it is neutralized and broken down further. Septic system operation and maintenance is the responsibility of the homeowner. In contrast, a centralized sewage system collects and treats sewage from many homes and/or businesses and disposes it off site. Centralized systems often use complex mechanical and chemical treatment methods.

### **Who uses septic systems?**

For many Pennsylvanians, centralized sewage disposal is not an option. In fact, one-quarter of Pennsylvania residents currently depend on septic systems to treat their sewage. In some cases, this is because many rural areas have no central sewage facility. In other cases, a central facility may have reached capacity due to development, requiring new homes to use septic systems on an interim basis.

### **What kind of system do you have?**

There are several variations to the standard septic system depending on soil, site and operational conditions. They are:

- Standard trench
- Seepage bed system
- Subsurface sand filter
- Elevated sand mound
- Individual residential spray irrigation system (IRSIS)

## **How do I obtain a septic system permit?**

Anyone who intends to install a septic system with a flow of less than 10,000 gallons per day must obtain a permit using the following generalized process:

1. The lot owner or an agent for the owner applies for a permit through the local agency\* Sewage Enforcement Officer (SEO);
2. The SEO for the local agency conducts soil profile examination and percolation tests to determine site suitability;
3. The lot owner or agent completes the permit application by including a septic system design based upon the results of the site suitability testing;
4. The SEO approves or denies the permit within seven days of receipt of a completed application; and
5. If approved, the SEO issues a permit. Installation of a system may begin. If denied, the SEO notifies the applicant and provides opportunity for an appeal hearing.
6. The SEO may oversee any step of installation and must inspect the completed system before coverage.

## **What is an SEO and what are his/her duties?**

Certified Sewage Enforcement Officers (SEOs) working for local governing bodies handle the septic system permitting process. This includes the review of soil profiles (deep probes) and percolation tests and the issuance of permits.

## **What is a deep probe test?**

The first test on the site is a deep probe test. In this test, a backhoe pit is dug as deep as eight feet. The SEO enters this pit to examine the make up of the soil (soil profile). From this, the SEO will determine the suitability of the soil for a septic system. If the soil is determined suitable for a type of system (standard or alternate), then a percolation test will be performed. If the soil is determined unsuitable, no permit will be issued.

## What is a percolation test?

A percolation ('perc') test measures the rate at which water moves through soil. The test is to determine if the soil will allow water to drain quickly enough to support a properly working septic system. The following process is used to perform a percolation test:

1. A minimum of six holes are dug in the area of the proposed absorption field;
2. The soil is soaked before the actual test to reproduce wet season operation;
3. The day of the test, a final soaking is completed for one hour; and
4. The actual test then begins with a series of measurements of water level drop done at 10 or 30 minute intervals. This test may take as long as four hours or as little as 40 minutes, depending upon the type of soil. (Very sandy soils usually take less time to test than soils with a lot of clay.)

It is very important to realize that although the effluent from a septic or aerobic tank is partially treated, it still contains substances that can affect the groundwater, such as viruses, pathogens and nitrates. The soil is a critical component of an efficiently running system. Regular maintenance of the system also is necessary to ensure long-term operation.

## What is DEP's role in the permitting process?

The Department of Environmental Protection (DEP) can review, monitor and assist a local agency's administration of the permitting process.

For more information on these variations, please contact your local SEO (Appendix A).

## How does a septic system function?

Sewage, both human waste and water used for bathing and washing, flows to the **septic tank**. Here, primary treatment of the sewage takes place. The heaviest matter falls to the bottom of the tank forming **sludge**. Lighter matter (**scum**) floats on top of the liquid (**effluent**). Sludge and scum must be pumped out regularly.

Septic tank effluent then flows to a **distribution box** or a **solid header** in gravity flow systems (see Figure 3.A) or to a **pump tank** in pressurized systems (see Figure 3.B).

In both types of systems, the septic tank effluent is then directed to an **absorption area** constructed of pipe placed within a layer of gravel, and percolates through the soil for additional treatment. The soil neutralizes many of the contents of the wastewater and converts other contents to different forms.

### How does a septic system function?

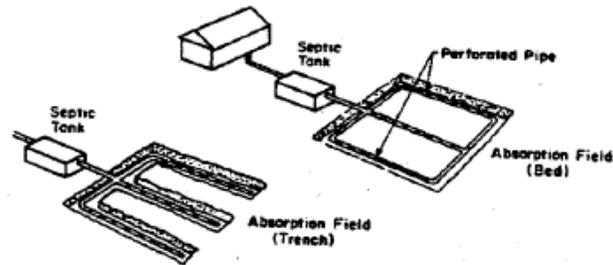


Figure A: Gravity Distribution Systems

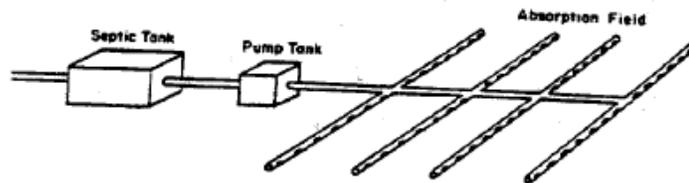


Figure B: Pressure Distribution Systems

Figure 3. Gravity and Pressure Flow Systems

### How often must my septic tank be pumped?

Up to 50 percent of the solids retained in the tank decompose; the remainder accumulates in the tank. A septic tank should be pumped out at least every three to five years, or according to your local sewage management program which may require more frequent pumping. Below, table 1 shows typical septic tank sizes.

Under current Pennsylvania law, a 900-gallon septic tank must be used for a home with three bedrooms or fewer (table 2). If six people reside in a three-bedroom house, the tank should be pumped every year. If the same system serves a family of two, the tank would be pumped every 5

years. Systems installed before 1971 may have septic tanks smaller than 900 gallons. These tanks may need to be pumped more than once a year.

### **What if my lot conditions do not meet the requirements for a standard septic system?**

If your particular lot conditions do not allow the installation of a standard septic system, some alternates may be available. Your local SEO can help find the best system for you depending on your specific site, soil and operational conditions.

### **How do state and local actions protect Pennsylvania's public health and water quality?**

The Pennsylvania Sewage Facilities Act (Act 537) was enacted in 1966 to set uniform standards for the construction or repair of any sewage disposal facility. The two main goals of Act 537 are to correct existing disposal system problems and to prevent future problems. To reach this goal, Act 537 requires the planning of all sewage facilities and the permitting of on lot sewage disposal systems.

Provisions of Act 537 administered by DEP include:

1. Training and certifying SEOs;
2. Providing technical assistance;
3. Reviewing official sewage plans and revisions;
4. Awarding planning grants to local agencies; and
5. Reimbursing local agencies for permitting expenses.

**Table 1. Probable Septic Tank Size**

Probable Septic Tank Size	
Bed Rooms	Tank Size (gallons)
1	900
2	900
3	900
4	1,250
5	1,400
6	1,550

Note: Septic tanks predating these regulations may be smaller.

