

**US DEPARTMENT OF THE INTERIOR
OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT**



REPORT TO THE PRESIDENT AND CONGRESS



The OSM Emblem

The emblem of the Office of Surface Mining symbolizes the agency's mission: to balance our country's need for coal with our need to protect the environment in which our citizens live and work.

The emblem features a scale balancing trees on one side and coal on the other. Below the scales is a stylized earth cross-section with curved bands of green, (vegetation and topsoil), white (subsoil and rock overburden), and black (coal). The low point of the curve is filled with blue waves (water).

Atop the scale is a Federal eagle, signifying the Federal regulatory program carried out by the States, as directed by the Surface Mining Control and Reclamation Act of 1977.

The emblem, a compilation of employee ideas, has been in use since 1990. OSM Director Harry Snyder, when he was sworn in a year earlier, proposed a new emblem "to symbolize a new day and a new look for the Office of Surface Mining" to reflect "what we all believe in and what we've all been working for."

Balance. Protect. Restore.

About the Office of Surface Mining Reclamation and Enforcement

The Office of Surface Mining Reclamation and Enforcement is charged with balancing the nation's need for continued domestic coal production with protection of the environment.

The agency, usually referred to simply as the Office of Surface Mining or OSM, was created in 1977 when Congress enacted the Surface Mining Control and Reclamation Act. OSM works with State and Indian Tribes to assure that citizens and the environment are protected during coal mining and that the land is restored to beneficial use when mining is finished. OSM and its partners are also responsible for reclaiming and restoring lands and water degraded by mining operations before 1977.

In the last 29 years, OSM has provided more than \$1 billion in matching grants to the States and Tribes to assist in funding the regulation of active coal mines.

OSM has also provided more than \$3 billion to its partners to clean up dangerous abandoned mine sites. The Abandoned Mine Land Program has eliminated safety and environmental hazards on 314,108 acres since 1977, including all high-priority coal



A World War I poster illustrates the critical role coal played in fueling America's industrial growth and emergence as a global power during the 20th Century. America had no national program to restore mined lands until Congress enacted the Surface Mining Act in 1977 and created the Office of Surface Mining.

problems and non-coal problems in 27 States and on the lands of three Indian Tribes.

In its beginning, OSM directly enforced mining laws and arranged cleanup of abandoned mine lands. Today most coal States have developed their own programs to do those jobs themselves, as Congress envisioned. OSM focuses on overseeing the State programs and developing new tools to help the States and Tribes get the job done.

OSM works with colleges and universities and other State and Federal agencies to further the science of reclaiming mined lands and protecting the environment — including initiatives to promote planting more trees and establishing much-needed wildlife habitat. Each year OSM trains hundreds of State and Tribal professionals in a broad range of needed skills.

Although a small agency, OSM has achieved big results by working closely with those closest to the problem — the States, Tribes, local groups, the coal industry and communities. OSM's

strong, productive partnerships and down-to-earth way of getting things done led *Governing* magazine in 1999 to nickname OSM's professionals "The Feds Who Get It."

About this report

This report was compiled to meet the specific requirements of Sections 706, 411, and 529 of the Surface Mining Act. Included in the report are activities carried out under Title IV, "Abandoned Mine Reclamation" and Title V, "Control of the Environmental Impacts of Surface Coal Mining."

The report describes the operations of the Office of Surface Mining for the period October 1, 2005 through September 30, 2006 (Fiscal Year 2006). To meet the reporting schedule, some state program performance information was collected for the 12-month period of July 1, 2005 - June 30, 2006.

Surface Mining Act responsibilities which are performed by other bureaus or agencies have been omitted because they are reported directly to Congress by the agencies responsible. Those responsibilities include Title III, State Mining and Mineral Resources and Research Institutes program, which was administered by the now-abolished U.S. Bureau of Mines; Titles VIII and IX, the University Coal Research Laboratories and the Energy Resource Graduate Fellowships, which are administered by the Secretary of Energy; and Section 406, the Rural Abandoned Mine Program, which is administered by the Secretary of Agriculture.

All facts and statistics cited in this report reflect circumstances as of October 1, 2006.

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What we do:

Balance..... 2

Message from the Acting Director

Protect..... 4

Regulation of Coal Mining..... 4
Award-Winning Reclamation..... 14

Restore..... 18

Abandoned Mine Land Reclamation..... 18
Emergency!..... 30
Award-Winning Reclamation..... 34

What makes it possible:

Technology..... 38

Technical Training..... 44

Partnerships..... 48

Reforestation of Mined Lands..... 50

More Information:

2006 Significant Court Decisions..... 56
OSM At-a-Glance..... 58
2006 Data Tables..... Following page 58





President Jimmy Carter signs the Surface Mining Act, August 3, 1977.

Looking for Innovation

*Brent Wahlquist,
Acting Director, OSM*

Almost 30 years ago the Surface Mining Control and Reclamation Act of 1977 created the opportunity to strike a balance between protecting the environment and meeting the Nation's demand for coal as an essential energy source.

Mining is a temporary use of the land and reclamation after mining should result in an equal or better use of that resource. While the landowner makes the final decision on post-mining land use, we should promote reclamation that contributes to a sustainable environment, a sound economy and a healthy society.

OSM looks to new and innovative ways that we and our State and Tribal partners can work along with coal operators, landowners, and citizens who care about the environment to promote a more forward-looking approach to post-mining land use. Opportunities exist to create economic development, enhance recreation, create habitat for wildlife or provide youth sports facilities like



"We should promote reclamation that contributes to a sustainable environment, a sound economy and a healthy society."

soccer and baseball fields. If there's a better way to reclaim the land, we should explore it.

Through OSM's annual reclamation awards we have promoted innovative steps to reclaim land and water and create sustainable environments and long-term benefits by recognizing operators who successfully used this approach, but we must continue to do all we can to promote stability in the surface mining control and reclamation community.

As of October 1, 2006, Congress had extended

OSM's Abandoned Mine Land fee collection authority through September 30, 2007 and was considering legislation to reauthorize the program. This is critical to OSM's ability to address ongoing threats to the health and safety of millions of citizens living and working in the coalfields.

OSM has worked with Congress for several years to revise the AML allocation formula to focus on historic production by directing future fees to areas with the greatest reclamation needs.

BALANCE



"Mining is a temporary use of the land and reclamation after mining should result in an equal or better use of that resource. "

In a series of rulemaking efforts, OSM is continuing to focus on creating regulatory stability in our programs so that industry, States, Tribes and citizens can operate in a more predictable environment.

To work cooperatively with our partners takes more than regulations, it takes providing technical assistance along with training to provide the skills and knowledge required to develop new reclamation practices.

One of OSM's most important missions is to advance and transfer technologies that will improve the effectiveness and efficiency of the science of mine land reclamation through research projects. Advancement of this technology will result in better mining and reclamation practices, thus being conducive to better environmental protection and less off-site impacts.

OSM's Applied Science program gets specifically to the needs of individual State programs as well as national interests. This is accomplished through the solicitation and review process which is carried out by OSM's National Technology Transfer Team (NTTT). NTTT represents the interests of all States, regions, and OSM. The research projects, which must be supported by a State Regulatory or Abandoned Mine Land Agency, will focus on adherence to regional special interest topics, technical merit, technology transfer potential, cost sharing, and overall technical quality.

OSM created the Appalachian Regional Reforestation Initiative (ARRI) to communicate and encourage mine reforestation practices that reestablish forests as they existed prior to mining.

Many surface coal mining sites were largely forested with mixed species of hardwood trees prior to mining. Past reclamation focused on creating grasslands, although this is not conducive to tree survival or growth. While grasslands meet regulatory requirements for reclaiming coal mines, often they do not provide the economic, recreational and environmental advantages of restoring mine sites to forest land.

OSM will build on its success of the ARRI by bringing



OSM officials tour a surface mining site in West Virginia as part of a meeting of the agency's Core Leadership Team. The man at far left is unidentified. Beginning second from left are Brent Wahlquist, acting OSM director, Eldrich Frazier, chief information officer, and Vann Weaver, branch chief of the Appalachian Region's Federal Reclamation Program Division.

the "Forestry Reclamation Approach" to an even larger audience in the Appalachians as well as to the Mid-Western and Western U.S. In addition, OSM plans to use this success achieved under ARRI as a platform to launch other technical assistance efforts geared towards enhancing post mining land use including increasing the restoration of natural habitat.

Historically, we have never been in a better position to achieve more effective reclamation, create healthy and sustainable environments, and advance our scientific and technical skills as we are now. We can achieve them.

A handwritten signature in blue ink that reads "Brent Wahlquist".



Land in Kentucky that once produced coal now serves as pastureland to produce beef.

2006 OSM Fast Facts

91.5 %

of active sites free
of offsite impacts

49,796

acres released
from Phase III
Performance
Bonds

\$56,365,347

in regulatory
grants to States
and Tribes

Protect



Montana

Western Energy Company
Rose Bud Mine, Colstrip, MT



Western Energy Company's Rose Bud Mine in Colstrip, Montana, was the first mine to receive a permit under the Surface Mining Act. Winner of many reclamation awards, the mine's operators have demonstrated a commitment to the community, which includes the nearby Northern Cheyenne Reservation. The company has mined around and preserved petroglyphs from ancient peoples, established buffalo herds for traditional ceremonies and opened reclaimed land for cattle grazing and crop production by local farmers and ranchers at no cost. The area's history, settlers cabins and an early post office have been preserved for future generations.

Regulation of Active Coal Mines

Title V of the Surface Mining Act: Control of the Environmental Impacts of Surface Coal Mining

The Surface Mining Act contains five main regulatory provisions that together form the basis for protecting the environment during coal mining and ensuring prompt restoration of the land when mining is done.

Performance Standards are intended to make sure that all coal mining is done in ways that protect the environment and the public and that mined land is reclaimed properly afterward.

Permits are required before a coal operator is allowed to develop a surface or underground coal mine. Applications for a permit are detailed documents explaining the proposed mining and reclamation. Information must be provided describing environmental conditions before mining begins, how the land is currently being used, how the land will be mined and reclaimed, how the performance standards will be met and what the use of the land will be after it is mined.

Performance Bonds must be posted by the operator before a permit can be issued. The bond is intended to cover the cost of reclaiming the site if the operator fails to do it. Operators can get part of their money back as phases of reclamation are completed. However, the bond can't be fully released until all performance standards have been met and the land has been successfully reclaimed. Sites aren't considered to be

successfully reclaimed until five years have passed in the East and the Midwest. Because of arid conditions in the West, a site must remain stable for 10 years before the operator's bond can be fully released.

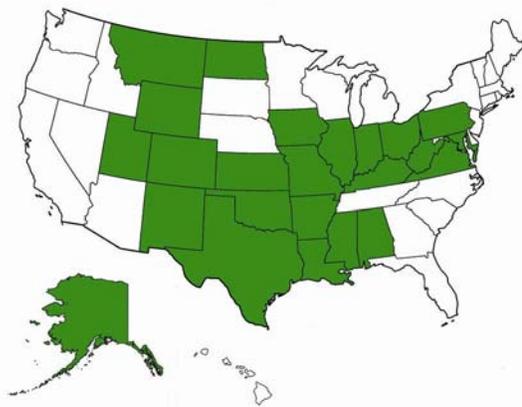
Inspections and Enforcement are carried out by inspectors who visit mining sites and have authority to issue a *notice of violation* if they spot problems. The problem must then be corrected. If the violation is severe, the operator may have to pay a fine. If the operator fails to correct the problem, inspectors can issue a *cessation order* to stop all mining until the situation is corrected. An inspector may skip the notice of violation and immediately issue a cessation order if a violation is found that creates an imminent danger to the public or causes significant environmental damage.

Lands Unsuitable for Mining are protected in the Surface Mining Act. The Act prohibits surface coal mining within national parks, forests, wildlife refuges, trails, wild and scenic rivers, wilderness or recreation areas. Mining is prohibited in places where it would adversely affect sites listed in the National Register of Historic Places and within restricted distances of homes, public roads, buildings, parks, schools, churches and cemeteries. The Act allows anyone to petition to have specific lands designated unsuitable for surface coal mining.

Partnership with Primacy States Is Based on Shared Principles

All surface coal mines are required to have permits and comply with OSM regulations or the provisions of approved State programs. Currently, there are 24 "primacy" States that administer and enforce approved programs for regulating surface coal mining and reclamation under the Surface Mining Act.

An effective relationship between OSM and the States is fundamental to the successful implementation of the Surface Mining Act. A shared Federal-State commitment to carry out requirements of the Surface Mining Act is based on a relationship that includes common goals and principles.



"Primacy" States with regulatory authority

Facts About Primacy States

Wyoming
State with the most coal production

Arkansas
State with the least coal production

Texas
State with the most lignite coal production

Alaska
State with the greatest unmined coal reserves

West Virginia
State with the most underground coal production

Kentucky
State with the most coal mines

Pennsylvania
State with the most anthracite coal production

Alabama
State with highest average price for coal

Virginia
State with the earliest commercial coal production

Illinois



Inspectors consult a map to determine the sequence of mining at Pyramid State Park in Illinois on land mined by Arch Minerals. From left to right – Kevin Garnett of OSM, Clay Kolar of the Illinois Office of Mines and Minerals, Perry Pursell of OSM. (Photo by Tami Heilemann)

Oversight of State Programs

Inspection Strategy Focuses on Results

The Surface Mining Act requires OSM to make inspections to evaluate how well State programs are administered. Oversight focuses on examining the implementation of many procedural requirements such as permitting, inspection, enforcement, and penalties. Each facet has requirements prescribed to achieve environmental compliance.

OSM applies a results-oriented oversight strategy devised to consult with the States, a technique that emphasizes cooperative problem-solving. The OSM strategy involves evaluation and reporting State-specific and national findings for offsite impacts. The purpose of measuring offsite impacts is to gauge how the Surface Mining Act is protecting citizens, public and private

property, and the environment outside the areas authorized for mining and reclamation activities. This measurement is intended to identify the number and severity of offsite impacts, determine causes of impacts, and identify improvements to lessen the number and degree of these impacts.

Success is measured as a percentage of inspectable units that achieve the goal of having no offsite impacts and as the number of acres that meet the bond release requirements for the various phases of reclamation. During 2006, 91.5 percent of inspectable units were free of offsite impacts and all performance bonds were released on 49,796 acres.

Missouri



An OSM specialist and a Missouri State inspector measure topsoil depth at a mine site in southwest Missouri using a Global Positioning System-enabled tablet computer.

Missouri Resumes Authority Over Enforcement, Permits

OSM provided inspection, enforcement, permitting, and bonding services for the first four months of FY 2006 until Missouri re-assumed full primacy over the its own regulatory program on February 1, 2006.

OSM began enforcing part of the State's mining program in August 2003 after determining that Missouri had failed to provide adequate staff or funding to implement its coal mining regulatory program. For more than two years Federal officials were responsible for enforcement, permitting, and bonding. Missouri retained bond forfeiture reclamation responsibilities.

During that time OSM conducted 20 complete and 32 partial inspections, issued one new permit and six permit revisions, and released Phase II bond on 531.2 acres and Phase III bond on 318.5 acres. No enforcement actions were issued during this period.

OSM also helped prepare the State by assisting in conducting joint inspections and permit decision reviews, and by providing training to Missouri personnel. Training courses included permitting, bond calculation, blasting, TIPS software, and mobile computing.

Regulatory Program Strategic Plan Measures

Measure	Target	Results
Percent of active sites that are free of offsite impacts	93 %	91.5%
Number of acres where reclamation goals are achieved as evidenced by Phase III bond release	50,000	49,796

Final Rules Published (See Appendix for Full Information)

In FY06, OSM published three final Federal program rules:

Civil Penalty Adjustments
(70 FR 70698)

Revisions to the State Program Amendment Process
(70 FR 61194)

Topsoil Replacement and Revegetation Success Standards
(71 FR 51684)

States have the right to amend their programs. Whenever Surface Mining Act or its implementing regulations are revised, OSM is required to notify the States of changes needed to keep State programs in compliance with Federal requirements.

As a result of the process, the States have submitted a large number of complex amendments. OSM has taken several steps to process States' submissions more efficiently. For example, the amendment review process within OSM has been decentralized with format and content guidelines for State program submissions issued to the States.

In 2006, OSM published 24 proposed and 20 final State program amendments in the *Federal Register*.



Anthracite mine showing steeply dipping coal seam.

Anthracite Industry Produces 2.1 Million Tons

In 2005, the most recent year for which complete statistics are available, the Pennsylvania anthracite mining industry produced approximately 2.1 million tons.

Approximately 1.9 million tons were produced from surface mines and 0.2 million tons from underground mines. The reprocessing of anthracite coal waste banks continued throughout the anthracite region in 2005 and produced 2.76 million tons used to fuel approved waste burning electric plants.

The Pennsylvania anthracite program currently includes 311 inspectable units (47 underground, 14 preparation plants, 3 refuse disposal sites, 122 reprocessing operations, and 125 surface mines).

Pennsylvania's Department of Environmental Protection conducted 3,655 inspections and issued 160 violations in the anthracite region. Pennsylvania's Department of Environmental Protection continues to successfully enforce the provisions of the anthracite regulatory program.

State Oversight

More Than Random Inspections

OSM conducts random inspections to provide a broad perspective of the administration of a State's program, but many of the efforts today involve more complex activities aimed at a specific or potential problem.

These activities often include both elements of oversight and technical assistance in multiple States over many years. Particular emphasis is placed on ensuring that experts working on a joint effort produce a report on any catastrophic event to share information.

This page features two examples of such process implementation.



A typical slurry impoundment in Appalachia.

Virginia, Kentucky Incidents Raised Concern

Impoundments Carefully Analyzed

Beginning with a slurry impoundment breakthrough into a Virginia underground mine in 1994, OSM and the States have conducted extensive inspection and analysis of impoundments.

Shortly after the first breakthrough, three additional breakthroughs occurred in Virginia. These four events resulted in having all impoundments in the State inspected and, where necessary, implementing plans to prevent additional breakthroughs.

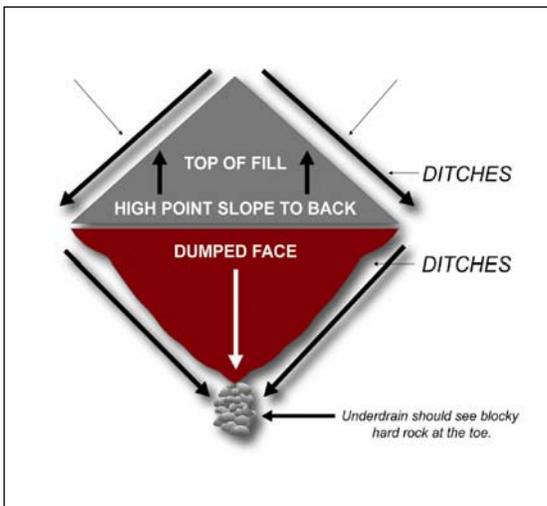
No additional breakthroughs were recorded until the October, 2000 breakthrough at the Martin County Coal Company impoundment in Kentucky. This breakthrough resulted in 250 million gallons of slurry being released and impacting over 75 miles of streams and rivers.

The seriousness of this incident led to an extensive investigation and a multi-year

OSM oversight evaluation in all of the Appalachian coal producing States. OSM's Appalachian Region's oversight plan provided for an evaluation of existing regulatory requirements in each State, as well as technical evaluations and individual on-the-ground reviews of many of the Region's impoundments.

These reviews were not only detailed field inspections but also included complex engineering reviews of permit plans and a review of the history of selected sites.

When the initial phase of the evaluation was completed, each OSM Field Office decided whether to return the level of evaluation for impoundments to routine oversight status or to continue an increased level of oversight. In either case, OSM continues to be involved in the quest for safety of impoundments in the Appalachian States.



West Virginia

Lyburn Lessons Led to Better Valley Fill Model

In 2002, a mudslide from an unfinished excess spoil valley fill damaged homes in the small community of Lyburn, West Virginia.

OSM conducted an independent investigation of the incident and noted several problems that led to the mudslide including inadequate surface water drainage control and a failure to reclaim the fill concurrently.

OSM has used what it learned in the Lyburn incident to provide oversight, training and technical assistance in other States. OSM uses the training aid above as a primer on proper drainage control.



OSM's first inspector orientation, April 1978 in Madisonville, KY



Federal Agencies work to protect bat habitat

In Tennessee, where OSM enforces the Surface Mining Act, OSM's Knoxville Field Office and the US Fish and Wildlife Service this year finalized guidelines to protect the Indiana bat (*Myotis sodalists*) when coal mining occurs in areas where the bat may reside. The guidelines were developed in coordination with the Tennessee Department of Environment and Conservation using the most current scientific research regarding the Indiana bat, its habitat and biology. (US Fish and Wildlife Service photo)

Federal Program States

OSM Enforces Mining Laws For States With No Program

Although the Office of Surface Mining encourages and supports State primacy in the regulation of coal mining and reclamation operations, some States with coal reserves have elected not to operate their own regulatory programs.

Those States are called Federal Program States, and their coal mining and reclamation operations are regulated by OSM.



States in which OSM regulates surface coal mining.

The Surface Mining Act requires OSM to regulate surface coal mining and reclamation activities on non-Federal and non-Indian lands in any State if the State's proposal for a permanent program has not been approved by the Secretary of the Interior, the State does not submit its own permanent regulatory program or the State does not implement, enforce, or maintain an approved State program.

Federal programs are in effect in 12 States: Arizona, California, Georgia, Idaho, Massachusetts, Michigan, North Carolina, Oregon, Rhode Island, South Dakota, Tennessee, and Washington. Tennessee and Washington are the only two Federal Program States that had active coal mining in 2006.

REGULATORY GRANT FUNDING FY2006 OBLIGATIONS¹

State/Tribe	2006 Federal Funding		Cumulative Through 2006 Federal Funding ²
	2006	2005	2006
Alabama	\$ 1,022,211	\$ 987,979	\$ 29,031,657
Alaska	\$ 183,601	\$ 188,518	\$ 6,276,914
Arkansas	\$ 145,457	\$ 149,353	\$ 3,992,277
Colorado	\$ 1,903,776	\$ 1,954,760	\$ 35,368,979
Crow Tribe	\$ 29,387	\$ 30,174	\$ 1,203,905
Hopi Tribe	\$ 169,439	\$ 173,977	\$ 2,208,775
Illinois	\$ 2,375,884	\$ 2,439,511	\$ 60,958,596
Indiana	\$ 1,787,798	\$ 1,920,252	\$ 38,362,142
Iowa	\$ 125,378	\$ 128,736	\$ 3,076,324
Kansas	\$ 109,642	\$ 112,578	\$ 3,200,718
Kentucky	\$ 1,992,212	\$ 12,313,367	\$ 309,053,024
Louisiana	\$ 163,018	\$ 167,384	\$ 4,061,003
Maryland	\$ 575,520	\$ 590,933	\$ 13,619,358
Michigan	\$ -	\$ -	\$ 135,458
Mississippi	\$ 13,459	\$ 113,729	\$ 1,441,440
Missouri	\$ 245,767	\$ 162,675	\$ 8,955,308
Montana	\$ 1,043,335	\$ 1,050,741	\$ 20,477,258
N. Cheyenne	\$ -	\$ -	\$ 86,888
Navajo Nation	\$ 436,973	\$ 448,675	\$ 5,135,009
New Mexico	\$ 718,290	\$ 737,526	\$ 15,082,421
North Dakota	\$ 513,659	\$ 501,284	\$ 13,027,959
Ohio	\$ 1,967,353	\$ 2,020,039	\$ 64,854,853
Oklahoma	\$ 919,448	\$ 1,018,398	\$ 21,214,736
Pennsylvania	\$ 10,387,573	\$ 10,665,756	\$ 248,073,600
Rhode Island	\$ -	\$ -	\$ 158,453
Tennessee	\$ -	\$ -	\$ 5,340,085
Texas	\$ 1,399,190	\$ 1,317,376	\$ 27,157,852
Utah	\$ 1,698,219	\$ 1,743,698	\$ 34,303,588
Virginia	\$ 3,174,421	\$ 3,259,433	\$ 77,953,374
Washington	\$ -	\$ -	\$ 4,893
West Virginia	\$ 11,199,595	\$ 10,520,169	\$ 157,266,143
Wyoming	\$ 2,064,742	\$ 2,120,036	\$ 40,490,319
TOTAL	\$ 56,365,347	\$ 56,837,056	\$ 1,251,573,305

¹ Figures have been adjusted for rounding.

