

LAND RECONSTRUCTION, CURRENTLY MINED LAND (544) (ACRES)  
(Interim Partial Standard and Specifications)

STANDARD

Definition

Restoring currently mined land to an acceptable form and for a planned use.

Purpose

To prevent permanent damage to soil and water resources in and near mined areas. To restore the productivity of soils to permit their premining use or a more intensive use. To control erosion, preserve the environment, and provide an economic use of the land.

Conditions Where Interim Partial Practice Applies

Areas of prime farmland that have been approved for mining of coal.

Planning Considerations

- 1.) Use the local soil survey to evaluate the chemical and physical properties of the unmined soils. Considerations should be given to slope, erosion, surface drainage, internal drainage, texture, bearing strength, pH, bulk density, etc.
- 2.) Use the local soil survey to evaluate soil descriptions of the representative pedons of those soils involving prime farmland that will be disturbed due to mining. This involves evaluating total soil thickness, and thickness of the topsoil, B, and C horizons.
- 3.) Develop a plan that places emphasis on avoiding soil moisture conditions and equipment that result in soil compaction and damage to soil structure.
- 4.) Use positive surface drainage on the finished grading of stockpiles.

- 5.) Use erosion control measures that ensure stockpiled soil will not be contaminated or allowed to erode.
- 6.) Soil tests will be used to determine nutrient levels.
- 7.) Plant species selected will be consistent with the planned use of the land and crop needs.
- 8.) Landowner objectives will be considered during the development of management systems for restoration of productivity.

#### SPECIFICATIONS

##### A. Soil Removal and Stockpiling of Prime Farmland

- 1.) Soils subject to flooding or slippage will be avoided as sites for stockpiling.
- 2.) Prepare the stockpiling area by removing all woody vegetation and other materials that may interfere with placement or removal of stockpiled soil.
- 3.) Remove the prime farmland soils in the order of topsoil, B, and C horizons, and do it in a manner to ensure that horizons are not mixed during removal or stockpiling.
- 4.) Soil removal and stockpiling will be completed by:
  - a.) Remove the topsoil (A, Ap, AE, AB, E, etc. horizons) and transport to the designated stockpile area. If the topsoil is less than 6 inches thick, remove the top 6 inches of the soil and treat as topsoil.
  - b.) Remove the B horizons (BA, BE, B, BC, etc.) and transport to the designated stockpile area.
  - c.) Remove the C horizons (CB, C) and transport to the designated stockpile area.
  - d.) Remove a minimum of 48 inches of natural soil except where depth to bedrock (Cr or R) is less than 48 inches.

- 5.) Stockpile sideslopes shall be no steeper than 2 horizontal to 1 vertical.
- 6.) If stockpiled soil material is not used for reconstruction within 30 calendar days, stockpiles will be seeded and mulched to control erosion.
- 7.) If seeding as identified in item 6 above is required, the following specifications apply:
  - a.) Apply the equivalent of 40 pounds per acre each of Nitrogen,  $P_2O_5$ , and  $K_2O$  prior to disking or tracking operations.
  - b.) The seedbed shall be prepared by either the "tracking effect" of the crawler tractor to produce cleat marks on the contour, or use a disk or similar equipment to prepare a three-inch seedbed.
  - c.) The seeding mixture will include one (1) bushel per acre of rye, ryegrass, or wheat, with 6 pounds of orchardgrass or 10 pounds of tall fescue per acre.
  - d.) Mulching will be applied according to the current "West Virginia Surface Mining Reclamation Regulations" and/or the current Soil Conservation Service Technical Guide.
- 8.) Stockpiles will have a vegetative stand with a minimum of 6 perennial grass plants per square foot during the second growing season.

#### B. Reconstruction of Prime Farmland Soils

- 1.) Soil replacement shall occur within soil moisture and temperature ranges that will enable uniform spreading and provide uniform depth without compaction, puddling, or clod formation.
- 2.) Smoothing and final grade preparation of the subgrade will approximate the original soil contour and slope.
- 3.) Soil replacement will occur in sequence with the C horizon first, followed by the B horizon and finally, the topsoil. The C and B horizons each will have a minimum thickness equal to the respective thickness of the pre-mined soil horizons. The topsoil thickness will not be less than that of the pre-mined topsoil. If the original topsoil is less than 6 inches thick, the top 6 inches of the original soil will be treated as topsoil.

4.) Soil replacement shall be completed to a minimum depth of 48 inches or to a lesser depth if the unmined soil had Cr or R horizons less than 48 inches below the surface.

5.) Final grading of the replaced soil shall provide positive surface drainage, and shall have an average slope percentage within the slope class of the unmined prime farmland map unit. Slope classes are described in Soil Conservation Service published soil survey reports and in soil survey manuals.

6.) When soil replacement is completed, the bulk density for each the topsoil, B, and C horizons shall not exceed the maximum bulk density given for each of the unmined comparable soil horizons on the current SOIL INTERPRETATIONS RECORD (SCS-SOILS-5).

7.) Soil pH values of each replaced soil horizon shall be within the range given for comparable soil horizons on the current SOIL INTERPRETATIONS RECORD (SCS-SOILS-5) or more favorable.

8.) Replaced soils shall be seeded and mulched immediately after replacement is completed to control sheet and rill erosion. Refer below to Standards and Specifications on Revegetation and Restoration of Productivity for more detailed information.

### C. Revegetation and Restoration of Productivity

#### Specification Guide

1.) Conservation practices such as seeding, mulching, contour farming, conservation tillage, crop rotation, terracing, surface and subsurface drainage systems, and stripcropping will be applied according to the current "West Virginia Surface Mining Reclamation Regulations" and/or the current Soil Conservation Service Technical Guide. These practices will be applied as needed to control annual soil loss from sheet and rill erosion at or below the level of 3 tons per acre per year. Soil loss will be determined by the Universal Soil Loss Equation (USLE).

2.) Where needed, water management practices such as grassed waterways, diversions, and grade stabilization structures will be installed and maintained to control gully erosion.

- 3.) Chiseling, disking, harrowing, or a combination of tillage operations will be performed to prepare a three-inch minimum seedbed that is smooth and free of stones. The last tillage operation shall be performed on the approximate contour. The seedbed will be firmed with a cultipacker or similar equipment prior to seed placement.
- 4.) Lime and fertilizer will be applied according to soil test recommendations as an integral part of meeting targeted yields of the reference crop. Amendments will be applied and mixed into the seedbed during seedbed preparation. Annual topdress applications of lime and fertilizer will be made according to soil test recommendations.
- 5.) Select high quality seed of adapted species and varieties. Use the current West Virginia Soil Conservation Service Technical Guide or the Ohio State, Penn State, or Virginia Polytechnic Institute and State University Agronomy Guides to select legume and grass seeding mixtures and rates. All legume seed shall be inoculated with the proper inoculum prior to seeding. The ideal periods for establishing seedings are April and August.
- 6.) All harvesting will be delayed until new seedings have made a minimum growth to conform with good management requirements of the key species.
- 7.) A management system will be applied which includes fertility treatment, weed and insect control, and a harvesting schedule for the crops grown.
- 8.) The reference crop on which restoration of soil productivity is proven shall be selected from the crops most commonly produced on the surrounding prime farmland.