**Table 2. Recommended Septic Tank Pumping Frequency**

Recommended Septic Tank Pumping Frequency						
Actual Tank Size (gallons)	Number of Occupants					
	1	2	3	4	5	6
	Pump out intervals (years)					
500	5	3	2	1	1	1
750	5	4	3	2	1	1
900	5	5	3	2	1	1
1,000	5	5	4	3	2	2
1,250	5	5	5	3	3	2
1,500	5	5	5	4	3	3

Source: Small Flows Clearing House

## **Where can I obtain more information on septic related questions?**

For more information on on-lot sewage disposal systems, contact your local SEO or the DEP regional office serving your county.

## **Why should my municipality manage on-lot systems?**

Most municipalities have areas that can never be physically or cost-effectively served by public sewer facilities. Areas may contain suitable soils but have scattered malfunctioning on-lot treatment systems that can cause public health and other hazards. Malfunctioning individual on-lot systems will also often be found in areas that have poor soils and/or small lot sizes. It may become impossible to repair or replace these systems on an individual lot-by-lot basis. If your municipality is faced with this latter situation, you can assess your options for using community on-lot systems to meet your long-term needs. In any case, repairing on-lot systems as they malfunction typically will not solve the problem permanently until regular management and maintenance of on-lot systems is established to help keep the problems that lead to malfunctions from recurring.

## **Are there indications of a septic system in trouble?**

Yes. There are many indicators of a malfunctioning septic system. Some indicators can be very obvious to the property owner while others may require more careful observation. The indicators may include:

- Toilet runs sluggishly;
- Sewer odors in the house and/or drinking water;
- Sponginess around septic tank, distribution box, dosing tank or absorption area;
- Surfacing raw sewage;
- Dosing pump runs constantly or not at all;
- Dosing tank alarm light is on; and/or
- Backup of sewage into laundry tubs or other fixtures.

## **What can property owners do to prevent septic system malfunctions?**

Properly designed and installed sewage disposal systems function better and longer with proper maintenance. Most of the following recommended maintenance activities are simple and inexpensive for the property owner to implement:

- Conserve water and reduce wastewater flow into the septic tank;
- Have the septic tank pumped at least every three-five years, depending on tank size and household size;
- Avoid putting harsh chemicals in the septic system;
- Do not use the toilet to dispose of bulky, slowly decomposing wastes;
- Divert run-off from downspouts, sump pumps, and paved surfaces away from septic tank and sewage disposal area;
- Keep heavy vehicles, equipment and livestock away from the septic system;
- Do not plant trees and shrubs over or close to the septic system; and,
- Do not place structures, swimming pools, vehicles, etc., over drainage area.

## **Where and how should septic system malfunctions be reported?**

Complaints about malfunctioning septic systems should be reported directly to the local agency, SEO or the local government officials (township, borough or city officials) with jurisdiction in the municipality where the malfunction exists. Depending on each municipality's rules and procedures, complaints may have to be made in writing. Complaints received by DEP's service representatives will be directed to the appropriate local agency and/or SEO.

## **What should happen once a complaint is received?**

When a certified SEO or local official receives a complaint, the local government should take certain steps, including:

- Local official may issue a letter notifying the property owner of the alleged malfunction and allowing for voluntary compliance if a malfunction exists. Some local agencies bypass this step and first require the certified SEO to conduct an initial site investigation to document the conditions. If there is a malfunction, the SEO will try to determine the causes of the malfunction and to decide the extent of the repair needed to correct the problem. Corrective action may be as simple as requiring a septic tank to be cleaned or as complex as installing a new system at a new location.
- Local agency issues a Notice of Violation to the responsible property owner requiring the submission of a sewage permit application for the proper system repair. The local agency can often persuade the responsible property owner to take appropriate corrective action. If the responsible property owner fails to voluntarily take proper corrective action, the local agency and SEO should take appropriate legal actions, generally with the assistance of the municipal solicitor.
- SEO issues the responsible property owner a permit to repair or replace the malfunctioning system after any necessary site testing has been done and an acceptable system design has been submitted.
- Responsible property owner begins the repair/replacement activities as approved by the permit. Heavy rains or frozen soils could delay the repair/replacement activities until conditions improve.

### **What should the person making a complaint expect from the local agency and SEO?**

The local agency or SEO should acknowledge a complaint and investigate serious complaints in a timely fashion. Normally, the SEO should contact the owner of the alleged malfunction within one week of receiving the complaint. An actual site visit, if necessary, should be scheduled promptly.

The person making the complaint should not expect a final resolution of a serious malfunction to occur "overnight." The various steps to resolving a serious malfunction take time; investigating the site, testing soils, processing the sewage permit application, designing the repair system and conducting the repair. Also, the timing of the field activities is dependent on the weather.

If legal action is required by the local agency to get the responsible property owner to resolve the serious malfunction, additional delays can be expected. Complainants need to give their local officials time to do the job.

### **What happens if the malfunction problem is not resolved?**

If the responsible property owner fails to repair the malfunction, the person making the complaint should go back to the local agency and renew the complaint. That person also may wish to seek private legal assistance to help resolve the matter.

### **Phosphate Detergent Ban**

Act 31, the Phosphate Detergent Act, was signed into law on July 5, 1989. This law primarily bans phosphates from household laundry detergents and non-health care related commercial laundry operations.

### **Controlling the Impact of Nitrogen on Drinking Water**

The Environmental Protection Agency's drinking water regulations define the concentrations and chemical characteristic parameters that are harmful to public health. These regulations state that water containing nitrate nitrogen levels in excess of 10 ppm should not be used for drinking water. Further, nitrite nitrogen may not exceed 1 ppm. This regulation, when linked with the language of the Clean Streams Law which defines pollution in part as contamination that renders waters harmful to public health, thereby provides the basis for requiring hydro geologic studies.

### **Financial Assistance**

Low-cost financing for wastewater systems is available across the Commonwealth. In some parts of the Commonwealth, particularly rural areas, it may be more cost-effective for individual home owners to use their own on-lot sewage disposal systems rather than incur the high costs of constructing long collection lines to service widely scattered properties. As with larger systems,

however, these individual on-lot sewage disposal systems may require improvement, repair or replacement to meet public health and environment standards.

*Eligibility requirements:*

- All citizens of the Commonwealth, with limited exceptions. Detailed information eligibility requirements can be obtained from any of the agencies involved in the program by either sending in an information request form, or by calling the numbers listed at the end of this section. Alternatively, eligibility information can be obtained from a participating local lending institution or your local Sewage Enforcement Officer.
- Family Income must not exceed 150 percent of the statewide median household income, adjusted annually for inflation. The applicable maximum through December 31, 2005 is \$66,776.
- All areas are eligible for project location unless a community wastewater collection and treatment system is either in place or will be constructed in the next five years.

*Eligible Uses:*

- Rehabilitation, improvement, repairs or replacement of an existing system located on a single family, owner occupied property which is the primary resident of the owner.
- Project costs may include construction fees and costs, permit fees, loan origination fees and legal fees.

*Ineligible Uses*

- Construction may NOT begin on repair or replacement project before receiving approval of the loan. Projects will be ineligible for funding from this program if construction starts prior to approval.
- *Amounts*
- Loans up to a maximum of \$25,000 at an interest rate of 1% annum.
- Loans must be secured through financial ability to repay loan must be demonstrated through credit worthiness.

