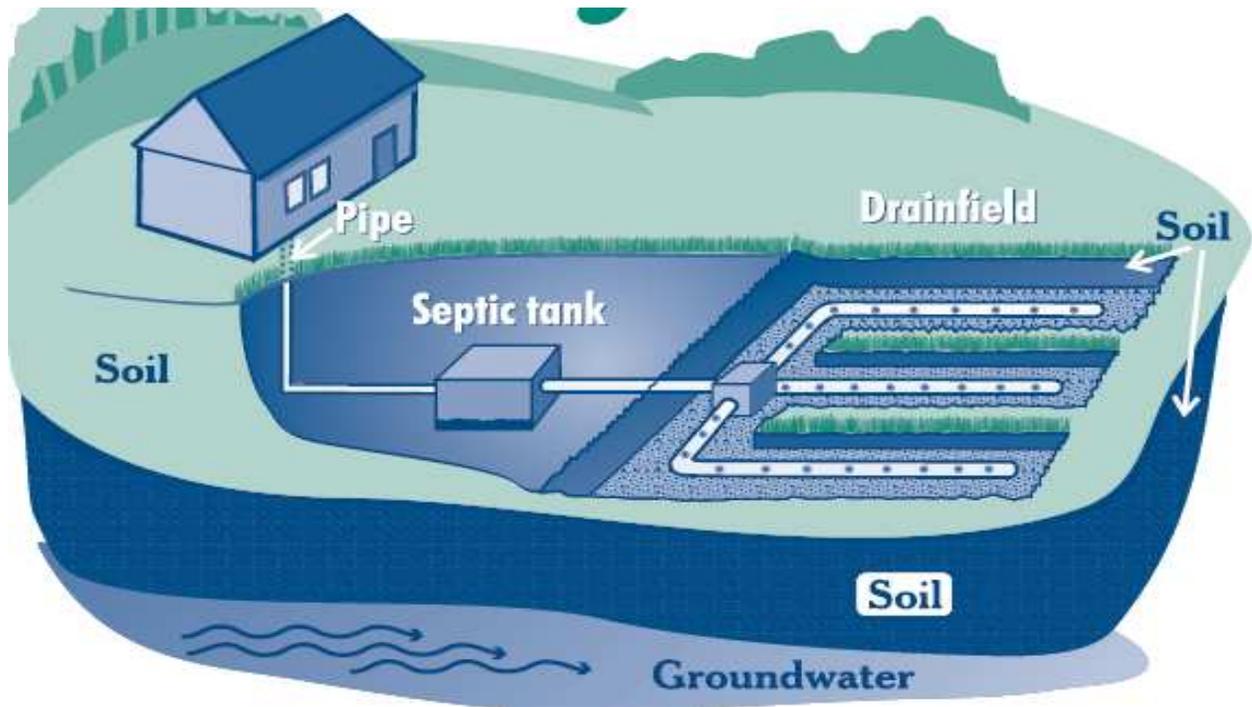


# Homeowner's Guide to Maintaining a Sewage Treatment System



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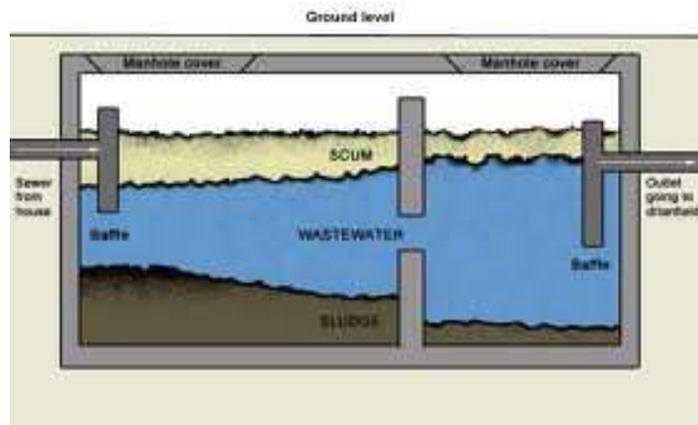
**Warren County**  
**Combined Health District**  
**Prevent. Promote. Protect.**

# Sewage Treatment Systems

## Septic Tank and Soil Absorption System

The septic tank and leach field sewage treatment system is the most common method of home sewage treatment in Warren County, Ohio. Whether the system is a gravity system or one that is mechanically dosed, the maintenance of the system is the homeowner's responsibility. Even the best designed and properly installed sewage treatment system will still malfunction if the homeowner does not properly operate and maintain the system. In addition to requiring costly repairs, malfunctioning sewage treatment systems can contaminate surface waters and ground waters, cause numerous health problems, and/or create unsightly yards and foul odors, seriously lowering your property values.

