

# *30 Postmining Land Use*

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**SUBJECT: Postmining Land Use on Mountaintop Removal and Steep Slope Mining with an AOC Variance**

**DATE: May 20, 1999**

To comply with the WVDEP/OSM Action Plan for resolving mountaintop mining and steep slope issues, the Surface Mining Application (MR-4) form is being revised. Any permit application with an AOC variance, that is pending or submitted, must have the following information. The applicant should be provided with the revised section of the SMA form which is available on the Intranet.

### **Mountaintop Removal AOC Variance Criteria**

The changes regarding mountaintop removal mining operations with variances from AOC are reflected in Section O, question O-5.C and will require the applicant to address the following pursuant to WV Surface Coal Mining Act 22-3-13(c)(3).

A mountaintop removal AOC variance may only be granted if the applicant proposes to remove the entire coal seam or seams running through the upper fraction of the hill, ridge, or mountain creating a level plateau or gently rolling contour with no highwalls remaining and capable of supporting postmining land uses in accordance with the following requirements:

- The proposed postmining land use of the affected land is limited to an industrial, commercial, woodland, agriculture, residential or public (facility) use.
- The proposed use constitutes an equal or better use compared with the premining use.
- The proposed use will be compatible with adjacent land uses and existing State and local land use plans.
- County commissions and other State and Federal agencies were provided an opportunity to review and comment on the proposed land use.
- The application contains a specific plan and assurances that the proposed postmining land use will be:
  - compatible with adjacent land uses;
  - practicable with respect to financing and completing the proposed use;
  - supported by commitments from public agencies where appropriate;
  - planned pursuant to a schedule attached to the reclamation plan so as to integrate the mining operation and reclamation with the postmining land use;
  - designed by an approved person to assure the stability, drainage, and configuration necessary for the intended use of the site; and
  - obtainable according to data regarding expected need and market.
- All other requirements of the Act will be met.

### Steep Slope AOC Variance Criteria

Also, Question O-5.B relating to steep slope mining (average greater than 20 degrees) is being revised to require the applicant to specifically address the following as required by 38 CSR 2.14.12:

- The land after reclamation is suitable for industrial, commercial, residential or public use (including recreational facilities); *these postmining land uses are required by the 1999 revised regulations.*
- All highwalls will be completely backfilled in a manner that results in a static safety factor of 1.3;
- Only spoil not necessary to achieve the postmining land use may be removed from the mine bench;
- The watershed of the permitted and adjacent areas will be improved by reducing pollutants, environmental impacts or flood hazards; provided that, the watershed will be deemed improved only if:

The amount of total suspended solids or other pollutants discharged to ground or surface water from the permit area will be reduced, so as to improve the public or private uses or the ecology of such water, or flood hazards within the watershed containing the permit area will be reduced by reduction of the peak flow discharge from precipitation events or thaws; and

The total volume of flow from the proposed permit area, during every season of the year, will not vary in a way that adversely affects the ecology of any surface water or any existing or planned use of surface or ground water;

- Appropriate Federal, State and local government agencies were provided an opportunity to comment on the proposed postmining land use and deemed it to be an equal or better economic or public use;
- The plan is designed and certified by a registered professional engineer to assure stability, drainage, and configuration necessary for the intended use of the site;
- The surface landowner requested in writing that a variance be granted to achieve the approved alternative postmining land use;
- The alternative postmining land use requirements are met;
- All other applicable requirements of the Act and regulations, except for those relating to AOC, are met.

The reviewer will be required to specifically address each of these requirements and justify their decision in the facts and findings (MR-2A) at the bottom of the variance page.

<i>SUBJECT:</i>	<b>Commercial Woodlands</b>
<i>DATE:</i>	<b>July 28, 1999</b>

Attached is a letter from OSM clarifying their interpretation of the definition “woodlands” under 38 CSR 2 2.134 of the Surface Mining Reclamation Regulations.

OSM has indicated that further clarification may be necessary and I am requiring this interpretation effectively immediately. Certainly, the applicant needs to demonstrate that restoration to AOC would prevent the use of mechanical harvesting equipment. In addition, the applicant must identify the operational limitations, in terms of slope and land configuration, of the harvesting equipment currently in use for the type of commercial forest products that the site is intended to produce (e.g., pulp, chips, poles, saw timber, veneer logs, etc.). Furthermore, the applicant needs to specify how these limitations were determined, i.e. what engineering or equipment manuals contain these specifications.

If the applicant does not provide this documentation, then the DEP is unable to allow commercial woodlands as a postmining land use.

**SUBJECT: Durability / Topsoil Substitutes**

**DATE: September 22, 1999**

A meeting was held on Thursday, September 16, 1999, to discuss the Office of Surface Mining's (OSM) concerns on the following issues regarding their permit reviews:

1. How can a material be durable and still be identified as a topsoil substitute?
2. What is the topsoil substitute proposed to be used in each phase of the operation?

Regarding the first issue, it was explained to OSM that durability is a function of whether a material slakes in water and topsoil substitute is a function of whether the material can be a media which is capable of supporting and maintaining the approved post mining land use. The analyses for durability and topsoil substitute are not interrelated. Therefore, a material that meets the criteria for durability can not be excluded as a topsoil substitute. The only way a material can be excluded as a topsoil substitute is based on the analysis specified in the rules and/or the resulting media is not capable of supporting and maintaining the approved post mining land use.

It was further stated that "durable" material is used as a topsoil substitute throughout the Appalachian coal fields. After a discussion, OSM concurred that a material can both meet the criteria for durability and the criteria as a topsoil substitute, with some mechanical action for sizing.

The second issue is related to "the best available" material used as a topsoil substitute. OSM stated "the best available" material is not clearly indicated in the application. At first, OSM stated it should be "best material" on the permit. It was explained to OSM that this approach is impracticable. OSM concurred but still stated that the application must clearly indicate what is the best available material. It was suggested that since the mining and reclamation plan denotes the sequence and/or phase of mining proposed for the operation and that each sequence has a spoil balance, the application could indicate the topsoil substitute(s) that would be used for each sequence/phase of the operation. OSM then agreed with this concept as long as the material identified has site-specific analyses conducted.

