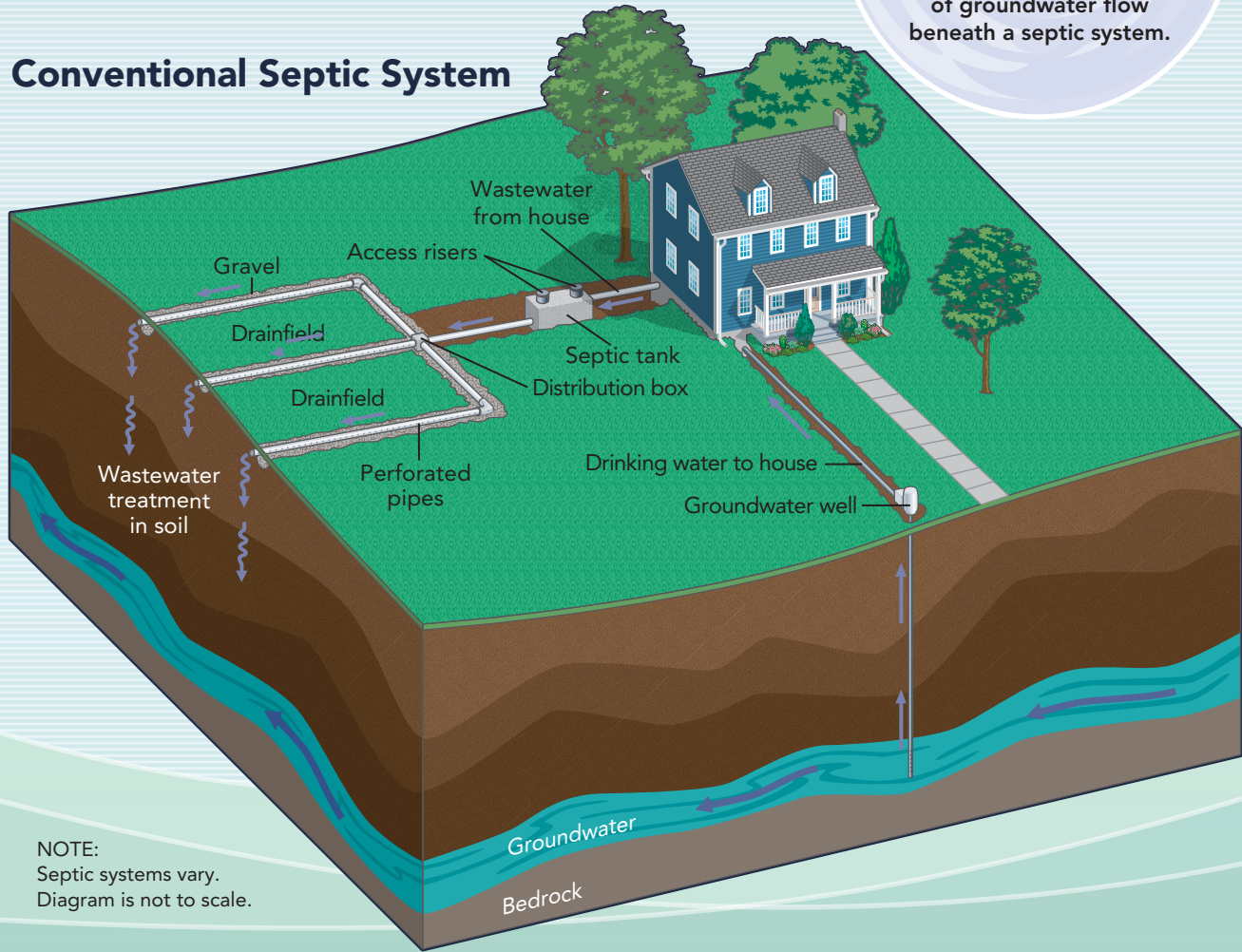


What is a Septic System, and How Does It Work?