² Includes obligations for AVS, TIPS, Kentucky Settlement and other Title V. cooperative agreements. Figures for FY 2006 do not include downward adjustments of prior year awards. However, cumulative figures are net of all prior year downward adjustments.

Agreements Provide Regulation, Reclamation On Federal Lands

The Surface Mining Act requires the Secretary of the Interior to establish and implement a Federal regulatory program for surface coal mining and reclamation operations on Federal land.

The Federal government owns significant amounts of land and coal reserves — primarily in the West. Sixty percent of the 147 billion tons of recoverable coal reserves in the western US are Federally owned. The development of Federal coal reserves is governed by the Federal Coal Management Program of the Department of the Interior's Bureau of Land Management.

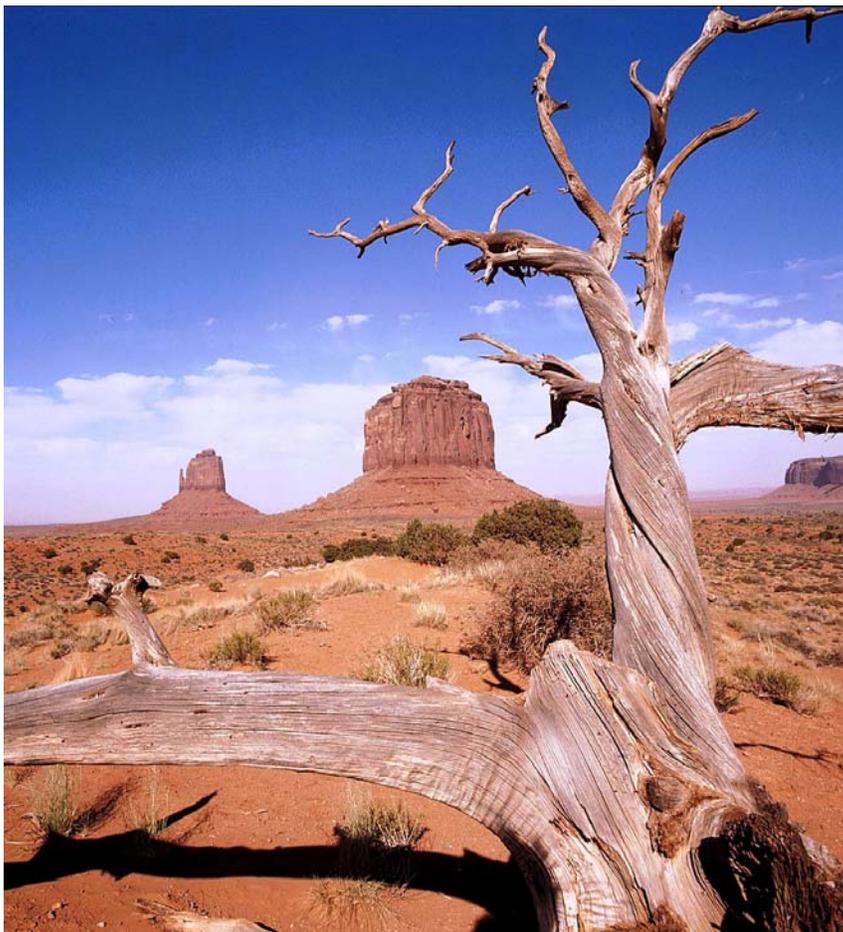
Sixty percent of the 147 billion tons of recoverable coal reserves in the western US are on Federal land.

Through cooperative agreements, the Secretary of the Interior may delegate most regulatory responsibilities for surface coal mining and reclamation operations on Federal lands to States with approved regulatory programs. Through 2005, the Secretary had entered into cooperative agreements with 14 States: Alabama, Colorado, Illinois, Indiana, Kentucky, Montana, New Mexico, North Dakota, Ohio, Oklahoma, Utah, Virginia, West Virginia, and Wyoming.

Once the Secretary and a State have signed a cooperative agreement, the State regulatory authority assumes permitting, inspection, and enforcement responsibilities for coal mining and reclamation activities on Federal lands in that State. The Office of Surface Mining maintains an oversight function to ensure that the State regulatory authority fully exercises its delegated responsibility under the cooperative agreement.

Grants to States and Tribes Fund Regulatory Programs

The Surface Mining Act authorizes OSM to provide grants to States with approved regulatory programs to administer and enforce the programs. States must match the Federal funds dollar for dollar; Federal funding can't pay for more than half of a State's regulatory program. When a primacy State elects to administer its approved program on Federal land through a cooperative agreement with OSM, the State becomes eligible for financial assistance of up to 100 percent of what the State spends to regulate coal mining on Federal lands.



Monument Valley on the Navajo Reservation.

OSM Has Responsibility for Regulation on Indian land

The Office of Surface Mining directly regulates coal mining and reclamation operations on Indian lands.

During 2006 there were:

- nine surface coal mining operations permitted on reservations or Indian-owned lands;
- two active mines and an active coal preparation plant on the Navajo reservation;
- two active mines located on both the Navajo and Hopi reservations;
- one active mine producing coal owned by the Crow Tribe on the Crow Ceded Strip;
- one permitted haul road on the Ute Mountain Ute reservation;
- two inactive mines on the Navajo reservation for which OSM, in cooperation with the Bureau of Indian Affairs and the Navajo Nation, oversees reclamation.

OSM is the lead Federal agency for preparation of an Environmental Impact Statement for the Black Mesa Project and a cooperating agency on two other Environmental Impact Statements being prepared by the Bureau of Indian Affairs, Desert Rock Energy Project and Absaloka Mine Extension.

The Office of Surface Mining awards grants to the Crow Tribe, Hopi Tribe, Navajo Nation, and the Northern Cheyenne Tribe to assist them in developing programs for regulating surface coal mining and reclamation operations on Indian lands. The development of these programs includes creating tribal mining regulations and policies; working with OSM in the inspection of coal mining activities on Indian lands (including permitting and bond release); and education in the area of mining and mineral resources. Development grant funding for 2006 was \$635,799.

Bonding Can Be Complex, Contentious

The Surface Mining Act requires that before a permit can be issued, applicants are required to file a performance bond with the regulatory authority to provide for proper reclamation in the event of permit revocation.

The approved regulatory program requires either a “conventional bonding system” (full cost bonding) or an “alternative bonding system” (a bond pool that distributes the reclamation liability among all participants in the pool). Within these bonding systems there are multiple bonding instruments available.

From the beginning, implementation of the bonding programs has proven to be very complex, resulting in contentious issues between States, OSM, the coal industry and

the public. Implementation is further complicated by issues relating to the bonding for long-term water treatment of acid mine drainage (AMD).

Consequently, implementing the bonding programs has resulted in multiple and complex law suits; significant disruptions resulting from bonding company failures; development of bonding policies / procedures and manuals; extensive training programs; actions by State Legislatures; formation of national bonding work groups; modifications of regulatory programs; and resource intense oversight to analyze the effectiveness and solvency of the bonding programs.

OSM recently notified Ohio of inadequacies

related in its bonding program (see story below). In the past, OSM has pursued bonding program changes in Pennsylvania, Tennessee, and West Virginia. In each situation, litigation was initiated by the public or the industry.

OSM and several States recognize this will be a long-term process with continual challenges that requires cooperation, good communication, and the resolve to maintain effective bonding programs.

For example, in West Virginia the State recognized the complexities of the issues and created an Advisory Council to monitor the implementation and solvency of its Special Reclamation Fund bond pool.



Ohio's Bonding System Facing Federal Action

OSM has been working closely with Ohio to change the State's bonding program to provide timely reclamation of mined property.

The State's Alternative Bonding System has been considered inadequate for several years. In 2004, representatives from the State and the Ohio Coal Association began drafting legislation to address the bonding condition, as well as to provide funding for program operation. However, that effort stalled and in early 2005, Ohio informed OSM that without the agreement with the coal industry, passage of any legislation was unlikely.

Ohio's past attempts to revise the ABS were unsuccessful due to the coal industry's unwillingness to support legislation that would increase bonding or provide adequate revenue to support the ABS.

On May 4, 2005, OSM began a process under 30 CFR Part 733 that could lead to withdrawal of Ohio's authority to operate its regulatory program.

Ohio renewed work on draft legislation and submitted a proposed amendment to OSM on December 19, 2005. OSM responded to Ohio's amendment on May 5, 2006, with several issues that must be addressed and additional data provided before the amendment will meet minimum Federal standards.

OSM will review Ohio's response, then review the revised amendment and determine if it can be approved. OSM must then recommend to the Secretary of the Interior whether the new amendment will result in an adequate bonding program. If not, OSM will have to decide whether to require Ohio to enact further amendments or proceed with the 733 process, which could result in OSM taking over part of Ohio's program.

OSM and its partners sign the Horizon agreement March 29, 2006

Horizon bankruptcy agreement

OSM, States ensure reclamation

Bankruptcies in the coal industry continue to require attention from both OSM and the State Regulatory Authorities (RAs).

OSM partnered with the regulatory agencies of four States to negotiate a Permitting and Reclamation Agreement with Lexington Coal Company, LLC (LCC) that ensures the cleanup of hundreds of inactive coal permits in several States.

LCC is derived from the reorganization of Horizon Natural

Resources Company approved by the U.S. Bankruptcy Court in September 2004. LCC was tasked with completing reclamation of hundreds of inactive permits.

The Agreement ended the surety company's direct involvement in the administration of the reclamation of these inactive permits. This action will result in less capital outlay for administration and more funding for reclamation. OSM and the State RAs will continue to monitor the progress of LCC.

Kentucky



Hay bales on land reclaimed by Patriot Coal.

Multiple Bankruptcies Can't Foil Reclamation

For a real patriot, no obstacle is too great when it comes to protecting the environment while providing America with the energy to power its economic growth.

Patriot Coal Company, Ltd., stepped in to reclaim a 1,013 acre coal mine in Henderson County, KY, left orphaned after two successive owners went bankrupt. Normally, the mine's reclamation bond would be cashed for the cleanup, however, the insurance company holding the bond also went bankrupt. Without Patriot's involvement, clean-up of the site would have cost hundreds of thousands of dollars in AML funds.

So far, Patriot has restored over 550 acres to prime farmland. Prime farmland must have at least 48 inches of topsoil and sustain crop growth at the highest levels. Over 48 acres have been established for wildlife and now attract deer, turkeys, ducks, geese and blue herons.

Additionally, this coal mine has produced approximately 4 million tons of coal.



Rows of corn growing on the reclaimed Patriot site.

Applicant / Violator System helps Regulators spot permit problems

One of the underlying principles of the Surface Mining Act is that those who benefit from mining are responsible for returning the land and water to productive use. The law prohibits the issuance of new permits to applicants who own or control operations with unabated or uncorrected violations.

The Applicant / Violator System provides State regulatory authorities with a central database of application, permit, ownership and control, and violation information. Federal and State officials review AVS data when evaluating the applicant's eligibility for new permits. The system is also used to determine the eligibility of potential recipients of Abandoned Mine Land reclamation contracts and for inspection and oversight purposes.

During 2006, the AVS Office responded with quality reviews for 3,938 requests for data evaluations from State and Federal regulatory authorities and State abandoned mine land program officials. The Office of Surface Mining (OSM) collected or settled payments of civil penalties and reclamation fees in the amount of \$1,244,217 in part because of violation information in the system.

AVS staff continued its efforts to support States in developing strategies and responding to new bankruptcy cases filed during 2006 in Virginia, West Virginia, Maryland and Indiana. Significant progress was achieved by Lexington Coal Company in reclaiming the hundreds of permits abandoned in the Horizon Natural Resources bankruptcy case. The most noteworthy was the replacement of all surety bonds with letters of credit, completion of all obligations in Indiana and major reductions in reclamation liability in West Virginia, Illinois and Kentucky. To help ensure that outstanding reclamation obligations are met, investigative assistance was provided to several States to promote and prepare alternative enforcement actions.

In 2007 the AVS Office plans to complete a re-design project that was initiated in October 2004 to transform the system to a more user-friendly, web-based system. This includes a rewrite of the business processes and change in application language to allow for more flexibility in future system enhancements and modifications.

The Applicant/Violator System Office received a customer satisfaction rating of 97 percent for services provided. This is the eighth consecutive year that the Office has received extremely high customer satisfaction ratings.

General information about the system, including access and user information, can be found at www.avs.osmre.gov.

SMALL OPERATOR ASSISTANCE PROGRAM (SOAP) 2006 GRANT AWARDS¹

State	Grant Amount 2006	Grant Amount 2005	Operators	Projects Started
Alabama	\$35,000	\$60,000	2	2
Kentucky	\$0	\$606,000	18	18
Maryland	\$0	\$35,000	0	0
Ohio	\$0	\$50,000	2	2
Pennsylvania	\$79,602	\$669,000	40	53
West Virginia ²	\$35,000	\$96,994	2	0
TOTAL	\$149,602	\$1,516,994	64	75

¹ Amounts do not include downward adjustments of prior-year awards.

² The figure for West Virginia in 2005 was reported incorrectly in the 2005 annual report. The corrected amount is shown above.

Federal Agencies, West Virginia Release Final Mountaintop Mining/ Valley Fill EIS



The U.S. Army Corps of Engineers (COE), U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service, U.S. Office of Surface Mining (OSM), and West Virginia Department of Environmental Protection (WVDEP) announced the availability of the programmatic Mountaintop Mining/Valley Fill (MTM/VF) Environmental Impact Statement (EIS) in the October 28, 2005, Federal Register.

The final EIS fulfills the commitment by the agencies in a December 23, 1998, settlement agreement on Clean Water Act (CWA) counts against the COE in the *Bragg v. Robertson* litigation filed in Federal District Court for Southern West Virginia.

The final programmatic EIS examines a broad range of potential Federal and State actions to further prevent or reduce adverse environmental impacts, as well as to clarify lines of responsibility among the agencies designed to improve compliance with and enforcement of the CWA, the Surface Mining Control and Reclamation Act (SMCRA), and The Endangered Species Act. The preferred alternative contains

actions that consider such things as coordinated data collection and environmental analyses in a collaborative regulatory process that could result in better watershed-based permit decisions in Appalachian States where mountaintop mining occurs.

The geographic focus of the final programmatic EIS is about 12 million acres encompassing most of eastern Kentucky, southern West Virginia, western Virginia and scattered areas of east Tennessee.

During preparation of the EIS, the agencies conducted or funded over 30 studies to compile existing data, expand the current knowledge base about impacts of mountaintop mining and associated excess spoil disposal valley fills. By integrating CWA and SMCRA requirements, the agencies are making a collective effort to provide a regulatory program that balances the Nation's energy needs and the protection of environmental resources in areas where mountaintop mining / valley fill operations take place.

Spoil Minimization, Stream Buffer Zone Rule Due in 2007

In 2007 OSM expects to publish a rule that will require that surface coal mining operations be designed to minimize the creation of excess spoil and the adverse environmental impacts of fills.

The rule will also clearly specify the conditions under which mining and reclamation activities may be conducted in or near streams and other waters of the United States.

Prior to the Surface Mining Control and Reclamation Act of 1977 (SMCRA) spoils above the coal to be mined were disposed below the coal seams. SMCRA requires spoils to be returned to the mined area and the pre-mining topography restored.

The Surface Mining Act requires this leftover rock ("excess spoil") be placed in stable areas to avoid slides and erosion. In the mountainous terrain of central Appalachia, excess spoil is routinely placed in valleys adjacent to the mined-out areas. Valleys often contain small streams ranging from perennial to ephemeral.



SMCRA allows valley fills like the one shown above over some streams if they provide adequate drainage.

The placement of excess spoil fills in natural watercourses and over springs and

seeps is authorized by the Surface Mining Act so long as sufficient drainage is available.

OSM's Stream Buffer Zone rule specifies under what circumstances mining activity can be conducted within 100 feet of a perennial or intermittent stream. Historically, the rule has not been applied by States or OSM to limit fills.

However, within the past few years, there has been extensive controversy and litigation leading to varying interpretations by the agencies involved, the Federal courts, and the Department of Justice over what the Stream Buffer Zone rule means in relation to fills.

In January 2004, OSM proposed changes to clarify the stream buffer zone rule and to strengthen the requirements to limit spoil. In June 2005, OSM announced its intent to prepare an Environmental Impact Statement on the regulatory changes. Both the rule and EIS will be published in 2007.

REGULATORY PROGRAM STATISTICS

State/Indian Lands	Regulatory Staffing ¹	New Permits ²	New Acreage Permitted ^{2 & 5}	Total Acreage Permitted ²	Inspectible Units ²	Complete Inspections ²	Partial Inspections ²	Notices of Violation ²	Failure-To-Abate CO ₂	Imminent Harm CO ₂	Bond Forfeitures ²	Acreage of Phase I Bond Released ²	Acreage of Phase II Bond Released ²	Acreage of Phase III Bond Released ²
Alabama	27.00	13	5,283	84,400	217	2140	539	123	10	0	5	2064	1369	2406
Alaska	3.88	0	0	9,099	11	27	57	1	0	0	0	0	0	0
Arkansas	3.95	0	0	1,670	12	48	98	4	0	0	0	0	0	0
Colorado	24.00	1	1,518	162,750	46	169	287	3	0	0	0	76	887	44
Crow Tribe ⁴	0.45	0	1,713	7,209	1	3	6	0	0	0	0	0	0	0
Georgia ⁴	0.00	0	0	0	6	1	0	0	0	0	0	0	0	0
Hopi Tribe ⁴	2.30	0	0	6,137	1	6	7	0	0	0	0	0	0	0
Illinois	31.70	7	2,441	60,900	92	403	868	26	0	0	1	5,082	5,123	6,787
Indiana	44.00	3	672	258,230	109	545	1,206	52	2	0	1	2,680	3,552	3,412
Iowa	3.00	0	0	2,960	16	20	8	0	0	0	0	0	0	115
Kansas	3.20	2	507	4,830	12	46	90	3	0	0	0	0	0	12
Kentucky	299.00	87	89,490	1,764,200	1,931	7,834	14,487	484	36	14	5	12,828	5,978	14,006
Louisiana	2.40	0	0	42,930	2	8	14	1	0	0	0	0	0	0
Maryland	11.60	3	624	6,426	72	364	613	57	31	0	1	75	82	118
Mississippi	2.25	0	0	5,809	1	4	10	0	0	0	0	0	0	0
Missouri ³	6.30	1	76	13,315	31	120	183	0	0	0	7	1,080	2,173	1,565
Montana	16.96	1	175	62,490	15	79	118	4	0	0	0	1,581	1,502	0
Navajo Nation ^{4&6}	5.00	1	6,200	82,863	18	64	37	11	0	0	0	0	0	0
New Mexico	9.00	1	15,000	86,830	10	40	80	3	0	0	0	3,160	3,160	319
North Dakota	7.70	1	5,931	103,680	32	127	534	1	0	0	0	395	395	395
Ohio	34.98	27	5,331	102,700	329	1,305	2,358	130	2	4	1	2,807	4,408	3,680
Oklohomia	21.10	1	498	22,900	62	263	390	20	0	0	0	0	1,574	2,667
Pennsylvania	243.00	64	8,770	417,849	1,820	6,695	9,183	592	9	17	7	6,036	4,597	4,394
Tennessee ⁴	37.00	4	1,558	30,200	351	558	805	75	12	0	0	459	696	782
Texas	32.00	0	13,368	270,200	30	123	247	15	0	0	0	2,345	2,794	2,974
Utah	19.50	0	548	2,682	33	117	224	12	0	0	0	11	0	0
Ute Mountain Ute Tribe ⁴	0.00	0	0	175	1	4	6	0	0	0	ND	ND	ND	ND
Virginia	78.00	33	9,853	81,200	479	1,957	2,817	185	2	2	1	687	938	3,780
Washington ⁴	N/A	0	0	14,910	2	8	21	6	0	0	0	0	0	0
West Virginia	281.20	43	8,713	334,087	2,258	13,721	13,257	963	59	15	13	5,547	2,716	2,021
Wyoming	29.70	1	13,369	367,600	36	143	253	4	1	0	0	3,002	0	0
TOTAL	1,280.17	294	191,638	4,411,231	8,036	36,942	48,803	2,775	164	52	42	49,915	41,944	49,477

¹ Number of regulatory program staff as of June 30, 2006.

² State program statistics are for the one-year period, July 1, 2005 - June 30, 2006, except where noted (federal statistics for Crow, Georgia, Hopi, Navajo, Tennessee and Washington. See footnote 4.

³ MO resumed full primacy February 1, 2006. As a result of substitution of federal enforcement in Missouri, OSM was the regulatory authority in the state until February 1, 2006, when Missouri assumed full primacy. As a result, 34 of the 120 complete inspections were made by OSM (14 between July 1, 2005 and September 30, 2005, and 20 between October 1, 2005 and January 31, 2006). In addition, OSM made 67 of the 183 partial inspections (35 between July 1, 2005 and September 30, 2005, and 32 between October 1, 2005 and January 31, 2006). The remaining 86 complete inspections and 116 partial inspections were made by the state of Missouri between February 1, 2006, and June 30, 2006."

⁴ Federal statistics are for the one-year period, October 1, 2005 - September 30, 2006.

⁵ New acreage permitted includes acreage permitted for incidental boundary revisions and other revisions or amendments that add acreage, in addition to acreage for new permits.

⁶ The figure for total permitted acreage for the Navajo Nation in 2005 was reported incorrectly in the 2005 Annual Report. The correction is reflected in the figure provided for 2006 above.

Award-Winning Reclamation

2006 Excellence in Mining Reclamation Awards



Director's Award

TXU Mining Company, D1 Mining Area
Oakhill, Texas

OSM's 2006 Director's Award honors innovation leading to greater efficiency and superior reforestation. TXU Mining Company set out from the very beginning to make its D1 Mine an innovative example of long term, post-mining value. Today, the site is comprised of hardwood forests and wildlife wetlands. Selective thinning has already produced nearly 1,700 tons of pulpwood and pine straw is harvested for commercial and residential landscaping. Early planning and commitment have enabled the D1 Mine to surpass regulatory standards and achieve long-term benefit for both nature and commerce.



National Award

Pritchard Mining Company
Lens Creek Mine #2
Kanawah and Boone Counties,
West Virginia

Pritchard recognized that the steep slopes in the mine's location called for innovative techniques in grading, back-filling and mining steep contour pits. Careful planning by the engineers, advances in equipment and fine tuning of practices by skilled equipment operators resulted in a competitive product with reclamation that meets or in many cases exceeds all State and Federal regulations. The resulting forest growing on steep topography – with scenic ponds – blends in with the surrounding natural growth.



*"Engrained
in the
American
spirit*

is a credo that the needs of today's generation must not outweigh the inheritance of future generations.

We celebrate this attribute with these awards, as they represent innovative reclamation projects in which the operators went that extra mile to ensure the land was restored and, in some cases, was made even more productive after mining was concluded."

*Dirk Kempthorne
Secretary of the Interior*

**National Award
Peabody Coal Company, Lynnville Mine,
Warrick County, Indiana**

Since 1958, Peabody's Lynnville mine has shipped more than 150 million tons of coal, primarily for electric generation. Throughout its operation and the many changes in regulation and advances in equipment, Lynnville's post-mining land use blends with the neighboring rural community. Water and forest, wildlife, cropland, pasture and hay, are all envisioned along with the necessary roads.

Thanks to carefully planned work with soil placement and selection, there has been remarkable success with trees. Of the 3,382 permitted acres, 1,721.6 are forest land use, and 1,617.5 are wildlife habitat. Today at the Lynnville mining complex, closed since 1999, a substantial forest is growing—the result of the high survival rate from the planting of over 6.7 million trees.