The septic tank and leach field system consists of your main waste line from your house to your septic tank, followed by a diversion device, then the leach lines. Your system may also have a perimeter drain which intercepts groundwater up slope of the system and diverts it around the system. Household sewage flows to the septic tank where the heaviest matter (sludge) settles to the bottom and the lighter matter (scum) floats to the top. The somewhat clear wastewater in the middle is the effluent that moves out into the leach field where it is absorbed into the soil and provides the final treatment for the wastewater.



## Signs of a Malfunctioning Septic Tank and Soil Absorption System

- Slow drains or sewage back up into the home: The cause could be a blockage in the main waste line to the septic tank, a blockage at the inlet or outlet baffle within the septic tank, or a plugged outlet filter if one is present. If the problem only occurs during rainy weather, the problem could be related to surface water drainage or water standing over your leach field. If the septic system is old (over 20 years) the gravel and soil may be clogged.
- Surfacing of sewage on the ground surface: The cause may be related to a slow soil absorption rate along with excessive water usage. If the problem occurs during rainy days it could be related to poor surface water drainage saturating the leach field. Again, if the system is old, the soil pores get clogged and further reduces already slow permeability.

- Smell of sewage odor: The cause of sewage odors may be the natural gases that occur in the septic tank that are vented through the plumbing waste lines through the roof vent stack. Odors may be noticeable in the area of the vent pipe or just downwind and may be more pronounced in the morning and the evening due to temperature inversions. Odors near the septic tank could indicate a cracked lid. Odors in the leach field area could indicate surfacing sewage.

## **Preventing Malfunctions**

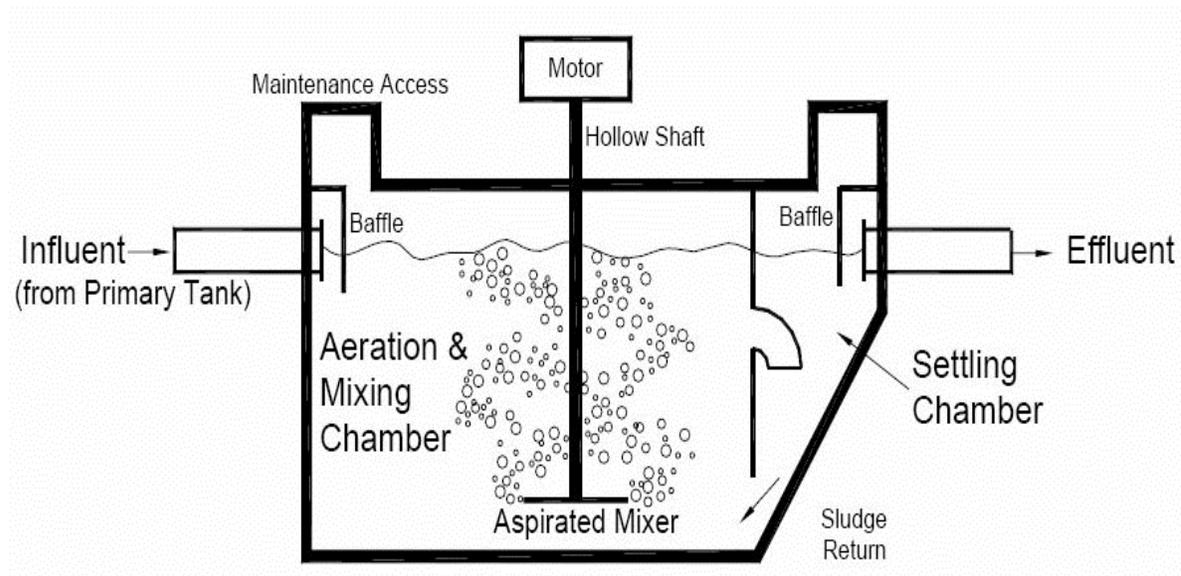
Homeowner's can help prevent malfunctions and ensure the long-term use of their sewage treatment system by doing the following:

- Conserving water and reducing the flow of wastewater to the septic tank.
- Having the septic tank pumped every 3-5 years depending upon family size.
- Avoiding placing excessive amounts of chemicals into the sewage treatment system.
- Not placing food scraps, oils, paints, or items such as sanitary napkins, diapers, or plastics into the sewage treatment system.
- Preventing runoff from downspouts, sump pumps, and paved surfaces from flooding the sewage treatment system.
- Keeping heavy vehicles, equipment, and livestock off of the leach field.
- Not planting trees or shrubs over or close to the sewage treatment system.

## **Aerobic Systems (also called Aeration Systems)**

Aerobic is a general term for a sewage treatment system that infuses air into the wastewater while in the aeration tank. There are many different types of aerobic systems, differing greatly in appearance and performance; however, all aerobic systems generally have the same basic functions. Aeration systems may be used when the land around the house prevents the use of a septic tank/soil absorption system. Aeration systems can discharge into a leaching system or serve as a pre-treatment component for other types of sewage treatment systems.

The use of aerobic systems as a discharging system in the State of Ohio is not allowed now for new development without a permit from the Ohio EPA. Ohio EPA regulates the replacement of existing and any proposed aeration systems and not the Warren County Combined Health District when the system discharges to a stream or waterway.



## Maintenance

It is important that mechanical components in aerobic systems receive regular inspection and maintenance. For example, air compressors sometimes need to be oiled, and vanes, filters, and seals may need to be replaced. Malfunctions are common during the first few months after installation. In most cases, homeowners do not have the expertise to inspect, repair and maintain their own systems.

## Recommendations to Maximize your Aeration Sewage Treatment System

- Do not add excessive amounts of harsh chemicals to the system. Normal household cleaners in moderate amounts should not harm the system, but highly concentrated solutions or toxic chemicals may upset the system.
- Do not drive, park, or store heavy objects over the on-lot subsurface disposal area.
- Do not pour cooking oils, lard, cooking fats or greases down the drain. Try to separate this waste and dispose as part of the household trash.
- Do not connect cellar drains, sump pumps or rain downspouts to the septic tank system.
- Do not put disposable diapers, sanitary napkins, tampons, or other materials containing non-biodegradable substances into the system.
- Do not waste water and do not install high water usage devices without determining the capacity and capability of the system.
- Do not concentrate water usage, spread out high volume use throughout the week. This would include eliminating wash day and it would be better to run dishwashers and clothes washers on separate evenings or low water use periods.
- Never turn off an aerobic tank (unless it is designed with a timer), even if you are going away for a short trip.

# Operation and Maintenance of Mound Sewage Treatment Systems

Some soil types are unsuitable for conventional septic tank and leaching line sewage treatment systems. However, alternative technology systems, such as the mound system, can overcome soil and site conditions which might prevent the use of conventional septic systems. The mound sewage treatment system is more expensive to install than the conventional septic system so you want to understand how they work and how to maintain your investment.

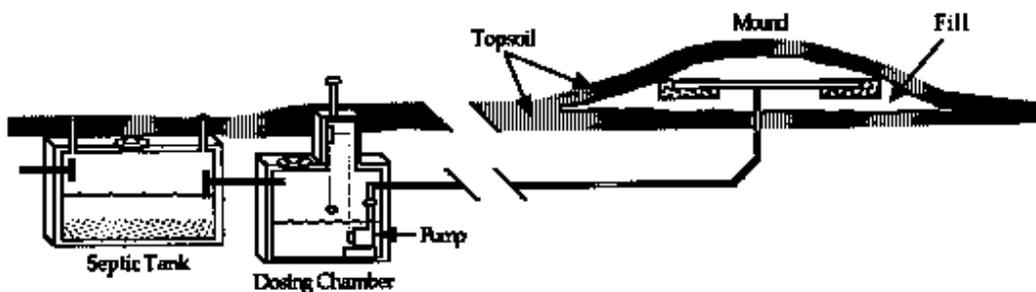
## How Does a Mound Sewage Treatment System Work?