*Terms and Conditions:*

- Loans must be secured by a mortgage on the borrower's home.
- The maximum term of a loan is twenty years and loaned repayment commences within sixty days after the date of loan closing.
- Loan must be immediately repaid in full if the property on which the project is located is either sold or transferred.
- Loan origination and servicing fees will be also charged in connection with a loan.
- A basic requirement of the program is that you keep your upgraded or new on-lot system in good repair, have it pumped out regularly and ensure that it does not malfunction and fail to adequately treat wastewater or cause a public health hazard. A pumping frequency schedule and reporting requirements will be included in your loan agreement.

For more information, contact PennVEST at 717-787-8138.

**I want to build a hunting cabin with indoor plumbing or add indoor plumbing to my existing cabin. Since it will only be used a short time each year, can I use a holding tank?**

It is an unfortunate fact that, over time and changing ownership, many seasonal facilities like hunting cabins and vacation cottages evolve into year-round residences. With this evolution in mind, even seasonal sites must demonstrate capability of supporting a sewage system able to serve a full time residence. Therefore, sufficient site suitability testing, such as percolation and soils probe tests must be conducted to identify and protect a location suitable for the installation of an on-lot sewage disposal system to service a structure with indoor plumbing. In this way, seasonal use cottages and even hunting cabins are prepared for long-term residential use. Modern regulations do not provide for long-term holding tank service to residential type structures. Even interim use of a holding tank for a cabin is allowed only if the municipality's official sewage facilities plan (Act 537 Official Plan) schedules a short-term replacement of the holding tank with a permanent long-term facility such as a public sewer line. Generally speaking, cabins without indoor

plumbing rely on privies for sanitary facilities, while cabins with indoor plumbing utilize on-site septic systems, not holding tanks.

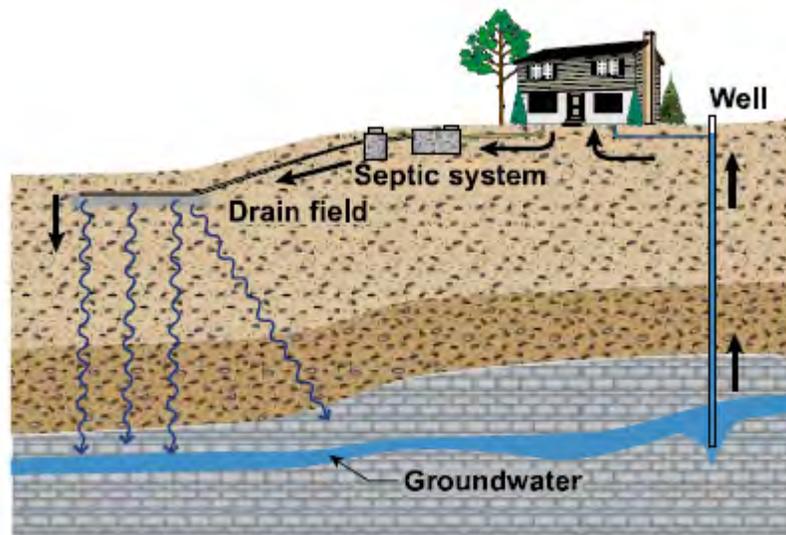
**I am thinking about buying a cottage for seasonal use that currently has an old privy. With what I have just read about holding tanks, what should I be concerned with as I investigate this property?**

The greatest concern would be purchasing a property that has no future method of sewage disposal. The greatest protection against such a problem is to become informed about the property. Ask the seller about the sewage facilities planning status of the property. It should have received planning approval from the local municipality and DEP or predate this requirement (prior to May 15, 1972). Ask about sewage disposal permit status and site suitability testing. Ask for copies of any permits issued and for soil test reports. Discuss the property's potential for sewage disposal with the Sewage Enforcement Officer employed by the municipality where the property is located. Privy standards have changed over the years, and an examination of the privy's construction can reveal much information. Modern privies are built above a watertight vault, while substandard privies use a pit dug in the ground. The combination of a privy and a pressurized water system (within the structure) is not allowed in modern regulations and is a situation that should cause a prospective buyer to ask questions about waste disposal. Do not make the mistake of assuming that upgrading a privy to a holding tank is an available option. Pit privies are routinely upgraded to vault privies, not holding tanks. Conversion to holding tanks use is rarely an acceptable alternative.

### 3. Understanding the Importance of Soils in Siting an On-lot System

#### Why is having a properly functioning on lot system important?

Groundwater is the primary source of drinking water in areas served by individual and community wells; therefore, keeping the groundwater free of contamination is very important. Water that carries sewage from a household or business to an on-lot sewage disposal system (sometimes called a septic system) will eventually re-enter this same groundwater (figure 4). On-lot systems, when properly designed, operated and maintained, will treat this wastewater so that it may safely be used again. On-lot systems that are not functioning properly do not treat sewage to a level that is safe and can discharge improperly treated sewage to the surface of the ground and/or to groundwater. Improperly treated sewage carries bacteria and viruses known to cause many human diseases, such as gastroenteritis, diarrhea and dysentery.



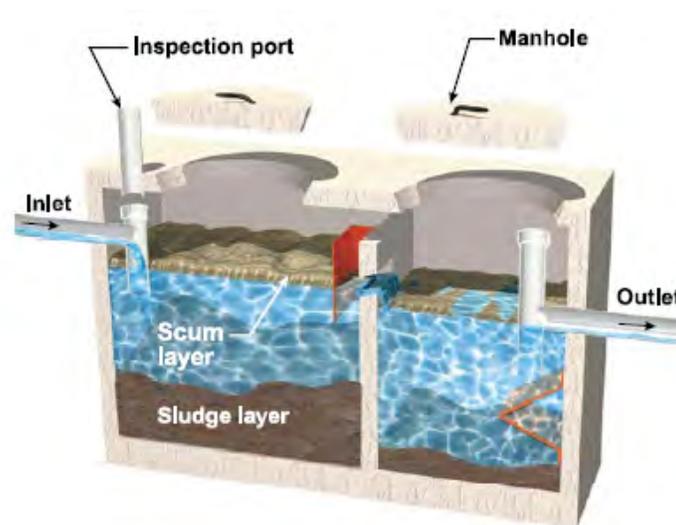
**Figure 4. On-Lot Disposal System and Groundwater Flow**

#### How does an on-lot system treat sewage?

The sewage from household plumbing first enters a treatment tank (figure 5), where primary treatment occurs. The heavier solid matter settles to the bottom of the tank, where microorganisms

feed on and break down the waste. Lighter fats, oils and greases float to the top of the tank, forming a scum layer. Wastewater leaving the treatment tank is cleaner, but still contains disease causing bacteria and viruses, as well as other contaminants, which must be further treated before reaching groundwater or other water supplies.

From the treatment tank, the partially-treated sewage passes through a distribution system of piping and into a bed of gravel (aggregate). The sewage flows over the gravel and then into the underlying soil. In a properly sited on-lot system, further treatment is provided by this soil. The soils are the most important part of your on-lot system because they provide a treatment barrier between untreated sewage and water supplies.

