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COMMERCIAL/RESIDENTIAL
PLUMBING • HEATING • A/C
SEWER CLEANING • PUMPING
SEPTIC MAINTENANCE

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Septic System Owner's Guide

The following pages were obtained from the
Septic System Owner's Guide
University of Minnesota Onsite Sewage Treatment Program
and used with permission.

To obtain a complete version of the Guide please click this link:

https://septic.umn.edu/publications/owner-guide

More information on Seasonal Care:

https://septic.umn.edu/septic-system-owners/seasonal-care

Septic Tank: Primary Treatment

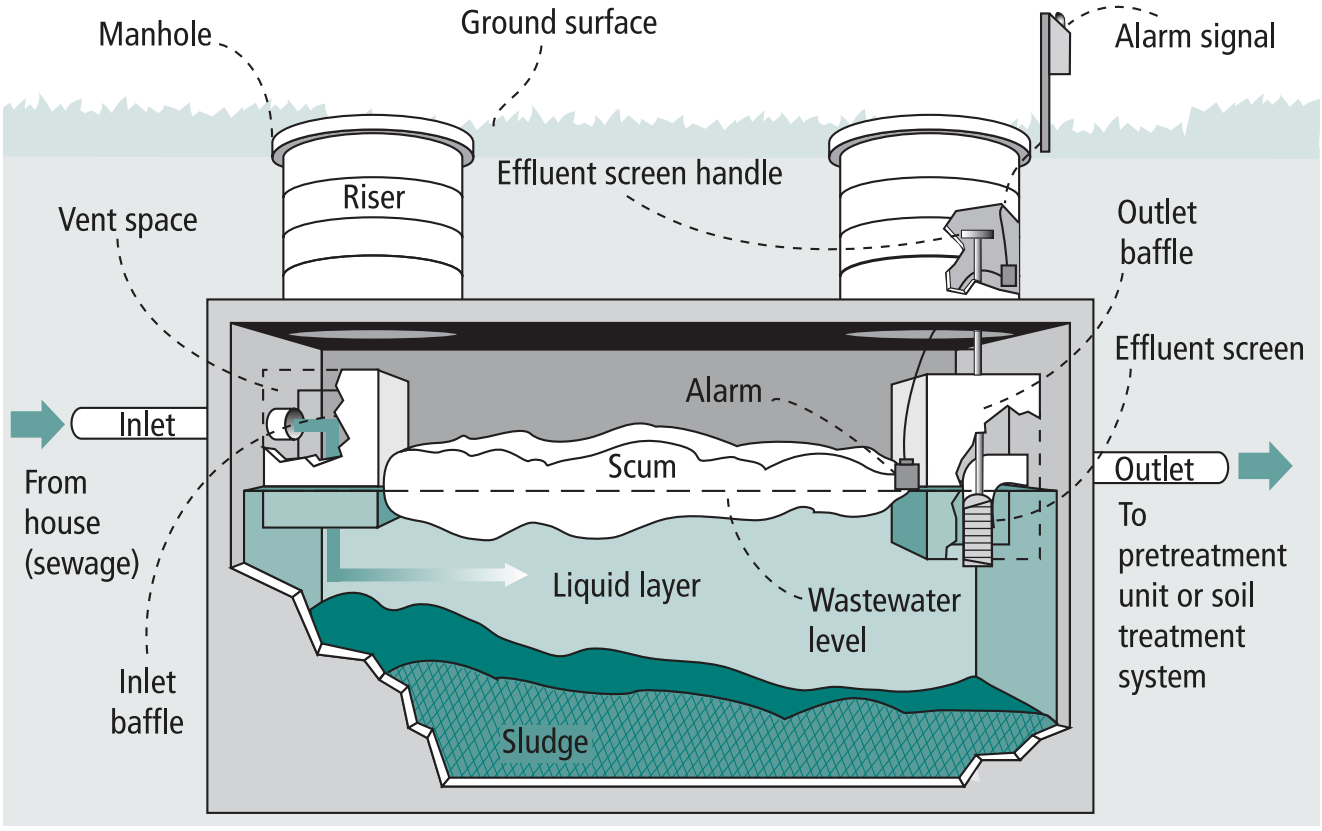
How the Tank Works

With time, the contents of the septic tank separate by density into three layers:

- ***Floating scum layer*** – soaps, greases, toilet paper, etc., form the top layer
- ***Liquid layer*** – liquid and suspended solids are in the center of the tank
- ***Sludge*** – heavy organic and inorganic materials sink to the bottom of the tank

Solids separate in the tank by gravity – lightweight materials float to the top and heavy materials sink to the bottom. Naturally occurring bacteria in the sewage begin to break down the organic materials. This is often referred to as ***primary treatment.*** Pathogens in the sewage are ***NOT*** destroyed in the septic tank. Anaerobic bacteria that live with very limited oxygen in the septic tank prepare the sewage for final treatment in the soil treatment area. Liquid leaving the septic tank is referred to as septic tank ***effluent.***

Figure 3 – Septic tank

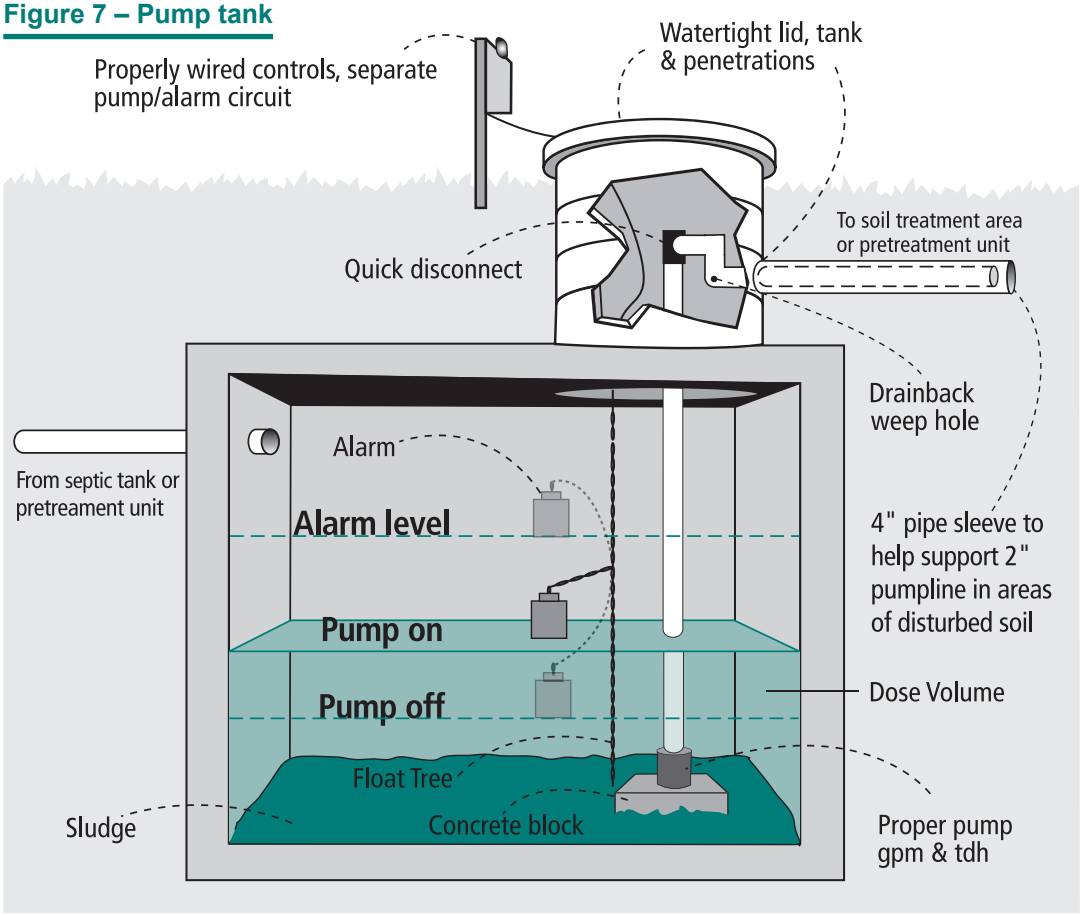


Components of the Tank

The ***septic tank*** is the first step of the sewage treatment process. The septic tank is a solid, watertight tank. Septic tanks are most commonly constructed of concrete. Occasionally other materials (polyethylene, fiberglass, or coated metal) designed specifically to accept sewage are used. Installations may have two tanks in a row or one large tank with two compartments. Increased tank capacity is necessary if a garbage disposal is installed or if there is a pump in the basement. A few homes on small lots or with poor soil may have a large holding tank to store sewage until the entire contents are pumped and hauled away for treatment at another location. For shallow installations in cold climates, insulating material designed

! Something is wrong when your alarm is activated! Call your service professional !

Figure 7 – Pump tank



an emergency alarm to warn the homeowner when the water level is too high. If the alarm goes off, the problem needs **immediate attention!** Be sure to know where this alarm is, what it means, and what to do when it is activated. Remember, you may need to access the manhole cover on your pump tank at any time of the year, so it should be at ground level.

Alternative to Trenches, Beds, At-Grades, and Mounds

Drip Distribution

Drip distribution is used in places where standard trenches are hard to install such as on steep slopes, in forested areas, or with shallow soil over bedrock. Drip systems will usually require more space than trenches, beds, or mounds. They utilize a series of shallow small-diameter plastic tubes fitted with emitters. Emitters are regularly spaced holes that disperse very small amounts, or drips, of pretreated effluent into the soil, providing nutrients and water to plants.

