

REMINING TO RECLAIM ABANDONED MINED LANDS: VIRGINIA'S INITIATIVE ¹

by

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Abstract: Abandoned Mined Lands (AML) are lands that were mined prior to implementation of the federal Surface Mining Control and Reclamation Act (SMCRA) in 1977, but were inadequately reclaimed. Re-mining of AML is being conducted on a routine basis by coal-mining operations in eastern states such as Virginia. Re-mining is a potentially important means of reclaiming AML. However, under current policies, re-mining operations often fail to permit and reclaim priority 1, 2, and 3 AML, especially those areas which present the most severe environmental problems. This paper describes policy issues which affect the potential for AML reclamation by re-mining operations in mountainous mining areas, such as Virginia; efforts underway in Virginia which seek to resolve those issues; and progress achieved to date under that initiative.

Additional Key Words: Abandoned mine lands, Surface Mining Control and Reclamation Act, re-mining.

Introduction

Abandoned mined lands (AML) are areas that were mined prior to implementation of federal controls over coal-mined land reclamation and inadequately reclaimed.

The federal Surface Mining Control and Reclamation Act (SMCRA) was signed into law in 1977. One of SMCRA's stated goals was to

"promote the reclamation of mined areas left without adequate reclamation prior to the enactment of this Act and which continue, in their unreclaimed condition, to substantially degrade the quality of the environment, prevent or damage the beneficial use of land or water

resources, or endanger the health or safety of the public" [102(h)].

The majority of the United States' AML acreages were produced by coal mining in Appalachia. Many AML present dangers to public health and safety. AML also impact the environment; typical AML environmental problems include lands in barren or semi-barren condition, excessive sedimentation, acid water discharges, and unstable slopes.

Despite the passage of 20 years time and the expenditure of approximately \$1.8 billion from the Abandoned Mine Reclamation Fund (AML Fund) established by SMCRA's Title IV, many of the lands adversely impacted by coal mining prior to 1977 remain in an unreclaimed condition.

Unmined coal reserves remain in place on many AML areas. When AML are re-mined and reclaimed by active operations, results can include production of otherwise-unmineable coal resources and reduction of adverse impacts from previous mining. Public benefits would result from a regulatory strategy that emphasized full extraction of remaining coal resources on AML sites while reclaiming the site and closing out the cycle of mining. However, the current SMCRA Title V legal and regulatory structure tends to discourage environmental enhancement of AML through re-mining, especially where adverse impacts of previous mining are severe. Today, mining operations on previously mined sites often fail to reclaim adjacent AML problem areas.

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This paper describes a multi-interest Virginia initiative to stimulate AML reclamation through re-mining, and progress achieved to date under that initiative.

AML Reclamation Problems

Abandoned Mined Lands

There is no unified data source which reflects the current and complete extent of AML. The U.S. Office of Surface Mining Reclamation and Enforcement (OSM) does maintain an inventory of current AML problems - the Abandoned Mine Land Information System (AMLIS). Its purpose is to guide AML Fund expenditures. Because SMCRA Title IV requires that Fund expenditures for reclamation of AML areas endangering public health, safety, and general welfare (priority 1 and 2 sites) be given priority over reclamation to remedy adverse effects of past mining on land and water resources and the environment (priority 3 sites), the AMLIS database is focused on priority 1 and 2 areas. AMLIS catalogs AML areas by problem type and estimated reclamation cost. The totals are adjusted as additional AML areas are identified. The AMLIS inventory is more complete in some states than in others, and the frequency of occurrence for different types of problems varies between states (Table 1). The inventory

also contains information on post-1977 bond forfeitures that are eligible for AML Fund reclamation.

In the major mining states, little work has been done to identify priority 3 areas, or the environmental impacts of AML. Virginia's AML inventory of priority 3 problems has advanced substantially in recent years, yet Virginia's AML officials acknowledge that this inventory is far from complete (Table 2).