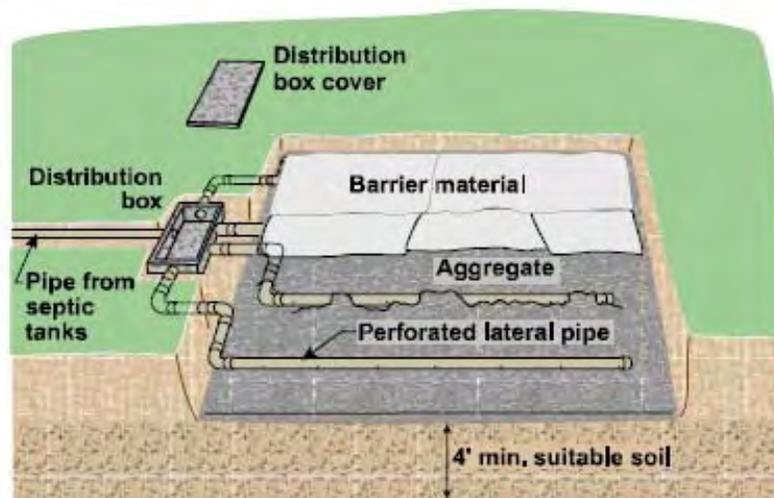


**Figure 5. Treatment Tank**

### **What soil conditions are needed to treat sewage?**

About four feet of suitable soil is needed under the gravel layer to treat sewage (figure 6). Good soil for sewage treatment is relatively free of rock and not saturated with water. The soil structure must allow the liquid waste to pass through at a suitable rate. The waste must pass slowly enough to allow the microorganisms time to feed on the harmful material, yet fast enough to dispose of the amount of liquid waste entering the absorption area. While soils rich in clay treat sewage most effectively, the fine pores of many of these soils slow the downward movement or percolation of

sewage, which may cause backups to the surface of the ground. Soils rich in sand allow rapid percolation to dispose of sewage but do not hold the sewage long enough to treat it adequately before it reaches groundwater. Treatment continues in the soil until rock or soil saturated with liquid is encountered. Rock allows sewage to move quickly into groundwater without proper treatment. Saturated soils do not provide the aerobic (oxygen rich) conditions needed by microorganisms to treat sewage.



**Figure 6. Soil Absorption Area**

Partially treated sewage reaching either rock or saturated soils will enter the water supply. Any contaminants or disease-producing organisms present in the sewage will be in the glass of water you drink from your polluted well. Viruses can survive in groundwater in excess of one year.

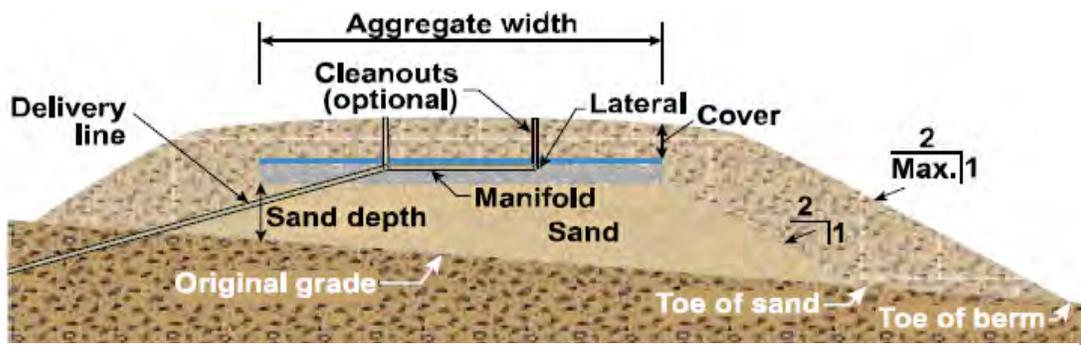
**I don't have four feet of suitable soil on my property, but the SEO issued a permit for an elevated sand mound. How does this system work?**

The elevated sand mound system (figure 7) makes up for the lack of natural suitable soil by using a special blend of sandy fill material. The sandy fill material is placed on top of the natural soil. The piping and gravel are then placed on top of this fill material and a mound is formed above the

original ground level. A property with as little as 20 inches of suitable natural soil may use an elevated sand mound, depending on slope. The required four feet of suitable soil in this case is made up of 20 inches of natural soil and 28 inches of sandy fill material.

**I understand the need for an elevated sand mound for my lot but don't like the idea of a big mound in the middle of my yard. Can it be blended into the landscape?**

Yes, if possible, the system should be located in a position that will make it easy to blend into the landscape. Fill soils may be used to blend the system into the landscape after installation, as long as care is taken not to damage the system or compact the soils around the system. Elevated sand mound systems, however, are never 'cut' into a hillside.



**Figure 7. Typical Elevated Sand Mound System**

## 4. Sales Contract Requirements under Act 537

Act 537 (the Pennsylvania Sewage Facilities Act) requires every contract for the sale of a lot where there is no currently existing community sewage system available, to contain language notifying the buyer of this fact. Other language indicating what actions are necessary to obtain a sewage disposal permit for the lot, or notifying the buyer of unusual circumstances surrounding sewage disposal on the lot, may also be required. This section answers frequently asked questions about required sales contract language.

### When does Act 537 require sales contract language?

Act 537 (the Pennsylvania Sewage Facilities Act) requires the inclusion of advisory language in the sales contract for a building lot whenever certain specified situations occur. These include:

- the sale of a lot that does not have access to a community sewage system, and therefore must be served by an individual sewage system;
- the sale of a lot that is served by an individual sewage system installed under the 10-acre permit exemption provisions of Act 537;
- the sale of a lot served by a holding tank, whether permanent or temporary;
- the sale of a lot where the required horizontal isolation distance between the well and sewage system is not met;
- the sale of a lot located within an area where limitations on permit issuance are in effect; or
- the sale of a lot where a required revision for new land development, exception to the requirement to revise or supplement has not been approved by DEP or a delegated local agency.

## Why does the act require sales contract language in these situations?

The intent of the sales contract language is to ensure that the buyer of the lot is aware of any unusual circumstances surrounding sewage disposal on the lot. However, it does not substitute for careful investigation on the buyer's part.

## If a lot does not have access to a currently existing community sewage system, what language must appear in the sales contract?

Language similar to the following must be included in the sales contract:

*“This lot does not have access to a currently existing community sewage system. A permit for an individual sewage system must be obtained from the local agency in accordance with Section 7 of the Pennsylvania Sewage Facilities Act. The buyer should contact the local agency charged with administering the act before signing this contract, to determine the procedure and requirements for obtaining a permit for an individual sewage system if one has not already been obtained.”*

## What language is required if the lot in question was created under the 10-acre exemption provision of Act 537?

Language similar to the following is required:

*“Soils and site testing relating to the suitability of this lot for the installation of a sewage disposal system have not been conducted. The owner of the property served by the sewage disposal system installed on this lot at the time of a malfunction may be liable for any contamination, pollution, public health hazard or nuisance which may occur as a result of the malfunction.”*

## What language must be included in sales contracts for lots served by holding tanks?

The sales contract for a lot served by a holding tank must contain language similar to the following:

*“With respect to sewage disposal, this property is served by a holding tank instead of a conventional sewage disposal system. The holding tank is designed and constructed for the temporary storage of sewage and to facilitate ultimate disposal of the sewage at another site*

approved by the Department of Environmental Protection. It has cost \$ \_\_\_\_\_ per year to maintain the holding tank since the date of its installation.”

