Appendix I: Workplans\Performance Agreements for Kentucky and Virginia's Oversight of Mountaintop Mining

WORK PLAN

SPECIAL OVERSIGHT STUDY
OF
APPROXIMATE ORIGINAL CONTOUR (AOC),
POST-MINING LAND USE (PMLU),
AND
EXCESS SPOIL DISPOSAL

WORK PLAN

Office of Surface Mining (OSM)
Lexington Field Office (LFO)
Evaluation Year 1999

LEXINGTON FIELD OFFICE
WORK PLAN

I. INTRODUCTION

The Lexington Field Office (LFO) of the Office of Surface Mining (OSM) and the Department for Surface Mining Reclamation and Enforcement (DSMRE) are working together to examine aspects of mountaintop removal mining.

The study will address certain aspects of the mountaintop mining operations in eastern Kentucky that remove all or a large portion of a coal seam running through the upper fraction of a mountain. These operations are often referred to by the public and media as "mountaintop removal." The term "mountaintop removal," however, is more limited in its regulatory usage. This study will address a range of mountaintop mining operations. The evaluation focuses on three questions related to these type operations:

- Has DSMRE required the appropriate post-mining land uses where it has granted mountaintop-removal or steep-slope variances from approximate original contour (AOC)?
- What post-mining land configuration does DSMRE accept in determining that a given site has been returned to AOC or when a variance is required?
- How is excess spoil determined and to what extent do Kentucky mining operations restrict spoil placement?

II. IMPLEMENTATION

Upon completion of each of the following tasks, LFO will brief DSMRE on the preliminary findings. Reports will then be drafted for the completed task. DSMRE comments will be taken into consideration in preparation of the draft, and DSMRE will be provided the draft for review and comment. At the completion of all the tasks, a combined draft report will be submitted to DSMRE for review and comment.

A. Scope of Mountaintop removal

DSMRE developed a mountaintop removal inventory. DSMRE verified the number of AOC variances obtained from the inspectable units list and collected general data about those mines. DSMRE submitted this inventory on October 15, 1998.

B. Sampling

Preliminary experience indicates that Kentucky has two large dragline operations in eastern Kentucky, a series of surface mine complexes that are mining mountaintops and ridgelines, and several multiple seam contour mines that surface mine some points and ridgelines that obtain AOC variances.

The sampling for the study will include:

- All permits associated with the two large eastern Kentucky dragline operations.

- And additionally, twelve surface mine permits divided between the surface mine complexes and multiple seam mines. This selection will be based on the inventory.

C. Review Methodology

This study will determine if the approved State provisions relating to AOC and PMLU are being implemented. It will also review total overburden volumes and earthwork calculations to determine how excess spoil volumes are determined and if the amount determined to be excess is consistent with the PMLU.

Permit documents for the operations will be reviewed to determine if all requirements related to approval of an AOC variance and changing of the PMLU have been met. When available, digitize maps of the operation will be used to compare pre-mining topography and post mining topography.

Field reviews will be conducted on all permits. The review will determine if the final surface configuration is consistent with the approved permit and whether the alternative PMLU is being developed, or has been achieved on the final bond released sites in accordance with the plans and schedule required by DSMRE. Geo- Referencing of the major features of the mine site will be accomplished.

The following activities will occur to complete this evaluation:

1. Create an OSM team with support from DSMRE
   a. Name team leaders.
   b. Select team members.
   c. Apportion assignments.

2. Select permits.
   a. All permits associated with the two eastern Kentucky dragline operations will be reviewed.

b. Select twelve additional permits drawn from DSMRE'S field verified inventory.

3. Conduct review of variance and earthwork for each permit. Use Permit Review Form, to be developed).
   a. Locate variance within specific permit.
   b. Identify type of variance and conditions.
   c. Determine if variance was issued in accordance with approved program.
   d. Tabulate bank (in situ) spoil volume for permit.
   e. Tabulate bulked or loose volume for permit.
   f. Calculate swell or bulking factor for permit.
   g. From permit cross-sections determine maximum elevation change.

4. Conduct field review of the same permits (Use Site Review Form, to be developed).
   a. Conduct a "plan-in-hand" site visit with State personnel.
   b. Note latest revisions and amendments to earthwork.
   c. Compare on-the-ground conditions with final cross-sections and latest revisions.
   d. Make horizontal and vertical measurements as required to verify plan and "as built" data.
   e. Photograph land forms as required.

5. Coordinate with other agencies, as necessary.
   a. If variance involves local or regional planning agency contact agency to verify variance purpose and data.
   b. Contact other State and Federal agencies concerning variance conditions as need arises.

6. Compile final report.
   a. Use the Permit Review and Site Review Forms that are to be developed.
   b. Results will be grouped in tabular form based on type of variance, type of mining, and post-mining land use.

D. Scope of Valley fills

Presently, there is data on fills in various forms that would, if compiled, is helpful in analyzing impacts in Kentucky. The forms of data include the DSMRE permit information, the engineering certifications, the 401 water quality certification and SMIS. Also, DSMRE is in the process of developing a GIS fill inventory. OSM will scope out data collection needs and collect that data from each source to improve analysis of fills.

III. REVIEW PERIOD

The permit, map, and site reviews will be completed in about two months.

IV. REPORT AND RECOMMENDATION

DSMRE will be briefed on the reviews as they progress. A draft report will be submitted to the LFO Field Office Director and the Commissioner of DSMRE one month after completion of the permit, map, and site reviews. A courtesy copy of the draft report will be submitted to the Appalachian Regional Coordinating Center (ARCC) for comment and consideration of their national concerns. The final report will address comments submitted on the draft and will be completed within one month after distribution of the draft.

V. COORDINATION AND ADMINISTRATIVE MATTERS

The OSM/DSMRE technical review staff may determine that additional technical assistance is necessary on a case-by-case basis. The assistance may be provided by ARCC staff and/or DSMRE staff from Field Services and Permits Divisions.

The OSM/DSMRE site review team will coordinate the site reviews with the Regional Administrators through the Director of the Division of Field Services.

For permit reviews conducted at the Regional Offices, the OSM permit review team will coordinate the reviews with the Regional Administrators through the Director of the Division of Field Services. For permit reviews conducted at Frankfort, the review team will coordinate the reviews with the Director of the Division of Permits.

VI. REFERENCES TO ADDITIONAL MOUNTAINTOP REMOVAL / VALLEY FILL STUDIES

The Environmental Protection Agency, the U.S. Army Corps of Engineers, the U. S. Fish and Wildlife Service will conduct a joint federal evaluation of the impacts and regulation of valley fill activities in the Appalachia region. This will include the States of Pennsylvania, Maryland, Ohio, West Virginia, Virginia, Kentucky, and Tennessee. The evaluation will cover four areas. The effort will:

1. Develop a Geographic Information System (GIS) inventory for fills created by coal mining in the Appalachia region.
2. Collect regulations on stream mitigation practices as applied in the Appalachia region.
3. Assess long term stability of fills with emphasis on safety issues; and
4. Assess the past environmental impacts of fills on aquatic and terrestrial environments.

The Lexington Field Office (LFO) and DSMRE developed an oversight study to review stability of fills. This study is discussed in the 1998-1999 LFO/DSMRE performance Agreement.

PERFORMANCE AGREEMENT

SPECIAL OVERSIGHT STUDY
OF
APPROXIMATE ORIGINAL CONTOUR,
POST-MINING LAND USE,
AND
EXCESS SPOIL DISPOSAL

PERFORMANCE AGREEMENT

Between

Office of Surface Mining
Big Stone Gap Field Office

And

Department of Mines, Minerals and Energy,
Division of Mined Land Reclamation

Evaluation Year 1999

PERFORMANCE AGREEMENT

I. INTRODUCTION

The Big Stone Gap Field Office (BSGFO) of the Office of Surface Mining (OSM) and the Department of Mines, Minerals and Energy, Division of Mined Land Reclamation (DMME/DMLR) agree to work together to examine aspects of surface mining operations which include:

- Mountaintop-removal (as defined at 4 VAC 25-130-785.14) with a variance from approximate original contour (AOC);
- Mines which remove all of the coal seam or seams in the upper fraction of a mountain but which return the land to AOC; and
- Steep slope mines with an AOC variance pursuant to 4 VAC 25-130-785.16.

The evaluation focuses on the following questions related to these type operations:

- Where DMLR has granted mountaintop-removal or steep slope AOC variances, has an appropriate post-mining land use (PMLU) been requested and approved pursuant to 4 VAC 25-130-816/817.133?
- What post-mining land configuration does DMLR accept on mountaintop and other steep slope operations in determining that a given site has been returned to AOC?
- How are excess spoil yardage amounts determined and to what extent are Virginia operations restricted in spoil placement outside the mine pit area?

II. IMPLEMENTATION

BSGFO will brief DMLR on the preliminary findings as they are developed. DMLR comments will be taken into consideration in preparation of the draft reports, and DMLR will be provided the draft report for review and comment. Any DMLR comments not incorporated into the final report will be included as an appendix to the final report.

A. Scope of Mountaintop removal and Steep slope AOC variances

DMLR will develop an inventory of mountaintop removal and steep slope operations, consistent with the description and meanings described in the above section titled "Introduction". The inventory will come from the DMLR inspectable units list and DMLR will make available to OSM the bond released mountaintop and other steep slope sites with an AOC variance contained in the DMLR permitting and enforcement data bases. DMLR field inspection staff will field verify the number of AOC variances applicable to currently bonded permits and collect general data about those mines. DMLR and OSM anticipates that this inventory will be completed and provided to BSGFO on November 17, 1998.

B. Sampling

Preliminary estimates indicate that Virginia has a population of six mountaintop-removal permits pursuant to 4 VAC 25-130-785.14 with AOC variances. Currently DMLR estimates that there are approximately 16 area mining permits which are required to restore the AOC, and an unknown number of steep slope mines that have obtained an AOC variance.

The sample for the study will include 10 permits selected for permit file review and field inspection. The sites will be broken down as follows:

- Two bonded mountaintop-removal permits with an AOC variance (file and field inspection).
- Two bond released mountaintop-removal permits (file and field inspection).
- Three steep slope and/or area mines which have been restored to the AOC- (file and field inspection).
- Three steep slope mines (contour) with AOC variances (file and field inspection).

These selections will be based on the inventory and will be selectively picked to obtain the specified sample, with emphasis on more recent approvals where operations have advanced to the reclamation stage to allow an evaluation of the approved land configuration. Bond released sites will be selected from those most recently released which contained an approved variance from AOC.

C. Review Methodology

This study will determine if the approved State regulatory provisions relating to AOC, variances from AOC and PMLU are being implemented pursuant to applicable regulatory provisions. The study will also review spoil balance calculations in the sampled permits to determine if excess spoil volumes are within expected engineering norms and if the excess spoil volumes approved for placement in fills outside of the mine pit are based upon accepted engineering norms for swell and compaction percentages.

Permit documents for the operations will be reviewed to determine if all approved program requirements related to approval of an AOC variance and changing of the PMLU have been met. When available, digitized maps of the operation will be used to compare pre-mining topography and post mining topography. The field review will determine if the operations are proceeding pursuant to approved plans, the final surface configuration is consistent with the approved permit and whether the alternative PMLU is being developed, or for bond released sites has the requirement for bond release have been met in regards to post mining land use in accordance with the plans and schedule required by DMLR. Geo- Referencing of the major features of the mine site will be accomplished.

The following activities will occur to complete this evaluation:

1. Create a joint DMLR/OSM team.
   a. Name the OSM team leader.
   b. Name the DMLR team leader.

c. Select team members.

2. Team members will complete the following:
   a. Apportion assignments.
   b. Develop the review forms.

3. Select permits.
   a. Selectively pick the permits from the inventory to obtain the required mix of operational types and operational status to allow review of the applicable standards.

4. Conduct review of permit plans, AOC variance provisions, PMLU provisions and spoil balance equations. (Use Permit Review Form, to be developed).
   a. Identify types and locations of AOC variances within specific permit.
   b. Identify AOC variance conditions.
   c. Determine if AOC variance(s) were issued in accordance with approved program.
   d. Review and tabulate bank (in situ) spoil volume for permit.
   e. Review and tabulate bulked or loose volume for permit.
   f. Review and tabulate excess spoil calculations for permit.
   g. Identify excess spoil volumes approved for fill placement
   h. From permit cross-sections determine maximum, minimum and average elevation changes, if any.

5. Conduct field review of the sample permits (Use Site Review Form, to be developed).

   a. Conduct a "plan-in-hand" site visit with State personnel.
   b. Note latest revisions and amendments to actual earthwork.
   c. Compare on-the-ground conditions with approved plans, final cross-sections and latest revisions to such.
   d. Make horizontal and vertical measurements as required to verify plan and "as built" data.
   e. Photograph land forms as required.

6. Coordinate with other agencies, as necessary.
   a. If AOC variance involves local or regional planning agency contact agency to verify variance purpose and data.
   b. Contact other State and Federal agencies concerning AOC variance conditions as need arises.

7. Compile final report.
   a. Use the Permit Review and Site Review Forms that are to be developed.
   b. Results will be grouped in tabular form based on type of variance, type of mining, and post-mining land use.

III. REVIEW PERIOD

The permit, map, and site reviews will be completed by January 1, 1999.

IV. REPORT AND RECOMMENDATION

DMLR will be briefed on the review as it progresses. A draft report will be submitted to the BSG Field Office Director and the Director, Division of Mined Land Reclamation two weeks after completion of the permit, map, and site reviews. A copy of the draft report will be submitted to the Appalachian Regional Coordinating Center (ARCC) for comment and consideration of their national concerns. The final report will address comments submitted on the draft and will be completed by February 1, 1999, approximately two weeks after distribution of the draft.

V. COORDINATION AND ADMINISTRATIVE MATTERS

DMLR technical personnel will be assigned to the Team (as workload and resources allow) and will provide technical input, guidance and support. An OSM technical representative will also be assigned to the Team to assist in the review. The OSM/DMLR review Team may determine that additional technical assistance is necessary on a case-by-case basis. The assistance may be provided by ARCC staff and/or DMLR technical personnel.

OSM and DMLR agree that the primary emphasis of this review is to evaluate mountaintop removal and AOC variances. DMLR will be responsible for taking appropriate enforcement action on any violation discovered during the review. For permit deficiencies identified during the review, DMLR will be responsible for taking appropriate action under their program. However, performance standard violations or permit deficiencies not addressed by DMLR will be handled through the TDN process.

VI. REFERENCES TO ADDITIONAL MOUNTAINTOP REMOVAL / VALLEY FILL STUDIES

The Environmental Protection Agency, the U.S. Army Corps of Engineers, the U. S. Fish and Wildlife Service are planning to conduct a joint federal evaluation of the impacts and regulation of valley fill activities in the Appalachian Region. This will include the States of Pennsylvania, Maryland, Ohio, West Virginia, Virginia, Kentucky, and Tennessee.

VII. SIGNATURES

Representing OSM and DMLR, the following officials agree to the objectives and steps outlined in this plan:

Big Stone Gap Field Office

Robert A. Penn

Robert A. Penn, Director

Date: 11/13/98

Department of Mines, Minerals and Energy, Division of Mined Land Reclamation

Benny Wampler

Benny Wampler, Deputy Director

Date: 11-13-98

GLOSSARY OF MINING TERMS

OSM has defined the mining terms listed below in an effort to improve the general understanding of mining practices within the State of Virginia. These terms are used throughout this report. OSM has taken the definitions of some of them from the Virginia Surface Coal Mining and Reclamation Act (VASCMRA); others are culled from the Federal Surface Mining Control and Reclamation Act of 1977 (SMCRA) or from State and/or Federal regulations. OSM has developed still others solely for the purpose of the report. When not otherwise clear, the source of each definition is identified in the brackets that follow it.

State program:

Approved State program.–The Virginia surface coal-mining program approved under SMCRA consists of the Virginia surface mining law, regulations, policies, and procedures that OSM approved initially on December 15, 1981. Subsequent amendments and actions concerning the approved State program are set forth in 30 C.F.R.

Oversight.–The term used to describe OSM's role of monitoring a State's implementation of its' approved program. Upon approving a State program, OSM's role of sharing responsibilities for regulating surface coal mining activities within a State is reduced to overseeing the State's administration of its approved program [general term described in 30 C.F.R. § Part 732].

Primacy.–The term used to describe the delegation of primary authority by OSM to a State in administering its surface mining program. Virginia obtained primacy on December 15, 1981, with OSM's conditional approval of its permanent regulatory program [general term described in 30 C.F.R. § Part 732].

Approximate original contour (AOC):

AOC.–The surface configuration achieved by backfilling and grading of the mined area so that the reclaimed area, including any terracing or access roads, closely resembles the general surface configuration of the land prior to mining and blends into and complements the drainage pattern of the surrounding terrain, with all highwalls and spoil piles eliminated. All mined areas are to be returned to AOC, unless they receive a variance from it [term defined in section 4-VAC-25-130-700.5 of VASCMRR and Subsection 701(2) of SMCRA].

AOC variance.–A regulatory authority may grant a variance or waiver to restore a site to AOC if certain specified conditions are satisfied. State and Federal law provide for the following types of AOC variances: mountaintop-removal, steep-slope, thick overburden, thin overburden, and remined areas. **This report concentrates only on mountaintop-removal and steep-slope AOC variances.**

A mountaintop-removal AOC variance can be granted by the regulatory authority

only if the entire coal seam or seams running through the upper fraction of the hill, ridge, or mountain is removed, and a level plateau or a gently rolling contour is created with no highwalls remaining. The site granted such a variance must be capable of supporting certain postmining land uses.

A steep-slope AOC variance may be granted by the regulatory authority if (1) the proposed mining is going to occur in a steep-slope area, (2) the watershed control of the area will be improved by granting such a variance, and (3) the landowner requests in writing that the variance be granted in order that the land after reclamation will be suitable for certain postmining land uses [Section 4 VAC-25-130-785.16 of the VASCMRR and Subsections 515(c) and (e) of SMCRA].

Types of mining applicable to this report:

Area mining.–A mining operation where, unless the operation is located in a steep-slope area and a steep-slope AOC variance has been granted, all disturbed areas are restored to (1) AOC and (2) the site is capable of supporting the uses that existed prior to mining or an equal or better use.

An area-mining operation may remove multiple seams of coal in the upper reaches of a mountain just like a mountaintop-removal operation; however, this type of operation cannot be classified as a mountaintop-removal operation for two reasons. First, the site may be restored to AOC; second, the entire coal seam or seams may not be removed [Section 4 VAC 25-130-700.5 of the VASCMRR and OSM/DMLR oversight work plan; definition modified for use in this report].

Contour mining.–Surface-mining technique that makes a cut into a hillside, creating a level bench with a highwall. A contour-mined area must be restored to AOC, including elimination of the highwall, unless the mining is conducted on a steep slope and a variance from AOC has been approved. In either situation, the highwall must be eliminated. The AOC variance would have to meet the requirements of a steep-slope variance.

Mountaintop-removal operation.– Type of surface-mining operation that (1) has been granted a variance from AOC and (2) extracts an entire coal seam or seams running through the upper fraction of a mountain, ridge, or hill. Coal extraction must be accomplished by removing all of the overburden and creating a level plateau or a gently rolling contour that both has no highwalls remaining and is capable of supporting certain postmining land uses. The allowable postmining land uses for mountaintop-removal operations are industrial, commercial, woodland, agricultural, residential, or public use [Section 4 VAC 25-130-785.14 of the VACSMRR and Subsection 515(c) of SMCRA].

Steep-slope mining. –Type of surface-mining operation where the natural slope of the land within the proposed permit area exceeds an average of 20 degrees. In Virginia, those portions of a permit area classified as "steep slope" may obtain a variance from AOC if the permit application demonstrates that (1) the postmining

use of the mined land will be equal to or better than its pre-mining use, (2) the watershed affected by mining will be improved, and (3) mining will comply with all applicable provisions of the approved State program. Such operations could qualify as area, contour, or mountaintop mines, as further defined in this glossary [Section 4 VAC 25-130-785.16 of the VACSMRR and 30 C.F.R. section 785.16].

Mining-related terms:

Durable rock.–Naturally formed aggregates that will not slake in water or degrade to soil material. State and Federal law provide that durable-rock fills must consist of at least 80 percent durable rock [Sections 4 VAC 25-130-816.73 and 817.73 of the VACSMRR and 30 C.F.R. section 816 and 817.73].

Excess spoil. –Overburden material that is disposed of in a location other than the mine pit and that is not needed to achieve AOC [Section 4 VAC 25-130-700.5 of the VACSMRR and 30 C.F.R. Section 701.5].

Excess-spoil fills. –Fill structures that are created by the placement of excess spoil in valleys, on hillsides, or on preexisting benches. The State program contains regulations for constructing valley or head-of-hollow, preexisting bench, and durable-rock fills. Although most excess-spoil fills are commonly referred to as valley fills, most mountaintop-removal and steep-slope mining operations today involve the construction of durable-rock fills [Sections 4 VAC 25-130-816.71 and 817.71 of the VACSMRR and 30 C.F.R. Section 816 and 817.71].

Overburden. –Consolidated or unconsolidated material of any type, excluding topsoil, which overlies a mineral deposit [Section 4 VAC 25-130-700.5 of the VACSMRR].

Premining/postmining land use.–The primary uses of the land before and after mining. After mining, land is generally required to be returned to its premining use. As provided by [Section 4 VAC 25-130-816.133 and 817.133 of the VACSMRR] a site may be returned to an alternative postmining land use if certain requirements are satisfied. Permits involving mountaintop-removal or steep-slope mining operations with variances from AOC may be issued by the regulatory authority only if they meet certain specified postmining land uses as described in the approved State program. [Section 4 VAC 25-130-700.5]

Relief.–Difference in elevation between the highest mountaintop, ridge, or hill and the lowest valley within a permit area [derived, for purposes of this report, from Bureau of Mines, *Dictionary of Mining, Mineral, and Related Terms*: U.S. Government Printing Office, 1968.]

Required findings.–Specific findings that a regulatory authority must make prior to granting a mountaintop-removal or steep-slope AOC variance [Section 4 VAC 25-130-785.14 (c) and Subsections 515(c) and (e) of SMCRA].

Steep slope.–Any slope of more than 20 degrees or such lesser slope as may be designated by the regulatory authority after consideration of soil, climate, and other characteristics of a region or State [CSR 38-2-14.8 and 30 C.F.R § 701.5].

Swell.–The tendency of soils, on being removed from their natural, compacted beds, to increase or swell owing to the creation of voids or spaces between soil particles. The volumetric increase, normally expressed as a percentage, that occurs as the consequence of changing undisturbed overburden (bank) into loose (excavated) material [derived, for purposes of this report, from Bureau of Mines, *Dictionary of Mining, Mineral, and Related Terms*: U.S. Government Printing Office, 1968].