**National Award
Peabody Energy Seneca Coal Company
Seneca II West Mine
Routt County, Colorado**

Peabody's Seneca II West Mine before (above) and after reclamation (below).



Part of a three-mine complex that includes Seneca II and Yoast mines, the short, 65-day growing season, high elevation, and 18 to 35 percent pitching grade presented challenges when the reclamation plan called for wildlife habitat and grazing. With the assistance of reclamation manager Roy Karo, who personally gathered native seeds not available commercially, the goals of maximum establishment of native species, high levels of utility for livestock and wildlife, and good forage potential have been achieved. In an additional effort monitored by USDA's Forest Service, Seneca has begun a demonstration project reintroducing native Aspen stands at this site. With mining complete in 2005, over 4,000 acres were returned to natural use.

Best-of-the-Best Award : Roy Karo

Each year the individual who was directly responsible for the most outstanding reforestation is honored. The 2006 Best-of-the-Best award was presented to Roy Karo for his work at the Seneca II West Mine, Peabody Energy. Karo spent hours of his own time gathering native species of plant seeds – which were not commercially available -- to ensure the Seneca II was reclaimed using the truly unique native vegetation. This was but one example of Roy's dedication to ensuring Seneca II West Mine's reclamation excellence.

National Award

United Minerals and Black Beauty Coal Company's West Fork Mine
Daviss County, Indiana

The West Fork Mine includes an area suitable for re-mining. It has a history of unreclaimed mining activity where shallow coal seams had been extracted leaving deeper seams behind. Large portions of the area had been severely eroded with several gullies stretching 12 feet deep and 30 feet wide. Acid water from this prior activity was discharging off the site at nearly one cubic foot per second — truly, a grave danger to public health and safety.

Despite these obstacles, United Minerals took on an aggressive reclamation program which included reforestation, creation of both land and aquatic habitat as well as eliminating the health, safety and environmental problems.

National Award

Black Beauty Coal Company, Cedar Creek Mine
Schuyler County Illinois

The Cedar Creek Mine is a 440 acre site in central Illinois that produced approximately 500,000 tons of bituminous coal annually. Innovative mining at this area by contract miner United Minerals involved replacing subsoils to depths of five to seven feet as a non-compacted, extended rooting material resulting in high yields of corn and soybeans, and terraces were constructed to control erosion.

Today, to the casual observer, there is no visual evidence that this area was ever mined for coal. Where crops are not grown, one sees forest, grassland, water and a diverse population of wildlife.

National Award

North American Coal Corporation
Red Hills Mine, Ackerman, Mississippi

This mine is in an area where abundant rain and clay-like soil posed erosion challenges. The hot summers and cool wet winters leave little time for planting, further complicating the reclamation process.

North American Coal took the challenge head on. The company put a level of design and construction rarely seen into its drainage channels, using erosion control fabrics, rock check dams and large rip-rap. Limestone coverings to complete the channels were trucked in from 170 miles away. Innovative sequential plantings of millet and Bermuda grass -- developed with landscape experts -- enabled native trees, shrubs and grass to naturally move into the reclaimed area establishing a healthy foundation for a long term use of commercial forestry.

The Excellence in Surface Coal Mining and Reclamation awards program began in 1986 to publicly recognize outstanding active coal mine reclamation and to highlight exemplary reclamation techniques.

National Award Alcoa Sandow Mine, Rockdale, Texas

For 53 years Alcoa's Sandow Mine has been an example of excellence in surface mine reclamation.

Alcoa Sandow has demonstrated the highest commitment to the environment and the community with over 10,000 acres reclaimed to date. The Sandow reclamation plan established diverse plant species in support of habitat and is based on its commitment to returning mined land to a more productive level than existed before mining.

Sandow has reclaimed previously mined land at this site in addition to reclaiming land as its own mining proceeded. This award recognizes this commitment to excellence in mine reclamation.



Paramont mine superintendent Jimmy Adkins shows off awards.

Paramont's Black Bear Mine Earns Regional, National Awards

Innovative reclamation practices, assistance in educational research and successful reforestation practices - all of which resulted in environmental improvements - have earned Paramont Coal Company Virginia, LLC's Black Bear #1 Surface Mine national and regional recognition. In one ceremony in May, the mine was presented with the Interstate Mining Compact Commission's (IMCC) National Reclamation Award, the Appalachian Regional Reforestation Initiative (ARRI) Reforestation Award and the first of Virginia Division of Mined Land Reclamation's Excellence in Reclamation Awards. The Virginia Mining Association also selected the Black Bear mine as its top reclamation award winner for 2006. The mine was recognized for a combination of activities and cooperative spirit that make the operation unique and set a standard for environmental quality. The mine's stream channel mitigation project and wetlands are highlights of the reclamation work, as is its reforestation effort.

'Good Neighbor' Awards

Recognizing service to communities



Gold Award:

Western Energy Company
Rosebud Mine
Colstrip, Montana

Western Energy Company's Rosebud Mine was the first mine in the nation to receive a permit under the Surface Mining Act and has demonstrated commitment to the community from the beginning. Rosebud is part of a farming and ranching community near the Northern Cheyenne reservation. The company's outreach extends to all its neighbors. It has mined around and preserved petroglyphs from ancient peoples, established buffalo herds for traditional ceremonies and opened reclaimed land for cattle grazing and crop production by local farmers and ranchers at no cost. Protecting the area's history, settlers cabins and an early post office have been preserved for future generations. For the ranchers and farmers as well as the Cheyenne, Western Energy has established an enduring heritage as a good neighbor.

Silver Award

Thunder Basin Coal Company
Black Thunder Mine, Wright, Wyoming

Arch Coal subsidiary Thunder Basin Coal Company's Black Thunder mine is one of the largest surface coal mines in the world, producing nearly six thousand pounds of coal every second, every day. This company has long been a good neighbor to the community providing educational mine tours, awards for outstanding teachers in the area, and partnering with State and Federal agencies.

When a tornado struck the nearby town of Wright, Thunder Basin's response was immediate. Surface Mine Rescue teams arrived to search for survivors, provide first aid, supplies, and electric generators. Thunder Basin employees gave up their company picnic to provide a community meal to the people of Wright.

To expedite cleanup, the mine arranged with the Wyoming Department of Environmental Quality to dispose of non-hazardous debris from the town as backfill at the mine, thereby saving the county over \$200,000. Throughout the year and in times of need, Thunder Basin has been an exemplary good neighbor.

OSM's Good Neighbor Awards were established to recognize coal operators who contribute to the communities in which they work.

Bronze Award

AEP Kentucky Coal
Lick Creek, Kentucky

AEP Kentucky coal's operation near the community of Lick Creek is a beautifully reclaimed area with a post-mining land use of wildlife habitat, forestry and pastureland, all important uses for this rural area and difficult to accomplish given the steep slope conditions there.

Not only did AEP Kentucky give careful consideration to the community in its reclamation plan, the company met with the community, discussed their concerns and rerouted the coal haul road so the entire deposit was mined without disturbing the homes and schools of Lick Creek.

2006 OSM
Strategic Plan
Fast Facts

6,984

acres reclaimed
or mitigated from
the degradation of
past mining.

69

stream-miles
improved.

32

surface water
acres improved.

393,728

people with reduced
exposure potential
to safety risks from
abandoned mine
lands.

Restore



At this 100 acre site, a dangerous highwall, toxic gob-piles and hazardous water bodies were replaced by beautiful grassland supporting a growing wildlife population. Acid mine drainage from the stripped land which clogged streams and impacted roadways, bridges and nearby farmland has been corrected.

Reclamation of Abandoned Mine Lands

Title IV of the Surface Mining Act: Eliminating health and safety problems

The Abandoned Mine Land (AML) Program provides for restoration of lands mined and abandoned or left inadequately restored before passage of the Surface Mining Act in 1977.

Fees are collected on each ton of coal mined by surface or underground methods. The money is deposited in the US Treasury's interest-bearing Abandoned Mine Land Reclamation Fund, which is then used to pay reclamation costs.

The Surface Mining Act requires that half the fees collected in each State with a reclamation program or on the lands of any Indian Tribe with its own reclamation program are to be allocated for the use of that State or Tribe.

Part of the remaining 50 percent is distributed to States based on their history of coal mining. The money is also used by the Office of Surface Mining to fund emergency projects and high-priority reclamation in States that don't have AML programs. Fees also pay collection, audit and administration costs.

The Surface Mining Act established priorities for reclamation funding. The highest-priority projects are those intended to protect public health, safety, general welfare and property from the dangers posed by abandoned mines. The Law requires that these priorities be reflected when projects are selected for reclamation.

Situations that pose imminent danger to people or property are classified as emergency projects and are dealt with as quickly as possible. Emergencies include landslides near homes and across roads, subsidence under houses and public buildings, mine and coal waste fires and open shafts near populated areas.

In some States, particularly those in the West, problems with abandoned non-coal mines are more numerous and severe than those caused by old coal mines. When a State or Tribe has certified that all abandoned coal sites have been reclaimed, OSM has the authority to allow AML funds to be spent to reduce threats to public health and safety from non-coal mines.

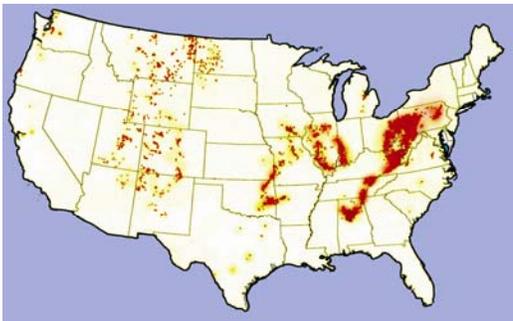
On-line Inventory Generates Reports, Enables Tracking Of AML Problems

OSM maintains an inventory of abandoned coal mine lands eligible for reclamation. The inventory is maintained and updated to reflect reclamation accomplishments.

The Abandoned Mine Land Inventory System (AMLIS) is accessible on the internet at:

www.osmre.gov/aml/inven/zintroin.htm

The system creates reports on abandoned mine land accomplishments and problems that still require reclamation. States and Indian Tribes manage their own data, entering it electronically into the inventory. In 2006 they added 533 records, modified 5,347 and deleted 818.



Distribution of abandoned mine land problem areas

As of September 30, 2006, the system contained information about 19,080 problem areas, mostly related to abandoned coal mines. Boundaries are determined by the extent of the effect of the problems on surrounding land and water, not just the size of abandoned mine sites.

The ABandoned Mine Land Reclamation Program has been responsible for the reclamation of almost 240,000 acres of high-priority coal related problems at a cost of \$1.7 billion.

Many projects have yet to be funded. The inventory of unfunded coal-related problems is reduced each year by State, Indian Tribe, and Federal reclamation projects. Unfortunately, new problems are discovered as development expands into old coal mining areas and as subsidence and mine fires occur. As of October 1, 2006, the inventory system shows more than \$11.4 billion of unreclaimed problems.



Pennsylvania

Luciana Bottoms West
Abandoned Mine Reclamation Project
Huntington County, Pennsylvania

Eliminating Highwalls, Refuse Piles Makes Room for 68,000 New Trees

Broadtop Coal and Mineral Company operated mines near Jacobs, Pennsylvania for about 23 years. By the late 1960s all mining ceased leaving unreclaimed pits, refuse piles, open mine shafts, and water pollution.

In early 2004 Pennsylvania's Bureau of Abandoned Mine Reclamation initiated a \$1.2 million project to address safety and water pollution

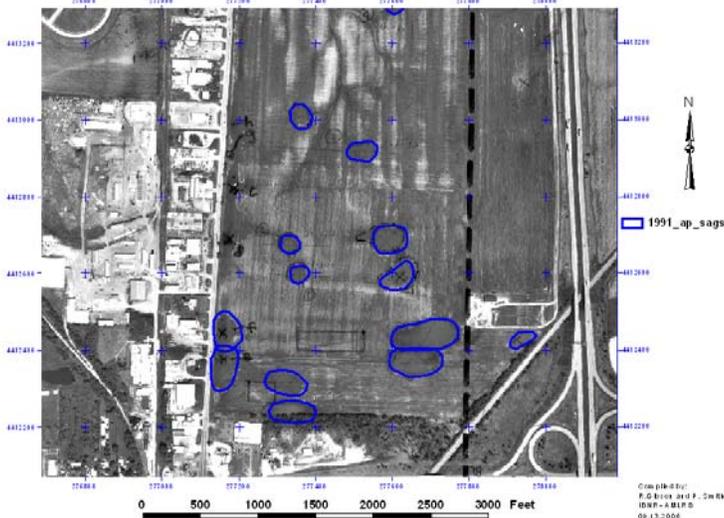
hazards at the site. The project reclaimed more than 8,000 feet of dangerous highwall covering 67 acres.

It also addressed three refuse piles, eight subsidence openings and shafts, and one mine portal. The graded areas were reclaimed and planted with grasses and more than 68,000 tree seedlings.



Grading prepares the Luciana Bottoms site for replanting.

1991 Airphoto Showing Surface Developments and Sag Subsidence



Springfield, Illinois

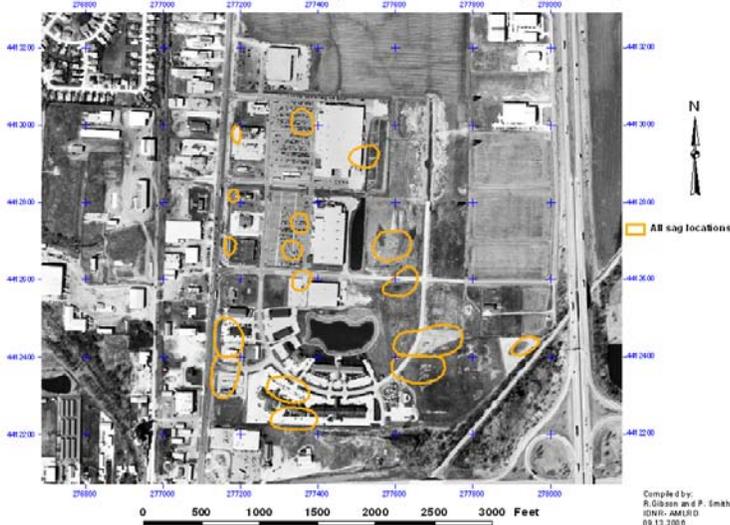
Urban Growth Meets Abandoned Mine Lands

The city limits of Springfield, Illinois, have expanded over old underground coal mines. Subsidence went unnoticed for decades and modern developments obscured all evidence of past mining activity including the old sinkholes.

In the late 1990s, several big-box superstores and a hotel were constructed over the underground mine. The areas in between the sinkholes could collapse at any time causing damage to buildings, injuring people, and/or disrupting public utility transmission. Abandoned underground mines are not in the inventory until subsidence occurs and causes an imminent threat to public safety or damages property.

Potential hazards exist in many communities across the country. Usually there are no limitations on land use or city growth in these areas and people living and working in the area have no awareness that a hazard exists until a potentially dangerous event occurs.

2005 DOQ Showing Surface Developments and All Suspected Sag Subsidence



Access to Information Is Key to Ensuring Safety

The States and OSM have begun efforts to make more information available to the public about the location of abandoned mines and the limitations that different mine features may present to new construction, or continued use of the lands. States have taken a number of different approaches to informing the public. While some States put together extensive map collections and make them available to the public, others publish informational material on what must be considered when developing near old mines.

Following are four initiatives taken by State and OSM AML programs to help reduce the growth of the AML Inventory and assist citizens in making better decisions.

Underground Mine Map Initiative

In 2004, OSM began working with the Mine Health and Safety Administration (MSHA) to provide funding to States to increase collection of underground mine maps and make them available to the public via computerized systems. In 2006, OSM provided \$344,989 through cooperative agreements to the States of Alabama, Colorado, Indiana, Iowa, Kentucky, Missouri, New Mexico, North Dakota, Pennsylvania, Virginia, and West Virginia, to continue this effort.

Coal Mine Geospatial Committee

Early in 2006, OSM established the National Coal Mining Geospatial Committee (NCMGC) to encourage increased use of geographic information systems by State AML and regulatory programs. A significant goal is to identify mining data layers of national significance, assist the States in collecting the data to complete those layers, and make the data available to the public. These data layers are a collection of information describing locations, boundaries, and attributes of mine features that will be important to the public in the future. In 2006, the NCMGC began working on two data layers, underground mine boundaries and surface mining boundaries. OSM expects to expand on additional layers in 2007. The goal is to make these data layers available to agencies and the public (with appropriate security controls) over the internet.

National Mine Map Repository

In 2006, OSM began a significant initiative to update and increase the capacity of the National Mine Map Repository located at OSM's Appalachian Regional Office in Pittsburgh, Pennsylvania.

AML Development Guides

Several State Abandoned Mine Land Programs have created and distributed guides to inform the public about what to consider when buying and building in areas affected by past mining activities.

Abandoned Mine Lands Fee Collection and Funding (Cash Basis)¹

State	AML Collections	State Share Distribution ²	Federal Share Distribution ²	Emergency Distribution ²	Clean Stream Distribution ²	Total Distribution ²
Alabama	4,806,648	1,171,473	1,471,442	400,000	173,884	3,216,799
Alaska	404,693	134,379	1,365,621	25,000	0	1,525,000
Arkansas	69,511	2,101	1,497,899	15,000	0	1,515,000
Colorado	7,010,099	1,702,602	717,106	0	0	2,419,708
Crow Tribe	2,224,248	516,431	0	0	0	516,431
Hopi Tribe	3,750,279	370,854	0	0	0	370,854
Illinois	5,748,808	1,882,718	5,451,169	950,000	373,713	8,657,600
Indiana	9,599,290	2,696,780	1,774,730	315,000	189,112	4,975,622
Iowa	0	1,898	1,498,102	60,000	121,635	1,681,635
Kansas	93,711	24,722	1,475,278	465,000	0	1,965,000
Kentucky	27,687,458	8,116,276	5,342,491	0	368,256	13,827,023
Louisiana	409,489	94,141	0	0	0	94,141
Maryland	1,334,005	246,254	1,253,746	0	117,383	1,617,383
Mississippi	350,718	0	0	0	0	0
Missouri	206,786	70,690	1,429,310	50,000	0	1,550,000
Montana	11,751,795	3,088,691	0	125,000	0	3,213,691
Navajo Nation	4,773,376	2,055,772	0	0	0	2,055,772
New Mexico	3,107,632	1,306,115	202,576	0	0	1,508,691
North Dakota	3,053,706	808,291	691,709	100,000	0	1,600,000
Ohio	5,245,842	1,569,467	3,341,637	2,300,000	267,790	7,478,894
Oklahoma	492,798	140,394	1,359,606	180,000	112,614	1,792,614
Pennsylvania	12,572,252	3,786,036	17,620,882	0	984,777	22,391,695
Tennessee	865,359	0	0	0	0	0
Texas	4,564,439	1,319,983	0	0	0	1,319,983
Utah	3,695,334	959,758	540,242	0	0	1,500,000
Virginia	6,008,273	1,768,049	1,639,778	1,700,000	182,336	5,290,163
Washington	1,391,665	0	0	0	0	0
West Virginia	35,486,909	8,563,809	10,127,088	4,500,000	608,500	23,799,397
Wyoming	146,286,681	29,469,486	0	0	0	29,469,486
Totals³	\$302,991,805	\$71,867,170	\$58,800,412	\$11,185,000	\$3,500,000	\$145,352,582

¹ Reporting on a "Cash Basis" refers to the recognition of revenue when it is received. Abandoned Mine Land (AML) fee collections are reported using cash basis criteria. AML revenue in OSM's 2006 financial statements may include other amounts.

² The term "Distribution" is now used instead of "Allocation." Allocation refers to the "pooling" of monies collected for the Fund. State and federal share distribution amounts are based on formulas and parameters provided annually by the Assistant Director, Program Support. The emergency program distribution amounts are based on estimates provided by the states and approved by the Deputy Director.

³ The "Totals" figures above have been adjusted for rounding.



Proactive Efforts Increase Efficiency of Fee, Debt Collection and Auditing

The Office of Surface Mining collects coal reclamation fees from coal mine operators through an efficient and effective reporting, audit and debt collection program.

OSM's proactive approach to collecting fees, by working cooperatively with coal mining companies in simplifying reporting and payment requirements, increases the efficiency of the program.

Specific steps taken to improve efficiency include:

- contacting new operators to explain reporting and payment requirements;
- sending pre-populated forms to all active coal mining companies;
- providing Internet based reporting and payment option; and
- providing guidance through handbooks, an 800 telephone line, e-mail, and during audits.

The percentage of fees collected in 2006 was 99%, the equivalent dollar amount was \$302,991,804.67.

Congress Appropriates AML Funds to States, Tribes for Reclamation

Congress appropriated \$145,352,583 from the AML Fund for FY2006 grants to States and Tribes to carry out reclamation programs. The Surface Mining Act provides a formula to calculate the distribution of AML funds to the States and Tribes.

Also, Congress established a minimum level of funding in the form of a supplemental grant where the annual grant distribution would otherwise be too small for the State or Tribe to administer an effective reclamation program. The States of Alaska, Arkansas, Iowa, Kansas, Maryland, Missouri, North Dakota, and Oklahoma received supplemental grants in 2006.

OSM makes additional grants of AML funds to eligible States to address locally-significant acid mine drainage problems. These "Clean Stream" grants are used by States as seed money to support partnerships with local governments, businesses and non-profit organizations to clean up acid mine drainage problems at significantly reduced costs. The resulting partnerships also encourage long-term commitment to projects by involving local people.

During 2006, OSM provided 11 States with \$3.4 million in Clean Streams funding. Since the beginning of the program in 1994, OSM has provided \$50.5 million for \$50.5 million for 178 projects, 134 of which had been completed.

Washington

Gaping Mine Shaft Sealed

In Washington a developer found a large open shaft during surveying activities. The shaft was not noted on mine maps in Washington State records used during the 1985 inventory. The shaft was sealed with a bat grate in a culvert in the summer of 2006. Each year about six new Abandoned Mine Land hazards are discovered in the State of Washington.





Navajo Nation

AML Funds Give Navajo Kids a Head Start

The Navajo Nation has excelled in its efforts to complete reclamation work and implement Section 411 of the Surface Mining Act, which allows construction of Public Facility Projects using AML grants.

The Beclabito Chapter Head Start School Building is an outstanding example of a Public Facility Project.

The facility design and construction demonstrate outstanding innovation.

Two large metal poles mark the entry way to the building ... they are designed to look like large color crayons and the colored label painted on them indicates the color of each "crayon" in Navajo.

Inside the building, floors, walls and window frames are colors used in a basic box of crayons. Tables, chairs, water cooler, sinks, windows and bathroom facilities are all at heights accessible to children.



Beclabito Head Start Public Facility Project —Notice the large metal crayons with color names written in Navajo.

AML Enhancements Give States Options

In 1999 OSM introduced an innovative way to increase reclamation of abandoned mine lands. Recognizing there would not be sufficient funds available to reclaim all abandoned coal mine lands, OSM revised its definition of government-financed construction associated with Abandoned Mine Land reclamation projects. The revision offers AML programs the ability to achieve significant costs savings.

The revised rule allows remnant coal removal to occur on abandoned mine land projects with the proceeds of coal sales going to offset the cost of the reclamation. Coal removal is strictly limited to an engineering necessity for reclamation and must be incidental to the reclamation project. State agencies must also concur there is little likelihood of the area being permitted and that environmental safeguards will be followed. Such projects have become known as AML enhancements and are particularly suited for coal refuse or gob piles, acid mine drainage, and subsidence.

Several State AML programs have been quick to implement the innovation. For example, Virginia has completed reclamation of more than 30 acres of barren and eroding coal refuse piles. Implementing the enhancement rule for these sites has resulted in a cost savings estimated at \$275,000.



Virginia
AML Enhancements
Middle Fork Gob Pile Project
Dickenson County

The AML Enhancements initiative made it possible for Virginia to eliminate hazards that might otherwise have gone unreclaimed, like the Middle Fork Gob Pile Project shown before (above) and after (below) reclamation.



Albert F. Stiffler AML Enhancement Rule Project before (above) and after (below)



Pennsylvania
Albert F. Stiffler AML Enhancement Rule Project
Government Financed Construction
Westmoreland County, Pennsylvania

Government-Financed Construction Solves Multiple Problems at AML Site

Pennsylvania's Albert F. Stiffler project involved reclamation of two contiguous areas; (1) an abandoned surface mine area with a highwall and spoil piles, and (2) an abandoned deep mined area with an old mine entry, a small flow discharge, and land subsidence.

One of the subsidence features captured surface flow from an ephemeral stream and directed the flow into the old underground mine complex.

AML funding restrictions and limited coal resources at the site meant that this site would not qualify to be reclaimed by the AML program or to be issued a re-mining permit. The Government-Financed Construction program provided an opportunity to achieve reclamation with little cost to the Pennsylvania AML program.

The receiving stream adjacent to the project is classified as a High Quality Special Protection watershed and flows into a county park that has a lake. The lake is a favorite spot for local fishermen. The reclamation activities reduced the sedimentation and mine drainage to the tributary—improving the overall water quality of the stream.

The completed project eliminated several hundred feet of dangerous highwall, re-graded and re-vegetated five acres of abandoned spoil piles and removed more than a dozen subsidence features by “day-lighting” portions of the abandoned underground mine.

A low-flow deep mine discharge was eliminated and flow was returned to the ephemeral stream channel.

Clean Streams Program Fights Mine Drainage

The Clean Streams Program began as the Appalachian Clean Streams Initiative in 1994. The program supports local efforts to eliminate environmental and economic impacts of acid mine drainage from abandoned coal mines. Its mission is to facilitate the efforts of citizen groups, university researchers, the coal industry, corporations, the environmental community, and local, State, and Federal government agencies in cleaning streams polluted by acid mine drainage. The program is carried out by State mine reclamation programs and nonprofit organizations with technical assistance and funding from OSM.



Virginia
Ely Creek
Aquatic Habitat Reclamation

Clean Streams funding enabled the Virginia Department of Mines Minerals and Energy and the US Army Corps of Engineers to construct treatment systems to dramatically improve water quality in Ely Creek, a tributary to the Powell River, a critical habitat for endangered aquatic species.

ABANDONED MINE LAND GRANTS¹ TO PRIMACY STATES AND INDIAN TRIBES FOR FY 2006

All numbers are rounded

State/Tribe	Subsidence Insurance 2006	10% Program Set-Aside 2006	Administration ³ 2006	Project Costs ⁴ 2006	Emergency ⁵ 2006	TOTALS		Program Staff 2006
						2,006	2005	
Alabama	0	0	789,722	2,323,220	400,000	3,512,942	3,504,804	17.55
Alaska	0	0	347,070	1,152,930	25,000	1,525,000	1,525,619	3.88
Arkansas	0	0	382,090	1,117,910	15,000	1,515,000	1,546,335	6.70
Colorado	0	0	1,152,000	2,037,091	0	3,189,091	2,415,000	14.00
Crow Tribe	0	0	266,048	472,322	0	738,370	575,409	3.55
Hopi Tribe	0	0	249,023	200,000	0	449,023	655,437	2.90
Illinois	0	733,389	1,328,210	8,946,001	950,000	11,957,600	9,224,124	24.00
Indiana	0	447,151	1,110,604	3,102,867	315,000	4,975,622	5,524,537	19.00
Iowa	0	0	211,105	1,410,530	60,000	1,681,635	1,720,949	4.10
Kansas	0	0	255,027	1,261,430	465,000	1,981,457	2,201,351	8.80
Kentucky	0	0	2,953,441	11,071,895	0	14,025,336	14,974,019	80.00
Louisiana	0	0	114,555	0	0	114,555	97,400	0.85
Maryland ²	0	258,000	428,565	1,081,398	0	1,767,963	1,419,130	3.50
Missouri	0	114,391	331,827	1,993,776	50,000	2,489,994	669,028	6.85
Montana	0	0	604,309	2,637,742	125,000	3,367,051	3,512,998	8.70
Navajo Nation	0	0	672,943	2,115,123	0	2,788,066	3,112,749	19.00
New Mexico	0	0	1,185,234	1,912,953	0	3,098,187	1,993,389	7.50
North Dakota	0	118,500	201,196	1,199,299	100,000	1,618,995	1,620,156	4.88
Ohio ²	0	538,861	1,216,611	4,304,909	2,995,588	9,055,969	9,025,307	43.44
Oklahoma	0	0	278,026	1,221,974	180,000	1,680,000	1,956,615	9.00
Pennsylvania ²	0	0	2,644,001	25,747,962	0	28,391,963	45,269,363	116.00
Texas	0	0	145,665	2,791,561	0	2,937,226	1,401,481	6.00
Utah	0	0	471,189	1,382,114	0	1,853,303	1,968,045	10.00
Virginia	0	30,000	720,962	3,096,033	1,700,000	5,546,995	5,831,344	16.00
West Virginia ²	0	500,000	4,985,000	16,105,238	4,500,000	26,090,238	26,169,736	56.70
Wyoming	32,879	2,946,948	1,335,780	33,614,861	0	37,930,468	38,064,655	13.30
Totals⁶	32,879	5,687,240	24,380,203	132,301,139	11,880,588	174,282,050	185,978,980	506.20

¹ Funding for these grants is derived from the FY 2005 distribution and funds recovered or carried over from previous years. Downward adjustments of prior-year awards are not included in the totals.

² These 10% set-aside amounts are for Acid Mine Drainage set-aside funding, rather than future set-aside funding.

³ Included in this category are costs for program support (personnel, budgeting, procurement, etc.), AML inventory management and program policy development. Indirect costs associated with the administration of the program also may be included.

⁴ The term "Project Costs" is now used instead of "Construction." AML simplified grants do not contain specific construction cost breakouts, but rather list all costs associated with a construction project as a project cost. This category contains non-water supply, water supply and non-coal project costs, and includes \$3,387,386 in funding for Appalachian Clean Streams initiatives.

⁵ This category contains emergency project, administrative and indirect costs.

⁶ The "Totals" figures above have been adjusted for rounding.

Tennessee

Wahoo Beach Reclamation Project
Van Buren County, Tennessee



View of the reclaimed area where once there were open pits.

Dangerous Highwall, Pits, Dump Eliminated Near Tennessee Highway

A 70-plus acre abandoned strip mine area consisting of two hazardous water bodies covering 13 acres and 2,000 linear feet of dangerous highwall was reclaimed through a cooperative effort between the State of Tennessee and OSM. A large section of the highwall was in close proximity to Tennessee Highway 111. The site was used by local residents to dump trash and swim in the large water bodies. In addition, four additional water-filled pits and 40 acres of acidic spoil material existed on the site.

OSM provided \$700,000 to the Tennessee Department of Environment and Conservation to remove the hazards at the site. The work began in the fall of 2005 and was completed in May 2006.



Kansas



Technical Assistance Will Enhance Recreation Area

OSM assisted the Kansas Surface Mining Section in the development of reclamation design plans and specifications for the Sportsman's Pit AML Reclamation Project. Preparations are being made to bid the project in late 2007.

The site is located in Cherokee County in southeast Kansas, and is used as a recreational resource by many area residents.

Sportsman's Pit also has roads within feet of submerged highwalls and deep water.

Kansas officials have negotiated with the property owners to mitigate the hazards and asked OSM to create a safe reclamation design while keeping the lakes open for use.

The final design includes relocating or improving parts of the roads which in part will enhance lake access while significantly improving visitor safety.



Kentucky

BELFRY SLIDE RECLAMATION
PIKE COUNTY, Kentucky

Homes Saved by Action on 'Challenging' Slide Problems

The Kentucky Division of Abandoned Mine Lands (DAML) recently completed the Belfry Slide Abandoned Mine Land Reclamation Project. The project is located in northeastern Pike County near the community of Belfry, near the Kentucky/West Virginia border.

Numerous complaints about landslides and drainage problems had been received from citizens over the past 10 years. A geotechnical investigation begun in November 2003 determined the problems were due to past mining in the area and were eligible for reclamation with AML funds.

The Belfry Slide AML project presented many challenges. The geotechnical investigation revealed abnormally deep colluviums on the steep hillsides near the Belfry community. The site is underlain by interlayered beds of sandstone, siltstone, and coal. Drainage from abandoned underground mine works in these seams was determined to be the cause of the instability in the area.

Four houses were being structurally damaged by the slide — one house had already been relocated and approximately 20 other homes were in danger of becoming inaccessible. During an interim emergency project, OSM built a 60-foot long retaining wall to prevent further encroachment by the slide.

The design called for building five retaining walls to stabilize the landslide and ensure the safety of the residences. Plans called for dewatering the mined area and constructing walls in series to minimize the chance of mass movement resulting in damage to the residences.

As the work was underway, an area below the road at one wall collapsed. DAML installed an additional concrete wall in order to stabilize the road and stream channel. When one residence began sliding down the hill, DAML placed a concrete wall approximately 80 feet long and 6 feet high below the residence to stop the movement.

The construction phase of the Belfry Slide AML Project concluded in mid-April 2006. The system of retaining walls stabilized the hillside and prevented further structural damage to four homes. The mine seam is being dewatered, minimizing further saturation of the deep colluvium soil.

The Belfry Slide AML Project is a superb example of the high priority problems that have been abated by the Abandoned Mine Land Program. The project saved four residences from almost certain destruction and maintained stability for 20 others that might otherwise have had to be abandoned.

1978-2005 Abandoned Mine Land Reclamation Accomplishments
 Priority 1 and 2 (Protection of Public Health, Safety and General Welfare) and Emergency Projects
 (Statistics do not include OSM emergency project accomplishments)

Measurement:	Miles	Acres							Feet			Number of Occurrences					
		Clogged Stream	Clogged Stream Land	Dangerous Pile & Embankment	Dangerous Slide	Industrial/ Residential Waste	Subsidence	Surface Burning	Underground Mine Fire	Dangerous Highwalls	Vertical Opening	Dangerous Impoundments	Dangerous Gas	Hazardous Equipment & Facilities	Hazardous Water body	Portal	Polluted Water: Agricultural & Industrial
Alabama	1	198	1,461	20	25	36	68	0	277,262	399	1	0	470	82	1,037	8	15
Alaska	0	0	6	0	4	0	21	0	11,190	41	4	0	1,485	2	43	0	0
Arkansas	1	0	828	0	31	15	4	0	65,931	112	1	0	2	83	28	0	0
California	0	0	0	0	0	1	0	0	0	42	0	0	0	0	34	0	0
CERT Tribes*	0	0	475	0	9	34	0	0	7,050	18	0	0	6	30	74	0	0
Colorado	0	0	44	0	10	56	30	184	51,992	4,238	0	0	14	0	3,087	3	0
Crow Tribe	0	1	58	23	0	16	0	0	2,267	5	1	0	32	1	15	3	0
Georgia	0	0	3	0	0	0	0	0	11,450	11	2	0	0	0	112	0	1
Hopi Tribe	0	0	0	0	0	0	0	0	11,662	2	0	0	8	0	9	0	0
Idaho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Illinois	21	1,291	329	4	72	100	115	0	62,351	1,226	7	22	361	9	199	11	1
Indiana	14	176	624	7	32	224	15	1	121,918	359	6	4	98	7	70	15	7
Iowa	9	728	847	0	18	4	0	0	62,966	22	3	0	5	27	1	12	2
Kansas	1	9	111	3	29	23	9	0	146,545	1,247	1	0	2	1	0	3	0
Kentucky	47	8,828	449	2,101	27	50	227	63	28,188	187	115	0	251	44	1,992	6	10,340
Maryland	5	66	272	68	35	15	1	2	44,430	5	3	0	25	20	41	84	41
Michigan	0	0	0	0	0	0	8	0	950	50	0	0	7	2	0	0	1
Missouri	11	1,514	572	0	71	6	19	7	73,702	182	6	0	28	11	35	34	15
Montana	21	96	174	1	407	554	305	69	25,560	622	3	1	248	1	1,100	17	12
Navajo Nation	0	1	665	7	6	12	3	0	109,586	382	4	0	5	0	870	19	0
New Mexico	2	21	10	0	0	35	35	32	280	993	0	0	17	0	531	4	1
North Carolina	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0
North Dakota	0	0	317	35	2	1,385	18	0	79,099	109	4	0	14	18	13	6	0
Ohio	38	5,542	96	455	34	158	154	3	69,164	254	8	4	64	14	364	53	285
Oklahoma	15	1	0	0	23	17	2	0	244,065	113	0	0	15	208	174	6	3
Oregon	0	0	0	0	0	0	0	0	0	3	0	0	3	0	12	0	0
Pennsylvania	103	223	627	63	39	2,458	123	1,024	885,855	545	667	0	341	120	293	27	240
Rhode Island	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0
South Dakota	0	0	0	0	0	1	0	0	135	1	0	0	4	0	5	0	0
Tennessee	2	147	533	68	14	6	28	0	52,970	11	3	0	31	67	192	7	14
Texas	0	0	1,461	0	0	19	0	0	52,665	368	0	0	0	17	66	0	0
Utah	14	9	356	3	0	185	43	20	3,425	1,220	1	19	206	2	3,146	3	0
Virginia	75	858	260	315	2	13	52	0	28,350	105	53	0	228	2	1,009	0	2,275
Washington	0	0	3	0	0	12	15	0	0	92	0	0	7	0	30	0	0
West Virginia	54	167	4,837	562	37	394	486	28	198,522	151	675	5	600	7	2,368	70	12,145
Wyoming	114	1,636	2,053	25	29	1,161	12	45	530,913	588	139	0	202	371	541	3	0
TOTAL	548	21,512	17,471	3,760	956	6,996	1,793	1,478	3,260,443	13,708	1,707	55	4,779	1,146	17,491	394	25,398

*CERT is the Council of Energy Resources Tribes: Blackfeet, Cheyenne River Sioux, Fort Berthold (Mandan, Hidatsa, Arikara), Fort Peck (Assiniboin and Sioux), Northern Cheyenne, Jicarilla Apache, Laguna Pueblo, Rocky Boys (Chippewa and Cree), San Carlos Apache, Southern Ute, Ute Mountain Ute, White Mountain Apache and Wind River (Arapaho and Shoshone).

1978-2006 Abandoned Mine Land Reclamation Accomplishments

Priority 3 (Environmental Restoration)

(Statistics do not include OSM emergency project accomplishments)

Measurement	Acres								Number		Feet	Gallons/ minute
	Bench	Industrial/ Residential/ Waster	GoB	Haul Road	Pit	Spoil Area	Slurry	Slump	Equipment/ Facility	Mine Opening	Highwalls	Water Problem
Alabama	23	15	216	2	0	9,726	5	9	8	50	32,435	379
Alaska	0	0	7	0	0	47	9	0	0	0	0	0
Arkansas	0	0	0	0	0	86	0	0	0	0	0	0
California	0	0	2	0	0	0	0	0	0	0	0	50
CERT Tribes	0	0	0	0	0	0	0	0	0	0	0	0
Colorado	3	6	162	0	131	829	0	0	7	18	2,028	1
Crow Tribe	6	0	35	12	32	27	0	4	0	2	2,245	0
Georgia	3	0	3	0	3	7	0	0	0	0	400	0
Hopi Tribe	0	0	26	15	10	10	0	0	0	0	51	0
Illinois	1	6	2,554	210	625	1,895	1,112	1	159	67	10,880	2,896
Indiana	0	108	1,521	227	376	2,257	1,102	4	211	28	14,976	5,105,428
Iowa	0	2	1	5	21	440	0	0	0	1	2,900	0
Kansas	0	0	89	0	23	316	10	0	1	0	3,200	0
Kentucky	564	0	233	0	4	820	66	5	61	69	2,240	60
Maryland	10	1	46	2	22	263	0	1	2	8	5,335	208
Michigan	0	0	27	1	1	10	0	11	1	0	0	0
Missouri	0	5	148	1	96	1,378	69	0	5	0	20,324	86
Montana	1	105	147	1	34	870	0	19	58	230	1,170	2,741
Navajo Nation	41	1	141	203	148	265	0	0	2	79	890	3
New Mexico	3	0	89	11	2	333	2	0	29	29	0	0
North Dakota	0	0	0	0	0	0	0	0	0	0	0	0
Ohio	2	0	197	0	19	425	0	0	3	19	9,620	100
Oklahoma	0	0	0	0	0	0	0	0	0	0	0	0
Oregon	0	0	0	0	0	0	0	0	0	1	0	0
Pennsylvania	0	0	67	0	116	2,695	1	27	22	31	8,258	270
Tennessee	76	1	67	8	114	678	0	4	15	3	3,230	360
Texas	0	0	8	0	0	552	0	0	0	0	0	0
Utah	4	7	255	4	8	55	1	16	64	0	550	20
Virginia	0	1	21	1	0	12	0	0	25	52	13,000	120
West Virginia	2	1	77	0	5	217	2	0	4	4	33,041	622
Wyoming	0	0	39	400	7,174	8,214	199	15	12	24	0	75
	739	259	6,178	1,103	8,964	32,427	2,578	116	689	715	166,773	5,113,419

*CERT is the Council of Energy Resources Tribes: Blackfeet, Cheyenne River Sioux, Fort Berthold (Mandan, Hidatsa, Arikara), Fort Peck (Assiniboin and Sioux), Northern Cheyenne, Jicarilla Apache, Laguna Pueblo, Rocky Boys (Chippewa and Cree), San Carlos Apache, Southern Ute, Ute Mountain Ute, White Mountain Apache and Wind River (Arapaho and Shoshone).

Emergency!



Over the years, the emergency program has been responsible for abating of hundreds of landslides, subsidence events, mine fires, refuse fires, mine related floods and mine blowouts.

Congress established Section 410, the “Emergency Powers” part of the Surface Mining Act to address the potential for any type of crisis resulting from past mining practices. Section 410 provides for immediate response to emergency situations related to mine hazards that may adversely affect life, safety and health when no other agency has the authority to act.

Under the Surface Mining Act emergency problems are defined as abandoned coal mine hazards that present an immediate danger to the public health, safety, or general welfare and are caused by coal mines abandoned before August 3, 1977.

Typically, emergency abandoned mine land problems include: landslides, open portals and shafts, subsidence, and waste bank and underground mine fires discovered near houses, roadways, and populated areas. Because health, safety, and property can be seriously threatened by Abandoned Mine Land emergency problems, rapid response is critical.

Jim Fulton, chief of OSM’s Denver Field Division, surveys the damage caused by mine subsidence to the driveway of a Marshall, Colorado, residence. OSM’s Denver Field Division reclaimed the pit quickly. Hazards like this can happen anywhere underground mining has occurred.



Not Much Fun Here

A huge subsidence void appeared in a high-density recreation area when the roof collapsed in an abandoned mine near Indiana Township in Allegheny County, PA. The resulting pit covered an area of approximately 2,400 sq. ft. with a depth of 60 feet. OSM’s Federal Emergency Reclamation Program Division responded by backfilling the void with durable rock followed by site restoration.

Since 1977, OSM has addressed 5,099 Abandoned Mine Land emergencies, while the States and Tribes have dealt with 2,764.



The "KY-06-025" landslide in Cranks, Harlan County, KY, before (left) and after (right) restoration.

Quick Action Stops Dangerous Slide

In April 2006 a sudden landslide occurred behind a home in Cranks, KY. The landslide damaged a carport and a utility building adjacent to the home. Large deposits of soil, rock, trees and mud were in the backyard and driveway of the home.

The landslide impacted an area of approximately 5,000 square feet. The cause was attributed to water from an abandoned coal mine saturating surface mine spoil on the hillside above the residence.

Investigation confirmed that the sudden event was the result of pre-SMCRA coal mining activities and that the landslide posed a significant threat to life, safety and health.

Within a week of the landslide event, exploratory and monitoring activities had been approved and reclamation design work began.

The unstable material was excavated and hauled to an approved fill location. An 80 ft. long, 10 ft. high reinforced concrete retaining wall was constructed at the base of the slope behind the residence. A number of surface and subsurface drainage control structures were installed behind the wall and on the hillside above the home.

The disturbed areas around the home were revegetated. The forest areas that had been impacted were replanted with a mixture of hardwoods, pines and ornamentals. All work was completed by July and cost approximately \$151,000.

Some States have voluntarily assumed responsibility for their emergency programs. In Fiscal Year (FY) 2006 the following States had emergency programs: Alabama, Alaska, Arkansas, Illinois, Indiana, Iowa, Kansas, Missouri, Montana, North Dakota, Ohio, Oklahoma, Virginia, and West Virginia. These emergency programs are Federally funded.

OSM provides direct emergency response on AML hazards in the States of California, Colorado, Georgia, Kentucky, Louisiana, Maryland, Michigan, Mississippi, New Mexico, Pennsylvania, Rhode Island, South Dakota, Tennessee, Texas, Utah, Washington, and Wyoming, as well as for all Indian Tribes.

During 2006, OSM handled 143 emergencies while the States and Tribes took care of 125.

St. Louis: Just Making Sure

The Missouri Land Reclamation Program received a complaint about a home's foundation shifting causing cracks in the outer shell. An investigation was initiated to confirm if the cracks were caused by mine subsidence or another mechanism. The area has a history of underground clay mining. However, exploratory drilling revealed neither coal nor voids. This information was useful to the homeowner for planning his own foundation stabilization measures.

Clint Bishop of the Missouri Land Reclamation Program (lower left) with crew drilling to look for mine voids.



Wyoming

Coal seam fire



In late December 2005 the Wyoming AML Program investigated a newly-discovered fire in an abandoned coal mine. It had already been burning for quite a long time, (left), but had not manifested itself to the surface. When it came through to the surface, it did so with a flourish (below).



First large subsidence holes opened around a power line, threatening to engulf the line.

Then the vent shaft burned through to the surface.



By good fortune the vegetation at the shaft was sparse and the breakout did not start a range fire.



The Wyoming AML Program took quick action to control the fire, and within a few weeks had the fire under control. More work will be needed before the project is complete, but the threat from the fire is now greatly reduced.

Gas Attack!

Agencies Respond To Dangerous Methane leak

The Illinois AML Emergency Program leapt into action when dangerous concentrations of methane gas were reported seeping into homes and sewer lines in the Illinois community of Belleville.

The problem occurred when a driller was boring a hole for the installation of a geo-thermal heating system and the boring intersected an abandoned underground coal mine filled with methane gas. The driller took immediate precautions and plugged the hole, however, the gas began to seep through the utility lines into homes and sewers in the neighborhood.

Emergency agencies responded by evacuating residents, installing a vent pipe, and permanently grouting the hole to ensure that gas could not reach homes or utilities. Fans were used to dilute gas concentrations around workers while a water mist was sprayed to prevent accidental electrostatic discharges.

Illinois Adam Drive Gas Leak Emergency Belleville, Illinois



Cooperative agencies respond to methane gas leak in Belleville, IL.



The area is sprayed to prevent accidental electrostatic discharges.



Pennsylvania Subsidence event Wilkes-Barre, Pennsylvania

Mine cave-in Forces family From home

On June 28, 2006, the residents of a mobile home in Wilkes-Barre, PA, were awakened by the sound of a loud crash. They discovered a large hole adjacent to the mobile home and evacuated the trailer.

OSM personnel reviewed mine maps, determined the subsidence had occurred over an abandoned mine and immediately began emergency procedures.

Subsidence damages a mobile home in Wilkes-Barre, PA.

Award-Winning Reclamation

2006 Excellence in Abandoned Mine Land Reclamation Awards

National Award

Montana Department of
Environmental Quality,
Abandoned Mine Section
Comet Mine and Millsite

One of the oldest mines in the Basin-Cataract Mining District, the Comet Mine was first mined about 1880, yielding copper, gold, zinc and silver while its mill served neighboring mines.



The mine was closed and dismantled in 1941, leaving a sterile stream, abandoned mine pits and eroded toxic waste piles as reminders of the past activities at the 35-acre site.

When reclamation began, heavy metals and metalloids including lead, zinc, copper, and arsenic had degraded water quality in High Ore Creek and significant amounts were being transported downstream to the Boulder River. In fact fish could survive only 72 hours in High Ore Creek. The area was a danger to wildlife, livestock, and people.



A cooperative effort by the State of Montana, Bureau of Land Management, twenty private landowners, Montana Conservation Corps, the Western Resource Institute, and several contractors resulted in the restoration of four miles of stream channel on High Ore Creek, and the reclamation of the Comet Mine and Millsite as well as other mines in the watershed.

National Award, Category II

Maryland Department of Environment,
Bureau of Mines
Shallmar Coal Refuse Site
Garrett County, MD

Mined first by pick and shovel, this area was active until 1977. Abandoned, deep mine portals were in danger of collapsing, abandoned highwalls were within 300 feet of a road and nearly 300,000 cubic yards of coal waste had been dumped downslope from the mine leaving an unstable refuse bank behind the town of Shallmar.

Acid drainage was uncontrolled and ditches had to be constructed to protect the town from refuse bank runoff during rainstorms.

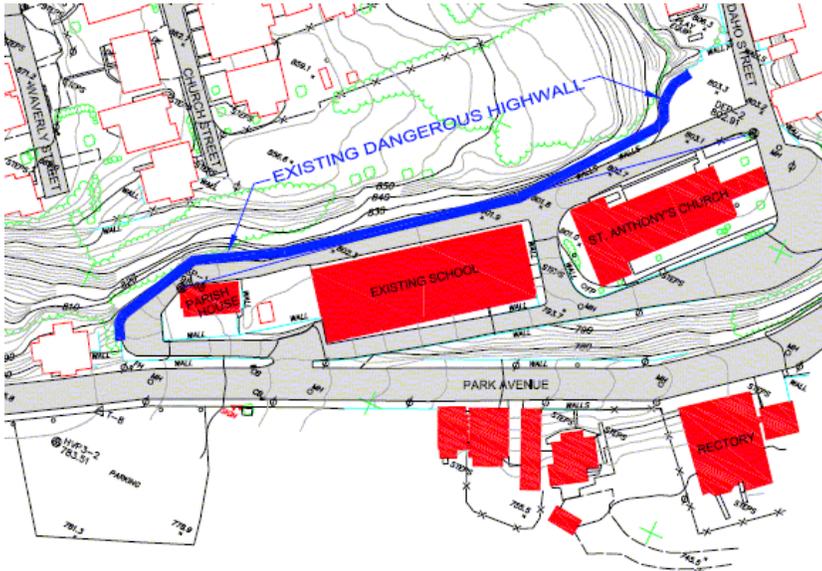
Using OSM Clean Streams and Watershed Cooperative funds as well as AML money, Maryland Bureau of Mines contractors sealed two mine portals, removed 140,000 cubic yards of unstable coal refuse, installed a water powered doser to reduce acidity and revegetated 17.5 acres with trees and grasses.



Crews work on steep slope during reclamation.



The large, dangerous gob pile (above) has been replaced by a pleasing, productive landscape.



Appalachian Regional Award

*Pennsylvania Department of
Environmental Quality
Bureau of Abandoned Mine
Reclamation*

**Monongahela South No. 1 Highwall
Mine, Washington County**



An 800-foot highwall from mining operations in the 1940s had become unstable and presented a severe landslide risk to the local community, including houses, a church and a school which had to be closed.

Innovation and expertise were required to stabilize the highwall and make the area safe for the public.



**Mid-Continent Regional Award
Iowa Department of Agriculture
and Land Stewardship
Trinkle Reclamation Project**

At this 100-acre site, a dangerous long-wall mine, toxic gob-piles and hazardous water bodies were replaced by beautiful grassland supporting a growing wildlife population. Acid mine drainage from the stripped land which clogged streams and impacted roadways, bridges and nearby farmland has been corrected.



**Western Regional Award
North Dakota Public Service
Commission
Garrison Abandoned Mine Land
Project**

Tackling a series of collapsing – and often hidden and forgotten — underground coal mines, the Public Service Commission developed a detailed, persistent approach to locating, mapping and filling underground mines before they could create dangerous sinkholes.

This proactive approach has resulted in safer conditions for ranchers, farmers, houses, city streets and modern highways located over abandoned mines.



2006 OSM
Fast Facts

1,446

students trained
in NTTTP courses.

350

students trained
in TIPS courses.

Technology



Members of the Hope Tribe use GIS technology to identify permit boundaries.

Technology Development and Transfer

"New capabilities emerge just by virtue of having smart people with access to state-of-the-art technology." ...Robert E. Kahn

Developing new technologies and making them widely available supports OSM's goal to strengthen the capabilities of the States, Tribes, and OSM staff to implement the Surface Mining Act effectively.

Technology Development and Transfer includes a number of successful partnership programs, including technical assistance, training, technology transfer and development — all of which enhance technical skills needed for government agencies to effectively and efficiently meet environmental and safety laws. Cost-effective compliance helps industry remain competitive with other energy sources. Helping industry achieve up-front compliance will reduce the need for additional regulatory resources.

OSM is now focusing on developing tools to improve mining and reclamation technologies nationwide.

Technology Transfer is accomplished through a

variety of activities. State technical representatives meet frequently with OSM regional staff to share resources whenever practicable to resolve regional technical issues. OSM sponsors or participates in interactive technical forums, computer applications workshops, and technical seminars to address mining and reclamation environmental issues. After coordinating the need of States, Tribes, and industry, OSM plans and presents technical forums.

OSM partners with the States to develop technology transfer priorities. The OSM national and regional technology transfer teams evaluate initiatives to encourage networking and information sharing that will result in program improvement or enhancement.

OSM's Technology Transfer activities bring a new approach to nationwide cooperation and customer service. They encourage the timely and efficient use of our natural resources while protecting the environment.

Congress Directs OSM to Coordinate National Coal Study

In the Consolidated Appropriations Act, P.L. 108-447, Congress directed the Office of Surface Mining to contract the National Research Council of the National Academy of Sciences to carry out a twenty-four month study on coal research, technology, and policy matters.

Congress indicated the need for involvement in the study by OSM, Department of Energy, U.S. Geological Survey, Mine Safety and Health Administration, National Institute for Occupational Safety and Health, Environmental Protection Agency and other Federal and State agencies.

The study is to review the following:

- (1) The importance of coal to the U.S. energy mix over the next 25 years, including the role coal plays in an integrated energy and environmental policy in order to develop a more comprehensive, strategic roadmap that builds on economic growth, fuel diversity, energy security, and environmental sustainability.
- (2) Coal reserve assessments based on recent trends in the coal sector and examine the current and future role of coal imports and exports.
- (3) The full range of local, regional, national, and global issues and challenges that lie ahead for the production and utilization of coal.
- (4) The categories of coal research currently being carried out in the U.S. and whether and how technology developments in other fields can be applied to the coal sector.
- (5) The priority needs for coal research, including in the areas of exploration, discovery, reserve assessment (including in terms of commercial feasibility for known reserves), extraction, coal preparation, delivery to market, waste disposal, reclamation, health and safety, community impact, environmental practices, education and training, and productivity.
- (6) The need for a broad-based, coordinated, multi-agency coal research and development program.
- (7) Options for supporting and implementing a broad-based coal research program, including approximate costs, and the relative roles and commitments of the public and private sectors now and into the future.

OSM and the National Academies entered into a cooperative agreement in July 2005. The NRC committee was formed in December 2005 and held five committee meetings during FY 2006 to gather information and prepare the report. The final information gathering meeting of the committee will be held in November 2006.

The committee's report is scheduled for completion in the summer of 2007.

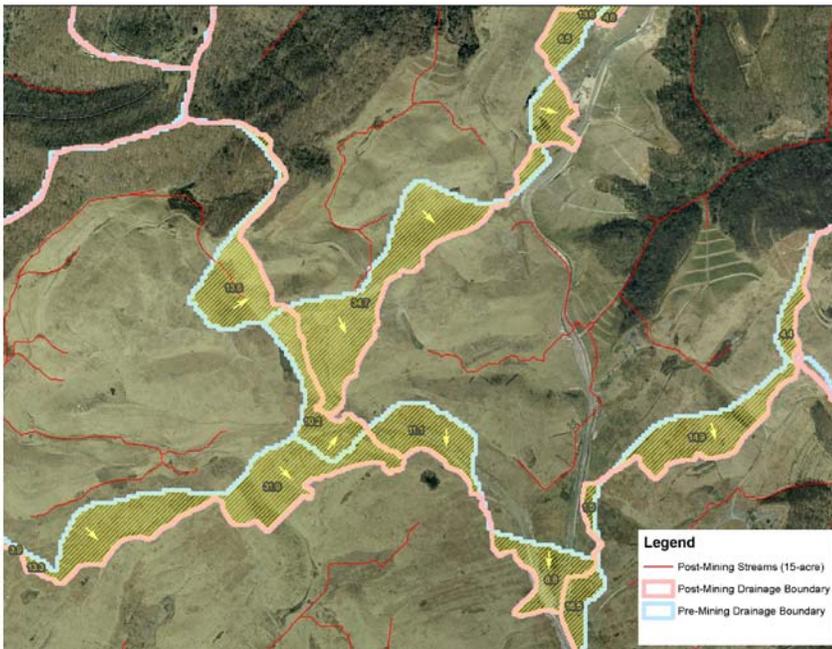
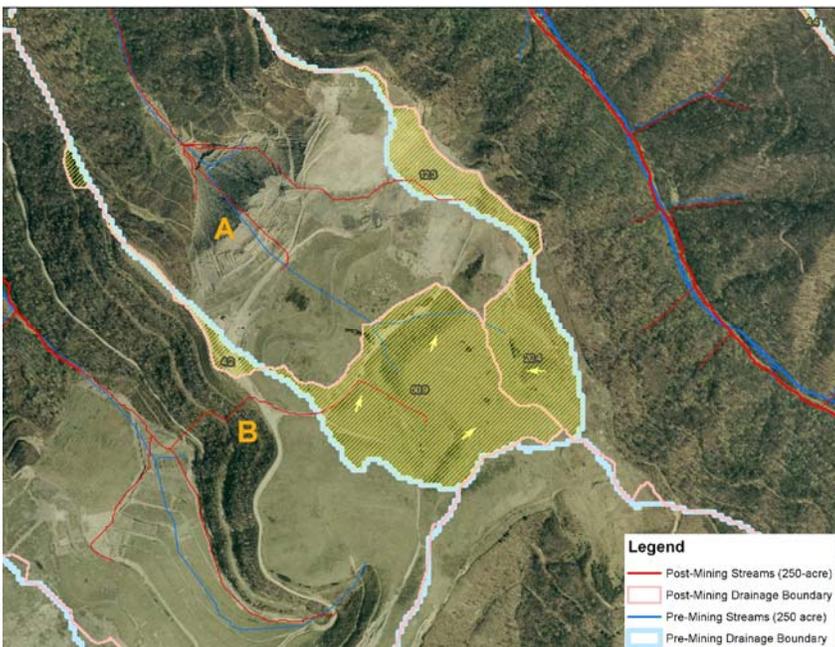


Photo showing shifts in drainage divides due to mining. Arrows indicate the direction of shift; labels indicate polygon areas, in acres.

Software Tracks Drainage Changes

Staff from OSM and the West Virginia Division of Environmental Protection evaluated the capability of Geographical Information Systems technology to characterize changes in drainage patterns due to surface mining activity. The study compared a variety of elevation data sources representing pre and post mining conditions for several test sites. The study also included sites where no mining had occurred as a control. ESRI's ArcInfo software, provided by OSM's Technical Innovation and Professional Services (TIPS), was essential for conducting data preparation and presentation. ESRI's model builder and spatial analyst extensions were used in the analysis of the landform drainage patterns. The software applications were essential in determining shifts in drainage due to mining.



Pre-mining drainage to the stream at point A that has been redirected to B, causing a 50 acre change in drainage area. Arrows indicate the direction of shift; labels indicate polygon areas, in acres.

Technology at Work:

Helping a Pennsylvania Community Study Solutions to Water Problems

Berlin, Pennsylvania's municipal water system faces two major problems in trying to boost water supply for the community.

First, Berlin pays 14 cents per thousand gallons of water obtained from the adjacent Susquehanna River Basin. Second, during extreme drought the available supply is barely enough for the combined needs of the Borough and a local business. Snyder, a potato chip manufacturer, uses more than 80,000 gallons per day. This is 18% of Berlin's total supply.

State and local officials asked OSM to evaluate the potential for using the discharge water from two nearby underground mine complexes to supplement the existing water supply. OSM focused on the quantity of water available including low-flow events, water quality and potability.

OSM's study yielded these recommendations:

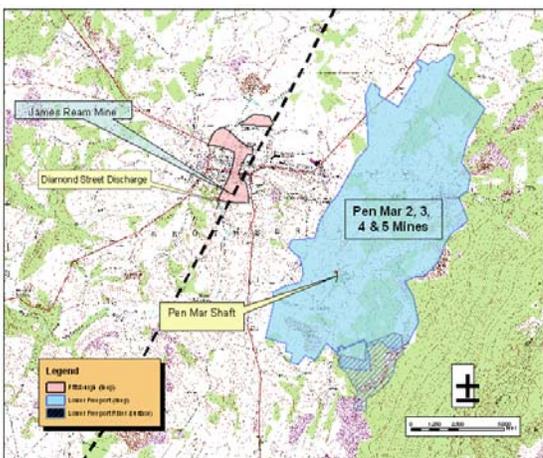
The first discharge point, known as Pen Mar Shaft, could provide the quantity of water Berlin needed. However, the water quality of the discharge requires treatment to meet drinking water standards.

The second discharge point, known as Diamond Street, meets primary and secondary drinking water standards. Unfortunately, it supplies a limited amount of water during low flow periods.

The Diamond Street discharge can be a water source for fire fighting, street cleaning, and/or irrigation of nonfood vegetation.

The Pen Mar Shaft discharge requires conventional treatment methods used for mine drainage except for sulfate. Sulfate would require costly reverse osmosis or less expensive dilution with a low-sulfate water source to achieve potability.

OSM has presented its final recommendations to the State, community and company officials.



Pen Mar project map



Pen Mar Shaft discharge

"AMDTreat" Does the Trick

Unique Software Estimates Mine Drainage Treatment Costs

In 2006 government agencies and mine water practitioners got an improved tool when a new version of "AMDTreat" was released.

The innovative software makes it possible to estimate costs to treat acid mine drainage (AMD). OSM partnered with the Pennsylvania and West Virginia Departments of Environmental Protection to release Version 4.0 of the popular program.

AMDTreat provides a variety of treatment options and performs economic analysis of each option. The program provides an effective decision-making tool in the industry.

AMDTreat estimates the cost of constructing and operating passive treatment systems such as vertical flow ponds, anoxic limestone drains, anaerobic and aerobic wetlands, and manganese removal beds.

It can calculate the capital cost of constructing chemical treatment systems for caustic soda, ammonia, pebble quick lime, and soda ash. It can also estimate a

number of ancillary capital costs, including building retention ponds, roads, land access and ditching and performs engineering cost analysis.

Annual costs for chemical reagent consumption as well as other sampling, labor, maintenance, pumping and sludge removal costs can all be studied using AMDTreat.

Version 4.0 gives users enhanced financial forecasting and recapitalization tools and the ability to model costs for multiple treatment structures (up to 99 each) of the same type in series or in parallel using different water parameters for sizing each structure.

The new software makes it possible to capture up to 1485 itemized costs (up from 15) and adds cost modules for oxidation chemical, Limestone Bed, and Bio-Reactor treatment.

To learn more, please visit the AMDTreat website (<http://amdtreat.osmre.gov>).

'TIPS' Provides Specialized Computer Support

"Technology made large populations possible; large populations now make technology indispensable."

John Wood Krutch

The Technical Innovation and Professional Services (TIPS) component of OSM provides specialized commercial hardware, scientific software, customized software training, and technical assistance to its user community.

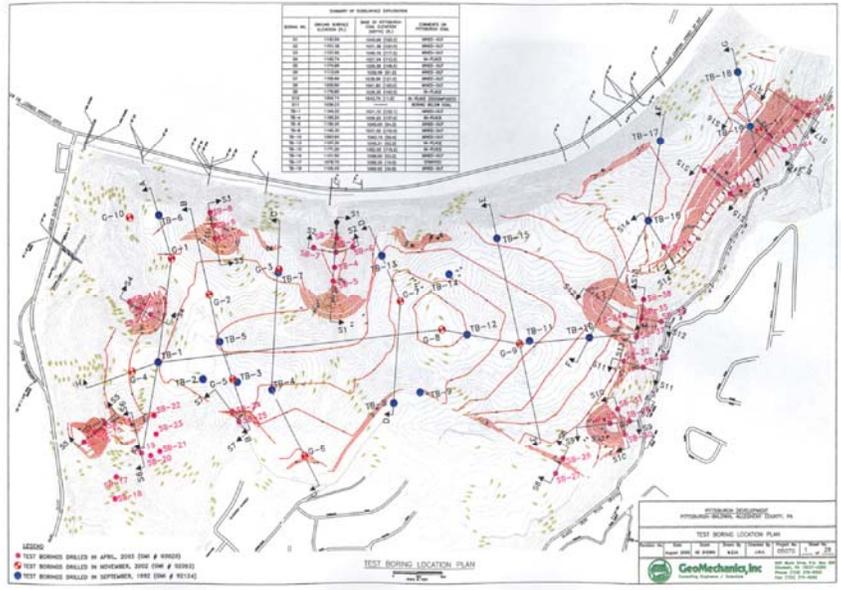
TIPS supports and enhances the technical skills that States, Tribes, and OSM offices need to operate their regulatory and reclamation programs, and to effectively implement the Surface Mining Act.

To better address customer needs, TIPS established technology workgroups in the fields of Mobile Computing, Computer Aided Drafting (CAD), Geographic Information Systems (GIS), Remote Sensing, Hydrology, and Technology Training.

TIPS continues to expand its ongoing mobile computing initiative by significantly accelerating delivery of mobile computing technology to users. Recently purchased hand-held GPS/GIS equipment, tablet computers, and sophisticated software and peripherals will enhance the ability of TIPS customers to take geospatial technology and data to the field.



An OSM employee uses the latest mobile computing technology to assess the suitability of a wetland wildlife mitigation site in Missouri.



Site layout for the Heights of South Hills Development Project

Specialized Software Models Slope Stability

In March 2006, the Office of Surface Mining and two Pennsylvania agencies partnered to use TIPS software to review a unique surface mining permit in an urban area near Pittsburgh.

The site had been previously surface and deep mined. The property owner wanted to develop the site into a race track facility and residential community. The site was redesigned for 17 fill areas, including eight large valley fills.

Engineers from OSM worked with geologists from the Pennsylvania Department of Environmental Protection and Bureau of Waterways Engineering Division of Dam Safety. The team evaluated a number of geotechnical aspects of the site including soil and rock

properties, soil borings, site layout, and surface drainage controls.

OSM engineers focused on slope stability of the cut and fill areas in the site, employing GALENA[®] slope stability software to analyze the site. The TIPS team furnishes GALENA[®] in its suite of software, and provides online and classroom GALENA[®] training.

GALENA[®] allows for simulation of geological, groundwater and external force conditions to analyze the stability of a modeled slope. The software easily allows the user to run many different types of analysis in minutes. The program developed tabular and graphical output that OSM engineers used to make recommendations about the slope stability of the valley fills.

Mobile Computing Takes Facts to the Field

Mobile computing devices and software allow inspectors to take maps and permit data to the field for review and verification of mining and permitting activities.

The TIPS CAD Team workgroup includes members from the States and OSM that partner to provide a variety of services to TIPS customers. All members are proficient in the Autodesk and Carson software provided by TIPS and continually review changes and enhancements to the software packages. New

software is also evaluated by the team to ensure that TIPS provides the latest advances in technology to its customers.

Team members oversee the distribution and provide installation directions for new or updated software. The team also creates, maintains and updates training materials for six courses in the TIPS Training Program. Other assistance is provided through online learning materials and tech support.

OSM employees presented a paper on "Take Autodesk Map[®] to the Field!" at the annual 2006 Autodesk User Conference. The conference provided learning opportunities on the latest Autodesk engineering tools and applications in a structured format. It also provided important information and tools that the TIPS CAD Team members use for the development and maintenance of TIPS training courses, and support of TIPS software applications.

OSM, States Build Inventory Of Underground Mine Maps

The National Mine Map Repository (NMMR) in Pittsburgh has become the prototype facility for archiving information on abandoned surface and underground mines throughout the United States.

Events like the 2002 Quecreek incident in Pennsylvania, in which miners' lives were endangered, have shown the hazards of failing to have accurate mine maps readily available.

The Repository collection currently contains about 139,000 mine maps. About 82,000 maps have been scanned and stored electronically. The Repository receives both digital and hard-copy maps from all sources and currently scans about 3,000 maps per year.

To meet the increasing need for mine maps, OSM has developed a five-year plan to improve outreach to map owners, improved technical capability for the electronic copying and storage of mine maps, and developing a web-based retrieval system for mine maps to improve access for the public and government agencies. Last year OSM invested more than \$400,000 in equipment.

A number of States have also been acquiring, preserving, and processing underground mine maps and developing their own map repositories and archives. Their methods for archiving and distributing maps over the internet serve as models for OSM and other States.

OSM Helps in Topographic Survey

The Missouri Department of Natural Resources, Land Reclamation Program asked OSM staff to help with topographic surveying in a coal mine site left partially unreclaimed due to the bankruptcy of the mining company. The goal was to obtain a topographic survey and at the same time document reclamation features that needed to be addressed. OSM staff successfully detailed the features of interest for completion of the project. OSM continues to work with State and Tribal partners on workshops, field demonstrations and training to increase the use of Mobile computing.

Applied Science Effort Supports New Technology

The Office of Surface Mining funded 12 applied science projects in 2006 as part of the agency's goal of fostering new technologies that promote on-the-ground mine land reclamation.

The Applied Science program is geared to meet the needs of State programs as well as serve national interests. Proposals are selected based on their adherence to regional special interest topics, technical merit, technology transfer potential, cost sharing, and overall technical quality. All projects are supported by a State Regulatory or Abandoned Mine Land Agency.

In Appalachia, the selected projects cover a variety of areas including: developing robotic

mapping of underground mines; a fast and reliable method to produce data on critical wildlife habitat and natural areas; and rapid geomorphic assessment technique to protect streams from sedimentation in a watershed. Other projects will evaluate the effectiveness of using water quality management controls called "Best Management Practices" in receiving streams; develop cost-effective *in-situ* mine water drainage treatment; and enhance the reforestation effort by evaluating the best soil preparation methods on reclaimed mine land for planting American Chestnut tree seedlings.

In the West, the projects will address the influence of topsoil handling practices and improvement of reestablishing native

vegetation; evaluate the placement of native shrubs on reclaimed coal-mined lands; and identify factors that limit the growth and survival of planted aspen trees on surface-mined land.

Three projects from the Mid-Century Region will develop a soil property based formula to promote productive agricultural soil; demonstrate acid mine drainage water treatment using sulfate-reducing bioreactor cell technology on low-flow, metal-rich acid seeps; and will improve the predictive tests and models to assess the long-term potential for acid generation at mines.

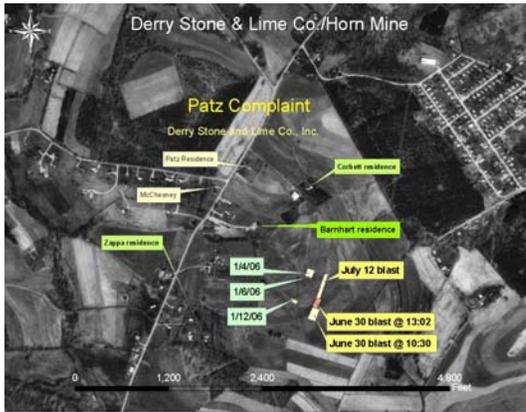
See "Reaching Out to Minority Schools," page 55



Part of a QuickBird Satellite image of a Centralia, WV, mine taken in 2006.

Satellite images give inspectors an "eye in the sky"

Satellite images of surface mines help mine inspectors plan field visits, provide supporting information for consultations with mine operators and aid in the preparation of maps for inspection reports. OSM's TIPS staff assist OSM regions, Tribes and States acquire high-resolution QuickBird satellite imagery, Light Detection and Ranging (LiDAR) imagery as well as aerial photography. In 2006, TIPS provided imaging and mapping services for all three OSM regions. In support of Surface Mining Act activities on Indian and Federal lands in the western US, imagery was procured for six separate mine sites. QuickBird satellite imagery was acquired for the States of Virginia and Tennessee. Prototype investigations are being conducted by OSM on selected areas in these States to determine the feasibility of using high resolution satellite imagery to identify Abandoned Mine Land sites, including Acid Mine Drainage locations and water quality trends, and land use classification. QuickBird satellite imagery was also purchased for a specific area for the State of Indiana. This imagery will be used by the State of Indiana to inventory Acid Mine Drainage seeps.



People living near mines often complain about ground and air vibrations, and fly rock.

OSM and Partners Work To Reduce Blast Impacts

Explosives are used to break the rock above coal in surface mines. Vibration energy is transferred outside the mine site and may impact adjacent property. Fly rock is also another blasting impact. These adverse effects beyond the permit boundary are the leading source of citizen complaints.

OSM partners with the States to bring new technologies for compliance to the field and to minimize the adverse effects of blasting. OSM partners with professional associations and other Federal agencies on training to improve the blasting performance and to ensure accurate accounting of explosive use.

Blasters at coal mines must be certified in the use of explosives and its adverse effects. OSM redesigned the certification test for use in Federal program areas. OSM and cooperating partners are developing a national tracking system for certified blasters. The database will allow OSM and its partners to track the current status of certifications and the performance of blasters.

OSM partners with the States and industry to train certified blasters in the state-of-the-art blasting and monitoring methodologies. Training topics include remote blasting machines, electronic detonators, GPS, seismographs, video cameras, public relations and forensic investigations.

OSM blasting specialists have been called for assistance when a unique or challenging blasting environment is encountered. These requests may include support in permitting, inspection, enforcement actions, and AML closure projects. Special projects have included ensuring rock slope stability, preventing fly rock in steep slope areas, special studies of vibration impacts on historic structures, evaluation of the impact of vibrations on endangered bats, and site evaluations on the cause of damage to public or private property.

Protecting Species Requires a Plan

OSM and the State regulatory authorities are required under the Endangered Species Act (ESA) to consult with the US Fish and Wildlife Service (FWS) and other State authorities regarding threatened and endangered species.

In 1996, FWS issued a Biological Opinion that concluded that coal mining operations and reclamation activities were not likely to affect the existence of threatened or endangered species. It further stipulated that it would not adversely impact designated or proposed critical habitats.

A requirement of the Biological Opinion was that regulatory authorities develop protective measures for threatened and

endangered species that might be affected by surface mining. OSM is working with the States to develop a plan for these species.

Guidelines for the development of protection and enhancement plans for the Indiana bat have been developed and are being implemented in Ohio, Tennessee and West Virginia. Plans are being developed in Indiana and Illinois.

A plan is also being developed in Tennessee for the Blackside Dace, a Federally threatened fish.

Guidelines are being developed in Virginia for the protection of endangered mussels.



(Left) A coal seam fire venting near a highway. (Right) A thermal image of the same area showing surface temperatures associated with the vent.

Thermal Cameras Highlight Hidden Hotspots

OSM has two thermal cameras (ThermaCAM™ E4) for use in locating coal seam fires. ThermaCAM is a hand held device that can also be used from an aircraft. In 2006, the camera was used in the States of Washington, Maryland and Pennsylvania to conduct site characterization on coal seam fires.

OSM staff completed mapping an underground mine fire in the Cougar Mountain Regional Wildland Park in King County, Washington, using the thermal camera and an additional helicopter-mounted thermal infrared camera. There was concern expressed from the Park about noxious gases being emitted from the ground fissures as well as the potential for ignition of a fire. Public safety issues in the park were a concern as there is potential for sudden and unexpected ground collapse in the immediate vicinity of the mine fire fissures.

Thermal mapping was ground referenced to the topography and mine maps, and aerial thermal infrared mapping geo-referenced the thermal images to the topography and the existing mine maps. The mapped areas established a baseline of fire locations and intensity.

OSM staff used the thermal camera in Pennsylvania to locate and record surface temperatures from a coal refuse fire that increased in area and intensity located near Wilkes-Barre, PA. Safety issues have become a concern as the fire threatened a sewer treatment plant and caused severe smoke conditions over a nearby highway.

Use of the thermal camera helps to determine and monitor site conditions and to direct and prioritize fire mitigation efforts.

TIPS Training Program

Technology With a Purpose

The TIPS Training Program trains hundreds of students every year in the use of high technology scientific and engineering tools. As part of the TIPS service, the TIPS Training Program is a collaborative effort between OSM, the States, and Tribes. Although the TIPS tools are off-the-shelf applications, the specialized training TIPS provides is tailored to Surface Mining Act application of those tools and represents the most requested and widely supported component of the TIPS service. This kind of tailored training can be found nowhere else.

In 2006 over 350 students attended 33 instructor-led TIPS classes, an increase of 35% students trained over last year. More than half of TIPS instructors are from State programs. A good example of this collaboration is the "Image Analysis for ArcGIS" course jointly developed and presented in 2006 by staff from the States of Oklahoma and Virginia as well as OSM personnel. Also in 2006 a basic GPS course "Introduction to GPS with Garmin eTrexVista C" was developed specifically for field personnel in both State and OSM offices to assist in their everyday field inspections.

Twenty-six instructor led courses incorporate the reclamation experience of its instructors and students to provide a unique shared training experience. Fifty-eight on-line courses provide students with just-in-time-training and prepare the learner for TIPS instructor-led GIS, Remote Sensing, and Mobile Computing classes. TIPS online courses provide students with additional choices and resources to enhance their expertise using TIPS software.

The training is delivered in small computer classrooms where students get personal attention and can apply the software to actual mining cases. The classes occur in specialized training centers located in all three OSM Regional centers. These centers are maintained by TIPS and equipped with state-of-the-art equipment. In 2006 the Western regional training center in Denver, Colorado, recently expanded its computer training room to accommodate 16 students (formerly 12).

Both of OSM's training initiatives, NTTP and TIPS, collaborate on shared training issues and incentives. They share representatives on their respective Steering Committees, coordinate course pre-requisites to best serve one another's classes, and share resources such as instructor succession planning, Continuing Education Units for classroom students, and implementation of the new learning management system, DOI Learn.



In OSM's Coalfield Communications training, students role-play crisis scenarios to develop their skills in communicating with the press and public.

OSM Training Program Focuses on Skills Needed by States and Tribes

OSM established its National Technical Training Program in 1985 recognizing the need for an ongoing educational program to increase the technical competence and professionalism of Federal, State, and Tribal personnel. The program delivers training related to permit approval, bond release, reclamation, and enforcement. The training received serves to update technical expertise and fosters consistent application of standards.

Training is provided in each of the disciplines involved in implementation of the Surface Mining Act, which include engineering, hydrology, blasting, agronomy, and botany. The program also ensures training is available to enable OSM and State staff to maintain the ability to gather and present information as an expert with the most recent data available. In addition, periodic training is needed to disseminate the latest technological and other changes in regulatory and associated reclamation activities.

All aspects of the program from identification of needs through course development and presentation are cooperative efforts of State, Tribal, and OSM offices. Of the 28 State and Tribal programs, 20 have fewer than 50 employees and another 5 have fewer than 100 employees. There is an economy of scale achieved by the pooling of State and Federal resources that allows instruction in a wide variety of subjects each year for all State, Tribal, and OSM programs.

NTTP Plans Improvements for 2007

NTTP has already received close to 2000 requests for spaces in FY 2007. It is anticipated that 100 requests for special sessions will be received, in addition to 300 requests for workshops, forums, and benchmarking. NTTP expects to exceed the GPRA goal of 1200 students and will work with the NTTP Steering Committee to determine exactly how additional needs will be met.

NTTP is working with the Interstate Mining Compact Commission on a mine mapping benchmarking and a workshop on electronic permitting. A pilot instructor refresher course, Master Instructor Forum, will be offered to improve presentation skills and to assure that instruction incorporates the latest technology. FY 07 will begin with a field-based Orientation Course for new OSM employees.

National Technical Training Program

Training Program Works Toward Helping Partners Achieve Goals

OSM's National Technical Training Program (NTTP) provides courses in a variety of technical fields such as hydrology, historic and archaeological resources that help OSM, State and Tribal personnel contribute to meeting joint Government Performance and Results Act (GPRA) goals. Providing on-the-ground environmental protection during active mining and remediation of abandoned mines is achieved by enhancing the technical skills of staff and increasing their knowledge of technical subjects related to mining.

In 2006, NTTP classes received program effectiveness ratings of 97 percent, exceeding the GPRA goal by 4 percent. OSM's NTTP is a model partnership with State and Tribal regulatory agencies, reclamation agencies, and the mining community. In addition, participating mining operations host field exercises that are critical to understanding on-the-ground operations. This joint effort exemplifies Secretary Kempthorne's 5Cs of *Cooperating, Communicating, and Consulting* with local agencies for the purpose of fostering good Conservation practices in the mining Community.

The program exceeded its annual GPRA attendance goal of 1200 students by training a total of 1446 students in 65 sessions of 45 different courses and workshops.

State students accounted for 74 percent of students; Tribal students for 4 percent; OSM students for 17 percent, and 5 percent for other participants.

Nearly 75 percent of students are State and Tribal staff. Regularly scheduled courses were held in 25 locations in 13 States.

Fifty-two regularly-scheduled courses were offered as well as four regional and national benchmarking forums and workshops. Five sessions were held to meet State and Tribal specific needs. Two new courses were developed.

In addition to regularly scheduled courses, in response to specific requests, NTTP offered a number of special course sessions. These included a session of the AML Realty Course for the Pennsylvania Department of Environmental Resources Watershed Academy; an Effective Writing course for OSM staff; AML Reclamation taught by Navajo staff for the Crow, Navajo, and New Mexico; and a Coalfield Communications Course for Virginia.

NTTP training corps offered a session of the AML Drilling and Grouting class in Manchester, England at the request and expense of the Coal Authority of the United Kingdom This class enables students to evaluate when the commitment of expenditures to drilling and grouting is the appropriate response to subsidence events.

New course offerings include the highly requested Coalfield Communications - *How to Get it Right*. The course consists of four modules: *Managing Media; Extending the Reach; Effective Outreach; Designing Effective Public Meetings; and Building Trust through Effective Communication*. Another new course was *Geology and Geochemistry of Acid-Forming Materials*.

Some training needs are best met in benchmarking forums and workshops where there are free-flowing discussions of unresolved issues and best practices and exchanges that promote transfer of new technologies and development of shared solutions. Some great benchmarking sessions include: *Underground Mine Mapping Workshop*, a special hands-on workshop hosted by Kentucky to demonstrate technology and practices used to acquire, digitize, store, and manage maps. Another workshop will be held in West Virginia in Fall 2007; *Abandoned Mine Land Inventory System (AMLIS) Workshop* that assists with the implementation of the Surface Mining Act programs to promote technology transfer; *Underground Mine Injection Workshop; Inspectors Workshop; Geomorphic Reclamation Workshop* that addressed geomorphic principles for landscape reconstruction and mined land reclamation; and *Keeping Current With Technology Workshop* that ensures that students receive the latest technical information.

NTTP COURSES AND ENROLLMENT

COURSE NAME	SESSIONS	Students
Acid-forming Materials AML Workshop	1	11
Acid-forming Materials: Fundamentals	1	29
Advanced Blasting	1	16
AML Design Workshop: Dangerous Highwalls	1	13
AML Design Workshop: Dangerous Openings	1	14
AML Design Workshop: Drilling and Grouting	2	33
AML Design Workshop: Fires	0	0
AML Design Workshop: Landslides	1	9
AML Design Workshop: Subsidence	0	0
AML Partnering Workshop	1	30
AML Realty: Special Session for PA	1	38
AML Reclamation and Health Physics	1	17
AML Reclamation Projects	1	13
AML Workshop: Subsidence	1	10
AMLIS: Entering and Retrieving Information	3	36
Appalachian Regional Field Issues Workshop	1	35
Applied Engineering Principles	2	34
Blasting and Inspection	1	37
Bonding Workshop: Cost Estimation	1	28
Coalfield Communications	4	122
Coalfield Communications Workshop	1	25
Effective Writing	3	60
Enforcement Procedures	1	19
Enforcement Tools and Applications	2	34
Erosion and Sediment Control	2	22
Evidence Preparation and Testimony	1	18
Expert Witness	1	14
Forensic Hydrologic Investigation	2	43
Geofluvial Workshop	1	119
Geology and Geochem of AFM	2	48
Geomorphology Inspectors' Workshop	1	19
Historic and Archeological Resources	2	31
Hydrology Workshop (MCR)	1	28
Instructor Training	1	15
NEPA Procedures	1	24
Passive Treatment	1	24
Permitting Hydrology	1	17
Principles of Inspection	1	30
Quantitative Hydrology	1	23
Roundtable on Financial Assurance (IMCC)	1	43
SMCRA and the ESA	1	14
Soils and Revegetation	2	45
Subsidence	2	33
Surface and Groundwater Hydrology	2	33
Underground Injection Workshop	1	48
Underground Mine Mapping Workshop	1	24
Underground Mining Technology	2	36
Wetlands Awareness	2	32
TOTAL	65	1,446

Continuous Improvement is Trademark

Continuing Education Units: NTTP reviewed a number of mechanisms to offer Continuing Education Units (CEUs) to students. George Mason University (GMU) was selected as the best vehicle. Students can obtain certificates of completion from the University for a nominal fee.

Instructor Advisory Council (IAC): Instructors formed a council to enhance the quality of instruction. The (IAC) was formed in June 2006 and will advise NTTP and TIPS training programs on issues like developing a succession plan since 40% of instructors will retire within 3-5 years. The IAC began a review of courses in all Career Series (e.g., Inspection, AML, GPS, Physical Sciences) to assure that students receive the best possible curriculum.

OSM Committed to Drafting Rules on Placement of Coal Combustion By-Products

OSM is committed to drafting regulations on the use of Coal Combustion By-Products in reclaiming mines now that a review of the subject by the National Academy of Sciences (NAS) has been completed.

In early 2004, Congress directed the Environmental Protection Agency to fund a study by the NAS to examine the health, safety, and environmental risks associated with using CCBs in the reclamation of active, abandoned, surface, and underground coal mines.

Coal Combustion By-Products (CCBs) include the non-combustible portion of coal and residues from various air pollution control technologies that remain when coal is burned to produce electricity. The amount of CCBs produced annually is currently more than 120 million tons.

Some CCBs can be used commercially in engineering applications or products like cement or wallboard. The remainder must be placed in landfills, surface impoundments, or mines. CCB mine placement can assist in meeting reclamation goals at active coal mines and enhance the reclamation of abandoned mine lands. Such placement is currently regulated under either or both the Surface Mining Control and Reclamation Act of 1977 administered by OSM, and the Resource Conservation and Recovery Act of 1976. The solid waste rules under RCRA were written by the Environmental Protection Agency (EPA) but are administered by State Solid Waste Programs.

OSM has taken an active role in promoting technological advances and research related to the placement of CCBs into mines. In doing so it has worked with the EPA, the Interstate Mining Compact Commission (IMCC), the Department of Energy and university researchers.

The NAS study mandated by Congress examined the health, safety, and environmental risks associated with using CCBs for reclamation in all major coal basins. The study was released in March 2006. Among the findings of the report are that OSM and the States that implement the Surface Mining Act should take the lead in addressing the report's recommendations.

Following the release of the National Academies' report, OSM reviewed the committee's findings in order to plan its next actions. OSM also met with EPA and the IMCC as well as other State regulatory and AML programs to develop detailed plans including any necessary regulatory or oversight proposals.



Underground Injection Pipeline, West Virginia

Underground Injection Workshop

OSM's Appalachia Technology Transfer Team conducted a workshop in July 2006 to discuss injection of impoundment slurry into mine voids. Participants included State and Federal permit reviewers and managers, and experts who described the environmental transport and fate of injected slurry. Presentation topics included regulatory requirements, chemical composition, classification, and groundwater monitoring and disposal methods. There are over 600 impoundments under the jurisdiction of the Mine Safety and Health Administration. The impoundments have inherent environmental and safety concerns. OSM's efforts will continue to evaluate alternative disposal methods.



Information, Please

Last year OSM's Technical Library responded to more than 600 requests from State regulatory agency staff, other Federal agency staff, citizens, coal industry, consultants, and academia in addition to filling 200 requests from OSM staff. The library's collection has been enhanced with more than 200 new books and more than 1600 current issues of journals and periodicals.

Group Working to Standardize Geospatial Mapping

Data Exchange Could Reduce Environmental Impacts, Speed Rescues

OSM has established a task group to develop standards for exchanging geospatial data about coal mines.

Standardizing the way geospatial data is exchanged will result in better enforcement of mining laws, faster response to mining-related emergencies and improve protection of the environment and public from the impacts of coal mining.

Geospatial data is used to pinpoint the location of natural or man-made features on, below or even above the earth's surface. In particular, the boundaries of surface and underground coal mines can be mapped precisely in three dimensions and expressed as data. Standardizing the way such geospatial data is expressed will enable the data to be exchanged quickly and accurately between agencies using different computer software.

Standards developed by the task group could ultimately help different enforcement agencies cooperate to reduce environmental impacts outside of mine boundaries or guide the efforts of rescue workers trying to reach miners trapped in an underground mine.

The Coal-Mining Spatial Data Standards ASTM Task Group will develop voluntary standards for the exchange of coal-mining spatial data among State, tribal, and OSM offices, as well as the coal-mining industry and the public. Standards will be developed in line



with procedures of the American Society of Testing Materials (ASTM) International, an organization which develops and provides voluntary consensus standards for a great many technical applications.

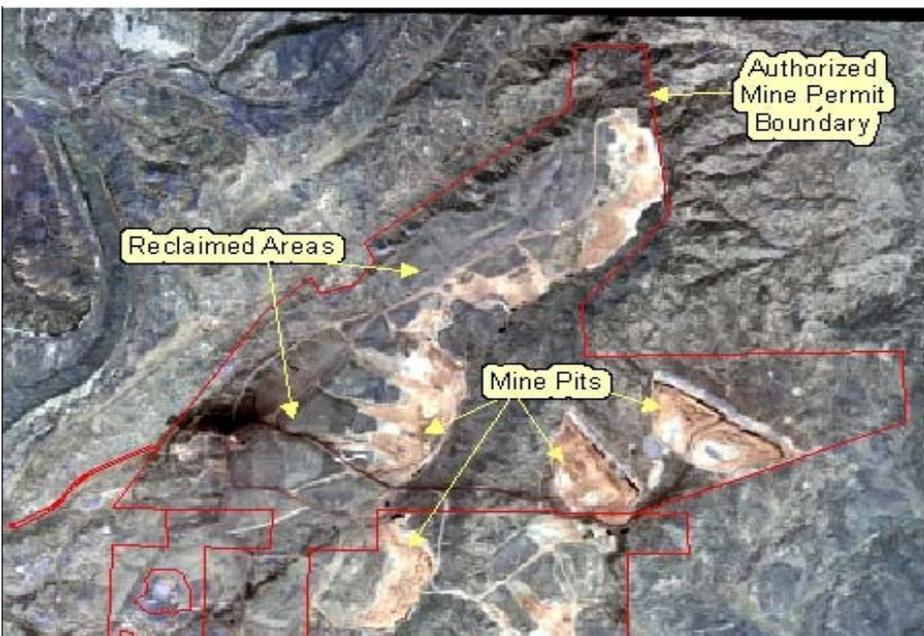
Members of the group are volunteer

representatives of State coal-mining regulatory programs, OSM offices, the Mine Safety and Health Administration, the coal-mining industry and the general public. The group will be supported by OSM's Technical Innovation and Professional Services (TIPS) program, which provides advanced engineering and scientific software to States, Tribes and OSM staff involved in regulating coal mines and reclaiming land disturbed by mining.

"Establishing agreement among all our business partners concerning the coal-mining geospatial data we create, use, and exchange is fundamental to improving our understanding," according to Billie Clark, Jr., chief of OSM's Technology Management Division. "It will help us better address and resolve a variety of problems associated with coal-mining and reclamation operations. To establish coal-mining geospatial data standards that are recognized by both ASTM International and the Federal Geographic Data Committee will indeed be to have accomplished a first."

The ASTM standards-development process is transparent and open to all who would like to participate in it. The task group is seeking to identify public-interest groups and industry representatives that want to contribute to standards development specific to coal-mining geospatial data.

More information is available at www.astm.org.



Geospatial permit boundary overlaid on a satellite image, McKinley mine, western NM. Once geospatial data standards are established, OSM will be able to meld together mining-boundary data from Federal, State, and tribal sources. With this data set, applications can be developed that will allow any interested party to create maps, by means of an interactive web interface, like the one shown here.

20
new watershed
cooperative
agreements.

22
watershed
interns.

Partnerships



An oak seedling appears to be thriving on reclaimed mine land. The Appalachian Regional Reforestation Initiative is a partnership between OSM, states, mining operators and conservation groups to promote planting of trees on mined lands using techniques shown to encourage tree growth.

Partnerships in Action

Working Together to Get a Big Job Done

It was inevitable that the Office of Surface Mining would be an agency firmly rooted in and dependant on the concept of *partnership* to accomplish its assignments.

In drafting the Surface Mining Act, Congress set a mammoth task —repairing the 300-year legacy of destructive mining practices and preventing future damage — then clearly expressed the preference that the job be done not by a large Federal agency but by the States and Tribes with Federal help.

This arrangement requires the Federal Government to rely on the States and Tribes for the on-the-ground effort. The States look to the Federal Government for resources they can't provide themselves, including funding, training and technology transfer.

After a rocky start, that forced interdependency shaped a highly cost-effective program that has steadily increased protection for people and the environment from mining impacts for almost three decades.

Today, through innovative programs that have grown out of experience, the partnership approach has expanded to include industry, local government, communities, citizen's groups, schools and regional and national conservation organizations. Each has something to contribute and something to learn.

OSM works to be an enabling agent, finding opportunities to bring partners together to solve problems and providing the support and tools they need to get a very big job done.



Students measure tree growth on reclaimed mine land.

Watershed Cooperative Agreements Mobilize Communities

In 1999, the Office of Surface Mining began the Watershed Cooperative Agreement Program (WCAP), part of the Clean Streams Program.

The purpose of the WCAP was to assist local not-for-profit organizations, especially small watershed groups, through cooperative agreements as the funding mechanism for Acid Mine Drainage remediation.

One of the criteria to qualify as a recipient for funding was for the watershed organizations to have other partners contributing either funding or in-kind services.

Since implementation of the WCAP, OSM has awarded 161 cooperative agreements and amendments to existing cooperative agreements totaling \$14,068,665 with 92 projects having been completed. During

FY 2006 20 new watershed cooperative agreements were awarded totaling \$1,556,475 and one amendment to an existing project for \$43,525.

Agreements are normally limited to a maximum of \$100,000 and are used primarily for the construction phase of the projects; however, administrative costs associated with the completion of a project are also allowable.



Volunteers help stock Quemahoning Creek at left. At right a fisherman shows off the result. (Photos courtesy of Len Lickvan)

Life Returns to Damaged Quemahoning Creek

Acid Mine Drainage discharge from coal mining operations conducted between 1909 and 1946 polluted Pennsylvania's Quemahoning Creek and wiped out its aquatic habitat. Due to the disastrous effects of the discharge, a segment of the Creek had not been fished for over a 100 years.

Funds to initiate the Boswell Remediation Project on the Quemahoning Creek were generated through a collaborative effort between OSM, the Pennsylvania Department of Environmental Protection, the Southern Allegheny Conservancy, Somerset County Conservation District, local sportsmen's club, and Reliant Energy. The project involves the treatment of the

discharge to Quemahoning Creek, relocation of threatened plant species, and water quality improvements in the watershed.

The project results are one of the most definitive measures of success for a mine drainage treatment system in the area. Approximately 3,000 trout were successfully stocked in a four mile section of the Quemahoning Creek that is located downstream of the Boswell project site.

In addition to the revitalization of habitat, water quality indicators have improved dramatically to enhance recreational use and to provide a resource for public water supply.



Acting OSM Director Brent Wahlquist checks the growth of newly-planted hardwood seedlings at a West Virginia mine site.

Reclaiming the Future

*OSM is Helping the
American Chestnut
Regain its Forest Throne*

"This partnership reflects our belief that reclamation should be more than damage-control. It should aim to improve the environment."

--Secretary of the Interior Dirk Kempthorne



American Chestnut Leaves, Burr and Nut
Drawing by Susan B. Riley
Courtesy of The American Chestnut Foundation

OSM is working in partnership with the American Chestnut Foundation (ACF) and the Appalachian Regional Reforestation Initiative to combine reclamation of mine sites with restoration of the American Chestnut — the tree that was once “king of the eastern forests.”

The agency has also provided a grant to Ohio University to evaluate the most suitable soil preparation methods for reclaimed mine land for planting blight-resistant American chestnut seedlings.

The American Chestnut at one time dominated eastern forests, representing a quarter of the trees from Maine to Florida and west of the Ohio Valley. The nuts were shipped by the boxcar load to large cities where they were famously “roasted on an open fire” by street vendors.

The tree was an economic powerhouse for other reasons. A hardwood, the lumber was a favorite because of its natural resistance to decay and insects. Its beauty and strength made it a favorite for construction and furniture making. Wildlife, including, turkeys, deer and birds feasted on the plentiful nuts.

Despite all its strengths, the American chestnut was no match for a fungus from Asia. From an estimated population of 4 billion in the early 1900s, by the 1950s all that remained were a handful of trees, many deformed to scrub-like appearance. Now, the American Chestnut is just few trees shy of being extinct.

The American Chestnut Foundation has been working for more than 25 years to develop a blight resistant American Chestnut it hopes will restore the tree to its place as monarch of the eastern woodlands.

To accomplish this, the ACF started by crossbreeding American chestnuts to chestnuts from Asia, where the blight originated and where trees have developed a resistance. These hybrids were then bred back to American trees again and again to achieve a 15/16 American Chestnut retaining only the blight resistance of its Asian ancestors. It takes nearly 20 years of continuous crossbreeding just to get a resistant American Chestnut that qualifies to be a “parent.”

“Properly reclaimed using sound science, mined land can produce healthy trees with much higher growth rates than un-mined land. Reforestation not only sequesters carbon, promotes biodiversity and restores the economic value of forests, but it also increases water filtration and reduces runoff and flooding.”

Brent Wahlquist
Acting Director, OSM

Once they have parent trees, ACF’s next goal will be to collect thousands of seeds for use in the reforestation effort. But thousands of seeds and seedlings are of little use if the hundreds of acres needed to support them aren’t available.

OSM oversees the reclamation of surface coal mines, many located throughout the American Chestnut’s former kingdom. Coal mines reclaimed under the oversight of OSM and its State partners offer several advantages for large scale chestnut repopulation according to Patrick Angel, an OSM forester.

“These sites are perfectly placed to facilitate a widespread reintroduction of the American Chestnut to this area of the country,” said Angel. “Because the sites are surrounded by millions of acres of forest, the wildlife will spread the American chestnut seeds from these reclamation areas to neighboring forests,” he said.

To boost the tree’s comeback chances, OSM is turning to another of its partners, the Appalachian Regional Reforestation Initiative (ARRI). ARRI brings together academics, foresters, concerned citizens, government agencies and coal industry officials to develop the most successful practices for reforesting reclaimed mines.



“Tree Cookies” tell the story

These cross sections were taken from trees of the same age. The section at lower right shows tree growth under normal soil conditions. At lower left is what happens when soil is packed tight on a reclaimed mine site, inhibiting tree growth. In back is an example of what can happen when soil is loosely compacted according to guideline of the Appalachian Regional Forest Initiative.



“From Little Acorns...”

Students get ready to plant seedlings on mined land at an ARRI Arbor Day event in Kentucky

ARRI merges the findings of leading scientists with the real-world experience of practicing foresters, land owners and coal operators to ensure that the best practices are used in reforesting former surface coal mines.

“Our experiments show that the American Chestnut grows very fast on mine spoil when prepared properly – which might not be the preparation used in the past,” Angel said.

As an example, traditional mine reforestation called for the soil to be heavily compacted and then a heavy bed of grasses to be put down on the site. This was done to prevent water runoff. However, ARRI’s research has found that trees struggle to send down their roots in the overly-hardened ground. While its roots are struggling to grow, the tree is overwhelmed by the thick grasses that are competitors for nutrients.



Instead, ARRI research has found that restricting both the compaction and the grass seeds ultimately ensures that the American chestnut – and many other tree species – are not overwhelmed by competition for resources.

Not pretty

The rough look of loosely-packed soil on a reclaimed mine site looks unfinished and undesirable to some, but trees love it.

“Using this approach, trees not only grow faster than using traditional reclamation techniques, but they grow faster than is seen in the natural reforestation process,” said Angel.

“The number of blight-resistant American Chestnut seedlings is extremely limited,” Angel explained. “That makes every seedling critical. We have to give every plant the best possible shot of thriving.”

“This is exciting,” said Angel. “We’ll see the American Chestnut in our forests in our lifetime.”



Tichnell treatment process - Steel slag leach beds are used to increase alkalinity as water passes.

West Virginia

Partnership Aims to Remove Stream from Impaired List

The Tichnell project is an abandoned coal mine that contains toxic spoils and Acid Mine Drainage seeps. The property is located in the Sovern Run watershed of Big Sandy Creek. In an effort to control and reduce pollution entering Sovern Run from this site, a partnership was established between Friends of the Cheat (a local watershed group), OSM, the National Mine Land Reclamation Center and the West Virginia Department of Environmental Protection. The purpose of the Partnership is to acquire funds for the design, construction and implementation of a passive treatment system and to perform project oversight.

It is estimated that the treatment system will reduce acid load by approximately 96%. The system's discharge will be used to neutralize acidity downstream. In addition, the treatment system will reduce metal concentrations drastically.

The ultimate goal of this project will be to get Sovern Run removed from EPA's list of impaired streams.

Ohio

Fish Return to Little Raccoon Creek

Little Raccoon Creek in Ohio is a water body severely impacted by Acid Mine Drainage. The creek is a 36.5 mile long tributary to Raccoon Creek.

Partnership efforts between the State of Ohio, EPA and OSM generated 4.7 million dollars in funding for seven restoration projects. The restoration work consists of combinations of passive treatment systems and land reclamation. Biological sampling performed prior to the initiation of the restorative efforts

indicated little to no biological activity near the mouth of Little Raccoon Creek.

Recent sampling in the same location indicated a substantial increase in biological activity. Sampling results show 123 fish of 16 species. Included in this group are spotted bass, a desirable sport fish.

The combined projects have allowed this once lifeless stream to meet EPA's warm water habitat standards.

Pennsylvania

Cessna Run Project Dedicated

On August 22, 2006, partners and friends gathered to dedicate the Cessna Run AMD treatment project in Pennsylvania.

Cessna Run is a tributary of Little Mahoning Creek heavily impacted by high concentrations of dissolved aluminum from mine drainage. OSM partnerships helped establish a passive treatment system that processes an average of 176 gpm and provides an effluent discharge free of dissolved aluminum. The system has also improved indicators of water quality downstream, where 114 fish including native and stocked *Brook Trout* and *Mottled Sculpin* have been identified.

The Cessna Run Partnering coalition includes: Indiana County Conservation District, Little Mahoning Creek Watershed Association, Ken Sink Chapter of Trout Unlimited, Western Pennsylvania Coalition for Abandoned Mine Reclamation, Pennsylvania Senior Environmental Corp, Penns Corner Conservancy, TJS Mining Company, Pennsylvania Game Commission, Pennsylvania's Growing Greener Program and OSM. This project reflects the positive impacts Partnership outreach programs are having throughout the area.



Dick Pardee, President of the Little Mahoning Creek Watershed Association, releases Eastern Brook Trout into Cessna Run located downstream from the Cessna Run project site.

Partnership begins its first project

Montour Run Watershed dedicated its first AMD passive treatment project in Allegheny County, Pennsylvania. The discharge from the project spoils area is net alkaline, allowing a relatively simple treatment process using wetlands and ponds.

A cooperative partnership was established between the Pennsylvania Department of Environmental Protection, Imperial Land Corporation, Stream Restoration Inc. and local property owners.

Water sampling results indicate approximately 98% reduction in total iron concentration. The project is an essential element for aquatic habitat restoration and water quality improvement. There are other AMD treatment projects underway to help re-establish the Montour Run area of Allegheny County.

Audenreid Treatment Project Can Handle Pennsylvania's Largest Mine Water Load



Audenreid treatment process includes limestone treatment tanks and settling ponds.

On June 17, 2006, a treatment project was dedicated at the Audenreid mine drainage tunnel in Pennsylvania.

The Audendreid Mine Drainage Tunnel discharges up to 14,000 gpm to the Catawissa Creek. The discharge accounts for 84% of the total acidity loading in the creek. In addition, a portion of the aquatic habitat was killed by the elevated levels of dissolved aluminum in the water. In order to address this problem, a

partnership was established between EPA, OSM and Pennsylvania DEP to build a passive treatment system to convert this contaminated rural mountain setting into a potential recreational resource.

The treatment system handles the largest load of mine water in the State of Pennsylvania. It consists of three limestone-filled holding tanks and two settling ponds. The dissolved aluminum precipitates in the settling

ponds. Monitoring points located downstream show improved water quality with reduced levels of dissolved aluminum. Further downstream, monitoring indicates the water has completely assimilated the dissolved aluminum. The treatment method's success can be seen by the increasing population of native Brook Trout in the Catawissa Creek.

Maryland Cleanup Site Doubles as Environmental Education Center

Maryland receives annual funding from the Appalachian Clean Streams Program (ACSP) to use for partnering activities with private and public entities.

The funds generated must be used only for AMD remediation activities. Funding allows for undertakings like the Crellin School AMD project to be completed.

Drainage from this site was degrading the water quality in Snowy Creek, Garrett County, Maryland. The partnership, which included students from Crellin Elementary, allowed for the construction of three treatment cells, and the removal and re-grading



Project site shows school, amphitheater, two AMD treatment ponds, and Snowy Creek. Photo courtesy of MD Bureau of Mines.

activities of abandoned coal refuse. The site is currently used as an environmental education center for 85 students.



OSM/VISTA Danielle Adams teaches community members about Acid Mine Drainage as part of her work with the Friends of the Cheat River.

OSM/VISTA Volunteers Extend the Reach Of Watershed Groups

The Friends of Cheat Watershed Association is a model watershed authority throughout West Virginia and neighboring States. This watershed "think tank" provides educational and work opportunities in the mining industry.

The Office of Surface Mining and AmeriCorps sponsor the OSM/VISTA program, which enables groups like the Friends of Cheat to expand their mission of educational and outreach programs, grant writing, partnerships, and volunteer recruitments.

The program matches OSM/VISTA volunteers with watershed groups. Each participant will work, gain valuable experience and receive a modest living stipend. OSM/VISTA volunteers have contributed to the Friends of Cheat's success by grant writing, project oversight, conducting water quality analysis, software training, creating GIS maps for remediation projects and organizing outreach activities in local areas.

For more information about OSM/VISTA program, please visit www.accwt.org.

Two-stage System Yields Results in West Virginia

The Blaser Refuse and Portals project is located near Tunnelton, Preston County, WV. The project site includes collapsed mine portals, coal refuse, tipples, mine buildings, impounded water, and multiple Acid Mine Drainage (AMD) discharge points. AMD discharge degraded the water quality of the receiving stream, Pringle Run, as well as the Cheat River, located further downstream.

The Abandoned Mine Lands Office constructed a two-stage passive treatment system using *Successive Alkalinity Producing Technology*. The two stage system has successfully provided an effective effluent polishing process that treats the discharge.



Completed Pine Glen East project

Pine Glen East Treatment Shows Results in Just One Season

The Pine Glen East project was constructed to address AMD issues in the Boake Run Watershed in Centre County, PA. Funding of \$819,767 from the Appalachian Clean Streams Program was used to restore water quality and aquatic life to lower portions of Sterling Run and expand habitat for the existing native Brook Trout populations.

Boake Run Watershed was contaminated by high concentrations of metals entering through seeps originating from reclaimed surface mines. The treatment strategy consisted of diverting stream flow through limestone beds and a series of ponds. The technique raised pH and precipitated the metals. The treated waters then re-enter Boake Run with a reduction in both acid load and contaminant concentration. In addition to the improved water quality efforts, 13 acres of disturbed area were planted to benefit wildlife.

After only one summer of operation, the Pennsylvania Fish Commission concluded that native Brook Trout were moving into sections of Sterling Run that had been previously uninhabited due to the pollution.

Iowa

Lake Red Rock Visitors Benefit from Mine Acid Cleanup, Erosion Control

Iowa has initiated partnerships with private and government entities to assist in obtaining funds for clean up of acid mine drainage under the Watershed Cooperative Agreement Program. The State has assisted the Red Rock Environmental Education Fund Resource Conservation and Development in acquiring an OSM Watershed Cooperative Agreement grant in the amount of \$75,000.

The grant money was used to address issues with AMD in the Red Rock Project site. The site consists of 8-acres of eroded acidic spoil material. Reclamation work has eliminated erosion of acidic material. Terraces were established to redirect surface runoff to wetlands. The reclamation project also includes application of a vegetative cover and erosion control. These efforts will continue to provide a more appealing place for visitors of the Lake Red Rock Recreation Area.

Single Source Coal Reporting Selected Finalist for Intergovernmental Awards

The Single Source Coal Reporting project was selected as a finalist for one of the 2006 Intergovernmental Solutions Awards presented by the American Council for Technology at its annual Management of Change Conference.

The system allows the coal mining industry to submit production and safety data requirements on a secure web-based system. The one-time data capture allows both Federal and State Agencies to consolidate multiple agency reporting requirements by sharing information. This system provides increased efficiency in customer service by eliminating redundant transmission and review of data.

OSM partnered with the Mine Safety and Health Administration, Internal Revenue Service and Pennsylvania and Virginia State governments in March 2006 to implement the Single Source Coal Reporting system.

Looking for Innovators

Partnering With Minority Schools

The demand for a skilled mining, environmental, engineering and scientific workforce is growing. With 50% of OSM's workforce eligible for retirement in the next five years, OSM will be competing with other public and private sector employers to recruit and retain the best and brightest of our nation's college graduates in these career fields.

In an effort to develop a supply of qualified individuals for the future, OSM is undertaking an initiative that focuses on activities with minority higher education institutions (MHEIs); specifically, Historically Black Colleges and Universities, Hispanic Serving Institutions and Tribal Colleges and University.

As its core purpose, OSM's Minority Higher Education Initiative will provide a mechanism for minority higher education institutions to participate and benefit from programs related to surface mining and reclamation activities by: providing project funding; providing technical expertise to assist in instruction, research, and project activities; expose students to surface mining and related issues; create mentoring and career opportunities; provide an avenue for OSM to more effectively deliver technical assistance to customers and partners; and develop a more knowledgeable and diverse cadre of potential OSM professionals.

To promote and support minority institutions participation in career fields in the mineral and energy resource industries, minority institutions were encouraged to participate in OSM's 2006 Applied Science Program. To encourage and solicit involvement, OSM staff visited several minority institutions to provide information on the Agency's mission, programs and partnership goals. Some of the schools visited by OSM were: University of New Mexico, Haskell Indian Nations University, Florida A&M, Prairie View A&M, Florida International, Spellman, Morehouse, Clark Atlanta, Central State, Alabama A&M, Tuskegee, Jackson State, Texas A&M Kingsville, Langston and New Mexico Highlands.

As a result of OSM's efforts, Prairie View A&M was awarded project funding to conduct a scientific study entitled "Improved Static Test Prediction of Acid Generation Potential: A surface Analysis Approach." Another solicitation effort will be conducted in 2007. With the new solicitation, OSM will once again encourage participation of minority institutions in the 2007 Applied Science Program.



In January, 2006, OSM volunteers were recognized for their work in relief efforts to help victims of hurricanes that slashed the Gulf Coast in 2005. Shown accepting awards on behalf of OSM volunteers are (from left) Allen S. Kraps, Carol Houston and Sheila Hartless of OSM's Pittsburgh Office, former Secretary of the Interior Gale Norton, Darlene Carter, OSM's Emergency Management Coordinator, Lynn Scarlett, Deputy Secretary of the Interior and Brent Wahlquist, Acting Director of OSM.

OSM Volunteers Aid Hurricane Victims

More than two dozen OSM volunteers worked for at least 30 days in Southeastern Texas as part of the Department of the Interior's response to Hurricanes Katrina and Rita.

OSM's first team of volunteers arrived the Beaumont, TX, area in mid-October of 2005 and began work immediately, ultimately spreading out over 11 Texas counties, working at 13 separate debris-disposal sites and accounting for more than 1 million cubic yards of debris handled by contractors.

The OSM team further enhanced DOI's contribution to the cleanup effort by quickly developing and implementing systems for conducting safety training and handling equipment inventory, purchasing and other administrative functions.

OSM Members of DOI Group 09

Group Leader: Allen S. Kraps, Appalachian Region, Pittsburgh
Deputy: Audrey Parker, Appalachian Region, Pittsburgh
Exec Admin: Paulette Wilson, Headquarters, Washington, DC

Debris Mission Quality Assurance Team members

Carol Houston, Appalachian Region, Pittsburgh *
Shelia Hartless, Appalachian Region,

Pittsburgh *

Rene Sanchez, Denver Finance Center *

Fred Fox, Headquarters, Washington, DC *

Gary Hall, London, KY *

Lafayette Vance, Appalachian Region, Pittsburgh *

Wendi Stephens, Lexington KY

Ned Hagen Bush, Pikeville KY

Victor (Brent) Virts, Big Stone Gap VA

Kale Horton, Mid-Continent Region, Alton IL

Mike Benevides, Western Region, Denver

Mychal Yellowman, Western Region, Denver

Frank Hooper, Appalachian Region, Pittsburgh

Samuel Pugh, Beckley WV

LaChelle Harris, Tulsa OK

OSM Members of DOI Groups 10 and 19

Ian Dye, Big Stone Gap VA
Bennett Stein, Appalachian Region, Pittsburgh

Jeffrey Zingo, Tulsa, OK

Debra Zirkle, Big Stone Gap, VA

Ike Isaacson, Johnstown, PA

Russell Porter, Albuquerque, NM

Dan Trout, Tulsa, OK

Assigned to FEMA in Baton Rouge

Alan Boehms, OSM, Casper, WY

* These volunteers from Group 10 extended their deployment to become members of Group 19/20.

Significant 2006 Court Decisions

There were six significant court decisions that influenced the implementation of the Surface Mining Act during 2006. The cases involved issues on takings, valley fills, material damage, hydrology, acid mine drainage, and Environmental Impact Statements.

In Tennessee

Takings Claim Fails to Prevail

Cane Tennessee, Inc. v. United States and Colten, Inc. v. United States

Plaintiffs claimed a permanent and temporary taking of their coal interests based on OSM's permitting action and the Secretary of the Interior's designation of certain land's unsuitability for surface coal mining operations. Plaintiffs own the fee interest (surface and minerals) in certain lands and the mineral interests only in other lands located in close proximity to Fall Creek Falls State Park, Tennessee. Plaintiffs were seeking \$8,000,000 for the alleged permanent taking based on the land's unsuitability for mining designation made by the Secretary and \$7,500,000 for the alleged temporary taking.

The only remaining liability issue that required resolution by the trial court was Cane Tennessee Inc.'s (Cane) permanent takings claim based on the land's unsuitability for mining designation. The Court has previously decided all other claims in favor of the Government. On January 25, the Court granted in part and denied in part the Government's motion for summary judgment. The Court agreed with the Government that Cane lacked "reasonable investment-backed expectations" but concluded there were genuine issues of material fact on the issue of "economic impact" and ordered an evidentiary hearing on that issue. A trial was held on July 12-13, on the issue of whether the property held by Cane had any non-coal value after June 17, 2000, the date of the Government action.

On October 27, 2005 the United States Court of Federal Claims found that the Cane tracts had a significant market value after the Secretary's unsuitability decision on June 17, 2000, and that the "economic impact" of that regulatory act did not constitute a sufficiently serious financial loss to constitute a taking. Therefore, the Court concluded that the plaintiff failed to establish that its property was taken by the Government.

OSM Prevails in NEPA Lawsuit

On June 29, 2006, a three judge panel of the United States Court of Appeals for the Sixth Circuit affirmed the District Court's decision to issue an Opinion granting the Government's motion for summary judgment in the case of Save Our Cumberland Mountains, et al., v. Dirk Kempthorne, et al. In the District Court case, plaintiffs and four environmental organizations had challenged OSM's June 30, 2003, decision to issue a permit to conduct surface coal mining operations in Campbell and Scott Counties, Tennessee. Pursuant to the Administrative Procedures Act, plaintiffs contended that in complying with NEPA, OSM's decision not to prepare an Environmental Impact Statement was arbitrary and capricious. Upon review of the entire record, the District Court concluded that OSM's decision to prepare an environmental assessment and Finding of No Significant Impact (FONSI) for the permit was not arbitrary, capricious, or an abuse of discretion.

In the Court of Appeals decision, the Court affirmed, with one caveat, the District Court's decision. The Court of Appeals concluded that OSM's position to only consider three alternatives in the environmental assessment - grant the permit, deny the permit, or take no action - unduly circumscribed the scope of the alternatives that the statute and regulations require Federal agencies to consider. However, the Court nonetheless concluded that the administrative record showed the agency had in effect considered other options to the permit request (primarily modifications to the application that would diminish the environmental consequences of the mining). OSM's Knoxville Field Office had already implemented changes in preparing its environmental assessments by expanding the range of alternatives the agency considers under NEPA after reviewing the February 23, 2005, District Court decision.

Program Amendments Decision Appealed

On January 19th, 2006, the Department filed a protective Notice of Appeal of the November 22nd, 2005, Amended Judgment Order by the Federal District Court for the Southern District of West Virginia revising OSM's December 2003 approval of two West Virginia State program amendments related to hydrologic protection. The US Court of Appeals for the Fourth Circuit established a briefing schedule on January 27, 2006.

Decision prohibiting Nationwide Permits Overturned

On November 23, 2005, the 4th Circuit Court of Appeals overturned an earlier decision prohibiting the U.S. Army Corps of Engineers' approval for valley fills without conducting a site-specific environmental assessment. Last year, U.S. District Judge Joseph R. Goodwin ruled that the approval of general permits for valley fills violated the Clean Water Act and ordered that all valley fill permits be considered as Individual Permits. The Appeals Court determined that the use of general permits did not violate the Clean Water Act and vacated the District Court decision.

District Court Amends Judgment Order On “Cumulative Impact” Definition

On September 30th, 2005, U.S. District Court for the Southern District of West Virginia vacated the Secretary’s approval of the State’s deletion of its definition of “cumulative impact” and its addition of the definition of “material damage to the hydrologic balance outside the permit area”. On November 1st in response to the Court’s decision, OSM sent the West Virginia Department of Environmental Protection (WVDEP) a 30 CFR Part 732 notification stating that the State cannot implement the new definition of “material damage to the hydrologic balance outside the permit area” and must re-insert into the West Virginia program the deleted definition of “cumulative impact.”

On November 22, 2005, the Court issued an amended judgment order that directed OSM to instruct the State that it may not implement the deletion of the definition of “cumulative impact” nor the addition of the definition of “material damage to the hydrologic balance outside the permit area”. The Court clarified that the State must enforce only the State program as approved by OSM prior to the amendments. In response to the Court’s decision, on January 5, OSM sent WVDEP a letter rescinding the November 1, 2005, 30 CFR Part 732 notification and informing the State that the definition of “cumulative Impact” remains part of the approved West Virginia program and, as such, must be implemented by the State. OSM also stated that the definition of “material damage to the hydrologic balance outside the permit area” remains disapproved and cannot be implemented.