<i>SUBJECT:</i>	<b>Commercial Forestry</b>
<i>DATE:</i>	<b>September 13, 2000</b>
<i>Approval:</i>	<b>John Ailes, Deputy Chief, OMR</b>

OSM has recently approved commercial forestry as a postmining land use for AOC variance on mountaintop removal permits only. The following are guidelines for all permits approved with this postmining land use after August 18, 2000:

- Commercial forestry land use must be on the area seeking a mountaintop AOC variance. Commercial forestry land use cannot be used on steep slope variance areas.
- The Planting and Management Plan must be developed by a Registered Professional Forester and shall include requirements under Section 7.4.b.1.A. of the rules.
- Two copies of each plan must be submitted to the Division of Forestry District Forester and two copies to the Secretary of WVDEP.
- Before approving a planting plan for commercial forestry, the plan must be reviewed and approved by a professional forester employed by the WV Division of Forestry. In addition, a Certified Professional Soil Scientist must review and shall field verify the soil slope and sandstone mapping.
- The Secretary of WVDEP shall ensure that the reviewing forester and soil scientist prepares site specific written findings addressing each of the elements contained in the plan. These findings shall be made part of the facts and findings section of the application.



## United States Department of the Interior

OFFICE OF SURFACE MINING  
Reclamation and Enforcement  
1027 Virginia Street, East  
Charleston, West Virginia 25301



JUL 25 1999

John C. Ailes, Chief  
Office of Mining and Reclamation  
Division of Environmental Protection  
10 McJunkin Road  
Nitro, West Virginia 25143

Dear Mr. Ailes:

This is to acknowledge receipt of your letter of July 14, 1999, where you clarify the State's existing definition of "woodlands" at CSR 38-2-2.134 by explaining how your agency interprets its requirements regarding mechanical harvesting. Woodlands is defined to mean commercial woodlands where the postmining land use would result in the development of a commercial product where flat or gently rolling land is essential for the operation of mechanical harvesting equipment.

In your letter, you state that the phrase "is essential for the operation of mechanical harvesting equipment" means that the proposed method of harvesting is automated and the technique has certain slope and land configuration limitations. You go on to say that it does not mean the applicant has to specify the exact equipment to be used, but he has to clearly indicate in the application that the proposed method of harvesting has certain slope and land configuration limitations that cannot be exceeded in order for the equipment to function.

I think additional clarification of the phrase may be necessary. <sup>D</sup>First, the applicant needs to demonstrate that restoration of the site to approximate original contour would prevent the use of mechanical harvesting equipment as provided by the approved program. In addition, the applicant must identify the operational limitations, in terms of slope and land configuration, of the harvesting equipment currently in use for the type of commercial forest products that the site is intended to produce (e.g., pulp, chips, poles, saw timber, veneer logs, etc.) Furthermore, the applicant needs to specify how these limitations were determined, i.e., what engineering or equipment manuals contain these specifications. Failure of the applicant to provide this documentation would not enable the State to make the required findings under §22-3-13(c) of the West Virginia Code.

As agreed in our action plan, the State may also want to submit additional information to demonstrate that "commercial forestry" constitutes an acceptable postmining land use for mountaintop-removal

John C. Ailes, Chief

2

and steep slope mining operations with variances from approximate original contour. Once submitted, OSM will determine if the State needs to submit a program amendment to implement its recommendations.

If you have any questions concerning either of these matters, please notify us.

Sincerely,

A handwritten signature in cursive script, appearing to read "Roger Calhoun".

Roger W. Calhoun, Director  
Charleston Field Office

**RECEIVED**  
DIRECTOR'S OFFICE

JUN 04 1998

## MEMORANDUM OF UNDERSTANDING

WV DIVISION OF  
ENVIRONMENTAL PROTECTION

Whereas, The West Virginia Division of Forestry (hereafter D.O.F.) and the West Virginia Division of Environmental Protection Office of Mining and Reclamation (hereafter O.M.R.) recognize the desirability of a healthy forestry industry in the state of West Virginia; They have entered into this Memorandum of Understanding to provide assistance to those mining companies and land owners who wish to develop commercial woodland as the postmining land use on their properties.

Whereas, In order to qualify for the "Commercial Woodland" postmining land use and the reduced tree stocking rates contained in 38 CSR 2 at §38-2-9.3h., the permittee must have an approved management plan prepared by a registered professional forester.

Therefore, In order to ensure compliance with 30 CFR 816.116 (b)(3)(i) and 817.116(b)(3)(i) D.O.F. agrees to review in a timely manner all "Commercial Woodlands" planting and forest management plans to be included in surface mining permits issued by O.M.R.. If after review, the D.O.F. agrees that the planting and forest management plan is in conformance with the prevailing local and regional conditions, D.O.F. will provide O.M.R. with a letter indicating such agreement.

This Memorandum of Understanding may be cancelled by either party by notification in writing to the other party.

Specific procedures for submittal, review and approval of the planting plans are contained in Attachment 1.

  
William R. Maxey  
State Administrative Forester

6.4.98

  
Michael P. Miano  
Director  
West Virginia Division of Environmental Protection

## Attachment 1

1. All plans to be reviewed will be prepared and signed by a Registered Professional Forester.
2. The permittee will submit their proposed forest management plan to the District Forester in the District in which the permit is located. The District Forester will then assign the plan to a Service Forester for review.
3. If after reviewing the plan the Service Forester agrees that the plan is adequate to ensure compliance with the other requirements in this attachment; the Service Forester will prepare a letter indicating approval. The letter of approval will be addressed to the O.M.R. Permit Supervisor for the Region in which the permit is located.
4. If the reviewing forester finds the plan to be insufficient, he will contact the preparing forester or the permittee and have the necessary changes made to the plan.
5. As an alternative, the permittee may use the services of the Division of Forestry to prepare the management plan. In such cases the Service Forester need only certify that the plan meets the requirements of this agreement and attachment.
6. The management plan will be in sufficient detail to ensure sound future management of the forest resource and have a reasonable expectation of being achieved.
7. The plan shall have a statement from the landowner or other responsible party indicating their intention of long term implementation and management in accordance with the plan.

**STATEMENT  
OF  
LANDOWNER INTENT**

I agree with, and intend to follow, the recommendations of the Registered Forester to achieve my objectives for managing the described area to be surface mined as postmined commercial forestland.

I reserve the right to have the plan amended according to future unforeseen circumstances which may change, however, I will continue to manage the postmined area as commercial forestland.

