

**Ohio Department of Natural Resources  
Division of Mineral Resources Management**

**\*\*PROCEDURE DIRECTIVE\*\***

Inspection and Enforcement # 94-1

- SUBJECT:** Verification of proper planting of tree and shrub seedlings/posts
- EFFECTIVE:** March 15, 1994
- PURPOSE:** To establish procedures for inspecting tree plantings for which the evaluation criterion is proper planting according to the approved planting plan

Revegetation success standards for phase III bond release on areas for which the approved postmining land use is "undeveloped" include compliance with the ground cover standards in Ohio Administrative Code rule 1501:13-9-15 and, for areas on which trees are planted, proper planting of trees and shrubs at a rate equivalent to 600 stems per acre on each acre to be planted with trees or shrubs according to the approved planting plan.

Riparian vegetation along stream channels is to be avoided or restored in accordance with procedure directive Regulatory 94-1. The criteria for successful restoration of riparian areas include proper planting of a sufficient number of tree or shrub seedlings, posts or stakes where appropriate or direct seeding.

Because riparian and undeveloped land plantings and tree plantings on odd areas of permits with other primary postmining land uses will be evaluated only for proper planting, in accordance with the planting plan, and will not be reevaluated in the future for compliance with a survival standard, assurance of sound handling and planting practices is necessary. Bare-rooted tree seedlings and shrubs shall be protected from sun and wind during transportation by covering the bundles with canvas or a similar material. Cold storage (34-38° F) is the preferable means of holding seedlings that cannot be planted immediately. Seedling roots shall be kept wet or damp, but not left in standing water during the holding period. Willow or other stakes or posts shall be cut and planted while dormant (i.e., December to April 1 provided the buds have not broken dormancy). They shall be kept moist and covered during transport to the planting site and during storage the bottoms shall be kept submerged. Stakes and posts shall be planted within 24 hours of cutting. If the top of the stake or post is split or damaged during planting, the damaged portion shall be cut off.

The permittee must assign a qualified individual who has participated in the Division of Mineral Resources Management Tree Planting Workshop to monitor the planting and verify that the following handling and planting practices are followed:

- 1 . Seedling roots must be protected from exposure to the drying effects of air and sun. During planting, seedlings must at all times be carried
  - (a) In a bucket or a canvas or plastic bag with a moisture retaining substance, such as damp peat or sawdust, in the bottom, or the roots shall be dipped in a super-absorbent, such as "Terra-Sorb;" or
  - (b) In trays for machine planters with sufficient moisture to keep roots from drying.
- 2 . No more than one seedling, stake or post can be placed in a single hole. The hole shall be closed tightly; a firm tug shall not loosen or remove the seedling, stake or post from the hole.
- 3 . Roots cannot be exposed once a seedling is planted. This requires that:
  - (a) Seedlings are planted deeply enough to cover the entire root system, and
  - (b) Holes are completely sealed.
- 4 . Seedlings shall be planted with a minimum of 85 percent of the root mass intact. Pruning shall not exceed 15 percent of the total root mass.
- 5 . Roots must remain straight when the seedling is placed in the hole. This requires that the hole is sufficiently deep for the entire root system to fit without being bent or doubled.
- 6 . Seedlings must be planted so that not more than one-half inch of the stem above the root collar is beneath the soil.
- 7 . Stakes and posts shall be planted so that at least 40 to 50 percent of the their total length is beneath the soil surface, with at least the bottom 12 inches in saturated soil. (Note: To meet this requirement, posts shall be at least 36 inches in height).

The permittee's qualified designee shall complete the attached form "Verification of Proper Planting of Tree Seedlings/Posts" and submit it, within one week of the completion of planting, to the Division of Mineral Resources Management regional office.

Upon receipt of the planting verification form, the division inspector shall, within one week, inspect the area to determine whether sufficient numbers of appropriate species have been planted in the areas indicated in the approved planting plan. If the inspector observes improperly planted seedlings, or determines that insufficient numbers were

planted, the inspector shall notify the permittee in writing of the number and type of seedlings that shall be replanted.

Upon the division's approval of the tree planting, a copy of the signed "Verification of Proper Planting of Tree Seedlings/Posts" shall be forwarded immediately to the permittee for submittal with the phase III bond release request.

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, Deputy Chief

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