

## SUBSURFACE DRIP

A subsurface drip system is like an aerobic system, but it uses drip lines instead of lateral lines so that the soil under the drainfield is not overwhelmed. This system consists of a trash/dose combo tank, an aerobic treatment tank, and a drip drainfield. The tanks must be placed accordingly so that they are downhill from the home/building's plumbing. Waste enters one of two separate compartments in the trash/dose tank. As the compartment fills, waste flows through the outlet to the aerobic treatment tank. Here, an aeration pump constantly pumps air into the effluent to speed up the bio-microbial treatment process. Then the effluent is transported back to the trash/dose tank, where it enters the second chamber (pump chamber). Further settling occurs in the pump chamber, ensuring that the pump does not send solid material to the drainfield.

The pump chamber contains two floats: a low level/off float (lower) and a high-water alarm float (higher). Time dosing is set upon installation. The system will turn the pump on a set number of times each day for a set amount of time. If the system pumps too much effluent out of the pump chamber, the low level/off float will turn the pump off automatically until its next dose time. If the effluent level in the pump chamber rises too high between doses, the high-water alarm float will trigger an alarm which indicates that something is wrong with the system or that dose times need to be adjusted to occur more frequently.

After leaving the pump chamber, a valve box evenly distributes the effluent between pressurized drip line loops. **The system must use a pump even if gravity flow can be achieved from the pump chamber to the drainfield.** This is to ensure that the drip lines are pressurized and all parts receive the same amount of effluent. Each drip line has emitters that allow the effluent to reach the soil throughout the entire drainfield at the same rate. The effluent then filters through the soil and is clean by the time it reaches the water table.

Not all effluent pumped to the drainfield escapes through the emitters. Effluent that circulates through the loops without dripping into the soil is returned through return pipes to the pump chamber where it will be pumped back through the drip lines until it does drip into the soil.

If the water level in the pump chamber ever reaches the high-water alarm float, the alarm will go off, indicating that there is something wrong with the system.

Subsurface drip systems should have an operation and maintenance inspection done once every year of operation. Concurring reports may need to be turned in to the county.

Septic systems are sized according to the amount of waste they will be treating, usually estimated by the number of bedrooms in the home. For non-residential buildings, water usage usually determines the size.

The most basic drip drainfields include parallel drip line loops that are spaced two feet on center. More intricately designed drainfields may include drip lines of varying lengths that branch out from the valve box in multiple directions.

Upon installation, the only parts of the system that will be visible from above ground are 24-inch riser lids above the tanks, access ports above the tanks and a valve box lid. Each of these

lids will be flush with the final grade and can be walked on, mowed over or disguised to lessen noticeability.

Drainfields should be treated as fragile to increase their longevity. Large animals such as cows or horses should not be kept on drainfields and vehicles should not be driven over them. Vegetation with intrusive roots should not be planted near them. Finally, a home owner should be mindful of what is going into the system.