Date: \_\_\_\_\_, 19\_\_\_\_ \_\_\_\_\_  
Landowner's Signature

Date Reviewed: \_\_\_\_\_, 19\_\_\_\_ \_\_\_\_\_  
Forester's Signature

Date Approved: \_\_\_\_\_, 19\_\_\_\_ \_\_\_\_\_  
State Forester or Representative

WEST VIRGINIA DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF MINING AND RECLAMATION

Postmining Land Use  
Procedures for Commercial Woodland

1. A Registered Professional Forester must develop a planting plan and long-term management plan for the permitted area.
2. The landowner should be encouraged to express desired objectives for achieving a commercial woodland post-mining land use; (ex: achieving short-term profits by managing for intermediate forest products "25-40 years" such as posts, rails, fiberwood or longer term profits "50-80 years" such as quality sawlogs/veneer).
3. A long-term management plan will be developed that addresses the option to reclaim to commercial woodlands. The plan must include:
  - A. A topographic map showing boundaries and extent of proposed surface mining operation.
  - B. A topographic map showing boundaries of area being planned for commercial woodland as the post-mining land use.
  - C. A proposed schedule of silvicultural activities necessary to develop the forest resources for commercial woodland through the appropriate forest rotation.
  - D. A prescription of activities necessary to protect the forest resources from wildfire, insects and diseases.
  - E. A plan to assure forest access for future management, protection and eventual utilization of the forest resources.
4. A commercial species planting plan and prescription (see attached Planting Plan Guidelines)
  - A. Description of the present (pre-mining) native soils to include productivity potential (nutrient and PH levels).

- B. Description of the present topsoils to be used as the plant medium and the proposed treatment for PH and nutrient requirements after soil replacement. The forest tree medium will consist of the top 6 to 10 feet of original topsoil that is comprised of brown weathered, slightly acidic sandstone.
- C. Seedbed preparation to include replacing the topsoil and other weathered material from the top 10 feet of the geologic column which is to be lightly graded.
- D. Fertilization rates.
- E. Mulching
- F. Seeding applications of perennial, annual, herbaceous plant materials as ground cover.
- G. Tree planting design to establish commercially important woodland.
- H. Description of the protection requirements to assure tree and vegetation survival.
- I. A maintenance schedule.
- J. A description of the long-term management needs to sustain commercial woodland. (Management Plan, see Item 3.)

A signed Statement of Intent which signifies the landowners' agreement and commitment to the long-term management plan to assure the establishment of commercial woodland. (Part of the long-term management plan; not the planting plan.) Signatures should include the landowner(s) as well as the consulting forester.

Two copies of the planting plan, management plan, pertinent maps and Statement of Intent should be submitted to the appropriate Division of

**District I**  
 W.Va. Division of Forestry  
 Route 2, Box 1100  
 Fairmont, WV 26554  
 (304) 367-2793  
 FAX: (304) 367-2795

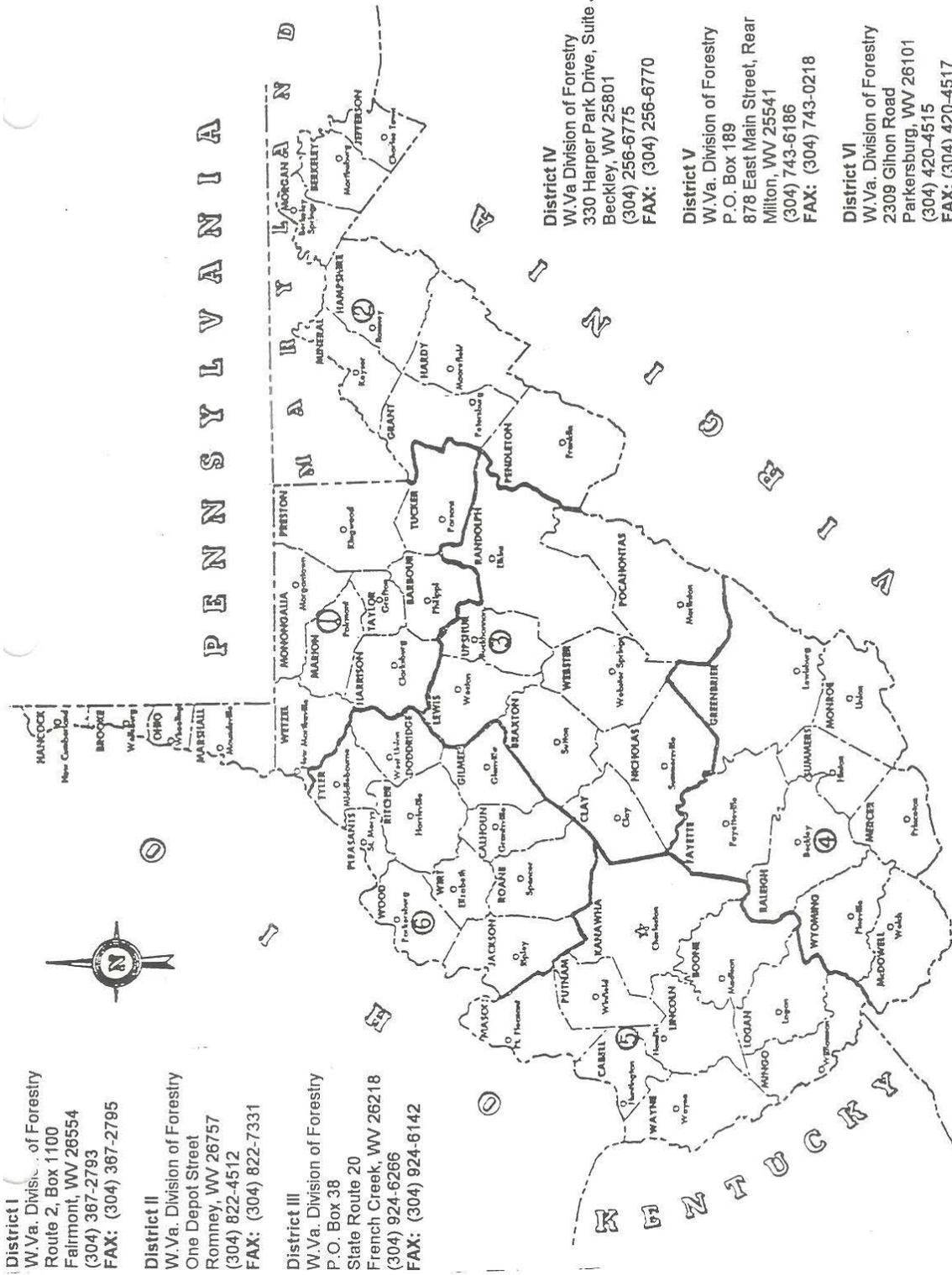
**District II**  
 W.Va. Division of Forestry  
 One Depot Street  
 Romney, WV 26757  
 (304) 822-4512  
 FAX: (304) 822-7331