**If a lot received a waiver of the isolation distance between the well and on-lot sewage disposal system components, what advisory language must appear on the sales contract?**

Sales contract language similar to the following is required:

“With respect to a well located on this property (or at a designated location on this property), the on-lot sewage disposal system components were not installed in conformance with the minimum isolation distances between on-lot sewage systems and wells specified in regulations of the Department of Environmental Protection at Title 25 Pennsylvania Code Chapter 73.”

**If a lot was created in an area subject to the limitations on permit issuance contained in Act 537, what language must appear in the sales contract?**

The contract of sale must include a statement similar to:

“Sewage facilities are not available for Lot # \_\_\_\_\_ in the \_\_\_\_\_ Subdivision, and sewage facilities will not be available and construction of any structure requiring sewage facilities may not begin until \_\_\_\_\_ Township has completed and DEP has approved, a major planning requirement in accordance with the provisions of Section 7(b)(4.1)(ii) of the Pennsylvania Sewage Facilities Act (25 P.S. Sec. 750.7(b)(4.1)(ii)).”

**If sewage facilities planning (a revision, exception or supplement to the municipal Official Sewage Facilities Plan) has not been approved by DEP or a delegated local agency for a lot, what language must appear in the lot’s sales contract?**

“Sewage facilities are not available to serve this lot. Sewage facilities will not be available, nor may construction begin on this lot, until sewage facilities’ planning has been approved by DEP or a delegated local agency serving this area, as appropriate.”

**Must the sales contract language be included only in the sales contracts for new lots, or must it be included for every sale of a lot affected by one of the specified conditions?**

The sales contract language must be included in the contract for each sale of the affected lot for as long as the condition remains. If the condition triggering the sales contract language requirement is removed, the language is no longer required.

**What happens if the required language is not in the contract?**

If the required sales contract language does not appear in the sales contract, the contract is not enforceable by the seller against the buyer. Further, should the contract contain language that an attempt to waive the buyer's rights to any of the required disclosures, the contract is void.

## 5. Act 537 Planning Module Review Fees

In Pennsylvania, each municipality is required by the Pennsylvania Sewage Facilities Act (Act 537) to have an Official Plan. This plan addresses the present and future sewage disposal needs of its residents. Individual municipalities (or groups of municipalities working together) prepare these plans to describe existing sewage disposal methods and methods proposed for future developments. Municipalities periodically revise their official plans to help ensure that all current and future development activities have access to adequate sewage disposal facilities. Such revisions to plan sewage disposal methods for new construction of residential, business or industrial areas are known as **Sewage Facilities Planning for New Land Development**. These revisions are completed using DEP-provided forms called **Sewage Facilities Planning Module Components**. Each component is designed to correspond to a specific type of new land development planning and sewage disposal method. A complete package of components and attachments for an individual new land development project is referred to simply as a "planning module."

Prior to Dec. 15, 1995, all planning modules were sent to DEP for final review. Since that date, however, local agencies can apply to DEP to be granted delegation of final planning module approval. A local agency that has been granted this authority is called a **delegated local agency**.

Act 537 also included a requirement for DEP or a delegated local agency to collect fees for the review of planning modules. The fee amounts that DEP collects for various types of projects are described below. Delegated local agencies may charge fees that are the same or different than those charged by DEP.

### **DEP Planning Module Review Fees**

After municipal approval of a planning module component and its submission to DEP for review, DEP will calculate the required review fee, notify the municipality and invoice the applicant. An applicant may also choose to calculate a project review fee and attach a check for this amount to the planning module package prior to submission to DEP. If the planning module must be reviewed more than once, review fees may be collected for each review. The following DEP fees are set by statute:

1. For projects proposing to use locally permitted on-lot sewage disposal systems and planned using a Component 2 type sewage facilities planning module, the fee is \$30/lot or Equivalent Dwelling Unit (EDU). One EDU is equal to the assumed sewage flow from a single-family home, i.e. 400 gallons per day (gpd). The expected daily sewage flow from a multi-unit, commercial or industrial development is divided by 400 to derive the number of EDUs.
2. For any proposal that can reasonably be expected to result in a surface discharge of sewage flows greater than 2,000 gpd to “waters of the Commonwealth” or to the ground’s surface and is planned using a Component 3 type sewage facilities planning module, the fee is \$500 for projects submitted by political subdivisions and \$1,500 for projects submitted by all other applicants. These same fees also apply to projects planned using a Component 2 type sewage facilities planning module and proposing a discharge to a subsurface absorption area for which a DEP-issued Clean Streams Law permit is required.
3. For projects proposing to use public sewerage services and planned using a Component 3 type sewage facilities planning module, the fee is \$50/lot or EDU, whichever is greater.
4. For all other proposals not fitting in one of the previous classifications, such as projects planned using either Component 1 or Component 3s type sewage facilities planning modules, the fee is \$35/lot or EDU, whichever is greater.

### **Delegated Local Agency Planning Module Review Fees**

If your project is located in an area served by a delegated local agency, contact that agency for a copy of its fee schedule. To find out if your project is located in an area served by a delegated local agency, contact the DEP regional office serving your county.

### **Exceptions to Act 537 Planning Requirements**

Act 537, the Pennsylvania Sewage Facilities Act, requires each municipality in the Commonwealth to have an Official Sewage Facilities Plan that addresses the existing and future sewage disposal needs of the municipality. In most cases, DEP requires completion of formal sewage facilities

planning for new land development to update or revise the municipal official plan before a subdivision is created thus ensuring an adequate means of sewage disposal. However, there are certain categories of subdivisions that do not require formal adoption of the plan by the municipality as a revision to the official plan. This fact sheet answers questions that are often asked regarding sewage planning for exceptions as described in Title 25, Pennsylvania Code, Chapter 71 §71.55. This section of DEP's Regulations, as well as others, is available on line at [www.pacode.com](http://www.pacode.com).

### **What is an exception or minor subdivision?**

To qualify as an 'exception', the subdivision must fit the following criteria:

- Planning must be required for the subdivision under Act 537 (to determine if planning is required for your project, request information on subdivisions exempt from planning from your DEP regional office.
- The entire subdivision (proposed lots, previous lots and residual land) must consist of no more than 10 lots created since May 15, 1972;
- The lots must be proposed as sites for construction of detached single family homes;
- The proposed homes must be intended to be served by individual on-lot sewage disposal systems;
- Exceptions are not prohibited by local public health or environmental conditions; and
- If all of these conditions are met, the proposed subdivision should qualify as an exception.

### **How is an 'exception' planned?**

DEP has produced a series of forms, called "planning module components," that are used to gather information about a project. When an exception is proposed, the developer should request a "Component 1" form from the municipality where the proposed subdivision is located, from the DEP regional office serving that municipality, or from the DEP website at [www.dep.state.pa.us](http://www.dep.state.pa.us) (Keyword: wastewater).

## **Who should complete the Component 1 planning module form?**

An individual, such as a consulting engineer or surveyor, who is familiar with the municipality's official plan and with DEP's regulations and procedures, should complete Component 1. The municipality's certified Sewage Enforcement Officer (SEO) also should be consulted to confirm site and soil testing information.

