

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

LAND RECONSTRUCTION, ABANDONED MINED LAND

(ha, acre)

CODE 543

DEFINITION

Restoring land and water areas that are adversely affected by past mining practices and increasing the productivity of the areas for a beneficial use.

SCOPE

The standard applies to the construction, grading, and reshaping of land that has been disturbed or adversely affected by past mining of all minerals and commodities.

PURPOSE

To stabilize mined areas so that they can be used to support desirable vegetation; reduce erosion and sedimentation; enhance water quality or quantity; maintain and improve the visual quality of the landscape; and protect public health, safety, and general welfare.

CONDITIONS WHERE PRACTICE APPLIES

Abandoned mined land that degrades the quality of the environment, prevents or interferes with the beneficial use of land or water resources, or endangers the health or safety of individuals.

CRITERIA

Site preparation. Unsuitable soil material must be removed and buried so that it does not adversely affect water quality or plant growth. Boulders, other rocks, and similar materials shall be buried or otherwise placed where they do not interfere with water disposal practices, stabilization operations, and the planned use of the land. These materials must be disposed of in a manner that minimizes the potential for seepage which can pollute surface and ground water. Materials containing heavy metals must

be buried to a depth below the root zone, or suitable kinds and amounts of soil amendments must be added.

Removal and placement of material for final cover. An effort should be made to reconstruct the soil with material available on site. If feasible, soil material suited to plant growth shall be salvaged, stockpiled, and protected for use as final cover material.

The reconstructed soil must meet the requirements for the specified land use on at least 80 percent of the area. The rest of the area must be in such a condition that it can be stabilized.

The salvaged material and other suitable materials must be spread over the graded areas to the depth specified in the reclamation plan. The final slope must permit application of needed conservation and management practices to keep soil losses at permissible levels. If settlement is likely to interfere with the planned use of the land, surface drainage, or water disposal, allowances must be made for the expected settlement during final grading.

Protective measures in areas with highwalls and landslides. Provisions must be made to reduce potential safety hazards and erosion and water pollution problems in areas that have highwalls and landslides. Treatment shall meet or exceed the requirements of SCS standards for landslide treatment (453) and highwall treatment (456) as appropriate.

Water disposal. The need for a water disposal system shall be carefully analyzed, and if needed, it shall be included in the design. The system must be intensive enough to control erosion during stabilization and after. If any practices are to be removed after vegetation is established, provisions must be made to promptly stabilize all disturbed areas. Water disposal systems suitable for erosion control on

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intensively farmed cropland are usually required for mine reclamation and may be used as a guide in the absence of local experience.

Landscape resources. The appearance of the reclaimed site must be in accordance with standards for maintaining and improving the visual quality of the landscape and must be compatible with the adjacent landscape. Areas of high public visibility or those offering direct or indirect human benefits shall be evaluated and considered in landscape resource management planning and design. Soil piles and borrow areas should be shaped to blend with the adjacent landscape.

Establishment. Due to the nature of mine reclamation work, it is not always possible to achieve complete stabilization with the first effort. Provisions should be made to promptly fill and vegetate areas of excessive settlement, repair and revegetate bare spots and eroded areas, add soil amendments or replace with suitable soil materials, add plant nutrients to achieve acceptable plant development, and install any additional structural measures needed, such as terraces, lined waterways, and grade stabilization structures.

Restoration of borrow area. If cover material is taken from an area outside the site, the borrow area must be graded and reshaped to insure proper drainage and must be revegetated to control erosion.

If the cover material is taken from adjacent farmland, the topsoil from the area must be stockpiled separately and then replaced after the land is restored for its intended purpose.

If the borrow area is prime farmland, the A and B horizons (or the B and C horizons if applicable) must be removed and stockpiled separately by horizon and then replaced on the borrow area in natural sequence. The combined thickness of the replaced horizons should be adequate to restore the original soil productivity.

CONSIDERATIONS

Evaluate the properties of the soils, including geologic and hydrogeologic values; the quantity and quality of water; and the potential of related resources to determine their suitability for use in reconstruction operations. Consider measures for placement of soils or spoil materials;

location of access roads; potential for water disposal and impoundments; measures to enhance visual resources; provisions for controlling erosion and sedimentation; practices for eliminating public health or safety hazards; and suitability of the reclaimed land for its intended use.

Land reconstruction on abandoned mined lands shall include the components necessary to reclaim and stabilize the area and prevent further degradation of air, water, soil, and plant resources. The system may consist of one or two components or several. The land reclamation standards shall be used for those components such as fire control (451) and toxic discharge control (455). Traditional practices such as terraces, grade stabilization structures, and critical area treatment components shall be used also as appropriate.

This practice is a management system that may combine practices to most conservation goals. Consult the planning considerations for water quantity and quality for the practices used in this system.

A special concern is the potential for uncovering or redistributing toxic materials from earth moving activities.

PLANS AND SPECIFICATIONS

Plans and specifications for reconstructing abandoned mined land shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

OPERATIONS AND MAINTENANCE

Maintenance. A plan shall be prepared that provides specific details concerning maintenance and operation of conservation practices identified in the reclamation plan. The maintenance and operation plan should specify procedures for filling areas where settlement may adversely affect drainage and land use; promptly repairing and revegetating bare spots and eroded areas; adding soil amendments to soils that cannot support adequate vegetation or replacing them with suitable soil material; maintaining access roads; keeping drainage structures and channels clean and functional; applying fertilizer and lime; controlling weeds;

using proper grazing practices; and controlling vehicular traffic.