**District III**  
 W.Va. Division of Forestry  
 P.O. Box 38  
 State Route 20  
 French Creek, WV 26218  
 (304) 924-6266  
 FAX: (304) 924-6142

**District IV**  
 W.Va. Division of Forestry  
 330 Harper Park Drive, Suite J  
 Beckley, WV 25801  
 (304) 256-6775  
 FAX: (304) 256-6770

**District V**  
 W.Va. Division of Forestry  
 P.O. Box 189  
 878 East Main Street, Rear  
 Milton, WV 25541  
 (304) 743-6186  
 FAX: (304) 743-0218

**District VI**  
 W.Va. Division of Forestry  
 2309 Gihon Road  
 Parkersburg, WV 26101  
 (304) 420-4515  
 FAX: (304) 420-4517



## PLANTING PLAN GUIDELINES FOR COMMERCIAL WOODLAND

The following minimum reclamation practices and planting procedures should be followed when establishing commercial woodland as the postmining land use. Reference is made to the West Virginia Surface Mining Reclamation Regulations, Bureau of Environment Division of Environmental Protection, August 1, 1997 which should be reviewed to assure compliance.

### 1. **Selecting the Soil**

A description of the native soils is to be provided for the area to be reclaimed. Top soil substitutes will contain any mixture of top soil, organic debris and rock materials from within ten (10) feet of the surface. The top six to ten feet of the geologic column of weathered slightly acidic, brown sandstone must be retained for backfilling. The unweathered material from further down in the geologic column (namely, the unweathered alkaline shales) are not to be used because they generally have a pH of 7.4 or higher. This high pH is not conducive to tree growth, nor is the silt and clay texture of this material helpful to trees. The rocky, sandy texture of the weathered brown sandstone with a lower pH is the material that is best for the surface. Core samples will be taken and tested for plant nutrient and pH levels. Much of the surface soil information is available in soil surveys provided by the USDA Natural Resources Conservation Service.

**NOTE:** The proper growth medium for commercial forestland establishment must be replaced on the surface to a depth of at least six feet. Low to moderate levels of soluble salts with an equilibrium pH of 5.0 to 6.5, low pyritic sulfur content, and a sandy loam texture are preferred. Siltstone rock materials should be avoided. Soil amendments should be proposed to produce a soil pH of approximately 6.0. The best available material may vary in pH from 4.5 to 7.0 and is acceptable as long as tree species tolerant of these conditions are selected for planting. Weathered, brown, slightly

acidic, sandstone is usually found near the surface in most areas of West Virginia coal fields. This sandstone is partially weathered and when further fractured by mining will quickly break down to become a good soil medium for trees.

## 2. **Grading**

Minimizing any compaction during the application of the rooting medium and the final grading operation is extremely important. (See Table 3; diagrams 1, 2, and 3.) The compaction that can occur during establishment of the final surface layer can be minimized by dumping and leveling in separate operations although backfill stability requirements must be sustained. **Caution:** Minimal compaction criteria do not pertain to areas which ultimately will support the final drainage conveyance systems including ditches and other waterways.

When trucks deliver the final layer of rooting medium material, it should be placed in closely spaced piles that abut one another across the entire area. Once the material is placed, a light bulldozer can grade the tops off the piles, "roughly" leveling the area with no more than one or two passes.

On areas utilizing draglines, the soil material should be cast and shaped so as to reduce the use of tracked equipment for grading by placing piles closely spaced, one abutting the other.

On steeper slopes the final layer of soil should be dumped over the top of the outslope onto the previously compacted backfill (see Page 10). Only one or two passes with a light bulldozer to minimally shape the slope is necessary. "Tracking in" (making several passes with a heavy bulldozer) slopes is not necessary. The overall objective is to minimize compaction as far as possible and to create a slightly uneven surface (microtopography)

and to leave as much organic debris (stumps, roots, limbs and brush) as possible with occasional protruding larger rocks, especially rocks that would necessitate compaction from equipment traffic in the process of their removal.

### 3. **Soil Nutrients and Ground Cover**

If the topsoil material is found to have a pH of less than 6.0 it should be tested and treated with limestone or an equivalent alkaline material at a rate to produce a surface soil pH of approximately 6.0. This pH adjustment is only for the benefit of the temporary grass and legume groundcovers. Liming is seldom needed for trees if the soil is no lower than 4.5. Fertilizer applications should be based on a current soil test also. The soil test laboratory making the test should be informed it will be making an application recommendation for an area to be planted to trees. The fertilizer recommendation should have a high rate of phosphorous, an adequate rate of potassium, with a low rate of nitrogen.

The ground cover recommendation should include grasses and legume species that are slow growing, tolerant of a pH range from 4.5 to 6.0 and can be established in a base mineral soil.

**NOTE:** Tree compatible ground covers are those that are relatively sparse during the first year but become increasingly lush by the second and third years. Do not use Kentucky-31 fescue, Seresia Lespedeza, all vetches, clovers (except Ladino and white) and any other aggressive or invasive species. A balanced seed mixture that allows for short-term and long-term erosion control while not inhibiting tree growth or survival is important. Some recommended ground covers are: (See Table 1.)

### 4. **Tree Species**

Commercial tree and nurse tree species selection should be based on site

specific characteristics. Mychorrizae inoculated seedlings should be used whenever possible. Native tree species should receive priority over other tree species.

Trees can be properly established by mechanical planters, hand planting, or a combination of these methods. Certain species can be hydroseeded, but their density is usually unpredictable. Black locust should only be direct seeded on steep slopes. Even there the rate should not exceed ½ ounce per acre. Experienced, reputable tree planters should be used.

Flexibility in tree species selection, while ensuring proper reforestation and compliance with the law, should be maintained.