Effluent is delivered to the drip tubing by a high-head pump. The effluent is filtered to prevent clogging of the small openings. Most systems are programmed to periodically "flush" the tubing. An air release valve is necessary to vent the tubing when the pump shuts off.

These components should be inspected at least annually. This should include checking pressure gauges and air relief valves, walking around the application area while the effluent is being applied, flushing the tubing, and cleaning the filters.

- Route chlorine-treated water from hot tubs and pools outside of the septic system.
- Install a water meter to monitor water use. Check it monthly.
- Dispose of solvents, paints, antifreeze, and chemicals through recycling and hazardous waste channels. Do not wash paint brushes in the sink. Disposable paint brushes are an alternative.
- Be sure your automatic lawn sprinkler system is zoned to minimize watering over the soil treatment area.

Septic Starters, Feeders, Cleaners, and Other Additives

There is no quick fix or substitute for proper operation and regular maintenance of your septic system. Do not use starters, feeders, cleaners, and other additives. Many of these additives suggest they work via "enzyme" or "bacterial" action.

! There's no such thing as a safe AND effective septic system additive. !

Starters: A starter is not needed to get the bacterial action going in the septic tank. There are naturally occurring bacteria present in sewage.

Feeders: It is not necessary to "feed" the system additional bacteria, yeast preparations, or other home remedies. There are millions of bacteria and plenty of food for them entering the system in normal sewage. If the bacterial activity level is low, figure out what is killing them (for example, household cleaners) and correct it. High levels of activity will return after the correction is made.

Cleaners: Additives that are effective in removing solids from the septic tank will probably damage the soil treatment area. Some additives may suspend the solids that would normally settle to the bottom of the tank in the liquid. This allows them to be carried into the soil treatment area where they clog pipes and soil pores, which leads to partial or complete failure of the system.

Others: Additives, particularly degreasers, may contain carcinogens (cancer-causing agents) that may flow directly into the groundwater along with the treated sewage.