## **What information must be provided in the Component 1?**

The Component 1 form contains instructions that describe the planning process and the information required in detail. The developer is required to provide information about the proposed subdivision, including:

- the location of the subdivision;
- the number of lots proposed;
- the planned layout of the subdivision, in the form of a surveyor's drawing or "plot plan";
- the planned source of drinking water (wells or a public supplier); and
- the site conditions, such as soil testing results and ground slope measurements.

When the Component 1 form is complete and all of the associated information required has been attached, the complete plan is called a "planning module for land development" or simply a "planning module."

## **When the Component 1 planning module is complete, what's the next step?**

The municipality where the proposed subdivision is located reviews the completed planning module.

## **What is the municipality's role in review of 'exceptions'?**

Each municipality has the primary responsibility to review and if appropriate approve exceptions. DEP provides oversight and assistance to local governments to help them effectively carry out their duties.

## **How long does it take to get municipal approval?**

If the planning module is complete, the municipality has 60 days to review and act on the plan unless both the developer and municipality agree to a time extension in writing. The municipality must either approve or disapprove the plan within the 60 days, or the agreed-to time extension. If the municipality approves the planning module, it then sends the planning module to DEP for final review. If the municipality fails to act within the allotted time, the planning module is "deemed approved" and can be sent to DEP for final review. If the planning module is not complete, the municipality will request the missing information before taking action.

## **How long does it take to get DEP approval for an exception?**

DEP has 30 days to act on a complete Component 1 planning module. If DEP does not act within the 30 day period, the 'exception' planning module is deemed to be applicable.

## **Is there a fee for DEP review of an exception?**

Yes. Act 537 requires DEP to charge a per-lot fee for review of planning modules. The amount is set by law and varies with the type of project. The fee for exceptions planned using a Component 1 is \$35 per lot. The developer may calculate the appropriate fee and submit it to DEP with the planning modules or DEP will calculate the review fee and advise the developer by mail of the amount owed. DEP does not include residual tracts in this fee calculation.

## **What happens if DEP or the municipality finds that my proposed subdivision is not an exception?**

If the municipality or DEP discover that the proposed subdivision does not meet one or more of the conditions required to qualify as an exception, the applicant will be informed and provided with the appropriate DEP forms. While some of these forms may require more information than the Component 1, much of the information, such as soil test results and plot plan, can be reused.

## **When can I apply for on-lot system permits for my lots?**

The developer may apply for individual on-lot sewage disposal system permits after receiving final DEP action on the Component 1 Planning Module.

## 6. Home Buyer's/Builders Guide

Many Pennsylvanians, particularly those living in rural areas, depend on on-lot systems (also called "septic" systems) to treat the sewage from their home. Properly functioning on-lot systems treat, distribute and dispose of sewage through a clean, economic and efficient process.

The Pennsylvania Sewage Facilities Act (Act 537 of 1966, as amended) requires local agencies (local municipalities, group of municipalities or County Health Department) to administer a permitting program for the installation of on-lot sewage disposal systems. The purpose of this permitting program is to ensure uniform standards of system design and installation and thus prevent outbreaks of environmental and public health problems from substandard or malfunctioning on-lot systems.

### **Investigate Before You Invest**

Planning to buy a lot that needs to have an on-lot sewage disposal system installed? Be sure to investigate before you buy. Among other precautions, find out if:

All state, county and local subdivision requirements, such as sewage planning, have been met and approved.

- All permit requirements, such as zoning and building, have been met.
- The lot you are considering qualifies for an on-lot sewage disposal system permit from the local certified Sewage Enforcement Officer (SEO). (The buyer needs to be aware that a subdivision approval does not guarantee that each lot in the subdivision will qualify for a sewage permit. The buyer may want to require the seller to obtain a sewage permit first as a condition of the sale.)

If you have any questions or doubts about the required permits or subdivision approvals for the lot you are considering, contact the local government officials where the lot is located. Be sure to contact the SEO.

Remember, what may look like the dream lot could lead to nightmares and, possibly, financial ruin. So, investigate before you invest!

## Working With Your Local SEO

The on-lot permit program is administered by a local agency. This organization may be a municipality, a multi-municipal organization, or a county or joint county Department of Health. An SEO is the local agency employee responsible for reviewing and approving permits applications and being knowledgeable about on-lot systems. While the SEO is trained by DEP and certified by the State Board for Certification of Sewage Enforcement Officers, the SEO is actually an employee of the local agency, not DEP. To find out how to contact the local agency SEO, start with your local municipal office.

## Getting Your Permit

To obtain a permit for an on-lot sewage system, these steps must be followed in the order listed:

1. The lot owner, or an agent for the owner, applies for a permit through the SEO. If the lot is in a subdivision, the lot owner should first ensure that all other state, county and local planning, zoning and land use requirements have been met by checking with municipal officials.
2. The SEO measures slope and conducts soil profile examinations and percolation tests to determine if the site is suitable for an on-lot system. If suitable, the SEO determines which type of on-lot system will work best. (The types of systems are listed later in this document).
3. If the site is suitable, the SEO informs the lot owner or agent to proceed with the system design. The system must be designed with certain factors in mind, including site conditions, isolation distances, percolation test results and the number of bedrooms in the home. (The SEO is specifically prohibited from designing the system.)
4. Once the lot owner or agent has the design and plot plan, they are submitted as part of the permit application to the SEO. The SEO must approve or deny the permit within seven days of receiving a complete application. If approved, the SEO issues the permit and the applicant may begin installing the system and building the home. If denied, the SEO notifies the applicant and provides the opportunity to an appeal hearing before the local agency.

The SEO may oversee any step of the installation, but must inspect the completed system before it is covered.

## **Knowing the Types of On-lot Systems**

There are five basic conventional on-lot systems permitted for use on residential lots. They are:

- in-ground trench
- in-ground seepage beds
- subsurface sand filters
- elevated sand mounds
- spray irrigation

The type of system selected and permitted depends on the site conditions and the type of soil on the lot.

## **Observing the Installation**

When you have the permit (which is valid for three years), you are ready for the installation of your system. Be sure to hire a reputable contractor because the best designed system can malfunction if not properly installed. Get written bids from potential contractors, ask for a list of references, and ask professional associations or your local SEO if they know these contractors. You, too, should be somewhat aware of the proper installation procedures and observe the contractor's activities. Ask your local SEO for information about proper installation procedures.

## **Continuing Operation and Maintenance**

Once the on-lot system is installed, the homeowner becomes responsible for following proper operating and maintenance procedures to prevent malfunctions and ensure long-term use of the system. See DEP's "On-lot System Operations and Maintenance (Homeowner's Guide)" available on the DEP website for additional information.

## **Understanding DEP's Role**

DEP's primary role in the on-lot permit program is to provide financial assistance and oversight to local agencies, train SEOs and help local agencies carry out their permitting and enforcement responsibilities.

## BIBLIOGRAPHY

Act 31 - Phosphate Detergent Act Fact Sheet, PADEP

Act 537 - Chapter 73. Standards for On-lot Sewage Treatment Facilities

Act 537 Sewage Disposal Needs Identification Fact Sheet, PADEP.