**Example:** On sites that will support hardwoods, the area will be planted or seeded with at least four species from the following list: white oak, red oak, mixed oak, white ash, green ash, yellow-poplar, black walnut, sugar maple, red maple, sycamore or other suitable native tree species designated by the landowner. Conifers including white pine, Virginia pine, Norway spruce, pitch pine or hybrid pine should be planted in pure stands. At any given location, the specific species selection will be based on seedling availability and in accordance with the suitability of the planting site for each species' site requirements based on spoil type, degree of compaction, ground cover competition, topographic position, and aspect. (See Table 2). In addition to those planted, some invasion of native species is expected.

A minimum planting density should result at least in 600 stems per acre. A simple spacing that will approximate this density is an 8 X 9 foot spacing. Species mixes can and should be recommended that will meet the

landowners objectives. Incorporated into the commercial species should be 100 to 200 miscellaneous nurse trees per acre to provide diversity, assure stocking and help train the commercial species.

Direct seeding can be an important part of the reforestation strategy due to cost savings that can offset higher planting costs. Black locust should not be seeded at a rate greater than ½ ounce per acre. This should be applied with the ground cover seed mix. Hardwood trees should be planted the first spring after the tree-compatible ground cover is sown. Pine species may be planted the first fall or spring after the ground cover is sown.

**5. Planting and Handling Seedlings**

- a. Start with healthy, moderately-sized seedlings. (Balanced root-shoot ratio (limb spread about equal to root mass) with good stem caliper; Mychorrizae treated roots are preferable).
- b. Keep tree seedlings cool, roots moist and well vented at all times. Store in the same environment.
- c. Match the species to the site.
- d. Supervise the planting operation.

**6. Protection**

Annual inspection of the tree planting site may be necessary the first three years to monitor survival. Some replanting and interplanting may be necessary to assure bond release.

Depending on the region of the state it may be necessary to provide for protection of the planting from deer browsing. Deer population control, may be necessary to assure survival.

**Table 1.** Species and fertilizer recommendations for a tree-compatible ground cover for weathered mine soils in the Appalachians.

Species	Application Rate (lbs/acre)
<i>Grasses:</i>	
winter rye ( <i>Secale cereale</i> ) fall seeding	15
foxtail millet ( <i>Setaria italica</i> ) summer seeding (June thru Sept)	5
redtop ( <i>Agrostis gigantea</i> )	2
perennial ryegrass ( <i>Lolium perenne</i> )	2
orchardgrass ( <i>Dactylis glomerata</i> )	5
weeping lovegrass ( <i>Eragrostis curvula</i> )	2
<i>Legumes:</i>	
kobe lespedeza ( <i>Lespedeza striata</i> var. Kobe)	5
birdsfoot trefoil ( <i>Lotus corniculatus</i> )	5-10
ladino clover ( <i>Trifolium repens</i> )	3
Fertilizer (elemental rate*)	
Nitrogen	50-75
Phosphorus	80-100

\*Blend 200 lbs/acre concentrated super phosphate with 400 lbs/acre 19-19-19 fertilizer, or equivalent.

**Table 2.** Species tolerance ratings for various adverse minesoil conditions.

Species	Minesoil Condition						
	pH < 4.5	PH > 6.5	compact	wet	tall grass	North aspect	South aspect
<i>Crop trees:</i>							
Norway spruce	poor	good	good	good	poor	fair	fair
white pine	poor	poor	poor	poor	poor	fair	fair
Virginia pine	fair	poor	good	poor	poor	fair	good
pitch/loblolly hybrid	fair	poor	fair	poor	fair	good	good
red oak	fair	fair	poor	poor	poor	fair	good
white oak	fair	fair	poor	poor	fair	fair	good
mixed oak (scarlet, chestnut, red, white)	fair	fair	poor	poor	fair	fair	good
white ash	fair	good	good	poor	fair	fair	fair
green ash	fair	fair	good	good	good	fair	fair
yellow-poplar	poor	fair	poor	poor	fair	good	fair
red maple	fair	fair	fair	fair	fair	fair	fair
sugar maple	poor	poor	poor	poor	good	good	fair
sycamore	fair	good	fair	good	good	fair	fair
<i>Nurse trees:</i>							
black locust	fair	fair	good	poor	good	fair	fair
black alder	good	fair	good	good	good	fair	fair
bristly locust	good	fair	good	fair	fair	fair	fair

A designation of "good" does not mean the species prefers the condition, but that it is relatively more tolerant than the other species in the list. For example, white ash does not prefer compacted soils, but experience has shown that it will survive and grow better than the other crop trees listed.

Table 3.