Septic systems are underground wastewater treatment structures, commonly used in rural areas without centralized sewer systems. Septic systems collect, treat, and dispose of wastewater from your home or business. A typical septic system consists of a septic tank and a drainfield, or a soil absorption field. Septic systems work by allowing waste from your home to separate into three layers once inside the tank: solids, effluent, and scum. The solids settle to the bottom, where microorganisms decompose them. The scum, which is composed of waste that is lighter than water, floats to the top. The middle layer, called effluent, exits the tank and travels through underground perforated pipes to the drainage field. Once in the drainage field, gravel and soil act as filters to purify the wastewater as it travels through the ground.

Conventional Septic System



NOTE:
Septic systems vary.
Diagram is not to scale.

Did You Know?

Faulty septic systems may contaminate groundwater (the water below the water table). A stream, lake, or coastal water is at greater risk of becoming contaminated if it is in the path of groundwater flow beneath a septic system.

Septic System Regulations

Septic system regulations vary from state to state. If you live in Delaware, you can view Delaware's regulations governing the installation and operation of wastewater treatment and disposal systems here: <https://regulations.delaware.gov/AdminCode/title7/7000/7100/7101.shtml>.

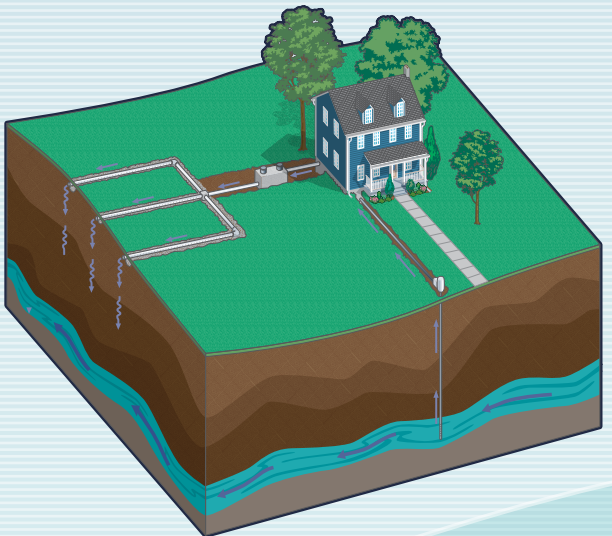
Delaware State Financial Assistance Program for Septic Systems

The Septic Rehabilitation Loan Program provides low-interest financing to replace failing septic systems and cesspools with on-site wastewater disposal systems that will function in an environmentally sound and cost-effective manner. To find out more about this program visit: <https://dnrec.alpha.delaware.gov/environmental-finance/septic-rehabilitation/>

Maryland State Financial Assistance Program for Septic Systems

The Maryland Water Quality Financing Administration provides low interest rate loans for septic system upgrade projects using the best available technology to achieve nitrogen removal on onsite sewage disposal systems consistent with the State Bay Restoration Fund Act. To find out more about this program visit: https://mde.maryland.gov/programs/water/wqfa/pages/mission_statement.aspx

Safe Septic Systems



Septic System Maintenance and How to Tell if You are Having Septic Issues



Nanticoke Watershed Alliance
113 Old Ocean Gateway
PO Box 111
Vienna, MD 21869
410-443-8878.
www.nanticokeiver.org

Brought to you by:



Septic System Maintenance:



Inspect and Pump Regularly
The average household septic system should be inspected and pumped at least every three years by a septic service professional. Newer septic systems are equipped with an alarm that notifies you when the water level in the tank is much higher or lower than it should be.



Use Water Efficiently
All of the water a household uses ends up in its septic system. The more water conserved by a household, the less enters the septic system. Efficient water use improves the operation of a septic system and reduces the risk of failure.



Properly Dispose of Waste
Whatever goes down the drain in your household ends up in the septic system, whether it is something flushed down the toilet, ground in the garbage disposal, or goes down the drain. Items that should never be put in your septic system include: paint, motor oil, cigarette butts, cat litter, coffee grounds, dental floss, disposable diapers, plastic, paper towels, feminine products, grease, oil, or fat.