Alternate Systems Guidance, PADEP.

Appealing a local Agency Decision under Act 537 Fact Sheet, PADEP.

Bonded Disposal Systems and Mottling Fact Sheet, PADEP.

Chesapeake Bay Program. [www.chesapeakebay.net](http://www.chesapeakebay.net)

Ensuring Long-Term Use of On-lot Systems through Proper Operation and Maintenance Fact Sheet, PADEP.

Exceptions to Act 537 Planning Requirements Fact Sheet, PADEP.

Growing Greener Grants for New or Innovative Water and Wastewater Technology Projects Fact Sheet, PADEP.

Malfunctioning On-Lot Sewage Disposal Systems Fact Sheet, PADEP.

National Small Flows Clearinghouse. [http://www.nesc.wvu.edu/nsfc/nsfc\\_index.htm](http://www.nesc.wvu.edu/nsfc/nsfc_index.htm)

Pennsylvania Department of Environmental Protection web site. [www.dep.state.pa.us](http://www.dep.state.pa.us)

Pennsylvania Sewage Facilities Act (Act 537) Planning Module Review Fees Fact Sheet, PADEP.

Sales Contract Requirements under Act 537 Fact Sheet, PADEP.

Understanding Holding Tanks Fact Sheet, PADEP.

Understanding the Importance of Soils in Siting an On-Lot System Fact Sheet, PADEP.

Understanding Your On-Lot Disposal System (OLDS) Fact Sheet, PADEP.

United States Environmental Protection Agency's Office of Water web site.

<http://www.epa.gov/water/>

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## GLOSSARY

You may come across the following words and terms in reference to on-lot disposal systems (septic systems), either in this document or elsewhere.

*Absorption area*—A component of an individual or community sewage system where liquid from a treatment tank seeps into the soil; it consists of an aggregate-filled area containing piping for the distribution of liquid and the soil or sand/soil combination located beneath the aggregate.

*Act*—The Pennsylvania Sewage Facilities Act (35 P. S. § § 750.1–750.20).

*Aggregate*—Coarse material manufactured from stone, gravel or slag, having Type B characteristics as described in Department of Transportation specifications, Form 408, section 703.3, Table B and uniform size and grading equivalent to American Association of State Highway and Transportation Officials No. 57, as described in Form 408, section 703.3, 2 Table C.

*Agricultural areas*—Areas used primarily for the production of crops and where the soil is without vegetative cover during certain periods of the year.

*Alternate sewage system*—a method of demonstrated on-lot sewage treatment and disposal not described in this part.

*Bonded disposal system*—an individual sewage system located on a single lot serving a single family residence, where soil mottling is within 20 inches of the mineral soil surface, the installation, operation and replacement of which is guaranteed by the property owner.

*Building sewer*—Piping carrying liquid wastes from a building to the treatment tank or holding tank.

*Buried sand filter*—a system of piping, sand media, aggregate and collection piping in a buried liner used for the intermittent filtration and biochemical treatment of sewage.

*Clean Streams Law*—the Clean Streams Law (35 P. S. § § 691.1–691.1001).

*Conventional sewage system*—a system employing the use of demonstrated on-lot sewage treatment and disposal technology in a manner specifically recognized by this chapter. The term does not include alternate or experimental sewage systems.

*Dosing pump*—the pump housed in a dosing tank which provides a measured volume of sewage effluent to the pressurized distribution system in an absorption area.

*Experimental sewage system*—a method of on-lot sewage treatment and disposal not described in this title which is proposed for the purpose of testing and observation.

*Filter tank*—the tank housing the piping and sand of the free access sand filter.

*Forested areas*—Areas where the predominant vegetative cover is comprised of trees with a closed canopy.

*Free access sand filter*—an accessible system of tanks, dose piping, sand media, aggregate and collection piping used for the intermittent filtration and biochemical treatment of sewage.

*Geotextile*—Material consisting of mesh polypropylene, polyester, nylon or similar material, used to prevent migration of fine aggregate into coarser aggregate.

*Grassed area*—an area where the predominant vegetative cover is comprised of grasses, bushes or trees not forming a closed canopy.

*Individual residential spray irrigation system*—An individual sewage system which serves a single dwelling and which treats and disposes of sewage using a system of piping, treatment tanks and soil renovation through spray irrigation.

*Individual sewage system*—A system of piping, tanks or other facilities serving a single lot and

collecting and disposing of sewage in whole or in part into the soil or into waters of this Commonwealth or by means of conveyance to another site for final disposal.

*Industrial waste*—A liquid, gaseous, radioactive, solid or other substance, which is not sewage, resulting from manufacturing or industry or other plant or works and mine drainage, silt, coal mine solids, rock, debris, dirt and clay from coal mines, coal collieries, breakers or other coal processing operations. The term includes substances whether or not generally characterized as waste.

*Lift pump*—a submersible pump used to convey effluent to the sand filter and from the sand filter to the chlorine/retention tank.

*Municipality*—A city, incorporated town, township, borough or home rule municipality other than a county.

*NSF*—National Sanitation Foundation.

*Official plan*—A comprehensive plan for the provision of adequate sewage systems adopted by a municipality possessing authority over the provision of the systems and submitted to and approved by the Department as provided by the act and Chapter 71 (relating to administration of sewage facilities program).

*Person*—The term includes an individual; association; public or private corporation for-profit or not-for-profit; partnership; firm; trust; estate; department; board; bureau or agency of the United States or the Commonwealth; political subdivision; municipality; district; authority; or other legal entity which is recognized by law as the subject of rights and duties. The term includes the members of an association, partnership or firm and the officers of a local agency or municipal, public or private corporation for-profit or not-for-profit.

*Qualified registered professional engineer*—a person registered to practice engineering in this Commonwealth who has experience in the characterization, classification, mapping and interpretation of soils as they relate to the function of on-lot sewage disposal systems.

*Qualified registered professional geologist*—a person registered to practice geology in this Commonwealth who has experience in the characterization, classification, mapping and interpretation of soils as they relate to the function of on-lot sewage disposal systems.

*Qualified soil scientist*—A person certified as a sewage enforcement officer and who has documented 2 years' experience in the characterization, classification, mapping and interpretation of soils as they relate to the function of on-lot sewage disposal systems and either a Bachelor of Science Degree in soils science from an accredited college or university or certification by the American Registry of Certified Professionals in Agronomy, Crops and Soils.

*Retaining tank*—a watertight receptacle which receives and retains sewage and is designed and constructed to facilitate ultimate disposal of the sewage at another site. The term includes the following:

- (i) Chemical toilet. A permanent or portable nonflushing toilet using chemical treatment in the retaining tank for odor control.
- (ii) Holding tank. A tank, whether permanent or temporary, to which sewage is conveyed by a water-carrying system.
- (iii) Privy. A tank designed to receive sewage where water under pressure is not available.
- (iv) Incinerating toilet. A device capable of reducing waste materials to ashes.
- (v) Composting toilet. A device for holding and processing human and organic kitchen waste employing the process of biological degradation through the action of microorganisms to produce a stable, humus-like material.
- (vi) Recycling toilet. A device in which the flushing medium is restored to a condition suitable for reuse in flushing.