AML are as occur in a variety of forms. Many Appalachian AML acreages were created by "shoot-and-shove" mining, a common practice in steep-slope areas prior SMCRA. The result was the characteristic highwall-bench-outslope terrain which remains common in Appalachia today. "Shoot-and-shove" mining created numerous environmental problems; outslope spoils tend to be unstable when they became saturated with water and/or the pre-mining slopes exceeded 20°. In some cases, outslopes contain pyritic spoils causing acid drainage. Pyritic and/or compacted surface spoils were slow to revegetate, and many such areas produce sedimentation. Highwall seeps can also act as sources of acid mine drainage. Abandoned deep mines are also responsible for many of today's AML environmental problems, due to the impacts of subsidence on the land surface and acid drainage from the deep-mine cavity.

Table 1: AML Inventory totals of 4 major AML problem types in 5 eastern coal-mining states and the U.S., as of November 6, 1997.

State	Clogged Stream Lands	Dangerous Highwalls	Dangerous Piles or Embankments	Dangerous Slides
	(acres)	(lin. ft.)	(acres)	(acres)
Kentucky	7,943	63,688	1,137	1,548
Ohio	11,738	57,053	29	92
Pennsylvania	570	1,106,771	5,294	7
Virginia	1,739	92,039	154	118
West Virginia	164	1,371,315	1,964	337
5 States Total	22,154	2,690,866	8,578	2,102
% of U.S. Total	93%	63%	52%	93%
U.S. Total	23,792	4,272,114	16,587	2,268

Source: Office of Surface Mining Reclamation and Enforcement, Division of Reclamation Support, Abandoned Mine Land Inventory System. Includes abandoned coal sites with priority 1 and 2 problems.

The AML Fund

The AML Fund has had a major impact in most (if not all) coal-mining states. Many of the worst Priority 1 and 2 AML problems have been addressed. However, it is clear that the AML Fund cannot be seen as a mechanism that is capable of fully addressing the AML liabilities that remain.

Table 2. Estimate of abandoned mined land acreage in Virginia's southwestern coalfields, as of November 6, 1997

Land	Acreage
Reclaimed by AML Fund	2,562
Reclamation funded but not complete	2,720
Priority 1 and 2, Inventoried	7,901
Priority 3, Inventoried	31,375
Priority 3, Not inventoried (est.)	5,000
Total	49,558

Source: Virginia Division of Mined Land Reclamation.

First of all, the amount of money likely to be released from the fund is insufficient to reclaim AML in the near term, especially in those states that were major coal producers prior to SMCRA. For example, in Virginia, an estimated \$432 million in Priority 1, 2, and 3 AML liabilities remain (Table 3) while annual funding in recent years has been on the order of \$5 million (Table 4). This situation is aggravated by the fact that Congress typically does not fully allocate AML Fund revenues to AML reclamation (Figure 1). The result is a substantial "unallocated balance" maintained as a book-entry by the U.S. Treasury.

Secondly, the AML fund's status beyond the year 2004, when the authorizing legislation expires, remains uncertain. With the passage of time since 1977, remaining AML is becoming more concentrated in those states that were major coal producers prior to 1977. In many coal-mining states, AML Fund expenditures are typically far less than AML taxes paid by that state's coal industry (Table 4). In some of the major western coal-mining states, AML reclamation obligations are close to completion. A majority vote by both Houses of Congress will be required to extend AML Fund authorization beyond 2004, but it is not clear that the necessary consensus will be present.

Re-mining

Current Policies. The SMCRA does not address the unique conditions faced by re-mining operations. SMCRA's primary focus is mining in previously unmined areas, as most coal surface mining was conducted in the 1960s and 1970s. Therefore, re-mining operations are required to meet the same performance standards as first-cut mining with only a few exceptions.

One exception is SMCRA's "approximate original contour" (AOC) requirement. Re-mining operators are not required to reconstruct AOC when the contours disturbed by the re-mining operation are not the site's original contours. OSM regulations do require, however, that all "reasonably available" spoil be used to backfill the highwall "to the maximum extent technically practical" [30 CFR 816.106]; the regulations do not contain any definition or guidelines regarding how spoil should be identified as "reasonably available." Regulations implementing SMCRA also relax revegetation standards for re-mining operations [30 CFR 816.116(5)] by specifying that post-mining vegetation must, at a minimum, provide no less groundcover than was present prior to re-mining, and be adequate to control erosion.