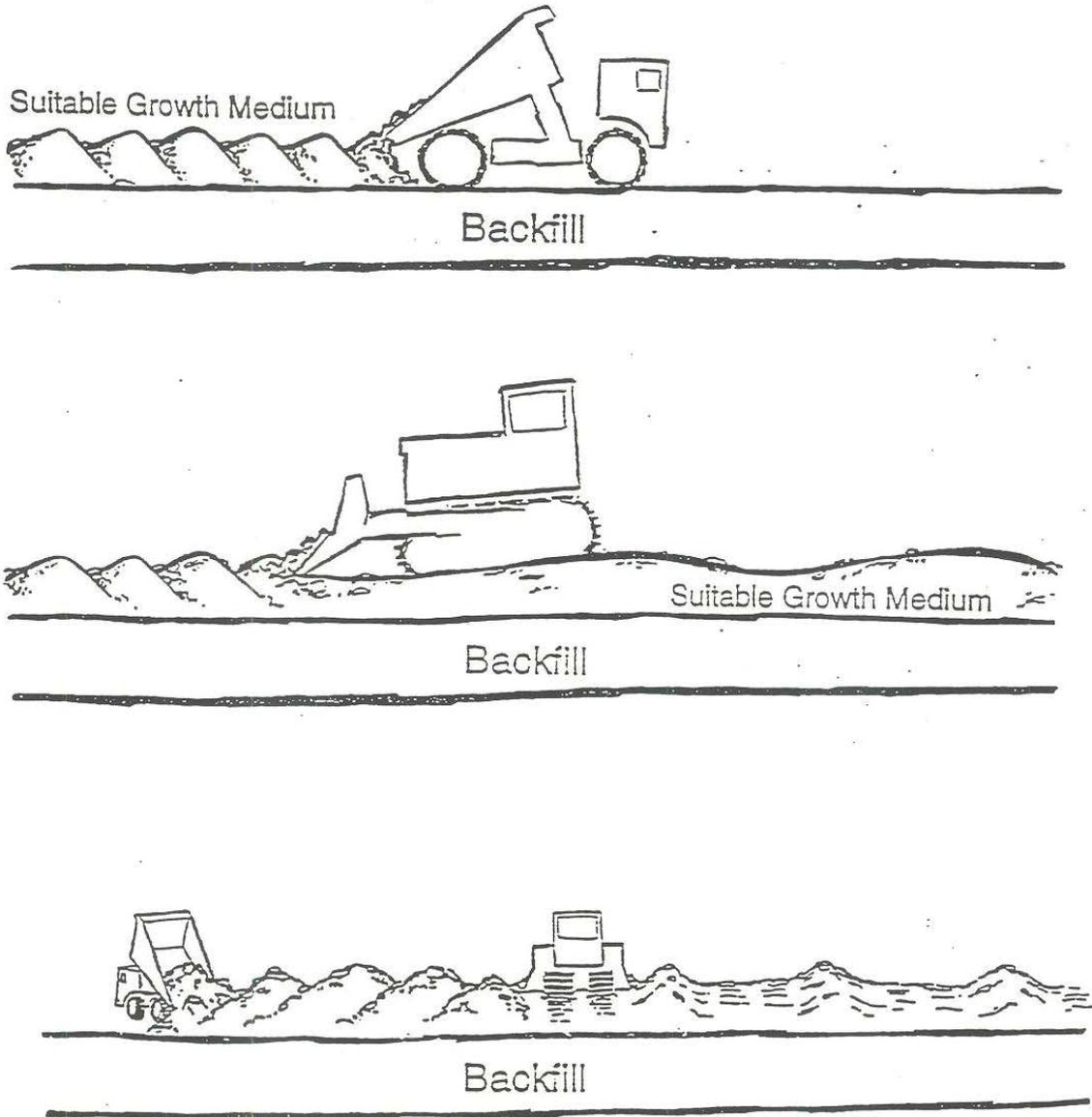


Diagram 1. Area Mining or Mountaintop Removal methods

illustrations not to scale

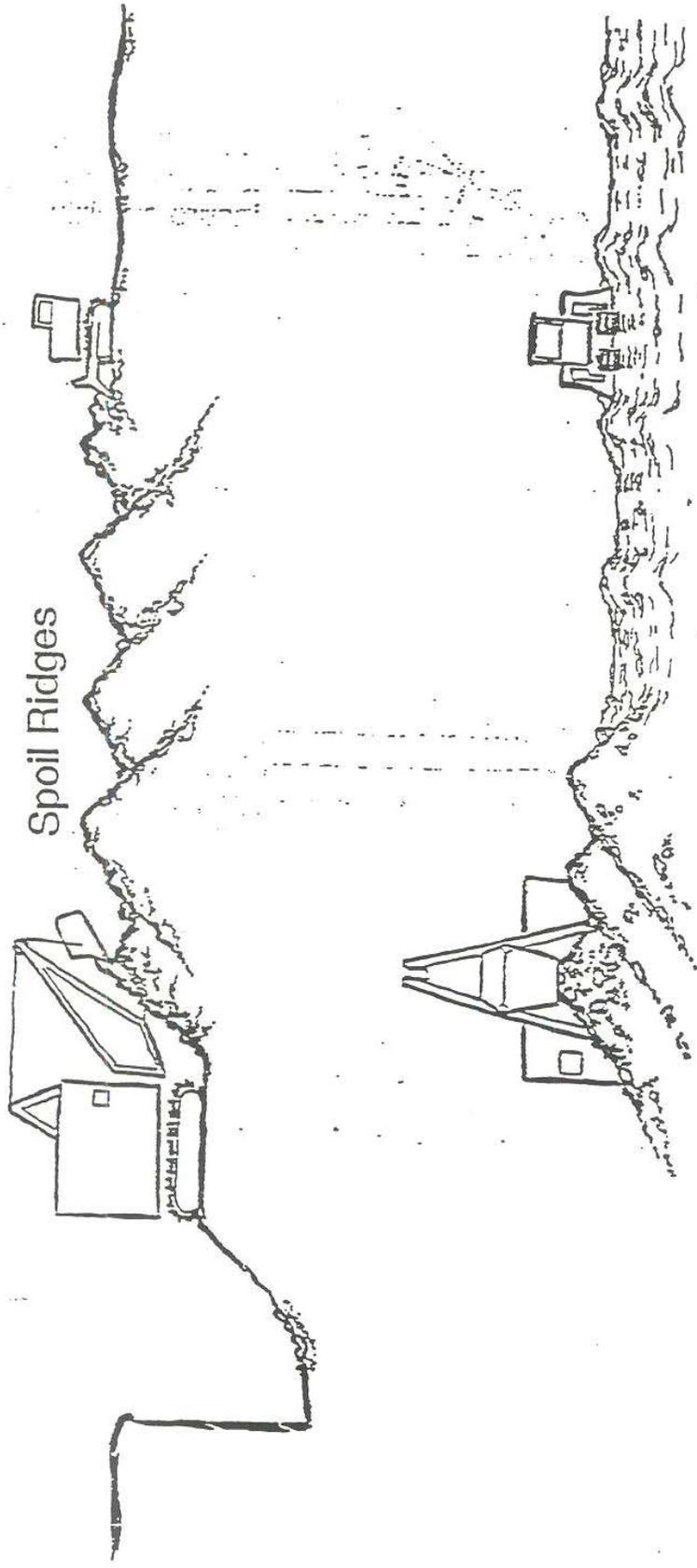
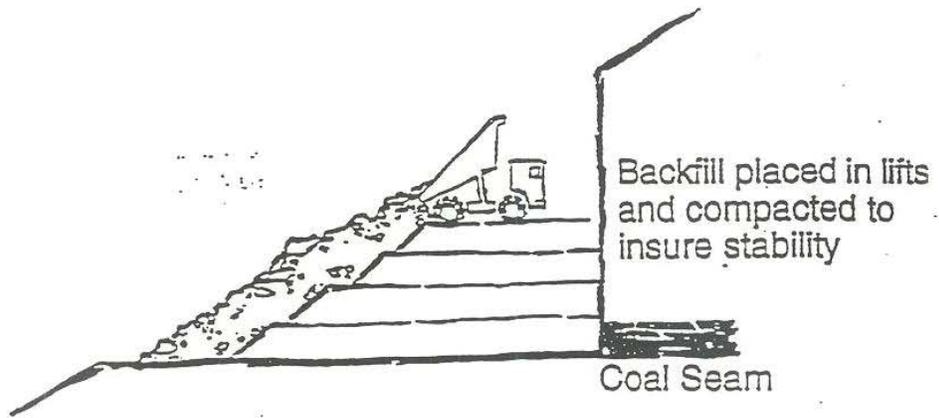


