

Sewage generated by a residence or business must dispose of the treated effluent on site. While a septic tank or Aerobic Treatment Unit (ATU) can be installed in a relatively small area, the disposal in or onto the site requires a relatively large area. The area necessary to dispose of the treated effluent from a single family dwelling varies based on the estimated flow of the home. The number of bedrooms and the square footage of the home are used to estimate flow. The area necessary to dispose of a modest 3 bedroom home can range from an area as small as 960 square feet in a standard drain field to as large as 3,750 square feet of surface discharge or spray area.

The type of disposal generally proposed following a septic tank is a standard drain field utilizing 4" pipe and gravel or leaching chamber when suitable soil and elevation exist. Trenches or pits are excavated to a depth of 1 ½ feet to 3 feet and pipe and gravel or leaching chamber area placed in the excavation and vegetation is established. Effluent flows through the system based on elevation changes or gravity. Percolation, evaporation and transportation complete the treatment of the effluent as it returns into the water cycle.

When elevations are not suitable for gravity disposal, a pump tank can be installed after the septic tank. This type of disposal is called Low Pressure Dosing. Similar excavations can be designed with 1" pipes and small pea gravel with small holes spaced evenly throughout the drain field. The pump evenly doses the septic effluent utilizing a float or timer.

When high amounts of clay are present in the soil, an evapotranspiration drain field can be installed following a septic tank. These drain fields are over twice as large as a standard drain field. The design must split the area into two separate areas. While clay treats effluent to a high level it is very slow. To compensate for the slow treatment of clay, the excavation must be backfilled with a sandy loam soil to enhance evaporation. Each drain field must be occasionally isolated to allow complete drainage of the area to ensure long term operation.

When site or soil conditions require the use of an ATU (Aerobic Treatment Unit), the two types of disposal proposal are generally surface application or drip emitters.

Surface application uniformly dispenses highly treated and disinfected effluent onto vegetated area on the site. The effluent must be dispensed through purple piping, designating treated effluent, and low angle, effluent approved spray heads. When discharged within 20' of a property line they can only be designed to spray between midnight and 6 AM. A spray system relies entirely on evaporation for disposal and therefore requires the largest design area.

When a site is not large enough to allow surface disposal, or other factors prevent surface discharge, drip emitters are often selected. Small, plastic tubing with drip emitters embedded in the line evenly dispense the effluent over the site. Tubing can be utilized in shallow soils and can be trenched around existing trees and surface improvements. Because the effluent is pumped, this method can be utilized on challenging sites in multiple zones.

Whatever type of disposal is selected, it is important to protect and maintain the design area to ensure long term viability. Construction of buildings, decks, sidewalks and other surface improvements can prevent your system from operating as designed and can void your OSSF license. Excess water in or onto the drain field can cause improper final treatment and create public health issues.