The Energy Policy Act of 1992 [Sec. 2503] includes clauses relaxing certain SMCRA standards for re-mining. The SMCRA's five-year revegetation success standard [Sec. 515(b)(3)(20)] is changed to two years for re-mining operations. The SMCRA requirement that no new permits be issued to operators responsible for unsatisfied bond forfeiture violations [Sec. 510(c)] is waived when the forfeiture occurs because a re-mining operation encounters an "unanticipated event or condition." In such a case, AML Fund revenues would be eligible for use in reclaiming the site.

Section 307 of the Water Quality Act of 1987 allows relaxation NPDES effluent limitations for re-mining operations, where pre-re-mining discharge concentrations exceed those limits. Under this statute, re-mining permits can be issued if the proposed operation "will result in the potential for improved water quality" rather than requiring that post-mining water quality be brought to the same standards as would be required of a first-cut operation. This statute has been utilized in some states to achieve AML reclamation through re-mining on a limited basis. These states have programs in place which offer water quality standard exemptions to operators who conduct re-mining according to an approved pollution abatement plan.

Aside from these exceptions, re-mining operations are held to the same standards as first-cut mining, regardless of environmental conditions present as a result of previous mining.

AML Reclamation Problems. Re-mining operations are capable of reclaiming AML areas, but generally the most profitable coals were removed from the site by the original mining. In some cases, deep mining or augering has removed additional coal, further degrading the ability of unmined reserves to sustain the costs of reclamation to current SMCRA standards.

Although re-mining of AML results in environmental improvement of the mining site, it does not guarantee elimination of environmental problems. Profitable re-mining requires judicious control of reclamation costs, so permit boundaries are typically drawn tightly. For example, in bench-highwall-outslope terrain produced by pre-1977 contour mining, a common re-mining strategy is to take an additional cut from the highwall while excluding outslope spoils from the permitted acreage. Permit boundaries are often defined so as to exclude existing problems, such as acidic seeps and deep mine discharges, so as to avoid high costs of treatment. When re-mining operations remove coal while failing to reclaim associated AML, the potential for remaining coal to generate revenues sufficient to

support re-mining AML reclamation in the future is reduced.

Because of the marginal economics associated with mining in previously mined areas, it is often important for re-mining operations to take place (along with associated AML reclamation) when equipment is in the vicinity mining nearby coals. Should such coals be mined without reclaiming adjacent AML, the likelihood of an active mining operation returning to that area and reclaiming the AML is greatly reduced. In states such as Virginia, reserves mineable by surface methods are being depleted rapidly. As surface mining declines, the potential for achieving AML reclamation through re-mining in the future is reduced.

Virginia's Remining Initiative

Virginia Ad Hoc Remining Work Group

As result of the problems discussed above, the State of Virginia established a multi-interest initiative in early 1996 for the purpose of stimulating additional AML reclamation through re-mining. The Work Group includes representation by the mining industry, state and federal mine-regulatory (U.S. OSM and Virginia DMME) agencies, other natural resource agencies educational institutions, and local environmental

Table 3: National AML Inventory of AML obligations in major eastern coal mining states and the U.S.

State	Total	Funded and Completed	Unfunded	Unfunded
	(- - - - million \$ - - - -)			(% of Total)
Kentucky	674.2	271.8	402.5	59.7%
Ohio	281.9	88.4	193.5	68.6%
Pennsylvania	1,680.8	381.2	1,299.6	77.3%
West Virginia	1,125.4	243.1	882.3	78.4%
Virginia	495.9	63.2	432.7	87.2%
5 States Total	4,258.2	1,047.7	3210.6	75.3%
% of U.S.	68%	65.8%	73%	
U.S. Total	6,227.7	1,821.8	4,405.9	70.7%

Source: Office of Surface Mining Reclamation and Enforcement, Abandoned Mine Land Inventory System. Includes inventoried abandoned coal sites with unreclaimed priority 1, 2, and 3 problems as of 6 November 1997. (Priority 3 inventory is incomplete).