Many other state regulations ban the use of septic system additives that contain hazardous materials. In addition, they specify that additives must not be used as a means of replacing or reducing the frequency of proper maintenance and removal of scum and sludge from the septic tank. U.S. Environmental Protection Agency or U.S. Department of Agriculture approval statements on labels only mean that the product contains no hazardous material. *It does not mean the product is effective at what it claims to do in the tank.*

! Additives and cleaners are heavily promoted to homeowners through television, direct mail, e-mail, and telephone. Do not be fooled! !

Tank Maintenance

Frequency of Pumping

In ***new home installations,*** the tank should be pumped either before occupying the home or after one to three months of use as a precautionary measure to ensure good bacterial activity and proper operation. In new homes, sewage containing paint, varnish, stain, and other construction-related products can reduce the initial levels of bacterial activity causing damage to the soil treatment area. If construction work is not completed before occupancy, the tank should be pumped once work is complete.

Once a system is known to be operating properly, the guidelines on page 20 can be used to determine pumping frequency. Take into consideration both the calculated guideline results and the condition of the tank (amount of scum and sludge) at the last service visit. **Figure 13** illustrates how a licensed Maintainer will measure the scum and sludge levels in your tank to determine if it needs to be pumped. Homeowners should be present when the maintenance is done or be sure to get this information from the Maintainer.

ALL septic tanks **MUST** be periodically pumped to remove floating scum and sludge that accumulates. Floating scum or sludge that is allowed to enter the soil treatment area will cause expensive and often irreparable damage. Pumping frequency depends on tank size, use, and operating condition.

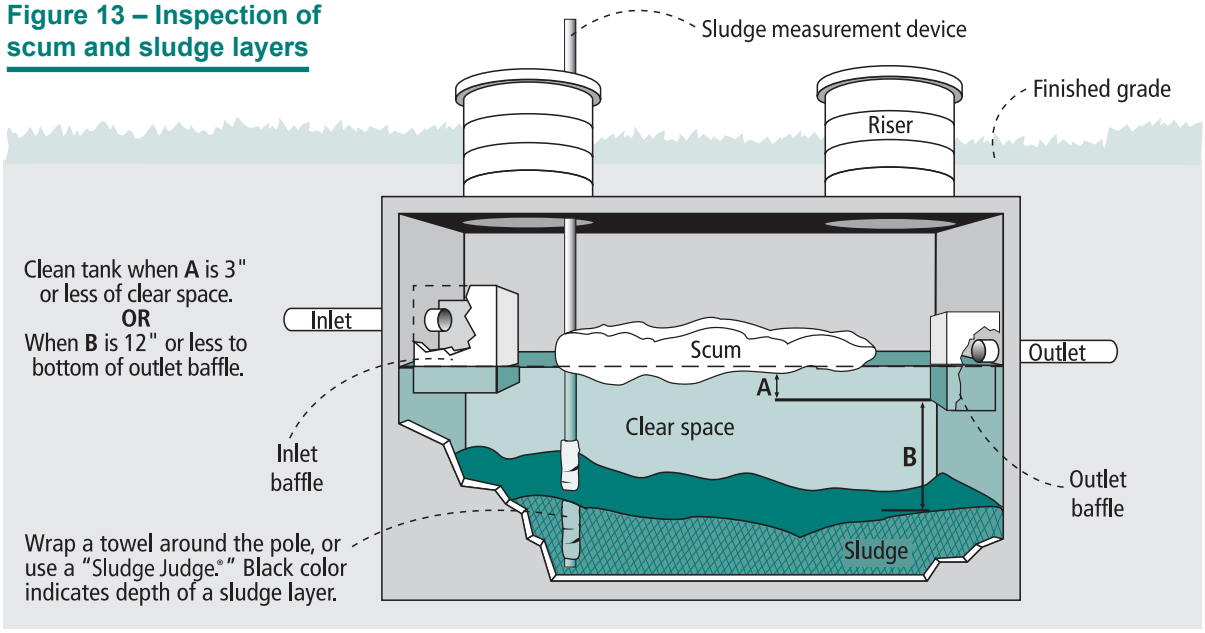
The pumping frequency guideline calculation for a typical household will suggest a pumping frequency of one to three years. If the result suggests very frequent pumping, the system may need to be upgraded and/or household habits changed. Even if your risk level is low, you should still have your tank evaluated every three years.

