

Maintenance of Mound Septic Systems

The Water Quality Program Committee, Virginia Tech

Some soil types are unsuitable for conventional septic systems. However, alternative systems such as the *mound system* can overcome soil and site conditions which might prevent the use of basic septic systems.

How Does a Mound System Work?

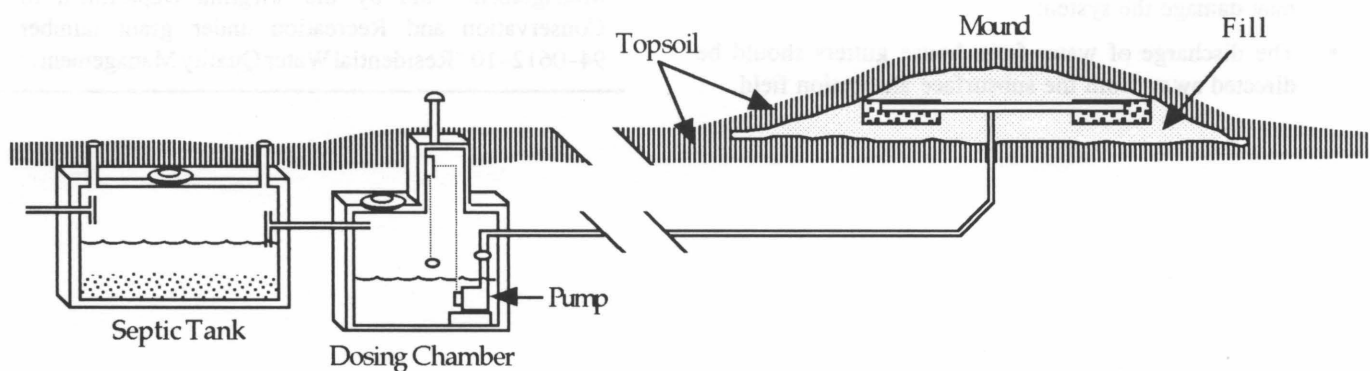
A mound system consists of a septic tank, dosing chamber, and elevated absorption mound. The dosing chamber is an additional tank that receives effluent from the septic tank. The effluent is held in this chamber and then periodically pumped into the absorption mound. Because the soil in the mound receives 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.

Help prevent septic system failure through regular maintenance and inspection. It is in the homeowner's best interest to properly maintain the system now and thus avoid expensive repairs later.



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Maintenance Recommendations

- If the system is not currently equipped with observation tubes, it is recommended that the homeowner have them installed. Observation tubes eliminate the need for the unearthing and removal of the access port in order to inspect the septic tank.
- Regular inspection of the dosing chamber by means of the observation tubes is encouraged. Any progressive increase in the depth of the water could be indicative of a problem.
- The septic tank and dosing chamber should be pumped out at least once every three to five years. Depending on the size of the septic tank and the number of people in the household, the interval between pumpings 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 the system is pumped out well before it reaches a critical level.
- Maintain grass or another vegetative cover over the drain field to maximize water uptake and prevent erosion. Do not, however, plant trees or shrubs with extensive root systems on or near the drain field as they may clog drainage pipes.
- Avoid traffic and construction on the drain field site. This could compact the soil, reducing its absorptive capacity and possibly damaging the distribution pipes. Small riding lawn mowers can be used for cutting the grass over the drainfield. However, permanent fixtures, such as playground equipment, should not be installed over the area.
- Keep a diagram showing the location of the septic tank, dosing chamber, and absorption field in relation to the house.
- Take steps within the house to reduce water usage, and always avoid unnecessarily putting solids, such as food, plastics, and paper, into the wastewater system.
- Grease, oil, solvents, and toxic chemicals should never be poured or flushed down the drain. These materials may damage the system.
- The discharge of water from house gutters should be directed away from the subsurface absorption field.

Important Reasons for Proper Maintenance

- If the LPD system is improperly maintained, the filtering and renovating capacity of the drain field can be greatly diminished. The narrower pipes of a LPD system can become clogged more easily than those of a traditional system and parts of the distribution system may need to be replaced if they are damaged. If the soil becomes too congested, the site of the drain field may need to be relocated. These repairs can be costly and are worth avoiding through proper maintenance.
- Seepage from inadequate or failing septic systems can contaminate both ground and surface waters with undesirable pollutants, posing a danger to public health. Pathogens such as viruses or bacteria can enter drinking water supplies. Nitrogen, a common component of wastewater, can also enter water supplies causing a dangerous form of anemia in infants, commonly referred to as blue baby syndrome. High nitrogen levels in the drinking water have been linked to birth defects and cancer as well. For households that use unfiltered wellwater, septic system failure can be an especially significant problem. Malfunctioning septic systems are currently the leading cause of groundwater contamination in Virginia.
- Nutrients and organic matter found in wastewater, can enter open waterways through both surface runoff and groundwater contamination. These compounds can lead to tremendous increase in the quantity of microorganisms found in Virginia's lakes, tributaries, and the Chesapeake Bay. The metabolic activity of these microbes can reduce oxygen levels in the water causing aquatic life to suffocate. This process is referred to as eutrophication and it is considered to be the leading cause of the Chesapeake Bay's decline. Septic system failure is one of the leading sources of water pollution that contributes to eutrophication.

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