Table 4. Comparison of AML Fund contributions and allocations in several major states during latest fiscal years for which data are available.

State	AML Taxes Paid (FY 96)	AML Fund Allocations (FY 97)	Allocations as % of Taxes Paid
(---- \$ Millions ----)			
Kentucky	33.5	16.2	48
Ohio	6.3	8.5	135
Pennsylvania	12.6	22.6	179
Virginia	7.1	4.8	68
West Virginia	34.7	22.5	65
Illinois	7.9	9.1	116
Indiana	10.4	5.2	50
Montana	11.6	3.7	32
Utah	4.0	1.5	37
Wyoming	90.4	22.0	24
US Total	250.8	141.7	56

Source: U.S. Office of Surface Mining.

interests. The Work Group's goal is to identify potential solutions to re-mining problems, solutions capable of stimulating additional AML reclamation through re-mining. The Work Group operates by consensus, with staff support and leadership provided by Virginia DMME.

The issues that follow have been identified as priorities by the Virginia Ad Hoc Remining Work Group. Most address issues of regulatory flexibility. Because a variety of conditions are found on previously mined sites, this group believes that a "one-solution-fits-all" regulatory approach is not the best approach to achieving AML reclamation through re-mining. As a result, most of the proposals that follow embody greater regulatory flexibility than is typical in most coal-mine regulatory programs today.

Current re-mining issues

Remining Permit Streamlining. Because of the variety of conditions often found in AML sites, re-mining permits can be more complex than permits required for first-cut mining sites. Therefore, a variety of parties, both within the regulatory agency and within other agencies having jurisdiction over permit issues, must be involved in permit decisions. In some cases, different

parties reviewing a permit application provide comments that appear contradictory to the permit applicant. Typically, the difficulties of coordinating all these parties, and rectifying contradictory comments, must be borne by the permit applicant. When re-mining permits are complex, problems of coordination can be considerable. Virginia DMME has established "permit streamline guidelines" that are applied to re-mining permits that will reclaim AML. These guidelines shift some of the responsibility for coordination from the permittee to the agency. For example, various parties within the agency that are required to comment on the permit will meet with the mining operator on site at one time, so that difficulties can be worked out ahead of time. Under these guidelines, Virginia DMME personnel will also take responsibility for scheduling on-site meetings of parties representing other agencies that are required to review a re-mining permit application.

No-cost AML Contracts. Agencies administering AML reclamation contracts under SMCRA Title IV have far more flexibility in establishing reclamation success standards than do Title V permitting agencies. In fact, the precisely worded performance standards written into SMCRA's Title V leave administering agencies little flexibility in interpretation.

This discrepancy can cause results that fail to support SMCRA's goal of promoting "reclamation of mined areas left without adequate reclamation." For example under current policies in most states, the only way a mining operation can receive authorization to reclaim an AML area adjacent to a Title V mining site is to include that area in the Title V permit, which means it must post an additional performance bond and meet Title V reclamation standards. This requirement can result in significant cost to the operator, since the permit must document conditions in the AML area adjacent to the actual mining site as well as within the mining site itself. The requirement can also cause the operator to bear significant risk, since the risk of encountering unanticipated conditions having a negative impact on that operator's ability to meet Title V standards is increased on an AML site. The result is that Title V operators are very unlikely to extend permit boundaries so as to perform AML reclamation, even when the operator believes that that such reclamation could be accomplished at low cost.