The guidelines suggest ways in which you can reduce your impact on your septic system. If you need help interpreting the results of the guidelines, contact a qualified septic system professional for additional advice.

Use the space in the folder accompanying this guide to record your septic tank cleaning dates.

! Never go more than 36 months between cleanings or evaluations! !

Figure 13 – Inspection of scum and sludge layers



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Septic Tank Pumping Frequency Guidelines

How often a septic tank needs to be pumped depends on the system design and how your household uses the system. Complete this chart, repeating every few years to gauge how often you should have your tank inspected or pumped. Remember these are guidelines. Your Maintainer or Service Provider can give you a better estimate of your pumping needs. State and local codes may dictate the maximum amount of time between tank cleanings.

Maintenance and Care

EFFECTS	FACTOR POINTS
Do you use a garbage disposal or dishwasher with a food grinder?	• No, enter 0 • Yes, use every other day or less often, enter 1 • Yes, use at least once per day, enter 2 _____
Is sewage pumped out of your basement to the septic tank (instead of using gravity flow), and/or is a sump pump connected to the septic system?	• No, enter 0 • Yes, enter 1 _____
Do you have a water-conditioning unit for which recharge water is connected to the septic system? (water softener, iron filter or other devices)	• No, enter 0 • Yes, 1 unit, enter 1 • Yes, 2 units or more, enter 2 _____
How often do you wash laundry?	• Spread out during the week with no more than 2 loads/day, enter 0 • 3 loads/day, several times/week, enter 2 • More than 3 loads/day, several times/week, enter 4 _____
Do you have a water-conserving top-loading washer, or a front-loading washing machine?	• No, enter 1 • Yes, enter 0 _____
Do you use low flow showerheads, toilets, not leave the faucet running, and repair leaks quickly?	• No, enter 2 • Sometimes or have made some changes, enter 1 • Yes, we make repairs quickly, enter 0 _____
Do you use few and mild cleaning products and detergents, limiting anti-bacterial products?	• No, enter 1 • Yes, enter 0 _____
Do you have an in-home business that increases water use? (such as a daycare, taxidermy shop, hair salon)	• No, enter 0 • Yes, enter 2 _____
Do you have 3 or more overnight guests at a time, or have large groups visit your house?	• Never to once/month, enter 0 • 2 – 4 nights/month and/or 1 large group, enter 1 • 5 – 8 nights/month and/or 2 large groups, enter 2 • More than 8 nights with over 3 guests, frequent large gatherings in your home, enter 4 _____
Is your septic tank (not including pump tanks) smaller than… **Tank Capacity** / **Bedrooms** 1,000 / 3 or fewer 1,500 / 4 – 5 2,000 / 6 or more	• No, enter 0 • Don't know, enter 1 • Yes, enter 2 _____
Are there more people living in your home than there are bedrooms? **Number of people** / **Bedrooms** 3 / 2 or fewer 4 / 3 5 / 4 6 or more / 5 or more	• No, enter 0 • Yes, enter 2 _____
When was the last time your septic tank was pumped or evaluated (inspected)?	• less than 3 years ago, enter 0 • 3 - 5 years ago, enter 1 • more than 5 years ago, enter 3 _____
Add your TOTAL score, enter here. (Compare your score to the risk level chart below)	_____

Score	Risk Level	Outcome
0 - 8	Low Risk	Based on your system and positive use habits, your system should be evaluated once every 2-3 years to determine if tank cleaning is necessary. Do not go more than 3 years without an evaluation. Some counties and municipalities require pumping or inspection every 3 years.
9 - 18	Medium Risk	Based on your tank size and use habits, your system should be evaluated every 1½ - 2½ years to determine if tank cleaning is necessary.
19 - 26	High Risk	Based on your tank size and use habits, your system should be evaluated annually to determine if tank cleaning is necessary.