Diagram 2. Area Mining or Mountaintop Removal by Dragline method

Illustrations not to scale



Recommend no more than two passes with equipment to remove excessively large rocks and shape to final backfill configuration

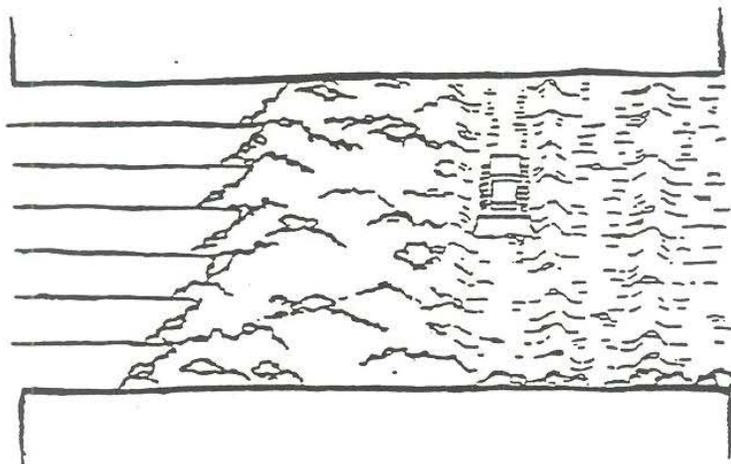
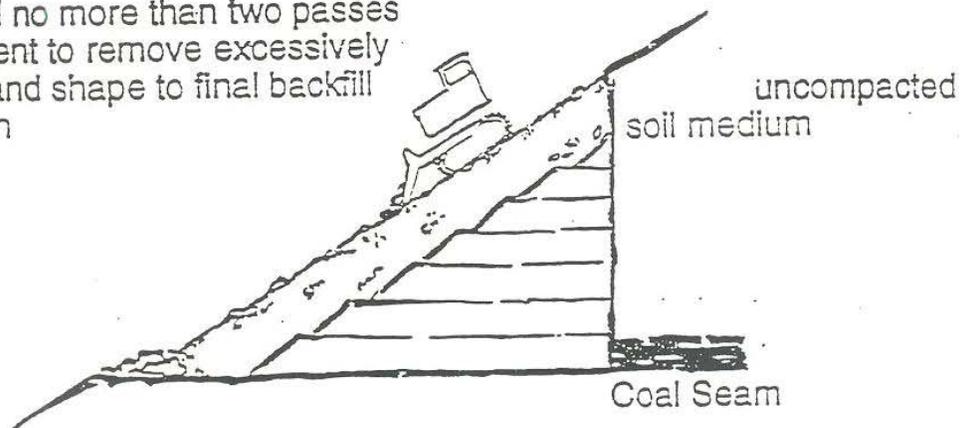


Diagram 3. Contour Mining or Other Sloped Areas

**STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF MINING AND RECLAMATION**

**MANAGEMENT PLAN APPROVAL FORM  
FOR  
POST MINE LAND USE OF COMMERCIAL WOODLAND**

Applicant Name: \_\_\_\_\_ SMA Permit #: \_\_\_\_\_  
When assigned

Street Address: \_\_\_\_\_  
(If a mailing address is a Post Office Box)

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

State of West Virginia Registered Forester Number: \_\_\_\_\_

**Postmining Commercial Forestland Management Plan**

- |   | Yes                      | No                       |
|---|--------------------------|--------------------------|
| • A brief description of the premining forest productivity is described.  | <input type="checkbox"/> | <input type="checkbox"/> |
| • A reasonable estimate of the postmining commercial forest productivity is described.                          | <input type="checkbox"/> | <input type="checkbox"/> |
| • Satisfactory maps delineating the proposed mining area and the area to be reclaimed to commercial forestland. | <input type="checkbox"/> | <input type="checkbox"/> |
| • Silvicultural prescriptions are provided.   | <input type="checkbox"/> | <input type="checkbox"/> |
| • Protection of the proposed commercial forestland area is provided.  | <input type="checkbox"/> | <input type="checkbox"/> |
| • An access plan is provided.   | <input type="checkbox"/> | <input type="checkbox"/> |
| • An estimated rotation age is described for the proposed commercial forestland area.                           | <input type="checkbox"/> | <input type="checkbox"/> |
| • Signed Statement of intent .  | <input type="checkbox"/> | <input type="checkbox"/> |

**(EXPLANATIONS ON BACK)**

Explanation of Shortcomings for Items Checked "No."

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The management plan for the postmining commercial woodland is (approved/disapproved) according to Attachment 1 of the MOU between the Division of Forestry and the Division of Environmental Protection, Office of Mining and Reclamation.

**DATE APPROVED:** \_\_\_\_\_

\_\_\_\_\_  
District Forester or Division of Forestry Representative

Enclosures: Maps and Approved Planting Plan

**STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF MINING AND RECLAMATION**

**PLANTING PRESCRIPTION APPROVAL FORM  
FOR  
POST MINE LAND USE OF COMMERCIAL WOODLAND**

Applicant Name: \_\_\_\_\_ SMA Permit #: \_\_\_\_\_  
When assigned

Street Address: \_\_\_\_\_  
(If a mailing address is a Post Office Box)

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Contact Person (Registered Forester): \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

State of West Virginia Registered Forester Number: \_\_\_\_\_

**PLANTING PRESCRIPTION**

- |   | Yes                      | No                       |
|---|--------------------------|--------------------------|
| • Satisfactory maps delineating the proposed mining area and the commercial forestland planting area. | <input type="checkbox"/> | <input type="checkbox"/> |
| • Topsoil description and soil productivity for backfilling proposed mine area.                       | <input type="checkbox"/> | <input type="checkbox"/> |
| • Plant nutrient/pH level information from corehole samples.  | <input type="checkbox"/> | <input type="checkbox"/> |
| • Proposed treatment or method to neutralize acidity or alkalinity to approximately 6.0.              | <input type="checkbox"/> | <input type="checkbox"/> |

**CONTINUED ON REVERSE SIDE**

- Adequate description of seed bed preparation requirements: backfill, leveling, soil compaction.
- Species and application rates of perennial, annual, herbaceous and woody plants. Ground cover seed mixture should be temporary plants, permanent grasses, legumes and small grains.
- Commercial tree species and nurse trees to plant. Include spacing and method of planting.
- Planting procedure and maintenance description.
- Protection needs described.

