§ 823.14 Soil replacement.

(a) Soil reconstruction specifications established by the U.S. Soil Conservation Service shall be based upon the standards of the National Cooperative Soil Survey and shall include, as a minimum, physical and chemical characteristics of reconstructed soils and soil descriptions containing soil-horizon depths, soil densities, soil pH, and other specifications such that reconstructed soils will have the capability of achieving levels of yield equal to, or higher than, those of nomined prime farmland in the surrounding area.

(b) The minimum depth of soil and substitute soil material to be reconstructed shall be 48 inches, or a lesser depth equal to the depth to a subsurface horizon in the natural soil that inhibits or prevents root penetration, or a greater depth if determined necessary to restore the original soil productive capacity. Soil horizons shall be considered as inhibiting or preventing root penetration if their physical or chemical properties or water-supplying capacities cause them to restrict or prevent penetration by roots of plants common to the vicinity of the permit area and if these properties or capacities have little or no beneficial effect on soil productive capacity.

(c) The operator shall replace and regrade the soil horizons or other root-zone material with proper compaction and uniform depth.

(d) The operator shall replace the B horizon, C horizon, or other suitable material specified in § 823.12(c)(2) to the thickness needed to meet the requirements of paragraph (b) of this section. In those areas where the B or C horizons were not removed but may have been compacted or otherwise damaged during the mining operation, the operator shall engage in deep tilling or other appropriate means to restore premining capabilities.

(e) The operator shall replace the topsoil or other suitable soil materials specified in § 823.12(c)(1) as the final surface soil layer. This surface soil layer shall equal or exceed the thickness of the original surface soil layer, as determined by the soil survey.

[48 FR 21463, May 12, 1983, as amended at 53 FR 40839, Oct. 18, 1988]

§ 823.15 Revegetation and restoration of soil productivity.

(a) Following prime farmland soil replacement, the soil surface shall be stabilized with a vegetative cover or other means that effectively controls soil loss by wind and water erosion.

(b) Prime farmland soil productivity shall be restored in accordance with the following provisions:

(1) Measurement of soil productivity shall be initiated within 10 years after completion of soil replacement.

(2) Soil productivity shall be measured on a representative sample or on all of the mined and reclaimed prime farmland area using the reference crop determined under paragraph (b)(6) of this section. A statistically valid sampling technique at a 90-percent or greater statistical confidence level shall be used as approved by the regulatory authority in consultation with the U.S. Soil Conservation Service.

(3) The measurement period for determining average annual crop production (yield) shall be a minimum of 3 crop years prior to release of the operator's performance bond.

(4) The level of management applied during the measurement period shall be the same as the level of management used on nonmined prime farmland in the surrounding area.

(5) Restoration of soil productivity shall be considered achieved when the average yield during the measurement period equals or exceeds the average yield of the reference crop established for the same period for nonmined soils of the same or similar texture or slope phase of the soil series in the surrounding area under equivalent management practices.

(6) 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. Where row crops are the dominant crops grown on prime farmland in the area, the row crop requiring the greatest rooting depth shall be chosen as one of the reference crops.

(7) Reference crop yields for a given crop season are to be determined from—