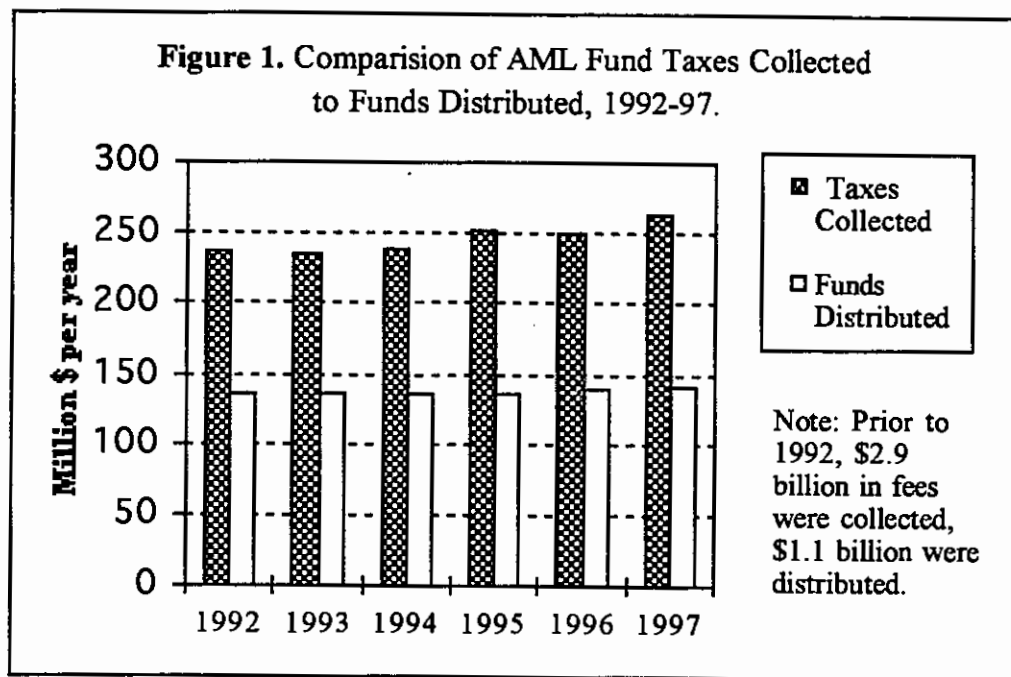
Under a no-cost contract, the Title IV agency would be allowed to issue a contract for reclamation of

AML adjacent to a Title V permit. The contract payment, if any, would be a nominal amount. Such a contract would spell out performance standards appropriate to the site in question under Title IV.

In some cases (i.e., where an adjacent AML site provides cost-effective opportunity for excess spoil disposal, or where the additional area created by extending effective site boundaries allows an operator to conduct operations more efficiently), voluntary reclamation under a no-cost contract can create economic advantages to a remaining operator.

Incidental Coal Removal on AML-Fund

Reclamation Contracts. Under current OSM regulations, coal can be removed from AML sites being reclaimed under Title IV contracts, and an estimated value for such coal can be considered by potential contractors in preparing Title IV reclamation bids. However, current regulations limit the value of coal that can be removed to 50 percent of the Title IV reclamation cost. If coal removal revenues exceed 50 percent, the area must be mined and reclaimed under Title V.



The requirement can inhibit regulatory agencies' abilities to stimulate low-cost AML reclamation. For example, some AML areas contain considerable coal reserves but Title V reclamation requirements effectively prevent profitable removal of that coal under a conventional permit. Elimination of the 50 percent "incidental coal removal" restriction would allow the agency to issue a Title IV reclamation contract for such an area, while conserving scarce AML Fund dollars for application in other AML areas.

Another situation where a regulatory agency could use a Title IV contract to stimulate cost-effective AML-Fund reclamation would be where a severe environmental-problem AML area is located adjacent to coals mineable under Title V. As noted above, there are many instances where Title V mining and reclamation takes place without reclaiming adjacent AML, despite the fact that the AML could be reclaimed most cost-effectively in conjunction with the Title V permit, when equipment is present and available - especially if spoils can be moved between the mining pit and an adjacent AML area. Recognition of ownership rights to mineable reserves would be essential to the success of an AML reclamation program based on this mechanism.

A recent draft policy circulated by OSM proposes to remove the "50 percent" incidental coal requirement. The proposal includes a requirement that Title IV and Title V agencies confer during consideration of any proposal to perform reclamation where incidental coal-removal revenues would be likely to exceed 50 percent of the reclamation costs, so as to assure that the area in question would not be more appropriately mined and reclaimed under Title V.