- I have reviewed the planting prescription and found it to be technically sufficient.
- I have reviewed the planting prescription and found it to be technically incomplete/insufficient. (Please refer to above items checked "No" and/or comments below. Make the necessary changes and resubmit.)

**DATE APPROVED:** \_\_\_\_\_

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District Forester or Division of Forestry Representative

Comments: \_\_\_\_\_

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\_\_\_\_\_

- Adequate description of seed bed preparation requirements: backfill, leveling, soil compaction.
- Species and application rates of perennial, annual, herbaceous and woody plants. Ground cover seed mixture should be temporary plants, permanent grasses, legumes and small grains.
- Commercial tree species and nurse trees to plant. Include spacing and method of planting.
- Planting procedure and maintenance description.
- Protection needs described.

- I have reviewed the planting prescription and found it to be technically sufficient.
- I have reviewed the planting prescription and found it to be technically incomplete/insufficient. (Please refer to above items checked "No" and/or comments below. Make the necessary changes and resubmit.)

**DATE APPROVED:** \_\_\_\_\_

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District Forester or Division of Forestry Representative

Comments: \_\_\_\_\_

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**REQUEST FOR DIVISION OF FORESTRY  
TECHNICAL ASSISTANCE**

I certify as the permittee that I have contacted at least three (3) Registered Professional Consulting Foresters regarding the development of a management plan and planting prescription plan for commercial woodland postmining land use. The three listed below have refused to assist or have not responded within 30 days of my initial request.

I have read and do understand the Division of Forestry Guidelines for providing technical assistance.

I believe my request meets the Division of Forestry criteria for providing technical assistance and am, therefore, requesting Division of Forestry assistance.

Registered Professional Consulting Forester Contacted (Name)	Registration Number	Address	Telephone Number	Date Contacted	How Contacted? Telephone, Mail or Other
1.					
2.					
3.					

\_\_\_\_\_  
Permittee (Signature)

\_\_\_\_\_  
Date

**See Reverse for Guidelines**

**DIVISION OF FORESTRY  
GUIDELINES FOR OBTAINING PLANNING/TECHNICAL ASSISTANCE**

In order to qualify for the "Commercial Woodland" postmining land use and the reduced tree stocking rates contained in 38 CSR 2 at §38-2-9.3 h the permittee must have an approved management plan and planting prescription prepared by a registered professional forester.

A West Virginia Registered Professional Forester is one who is licensed pursuant to Article 19, Section 30-19-1 thru 30-19-10 of the Code of West Virginia and is listed in the current published Roster of Registered Foresters. (Available by calling Division of Forestry @ (304) 558-2788.)

**Limited Availability of Division of Forestry Planning/Technical Assistance**

The Division of Forestry will provide limited free planning and technical assistance under the following circumstances.

- Permittee must show proof that at least three (3) Registered professional Foresters not employed by the Division of Forestry were contacted and refused to provide assistance or the permittee received no affirmative responses within 30 calendar days of initial contact. (Complete and submit reverse side of form to request assistance).
- Division of Forestry Service Foresters provide Technical Assistance within their project area on a first-come, first-serve basis. The average backlog of requests exceeds six (6) months from time of receiving request until initial technical assistance is started.
- Division of Forestry Service Foresters cannot provide technical planning assistance on acres exceeding 100 acres and/or for requests exceeding 5 man-days/year of technical time.
- District Forester must approve all requests for Commercial Forestland Reclamation Planning.
- Submit request for assistance to the appropriate District Forester. (See Division of Forestry District map).

<i>SUBJECT:</i>	<b>Productivity and Ground Cover Success Standards</b>
<i>DATE:</i>	<b>May 1, 2002</b>
<i>Approval:</i>	<b>Matt Crum, Director, DMR</b>

The productivity success standards for grazing land and hayland will be based upon determinations for similar map units as published in the productivity tables in Natural Resources Conservation Service (NRCS) soil surveys for the county or from average county yields recognized by the United States Department of Agriculture. The yields for grazing land or hayland will be measured in material produced per acre or animal units supported. The success of production shall be equal to or greater than that of the standard obtained from the tables. Evaluation methods for productivity to be utilized are described in section 1 of “Technical Guides of Reference Areas and Technical Standards for Evaluating Surface Mine Vegetation in OSM Regions I and II” by Robert E. Farmer, Jr. et. al., OSM J5701442/TV-54055A, 1981, U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement.

The productivity success standard for cropland shall be determined using yields for reference crops from unmined areas. Reference crop yields shall be determined from the current yields records of representative local farms in the surrounding area or from the average county yields recognized by the United States Department of Agriculture. The success of production shall be equal to or greater than that of the reference crop from unmined areas. Evaluation methods for productivity to be utilized are described in section 1 of “Technical Guides of Reference Areas and Technical Standards for Evaluating Surface Mine Vegetation in OSM Regions I and II” by Robert E. Farmer, Jr. et. al., OSM J5701442/TV-54055A, 1981, U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement.

The company shall be responsible for providing DEP with copies of the productivity tables and/or data used to determine reference crop yield. Where the USDA or other agricultural data for productivity does not exist for a particular county, the applicant will work with the DEP and the USDA to develop standards for the proposed area.

Ground cover success shall be based on the Rennie and Framer technique described in section 3 of “Technical Guides of Reference Areas and Technical Standards for Evaluating Surface Mine Vegetation in OSM Regions I and II” by Robert E. Farmer, Jr. et al, OSM J5701442/TV-54055A, 1981, U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement. et. al., OSM J5701442/TV-54055A, 1981, U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement.