

Composting Facility – Subsurface

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Composting is a method of using natural processes to accelerate the breakdown of waste vegetative debris into a useful product, humus. This interpretation shows the degree and kind of limitations that affect the siting of a subsurface composting facility to stabilize vegetative debris produced as a result of a major disaster.

The soil is evaluated from the surface to a depth of 79 inches. The ratings are based on the soil properties that affect attenuation of suspended, soil solution, and gaseous decomposition products and microorganisms, construction and maintenance of the site, and public health. Improper site selection, design, or installation may cause contamination of ground water, seepage, and contamination of stream systems from surface drainage or floodwater.

Properties that influence the risk of pollution, ease of excavation, trafficability, and re-vegetation are major considerations. Soils that flood or have a water table within the depth of excavation present a potential pollution hazard and are difficult to excavate. Soils that have high saturated hydraulic conductivity (Ksat) are shallow to bedrock, ice, or a cemented pan, or have a high content of stones and boulders are limited because these features interfere with the installation, performance, and maintenance of the system. Slope is an important consideration because it affects the work involved in road construction, the performance of the roads, and the control of surface water around the excavation. It may also cause difficulty in constructing trenches which must be kept level and oriented to follow the ground contour.

Climatic factors influence the ease with which a composting facility can be maintained. Adequate precipitation to keep the mass moist, and sufficient heat to sustain biological activity are essential.

The ratings are both verbal and numerical. Numerical ratings indicate the severity of the individual limitations. The ratings are shown in decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected of a properly designed and installed system on these soils. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

How to Obtain Interpretations

Soil interpretation maps can be generated for areas up to 10,000 acres at the Web Soil Survey (<http://websoilsurvey.nrcs.usda.gov/app/>) by selecting “Catastrophic Mortality, Large Animal Disposal, Pit” under Waste Management in the Suitability and Limitation of Use section of Soil Data Explorer after selecting the Area of Interest (AOI) and generating the Soil Map.

Soil interpretations for GIS applications can be downloaded from the Soil Data Mart at <http://soildatamart.nrcs.usda.gov/>.