Bond Credits. Virginia DMME has proposed to establish bonding credits for AML reclamation. Such credits would be issued to Title V operations that reclaim AML in amounts based upon the estimated costs that would be incurred by the AML program if such areas were reclaimed under Title IV. If it appears that reclamation of an AML area would be necessary to extract the coal in question, credit in the amount of 50 percent of the Title IV reclamation cost estimate would be issued. If the Title V operation could otherwise be conducted by excluding the AML area from the permit, credits in an amount of 100 percent of Title IV reclamation cost estimate would be issued.

The face-value of these credits could be used by the mining company to offset Title V bonding requirements. Bonding credits would provide financial incentives for operators to reclaim AML features adjacent

to mineable coals - without requiring expenditure of scarce AML Fund dollars. One drawback to such a program is that it would be ineffective in providing incentive to operators who obtain performance bonds under a pool-bonding system, such as has been established in Virginia and other states. This drawback could be alleviated, to some extent, by allowing transfer of such credits by the operator to which they are issued to other mining operators whose reclamation records are in good standing.

A downside to this mechanism would occur if bonding credits were used in lieu of a performance bond on a site where the operator is unable to complete reclamation obligations, in which case the AML Fund would be called upon to complete reclamation. If the credits were generated from reclamation of a priority AML feature, the result of forfeiture would be that the AML Fund is no worse off than if credits had not been issued. Mechanisms available to the agency to protect against that downside include limiting issuance of credits to reclamation of priority AML features, and limiting use of credits to operators with good compliance records.

AML Tax Waiver. Under SMCR Title IV, the AML Fund is funded by taxing active mining operators 35 cents for each ton of surface-mined coal removed, and 15 cents for each ton of deep-mined coal. These taxes accumulate in the AML Fund. Under SMCR, the primary purpose of this fund is to reclaim AML lands. AML taxes must be paid for all tonnages mined under Title V. If a re-mining operator reclaims a priority AML site, the result is a reduction in AML Fund reclamation obligations. Removal of this tax from coals mined from AML sites would present an additional incentive for AML reclamation via re-mining.

The objective of this tax is to achieve reclamation of AML Lands. This objective can also be met with appropriate re-mining. Generally speaking, far more AML will be reclaimed by the re-mining operation on an AML site than could be accomplished through Title IV expenditures of the taxes generated. Because this tax is imposed by federal law, removal of this tax would require an act of Congress.

Reasonably Available Spoil. Re-mining operations are required to use all "reasonably available" spoil on the permit site to backfill the highwall "to the maximum extent technically practical" [30CFR 816.106]. Only when a highwall is totally backfilled are operators allowed to place such spoil in an alternative use. Problems can occur because the regulations do not include criteria for determining whether or not spoils

available within a re-mining permit should be considered as "reasonably available." In some states, conservative interpretation by the regulatory agency (i.e., defining virtually all spoils within a given permit as "reasonably available") has acted as a disincentive to AML reclamation via re-mining.

First of all, placement of spoils against the highwall is expensive. A major limitation to AML reclamation via re-mining is economic feasibility. Generally speaking, backfilling of highwalls does create environmental benefits. However, where the expense of complete highwall backfilling makes re-mining of AML sites economically infeasible, the result is an environmental loss. In most cases, partial backfilling of a highwall under SMCRA controls will be a superior outcome, in comparison to the result of not re-mining the site -- no backfilling. Spoils placed at the very top of the highwall backfill are often quite expensive spoils to handle; per-cubic yard costs of high-backfill placement can be several times the mining operation average. Conservative interpretations of "reasonably available spoil" have, in some cases, prevented re-mining and reclamation from taking place where the result would have been substantial reduction in exposed highwall - but not complete elimination.

Economic consequences of a conservative interpretation can be especially severe when spoils removed during the first cut are determined by the regulatory agency to be "reasonably available" for backfilling the final cut, even where the first and final cuts are separated by substantial time and distance.

