

PART B. TOPSOIL LAYER/SEEDING SPECIFICATIONS

The topsoil layer of the final cover system is used to minimize erosion of the final cover and contains a minimum of six (6) inches of earthen material that is capable of sustaining native plant growth.

Any portion of the site that has been disturbed by solid waste disposal activities shall be reseeded to minimize wind and water erosion of the final cover, consistent with the post-closure land use. Erosion of the final cover may lead to exposure of the lateral drainage layer, initiate or contribute to sliding failures or expose the waste.

Vegetative cover serves the following functions:

- evapotranspiration (the loss of water from the soil both by evaporation and by transpiration from the vegetation)
- improves the appearance of the site
- protects the final cover against wind and water erosion

Vegetation shall:

- be a diverse mix selected to be compatible with the climatic conditions
- be resistant to drought and temperature extremes
- require little maintenance
- provide sufficient plant density to minimize cover soil erosion
- have root depths that will not exceed the depth of the final cover

The use of deep-rooted vegetation, including shrubs and trees, is inappropriate because the root systems may penetrate the final cover and create pathways of percolation.

Before planting, it is important to determine the suitability of the soil for growing vegetation. This can be accomplished by analyzing a sample of the topsoil for:

- pH
- phosphorus
- potassium
- nitrogen
- specific conductance (salts)
- organic matter

**SECTION 7. LANDFILL CLOSURE
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The three major nutrients necessary to grow vegetation are nitrogen, phosphorus and potassium (N, P, K). The amount to be added to the soil depends on the results of the soil tests and the crop need.

To determine the application rate of a specific nutrient, the following formula is used:

$$\text{Lbs/Acre of nutrient to apply} = \frac{\text{Crop Nutrient Need}}{\text{Nutrient in fertilizer}}$$

Example 1:
Calculate the amount of fertilizer required for a crop that requires 100 lbs of nitrogen per acre. The fertilizer contains 10% nitrogen.

Crop nutrient needs are determined by subtracting the quantity available in the soil from the quantity needed to grow the crop.

Planting and protecting the seed is accomplished as follows:

1. Drill or disc seed into soil to reduce wind and water damage;
2. Plant along the contour to reduce erosion rills;
3. Use enough seed; and
4. Apply a mulch.

Mulch consists of straw or grass hay which is free of noxious weeds. To avoid temporary nitrogen deficiency, apply 10 pounds of nitrogen per 1,000 pounds of straw or grass hay mulch material.

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The mulch:

- protects the slopes from erosion
- holds soil and seed in place
- provides water holding capacity
- protects against weed growth
- proceeds immediately after seeding
- should be anchored by discing into soil

Timing of seeding (spring or fall) is critical to successful germination and establishment of the vegetative cover. When to seed is dependent upon the climatic conditions for the area of the landfill facility.

Contact the local Natural Resources Conservation Service, Bureau of Land Management or Wyoming Department of Transportation office for specifications for establishing vegetative cover in areas similar to where the landfill facility is located.

Alternate designs in lieu of 6" of topsoil to address vegetative problems in areas that are not capable of sustaining plant growth may be approved by the director.

One example of an alternate design is an armored surface. An armored surface consists of gravel or crushed rock. Armored surfaces are:

- capable of protecting the underlying layer during extreme weather events of wind and/or rainfall
- capable of accommodating settlement of the underlying material
- designed with at least a 2% slope
- capable of controlling the rate of soil erosion