Septic systems contain living organisms that digest and treat household waste.
Pouring toxins (such as bleach) down your drain can kill these organisms and harm your septic system. Purchase septic-friendly cleaning products to avoid issues with your septic system.

Did You Know?
Inadequately treated sewage from septic systems poses a significant threat to drinking water and human health because diseases and infections may be transferred to people who come into direct contact with the contaminated drinking water. *Inadequately treated sewage from failing septic systems is the most frequently reported cause of groundwater contamination.*

How to Tell if You are Having Septic Issues:



Septic System Backup
Results in sewage and wastewater backing up into sinks, drains, and even your toilet. This is the most visible sign of septic failure.



Slow Drains
If a septic tank is full it won't actively collect wastewater – pipes will be clogged full of sewage, inhibiting its ability to drain your plumbing appliances.



Gurgling Sounds
Gurgling noises point to a clog or an internal septic issue that requires immediate servicing.



Pools of Water or Dampness Near Drainfield
When a septic drainfield fails, it will no longer absorb wastewater. This means that wastewater will naturally seep from the ground. It can form a large pool of wastewater near the drainfield or lead to dampness in the same area.

Bad odors
If you detect strong and foul odors when you walk outside and step into your lawn, then your septic system has likely failed.

Unusual, Bright Green Grass Above Drainfield
Waste contains nitrogen, phosphorus, and other nutrients that plants absorb to grow. If you notice unusually green grass near your drainfield, wastewater is likely leaking into your lawn.



Pictured below: An algal bloom in a stream.



Septic Systems, Water Quality, and Environmental Impacts

Septic systems filter wastewater through soil, which removes most viruses, bacteria, and some nutrients. However, they are not as efficient as municipal wastewater treatment plants at removing all contaminants, including pharmaceuticals, cleaning products, potentially harmful chemicals, and nutrients such as nitrogen and phosphorus. It is also important to note that septic systems are not monitored regularly like wastewater treatment plants, so it is important to keep an eye out for potential issues. If untreated wastewater surfaces in the yard, it may run-off through rainfall and be carried into local streams, lakes, or rivers near your home and contaminate them.

Faulty septic systems can also lead to algal blooms in nearby waterways. When there are too many nutrients in surface water, particularly nitrogen and phosphorus, they act as a fertilizer for fast-growing bacteria and algae. These algal blooms kill aquatic animals and plants. Harmful algal blooms in lakes and rivers can be toxic to both humans and animals.

If you have a septic system and well water, have your well tested regularly for coliform, particularly *E. coli*. A septic tank should be a minimum of 50 feet from the water well. Septic drainfields should be at least 100 feet away from the well. Repair the tank or drainfield as needed to prevent leaks that contaminate drinking water and contribute to bacteria and nutrients.

Septic Mound Seed Mix

Septic mound and drainfield native seed mixes provide an ecological solution. The roots of native plants will take up nutrients from the wastewater below, and they do a better job than turf! Planting wildflower and grass meadows in these areas will also help reduce soil erosion. Make sure that you avoid planting trees, shrubs, perennial legumes, anything with "swamp" in the common name or any plants that like wet areas. These types of plants can cause issues with your septic system. Planting your septic mound and drainfield also adds beneficial habitat to wildlife and pollinators.

BEFORE

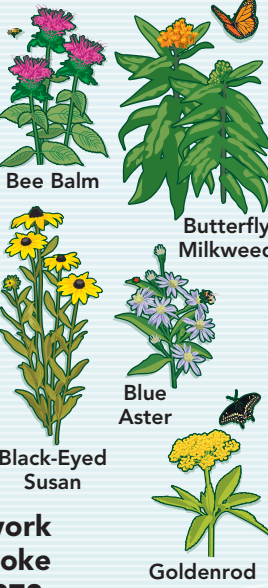
Pictured below: A septic mound that has been recently seeded with a septic safe wildflower mix.



AFTER



Wildflowers can include:



To find out what seed mix will work on your drainfield call the Nanticoke Watershed Alliance at 410-443-8878.