Establishment of criteria for defining "reasonably available spoil" which consider economic implications of costly highwall-backfill placement could help to ensure that conservative interpretations do not prevent re-mining and reclamation from taking place on AML sites where such activities can be expected to improve environmental conditions.

Another issue associated with "reasonably available spoil" concerns tradeoffs among various potential uses for limited amounts of spoil. On second- and third-cut re-mining operations on former contour mines, limited quantities of spoil are often available while a variety of environmental problems can be present on and adjacent to the Title V permit site. In some cases, use of these spoils to alleviate AML problems through means other than complete highwall backfilling can improve environmental conditions on the site.

For example, AML often have water quality impacts due to exposure of pyritic spoils at the surface and/or unvegetated outslope spoils that act as sources of sediments. In both of these situations, construction of a partial highwall backfill in combination with placement of non-pyritic re-mining spoils over the problem spoils would produce environmental benefits in excess of those generated by completely backfilling the highwall, at least in the eyes of many observers. The Virginia Ad Hoc Re-mining Work Group supports relaxation of the "reasonably available spoil" requirements on re-mining operations when the result of re-mining will be a net reduction of exposed highwall and when alternative spoil placement will result in a "higher and better use" for those spoils, relative to the increment of highwall backfilling that would otherwise take place.

Current interpretation of "reasonably available spoil" often includes all spoils generated by the re-mining permit - including spoils removed from the initial cut. From an environmental standpoint on some sites, it could make sense to devote spoils from the initial cut to a "higher and better use," such as coverage of AML features, as opposed to stockpiling those spoils for use in complete coverage of the final highwall. Re-mining operations on contour sites typically reduce the amount of exposed highwall significantly.

Complementarity of Policy Proposals

The above proposals offer opportunities for complementary application, within the context of a regulatory program designed to provide re-mining operators with AML reclamation incentives. For example, coupling "reasonably available spoil" relaxation with a no-cost AML contract would allow an agency to provide a mechanism to allow a Title V operation to reclaim adjacent AML features at relatively low cost. An ability to selectively apply bonding credits and/or AML tax elimination would allow the regulatory agency to provide incentives to the mining operator in completing that reclamation.

Oversight and Responsibility

Regulatory flexibility places increased responsibility for oversight of affected mining operations on regulatory agencies. In an era of heightened public scrutiny, regulatory agencies have a definite incentive to guard against opportunities for abuse that might result from increased regulatory flexibility. Regulatory flexibility also means discretion and responsibility.

Furthermore, increased public oversight would be advisable in the context of a "regulatory flexibility" re-mining program because choices regarding incentive application also involve tradeoffs. For example, if an agency were to consider granting a contour-remining operation with spoil limitations authority to place that spoil in a "higher and better use" as an alternative to backfill placement, this decision would involve evaluation of a tradeoff among several competing environmental benefits; these benefits are "competing" in the sense that there is a limited amount of mine spoil available on many steep-slope re-mining sites. Input from a multi-interest group reflecting the values of the local community can be one means used by the agency to evaluate such tradeoffs, with the goal of producing maximum public benefits.

Due to continuing consolidation that is being driven by competitive pressures and declining coal prices, today's coal mining industry is vastly different from the industry of 20 years ago. Many of the smaller, less-efficient operators have been driven out of business and a large proportion of today's coal-mining is performed by larger companies. These companies simply

cannot afford to enter a situation where they are prevented from taking out new mining permits. Given the existence of permit-blocking requirements and OSM's Application Violator System (AVS), the risks of non-performance inherent in application of a "regulatory-flexibility" re-mining to today's coal mining industry have been greatly reduced.

Conclusion

AML areas are common in Appalachian areas today, while opportunities for reclamation of such areas by the AML Fund are limited. Many AML features lie in close proximity to mineable coals. Given the AML Fund's limitations, re-mining can be seen as a reasonable and low-cost means for achieving reclamation of such areas. Development of mechanisms to allow greater AML reclamation through re-mining would allow limited AML Fund resources to be concentrated on reclaiming AML that is not in proximity to mineable coals. Achieving greater AML reclamation through re-mining will require regulatory innovation and flexibility.