*Sewage*—A substance that contains the waste products or excrement or other discharge from the bodies of human beings or animals; a substance harmful to the public health, to animal or aquatic life or to the use of water for domestic water supply or for recreation; or a substance which constitutes pollution under The Clean Streams Law.

*Sewage enforcement officer (SEO)*—An official of the local agency who reviews permit applications and sewage facilities planning modules and issues permits as authorized by the act and conducts the investigations and inspections that are necessary to implement the act and regulations thereunder.

*Sewage facilities*—A system of sewage collection, conveyance, treatment and disposal which will prevent the discharge of untreated or inadequately treated sewage or other waste into waters of this Commonwealth or otherwise provide for the safe and sanitary treatment and disposal of sewage or other waste. The term includes:

*Individual sewage system*—A system of piping, tanks or other facilities serving a single lot and collecting and disposing of sewage in whole or in part into the soil or into waters of this Commonwealth or by means of conveyance to another site for final disposal.

(A) Individual on-lot sewage system—An individual sewage system which uses a system of piping, tanks or other facilities for collecting, treating or disposing of sewage into a soil absorption area or spray field or by retention in a retaining tank.

(B) Individual sewerage system—an individual sewage system which uses a method of sewage collection, conveyance, treatment and disposal other than renovation in a soil absorption area, or retention in a retaining tank.

*Community sewage system*—A sewage facility, whether publicly or privately owned, for the collection of sewage from two or more lots, or two or more equivalent dwelling units and the treatment or disposal, or both, of the sewage on one or more of the lots or at another site.

(A) Community on-lot sewage system—A community sewage system which uses a system of piping, tanks or other facilities for collecting, treating and disposing of sewage into a soil absorption area or retaining tank.

(B) Community sewerage system—a publicly or privately owned community sewage system which uses a method of sewage collection, conveyance, treatment and disposal other than renovation in a soil absorption area, or retention in a retaining tank.

*Small flow treatment facility*—An individual or community sewerage system designed to adequately treat sewage flows not greater than 2,000 gpd for final disposal using a stream discharge or other methods approved by the Department.

*Soil horizon*—a layer of soil approximately parallel to the soil surface with characteristics produced by soil-forming processes.

*Soil mottling (redoximorphic features)*—a soil color pattern consisting of patches of different colors or shades of color interspersed with the dominant soil color which results from prolonged saturation of the soil.

*Soil profile*—the collection of soil horizons, including the natural organic layers on the surface.

*Solids retainer*—a deflection device at the outlet tee or baffle of a septic tank designed to deflect buoyed solids from escaping the tank.

*Spray field*—piping, spray heads and ground surface to the outside edges of the wetted perimeter, used for the application and treatment of the sewage effluent in an individual residential spray irrigation system.

*Treatment tank*—a water-tight tank designed to retain sewage long enough for satisfactory bacterial decomposition of the solids to take place. The term includes the following:

- (i) *Septic tank*—A treatment tank that provides for anaerobic decomposition of sewage prior to its discharge to an absorption area.
- (ii) *Aerobic sewage treatment tank*—a mechanically aerated treatment tank that provides aerobic biochemical stabilization of sewage prior to its discharge to an absorption area.

*Undisturbed soil*—Soil or soil profile, unaltered by removal or other man-induced changes, except for agricultural activities, that would adversely affect the siting or operation of on-lot systems.

*Water of this Commonwealth*—Rivers, streams, creeks, rivulets, impoundments, ditches, water courses, storm sewers, lakes, dammed water, ponds, springs and other bodies or channels of conveyance of surface and underground water, or any of their parts, whether natural or artificial within or on the boundaries of this Commonwealth.

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## **APPENDICES**

A. Sewage Enforcement Officers of York County

B. Offices of Pennsylvania Department of Environmental Protection

C. Other Resource Contacts

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## APPENDIX A - Sewage Enforcement Officers of York County

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Clark Craumer - SEO#:01588

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Jeffrey Helwig - SEO#:01655

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Bradley Hengst - SEO#:00215

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(717) 846-4805

Matthew Kramer - SEO#:02132  
Caliber Consulting LLC  
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(717) 659-0219

JAMES LEHMAN - SEO#:03585  
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DILLSBURG PA 17019-  
(717) 528-7955

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RED LION PA 17356-  
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GEORGE MAUTE JR - SEO#:03481  
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DOVER PA 17315-  
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Susan Miller - SEO#:03252  
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Fawn Grove PA 17321-9653  
(717) 382-4881

James Novinger - SEO#:03175  
45 Sam Snead Cr  
Etters PA 17319-

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(717) 843-2119

John Shambaugh - SEO#:01972

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Dillsburg PA 17019  
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Timothy Wargo - SEO#:02454

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Robert Whitmore - SEO#:02897

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Zane Williams - SEO#:02294

2464 Croll School Rd  
York PA 17403-  
(717) 741-4621

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## APPENDIX B - Offices of Pennsylvania Department of Environmental Protection

Department of Environmental Protection

Bureau of Water Supply and Wastewater Management

Division of Wastewater Management

P.O. Box 8774

Harrisburg, PA 17105-8774

(717) 787-8184

South-central Region

909 Elmerton Ave.

Harrisburg, PA 17110

Main Telephone: 717-705-4700

24-Hour Emergency: 1-877-333-1940

Counties: Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry and York

For more information, visit DEP's website at [www.dep.state.pa.us](http://www.dep.state.pa.us), Keyword: "DEP wastewater."

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## APPENDIX C - Other Resource Contacts

Bradley D. Hengst, Sewage Enforcement Officer, Septic System Design & Inspection, 40 Water Street, Jacobus, PA 17407-1010. Phone: (717) 428-1188. Fax: (717) 428-0563

Thomas R. McCarty, Ph.D., Multi-County Agent, Penn State Cooperative Extension, 110 Claremont Road, Carlisle, PA 17013-8802. Phone: (717) 240-6500. Fax: (717) 240-6548. Internet: [www.sfr.cas.psu.edu/water](http://www.sfr.cas.psu.edu/water)

Gary R. Peacock, Watershed Specialist, York County Conservation District, 118 Pleasant Acres Road, York, PA 17402. Phone: (717) 840-7430. Fax: (717) 755-0301. E-mail: [yorkccd@yorkccd.org](mailto:yorkccd@yorkccd.org). Internet: [www.yorkccd.org](http://www.yorkccd.org).

## York County Conservation District

### *Who are we?*

The York County Conservation District is the county government office that handles environmental concerns. The District was founded in 1938 when 554 farmers from 18 townships signed a petition. Since the beginning, the office has been citizen directed. Education has been consistently labeled as a priority area of focus.

The education office officially began in November 1996 although the District has been active in education programs for more than 15 years.

### *Our Mission*

The York County Conservation District commits to being an innovative leader, assisting and educating the public to make the best choices for conserving and preserving our natural resources.

### *Contact Us*

York County Conservation District

118 Pleasant Acres Road

York, PA 17402

Telephone: 717-840-7430

FAX: 717-755-0301

E-mail: [yorkccd@yorkccd.org](mailto:yorkccd@yorkccd.org)

Web: [www.yorkccd.org](http://www.yorkccd.org)