

**GUIDANCE MEMORANDUM<sup>1</sup> No. 2-01**  
**Issue Date 5/29/01**  
**Subject: Reforestation Reclamation Practices**

The Department of Mines, Minerals and Energy (DMME), Division of Mined Land Reclamation (DMLR) through this guidance memorandum is re-affirming that the reforestation husbandry practices outlined in the DMLR Memorandum to Operators No. [3-96](#) (copy attached) are still recommended. Operators should follow the husbandry practices outlined in Memorandum No. [3-96](#) when the post mining land use is designated as forestry. Highlights of the Memorandum No. [3-96](#) are provided below.

Current reclamation practices present three prevalent problems concerning reforestation and timber production: 1) excessively compacted mine soil, 2) inappropriate spoil material, and 3) competition from herbaceous ground covers established to control erosion.

1. Spoil Selection – In addition to available topsoil, at least four feet of good quality mine spoil should be placed at the surface to accommodate the needs of deeply rooted trees. Mine spoils with low to moderate levels of soluble salts, and equilibrium pH of 4.5 to 6.5, and a sandy loam texture are preferred. Oxidized sandstone found near the surface in most areas of the coalfields weathers quickly into good soil medium for trees; however, it must meet required pH limits.
2. Grading – Minimizing soil compaction is extremely important. The problem is more prevalent on level areas that could be very productive if excessive compaction is avoided. Performing the dumping and leveling in separate operations should minimize compaction that occurs during the final lift. Trucks delivering the final layer of overburden can place the spoil in tightly spaced piles across the whole area. After the spoil is in place, a bulldozer can knock the tops off the piles and gently level the area with one or two passes. These practices can be utilized in areas where slope ratios are 2:1 or less. In steeper areas, other methods such as cable dragging may be used, for leveling the final material that is dumped.
3. Tree-compatible groundcover – Reforestation requires a carefully planned balance between ground cover for erosion control and the trees' requirements for light, water and space. Ground covers should include grass and legume species that are slow growing, have a sprawling growth form, and are tolerant of acid (pH 4.5 to 6.5), infertile mine soils. Tree-compatible ground covers are designed to be relatively sparse during the first year and become increasingly lush by the second and third year. This allows tree seedlings to emerge above the ground and ensures their survival. K-31 tall fescue and all clovers (except ladino) should be avoided. For typical seed mixtures for forestry post mining land use, please refer to Memorandum No. [3-96](#).

4. Tree species selection – Two categories of tree species are recommended: 1) crop trees and 2) nitrogen fixing nurse trees. Crop trees are long-lived species that offer value to landowners as salable forest products. Nurse trees and nurse shrubs species recommended for reclamation planting are nitrogen-fixing plants that benefit crop trees and provide food and cover for wildlife. For examples of crop trees and nurse species, please refer to Memorandum No. [3-96](#).

While the crop trees listed in Memorandum No. [3-96](#) are appropriate for mine reclamation, an operator may wish to use some species and avoid other species if the silvicultural activity is also to serve as a carbon sequestration project. An operator that wishes to participate in a carbon sequestration project or other type of project should obtain recommendations for the specific species to use from reliable sources such as Virginia Tech Powell River Project, The Virginia Nature Conservancy, Virginia Department of Forestry or DMME.

The Virginia Department of Mines, Minerals and Energy's Division of Mined Land Reclamation is encouraging operators who propose to implement a post mining land use of forestry to follow the guidelines set out above and those contained in Memorandum No. [3-96](#). If you have any questions concerning the guidelines, contact Butch Lambert at 276-523-8286.

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<sup>1</sup>This Memorandum is to be considered a guideline issued under the authority of § 45.1-230.A1 of the Code of Virginia which reads:

"In addition to the adoption of regulations under this chapter, the Director may at his discretion issue or distribute to the public interpretative, advisory or procedural bulletins or guidelines pertaining to permit applications or to matters reasonably related thereto without following any of the procedures set forth in the Administrative Process Act (§ 9-6.14:1 et seq.). The materials shall be clearly designated as to their nature, shall be solely for purposes of public information and education, and shall not have the force of regulations under this chapter or under any other provision of this Code."