A mound system consists of a septic tank, dosing chamber, and elevated absorption sand-mound. The dosing chamber is usually an additional tank that receives effluent from the septic tank. The effluent is held in this chamber and then periodically pumped into the absorption mound. The soil in the mound then receives the effluent evenly and over set intervals, it is much less likely to become overly wet than a traditional system.

When the soil in the drainage area of a septic system becomes waterlogged, it loses some of its ability to treat the effluent. Consequently, a mound system works more effectively and has a longer life span than a conventional system. Furthermore, because the mound is constructed over the original ground level of the drainage area, it adds additional vertical filtering capacity to the site.

## Protecting the Mound

Additional precautions must be taken to protect the mound that would not be as important in a conventional drain field. The mound must be protected from compaction as this can reduce the amount of effluent the mound can safely filter. The drainage area in a mound system is more susceptible to compaction than a conventional drain field because the soil underneath the mound must already bear the weight of the mound itself. To prevent compaction, do not allow any vehicles or heavy equipment on the mound. When mowing the lawn, use a hand mower, rather than a riding mower. In general, try to reduce the amount of foot traffic and other activity on the mound. This will also help protect the mound from losing soil to erosion. The slope of the mound makes it more susceptible to erosion than a conventional drain field. A dense, healthy lawn or other vegetative cover will protect the soil surface from rain and hold the soil in place with its roots. Inspect the mound for any patches of bare soil and plant them with grass or other cover.



## Maintenance Recommendations

Because it is a more complex system, regular maintenance is even more important for mound systems than it is for traditional septic systems. The easiest way to avoid expensive repairs is to consistently follow recommended maintenance procedures such as:

- Regularly inspect both the septic and dosing tanks using the risers provided. Any progressive increase in the depth of the water in the tanks could indicate a problem. Routine pumping of the septic tank and dosing chamber should be done at least once every three to five years. Depending on the size of the septic tank and the size of your family, the interval between pumping these tanks may need to be shorter. Tanks should be routinely inspected on a yearly basis to determine the rate of sludge accumulation. This will ensure that maintenance can be performed before there is a problem.
- It is required that the dosing chamber be equipped with a high-water alarm to alert the homeowner to potential serious or sudden problems with the system.
- Maintain grass or other vegetative cover over the mound to maximize water uptake and prevent erosion. Never plant trees or shrubs with extensive root systems on or near the mound as they may clog drainage pipes.
- Avoid traffic and construction on the mound or on its slope as this could compact the soil, thus reducing the absorptive capacity of the soil.
- Grease, oil, solvents, and toxic chemicals should never be poured or flushed down the drain. These materials may damage the system.
- Take steps to reduce household water use, and always avoid unnecessarily putting any solids, such as food, plastics, and paper, in the wastewater system.
- The discharge of water from house gutters should be directed away from the absorption mound.

## General Maintenance Tips for Sewage Treatment Systems

- Properly use and maintain the system, which includes pumping the septic or aerobic tank, inspecting the system, cleaning laterals and/or delivery lines, and other maintenance items specific to the system.
- Divert surface water and roof runoff away from the septic tank/aeration tank and soil absorption area.
- Take showers rather than a bath and install low flow water conservation devices.
- Operate dishwashers and clothes washers with only full loads and spread out the water usage throughout the week. It is better to run these machines many times during the week rather than on the same day. NO MORE WASH DAY! Also, consider running these devices during periods of low water usage.
- Maintain records regarding the original site testing, permitting, design, inspection, maintenance, and repairs to the system.

If you have any questions regarding your sewage treatment system or if you are experiencing any problems, please contact the Environmental Health Division, Warren County Combined Health District at [www.wcchd.com](http://www.wcchd.com) or at 513-695-1220.