Court Upholds IBLA Decision Affirming OSM’s Procedure

West Virginia Highlands Conservancy v. Norton, No. 2:05-CV-11 (N.D.W.Va.)

On March 7, 2006, the U.S. District Court for the Northern District of West Virginia denied the West Virginia Highlands Conservancy’s (WVHC) motion for summary judgment and granted the Department’s motion for summary judgment affirming the Interior Board of Land Appeals’ (IBLA) decision in OSM’s favor.

This matter involved a follow-up citizen complaint to an initial citizen complaint. The initial complaint led to citation of a permittee for discharging acid mine drainage from its mine site, but did not result in abatement. The follow-up complaint requested further enforcement action, part of which OSM pursued (referral for alternative enforcement action). The WVHC was not satisfied, since abatement still was not achieved, and sought review by IBLA. The WVHC contended mere referral for alternative enforcement action was insufficient, since abatement was not achieved.

The IBLA upheld OSM’s action as reasonable at the time it was taken. The WVHC then requested judicial review, contending the citizen complaint regulations, principally 30 CFR 842.15, require abatement before OSM finally decides an informal review request of an enforcement action. The Court agreed with OSM that IBLA’s interpretation of the regulation to require a final appealable decision on a specific citizen complaint within 30 days, as expressly provided by the regulation, was reasonable and due deference.

New Logo for Mid-Continent



Charles “Sandy” Sandberg, director of OSM’s Mid-Continent Region, and Stefanie Self show off a tee-shirt bearing Stefanie’s winning design for the new MCR logo.



For more information about OSM and its programs

On the internet at

www.osmre.gov

US Office of Surface Mining
1951 Constitution Ave, NW
Washington, DC 20240
Email: getinfo@osmre.gov
Voicemail (202) 208-2719
TTY (202) 208-2694

Western Regional Office Denver, CO (303) 844-1401	Mid-Continent Regional Office Alton, IL (618) 463-6460	Appalachian Regional Office Pittsburgh, PA (412) 937-2828
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2006 Fast Facts

1,458
OSM mine
inspection visits

85,745
State and Tribal
full or partial
mine inspections

2,775
State and Tribal
notices of
violations

91.5%
of active sites
free of offsite
impacts

49,796
acres released
from Phase III
Performance
Bonds

6,984
acres of AML
problems
reclaimed or
mitigated

548
miles of streams
treated for AML
problems

69
stream-miles
improved

32
surface water
acres improved



At a Glance

As of October 1, 2006

Since 1977, about 29.5 billion tons of coal have been mined under the provisions of the Surface Mining Act, providing power for 93 million American homes.

The coal mining industry has successfully reclaimed more than 2 million acres of mined lands.

The Abandoned Mine Land Program has reclaimed almost 240,000 acres of hazardous high-priority (Priority 1 and 2) coal-related problems.

Safety and environmental hazards have been eliminated on 314,108 acres, including all three coal priority categories and non-coal problems in 27 States and on the lands of three Indian Tribes.

Since 1977 OSM has provided \$4.06 billion in grants to its partners in 24 States and three Indian Tribes to clean up dangerous abandoned mine sites.

OSM has provided \$1,251,573,305 in grants to the States and Tribes to assist in funding the regulation of active coal mines.

Since 1999 OSM has awarded 161 Watershed Cooperative Agreements and amendments to existing agreements totaling \$14,068,665. Ninety two projects having been completed.

Since 1977, OSM has addressed 5,099 Abandoned Mine Land emergencies, while the States and Tribes have dealt with 2,764.



2006 Fast Facts

\$302,991,805
Abandoned
Mine Land fees
collected in
FY 2006

\$59,000
contributed to
miners' health
benefits fund

1,446
students
trained in NTTB
courses

350
students
trained in TIPS
courses

20
new watershed
cooperative
agreements

\$1,556,475
In new
watershed
cooperative
agreements
funded

22
watershed
interns funded

393,728
people with
reduced
exposure
potential to
safety risks
from
Abandoned
Mine Lands

Appendix to OSM's 2006 Report to Congress

Data Tables and Figures

OSM/DOI STRATEGIC PLAN MEASURES Fiscal Year 2006

Measure	Target	Results
<i>Mission Area: Resource Protection</i>		
Number of land acres reclaimed or mitigated from the effects of degradation from past mining. (Calculated equivalent acres)	6,900	6,984
Number of stream-miles for which degradation from past surface coal mining has been improved.	35	69 ^{1&2}
Number of surface acres of water for which degradation from coal mining has been improved.	35	32 ³
<i>Mission Area: Resource Use</i>		
Percent of active sites that are free of offsite impacts.	93	91.5%
Number of acres where reclamation goals are achieved as evidenced by release from Phase III Performance Bonds.	50,000	49,796 ⁴
<i>Mission Area: Serving Communities</i>		
Number of people with reduced exposure potential to safety risks from abandoned mine lands.	160,000	393,728 ^{1&5}

¹ Information calculated from projects reported with completion dates of 10/1/05 – 9/30/06 and entered in the Abandoned Mine Land Inventory System as of 10/3/06. Data are recorded, processed, and summarized to permit the preparation of performance information in accordance with criteria stated by management and agreed to by the participating states.

² Results based on 44 projects ranging from 0.02 miles to 5 miles, and 1 project accounting for 35 miles. The Audenreid Mine Drainage Tunnel AML Treatment Project in Pennsylvania attributed to the clean-up of 35 miles of aquatic stream habitat.

³ Results based on 12 projects ranging from 1 to 17 acres.

⁴ Calculated values: State programs provide data on a July 1, 2005 – June 30, 2006, timeframe to accommodate the accelerated publishing requirements. Results are calculated by subtracting the 2005 quarter data (July 1 – September 30, 2005) and adding the 2006 quarter data (July 1 – September 30, 2006). Federal data is on the federal fiscal year.

⁵ Data anomalies: Of the 393,728 people with reduced exposure, 93,922 were reported for 1 project in Alaska. An additional 144,375 people were reported on 5 projects in Wyoming due to the sites' proximity to communities, recreational areas, schools, and a portion of a national park. States are provided the option of using data other than the calculated Census data due to site conditions that may impact more people such as those identified above, or less people as appropriate. If only the Census data calculation was used for all acres reclaimed in FY 2006, the total number of people associated with those acres would be 161,297. This is in line with our target.

TABLE 1
Abandoned Mine Lands Fee Collection and Funding (Cash Basis)¹

State	AML Collections	State Share Distribution ²	Federal Share Distribution ²	Emergency Distribution ²	Clean Stream Distribution ²	Total Distribution ²
Alabama	4,806,648	1,171,473	1,471,442	400,000	173,884	3,216,799
Alaska	404,693	134,379	1,365,621	25,000	0	1,525,000
Arkansas	69,511	2,101	1,497,899	15,000	0	1,515,000
Colorado	7,010,099	1,702,602	717,106	0	0	2,419,708
Crow Tribe	2,224,248	516,431	0	0	0	516,431
Hopi Tribe	3,750,279	370,854	0	0	0	370,854
Illinois	5,748,808	1,882,718	5,451,169	950,000	373,713	8,657,600
Indiana	9,599,290	2,696,780	1,774,730	315,000	189,112	4,975,622
Iowa	0	1,898	1,498,102	60,000	121,635	1,681,635
Kansas	93,711	24,722	1,475,278	465,000	0	1,965,000
Kentucky	27,687,458	8,116,276	5,342,491	0	368,256	13,827,023
Louisiana	409,489	94,141	0	0	0	94,141
Maryland	1,334,005	246,254	1,253,746	0	117,383	1,617,383
Mississippi	350,718	0	0	0	0	0
Missouri	206,786	70,690	1,429,310	50,000	0	1,550,000
Montana	11,751,795	3,088,691	0	125,000	0	3,213,691
Navajo Nation	4,773,376	2,055,772	0	0	0	2,055,772
New Mexico	3,107,632	1,306,115	202,576	0	0	1,508,691
North Dakota	3,053,706	808,291	691,709	100,000	0	1,600,000
Ohio	5,245,842	1,569,467	3,341,637	2,300,000	267,790	7,478,894
Oklahoma	492,798	140,394	1,359,606	180,000	112,614	1,792,614
Pennsylvania	12,572,252	3,786,036	17,620,882	0	984,777	22,391,695
Tennessee	865,359	0	0	0	0	0
Texas	4,564,439	1,319,983	0	0	0	1,319,983
Utah	3,695,334	959,758	540,242	0	0	1,500,000
Virginia	6,008,273	1,768,049	1,639,778	1,700,000	182,336	5,290,163
Washington	1,391,665	0	0	0	0	0
West Virginia	35,486,909	8,563,809	10,127,088	4,500,000	608,500	23,799,397
Wyoming	146,286,681	29,469,486	0	0	0	29,469,486
Totals³	\$302,991,805	\$71,867,170	\$58,800,412	\$11,185,000	\$3,500,000	\$145,352,582

¹ Reporting on a "Cash Basis" refers to the recognition of revenue when it is received. Abandoned Mine Land (AML) fee collections are reported using cash basis criteria. AML revenue in OSM's 2006 financial statements may include other amounts.

² The term "Distribution" is now used instead of "Allocation." Allocation refers to the "pooling" of monies collected for the Fund. State and federal share distribution amounts are based on formulas and parameters provided annually by the Assistant Director, Program Support. The emergency program distribution amounts are based on estimates provided by the states and approved by the Deputy Director.

³ The "Totals" figures above have been adjusted for rounding.

**TABLE 2
ABANDONED MINE RECLAMATION FUND STATUS
CASH BASIS (INCLUDES INVESTMENTS)**

(dollars in thousands)	2006	2005
Balance, Start of Year	\$2,133,969	\$2,043,080
Fees, Debts, and Interest Collected	\$302,992	\$293,604
Interest Earned on Investments	\$95,687	\$75,017
Total Earnings	\$398,679	\$368,621
Less:		
Disbursements	\$208,995	\$211,199
Transfers to the United Mine Workers	\$59,004	\$66,533
Total Disbursements and Transfers	\$267,999	\$277,732
Balance, End of the Year	\$2,264,649	\$2,133,969

Note: The information presented in this table is on a cash basis (which refers to the recognition of revenue when it is received) and, therefore, will not reconcile to accrual-based financial data presented elsewhere.

TABLE 3
ABANDONED MINE LAND GRANTS¹ TO PRIMACY STATES AND INDIAN TRIBES FOR FY 2006
 All numbers are rounded

State/Tribe	Subsidence Insurance	10% Program Set-Aside	Administration ³	Project Costs ⁴	Emergency ⁵	TOTALS		Program Staff
	2006	2006	2006	2006	2006	2,006	2005	2006
Alabama	0	0	789,722	2,323,220	400,000	3,512,942	3,504,804	17.55
Alaska	0	0	347,070	1,152,930	25,000	1,525,000	1,525,619	3.88
Arkansas	0	0	382,090	1,117,910	15,000	1,515,000	1,546,335	6.70
Colorado	0	0	1,152,000	2,037,091	0	3,189,091	2,415,000	14.00
Crow Tribe	0	0	266,048	472,322	0	738,370	575,409	3.55
Hopi Tribe	0	0	249,023	200,000	0	449,023	655,437	2.90
Illinois	0	733,389	1,328,210	8,946,001	950,000	11,957,600	9,224,124	24.00
Indiana	0	447,151	1,110,604	3,102,867	315,000	4,975,622	5,524,537	19.00
Iowa	0	0	211,105	1,410,530	60,000	1,681,635	1,720,949	4.10
Kansas	0	0	255,027	1,261,430	465,000	1,981,457	2,201,351	8.80
Kentucky	0	0	2,953,441	11,071,895	0	14,025,336	14,974,019	80.00
Louisiana	0	0	114,555	0	0	114,555	97,400	0.85
Maryland ²	0	258,000	428,565	1,081,398	0	1,767,963	1,419,130	3.50
Missouri	0	114,391	331,827	1,993,776	50,000	2,489,994	669,028	6.85
Montana	0	0	604,309	2,637,742	125,000	3,367,051	3,512,998	8.70
Navajo Nation	0	0	672,943	2,115,123	0	2,788,066	3,112,749	19.00
New Mexico	0	0	1,185,234	1,912,953	0	3,098,187	1,993,389	7.50
North Dakota	0	118,500	201,196	1,199,299	100,000	1,618,995	1,620,156	4.88
Ohio ²	0	538,861	1,216,611	4,304,909	2,995,588	9,055,969	9,025,307	43.44
Oklahoma	0	0	278,026	1,221,974	180,000	1,680,000	1,956,615	9.00
Pennsylvania ²	0	0	2,644,001	25,747,962	0	28,391,963	45,269,363	116.00
Texas	0	0	145,665	2,791,561	0	2,937,226	1,401,481	6.00
Utah	0	0	471,189	1,382,114	0	1,853,303	1,968,045	10.00
Virginia	0	30,000	720,962	3,096,033	1,700,000	5,546,995	5,831,344	16.00
West Virginia ²	0	500,000	4,985,000	16,105,238	4,500,000	26,090,238	26,169,736	56.70
Wyoming	32,879	2,946,948	1,335,780	33,614,861	0	37,930,468	38,064,655	13.30
Totals⁶	32,879	5,687,240	24,380,203	132,301,139	11,880,588	174,282,050	185,978,980	506.20

¹ Funding for these grants is derived from the FY 2005 distribution and funds recovered or carried over from previous years. Downward adjustments of prior-year awards are not included in the totals.

² These 10% set-aside amounts are for Acid Mine Drainage set-aside funding, rather than future set-aside funding.

³ Included in this category are costs for program support (personnel, budgeting, procurement, etc.), AML inventory management and program policy development. Indirect costs associated with the administration of the program also may be included.

⁴ The term "Project Costs" is now used instead of "Construction." AML simplified grants do not contain specific construction cost breakouts, but rather list all costs associated with a construction project as a project cost. This category contains non-water supply, water supply and non-coal project costs, and includes \$3,387,386 in funding for Appalachian Clean Streams initiatives.

⁵ This category contains emergency project, administrative and indirect costs.

⁶ The "Totals" figures above have been adjusted for rounding.

**TABLE 4
RECLAMATION PROJECTS STARTED**

State/Tribe	Federal Emergency	State Emergency	Emergencies 1978-2006 FEDERAL	Emergencies 1978-2006 STATE	Total Emergencies	Federal Non- Emergency	State Non- Emergency
	2006	2006	78-2006	78-2006	2006	2006	2006
Alabama	0	8	10	133	143	0	8
Alaska	0	0	0	1	1	0	0
Arkansas	0	1	1	23	24	0	2
California	0	0	5	0	5	0	0
Colorado	0	0	107	0	107	0	0
Crow Tribe	0	0	0	0	0	0	3
Georgia	0	0	0	0	0	0	0
Hopi Tribe	0	0	0	0	0	0	0
Illinois	0	11	51	289	340	0	11
Indiana	0	16	94	174	268	0	36
Iowa	0	0	22	3	25	0	0
Kansas	0	23	270	709	979	0	0
Kentucky	30	0	1,163	0	1,163	0	27
Louisiana	0	0	0	0	0	0	0
Maryland	0	0	0	0	0	0	4
Michigan	0	0	0	0	0	0	0
Mississippi	0	0	0	0	0	0	0
Missouri	0	0	6	6	12	0	0
Montana	0	0	7	14	21	0	8
Navajo Nation ⁴	0	0	6	0	6	0	2
New Mexico ⁵	0	0	16	0	16	0	9
North Dakota	0	3	15	18	33	0	3
Northern Cheyenne	0	0	2	0	2	0	0
Ohio ⁶	0	18	190	345	535	0	29
Oklahoma	0	2	47	31	78	0	3
Pennsylvania	111	0	2,748	0	2,748	0	185
Rhode Island	0	0	4	0	4	0	0
Tennessee	2	0	22	1	23	0	0
Texas	0	0	6	0	6	0	2
Utah	0	0	0	0	0	0	0
Ute Reservation	0	0	1	0	1	0	0
Virginia	0	7	30	181	211	0	12
Washington	0	0	59	0	59	0	0
West Virginia	0	36	179	836	1,015	0	24
Wyoming	0	0	38	0	38	0	0
Totals	143	125	5,099	2,764	7,863	0	368

**Table 5
Federal Reclamation Projects (Obligations)¹**

State or Tribe	Emergency	High Priority	Total 1978 - 2006 ²
	2006	2006	
Alabama	\$0	\$10,000	\$13,944,015
Alaska	\$0	\$0	\$194,638
Arkansas	\$0	\$0	\$84,904
California	\$0	\$0	\$2,626,403
Cheyenne Rive Sioux Tribe	\$0	\$0	\$2,803,165
Colorado	\$10,200	\$0	\$2,189,942
Crow Tribe	\$0	\$0	\$1,097,895
Fort Berthold Tribe	\$0	\$0	\$69,972
Fort Peck Tribe	\$0	\$0	\$147,991
Georgia	\$0	\$82,952	\$4,212,316
Hopi Tribe	\$0	\$0	\$1,263,409
Illinois	\$0	\$0	\$5,376,749
Indiana	\$0	\$0	\$4,032,023
Iowa	\$0	\$0	\$1,438,442
Jacarillo Apache Tribe	\$0	\$0	\$59,998
Kansas	\$0	\$0	\$5,094,172
Kentucky	\$2,060,085	\$0	\$125,482,104
Maryland	\$286,260	\$0	\$3,487,426
Michigan	\$0	\$23,793	\$3,676,175
Missouri	\$0	\$0	\$8,015,909
Montana	\$0	\$0	\$729,058
Navajo Nation	\$0	\$0	\$2,222,792
New Mexico	\$0	\$0	\$2,366,041
North Carolina	\$0	\$0	\$205,407
North Dakota	\$0	\$0	\$1,723,933
Northern Cheyenne Tribe	\$0	\$0	\$588,254
Ohio	\$0	\$0	\$18,295,299
Oklahoma	\$0	\$0	\$1,232,159
Oregon	\$0	\$63,200	\$176,736
Pennsylvania	\$2,700,813	\$0	\$118,847,579
Rhode Island	\$0	\$0	\$569,477
Rocky Boy Tribe	\$0	\$0	\$60,188
South Dakota	\$0	\$37,435	\$234,327
Southern Ute Tribe	\$0	\$0	\$94,206
Tennessee	\$161,688	\$1,008,000	\$27,796,940
Texas	\$0	\$0	\$289,849
Utah/Ouay Tribe	\$0	\$0	\$138,738
Utah	\$0	\$0	\$123,791
Ute Mountain Tribe	\$0	\$0	\$14,300
Virginia	\$0	\$0	\$10,139,469
Washington	\$186,159	\$239,937	\$9,048,802
West Virginia	\$0	\$0	\$29,023,226
White Mountain Apache Tribe	\$0	\$0	\$1,838
Wind River Tribe	\$0	\$0	\$73,267
Wyoming	\$0	\$0	\$1,067,101
Zuni Tribe	\$0	\$0	\$125,009
Undistributed	\$0	\$0	\$579
TOTAL	\$5,405,205	\$1,465,318	\$410,486,013

1. Federal projects started in 2006 (October 1, 2005 - September 30, 2006)

2. State projects started during the period July 1, 2005 - June 30, 2006

3. Total column includes projects started during both time periods.

4. The Navajo Nation groups several AML sites into one project/contract. The two non-emergency projects identified above (Chaco Plains and Wupatki) consist of nine separate mine sites.

5. State non-emergency projects include Lake Valley Ph1, Lumberton, Sugarite Ph5, Lordsburg/Florite Ridge, Manhattan, Yankee-Vukonich, Gold Hill, La Madera, and Grants II Maintenance.

6. Twenty-nine projects received "authorization to proceed" during the evaluation year.

¹ The figures above have been adjusted for rounding.

² Includes prior year contract deobligations and upward adjustments.

Table 6A: 1978-2005 Abandoned Mine Land Reclamation Accomplishments
 Priority 1 and 2 (Protection of Public Health, Safety and General Welfare) and Emergency Projects
 (Statistics do not include OSM emergency project accomplishments)

Measurement:	Miles	Acres							Feet			Number of Occurrences						
		Clogged Stream	Clogged Stream Land	Dangerous Pile & Embankment	Dangerous Slide	Industrial/ Residential Waste	Subsidence	Surface Burning	Underground Mine Fire	Dangerous Highwalls	Vertical Opening	Dangerous Impoundments	Dangerous Gas	Hazardous Equipment & Facilities	Hazardous Water body	Portal	Polluted Water: Agricultural & Industrial	Polluted Water: Human Consumption
Alabama	1	198	1,461	20	25	36	68	0	277,262	399	1	0	470	82	1,037	8	15	
Alaska	0	0	6	0	4	0	21	0	11,190	41	4	0	1,485	2	43	0	0	
Arkansas	1	0	828	0	31	15	4	0	65,931	112	1	0	2	83	28	0	0	
California	0	0	0	0	0	1	0	0	0	42	0	0	0	0	34	0	0	
CERT Tribes*	0	0	475	0	9	34	0	0	7,050	18	0	0	6	30	74	0	0	
Colorado	0	0	44	0	10	56	30	184	51,992	4,238	0	0	14	0	3,087	3	0	
Crow Tribe	0	1	58	23	0	16	0	0	2,267	5	1	0	32	1	15	3	0	
Georgia	0	0	3	0	0	0	0	0	11,450	11	2	0	0	0	112	0	1	
Hopi Tribe	0	0	0	0	0	0	0	0	11,662	2	0	0	8	0	9	0	0	
Idaho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Illinois	21	1,291	329	4	72	100	115	0	62,351	1,226	7	22	361	9	199	11	1	
Indiana	14	176	624	7	32	224	15	1	121,918	359	6	4	98	7	70	15	7	
Iowa	9	728	847	0	18	4	0	0	62,966	22	3	0	5	27	1	12	2	
Kansas	1	9	111	3	29	23	9	0	146,545	1,247	1	0	2	1	0	3	0	
Kentucky	47	8,828	449	2,101	27	50	227	63	28,188	187	115	0	251	44	1,992	6	10,340	
Maryland	5	66	272	68	35	15	1	2	44,430	5	3	0	25	20	41	84	41	
Michigan	0	0	0	0	0	0	8	0	950	50	0	0	7	2	0	0	1	
Missouri	11	1,514	572	0	71	6	19	7	73,702	182	6	0	28	11	35	34	15	
Montana	21	96	174	1	407	554	305	69	25,560	622	3	1	248	1	1,100	17	12	
Navajo Nation	0	1	665	7	6	12	3	0	109,506	382	4	0	5	0	870	19	0	
New Mexico	2	21	10	0	0	35	35	32	280	993	0	0	17	0	531	4	1	
North Carolina	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	
North Dakota	0	0	317	35	2	1,385	18	0	79,099	109	4	0	14	18	13	6	0	
Ohio	38	5,542	96	455	34	158	154	3	69,164	254	8	4	64	14	364	53	285	
Oklahoma	15	1	0	0	23	17	2	0	244,065	113	0	0	15	208	174	6	3	
Oregon	0	0	0	0	0	0	0	0	0	3	0	0	3	0	12	0	0	
Pennsylvania	103	223	627	63	39	2,458	123	1,024	885,855	545	667	0	341	120	293	27	240	
Rhode Island	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	
South Dakota	0	0	0	0	0	1	0	0	135	1	0	0	4	0	5	0	0	
Tennessee	2	147	533	68	14	6	28	0	52,970	11	3	0	31	67	192	7	14	
Texas	0	0	1,461	0	0	19	0	0	52,665	368	0	0	0	17	66	0	0	
Utah	14	9	356	3	0	185	43	20	3,425	1,220	1	19	206	2	3,146	3	0	
Virginia	75	858	260	315	2	13	52	0	28,350	105	53	0	228	2	1,009	0	2,275	
Washington	0	0	3	0	0	12	15	0	0	92	0	0	7	0	30	0	0	
West Virginia	54	167	4,837	562	37	394	486	28	198,522	151	675	5	600	7	2,368	70	12,145	
Wyoming	114	1,636	2,053	25	29	1,161	12	45	530,913	588	139	0	202	371	541	3	0	
TOTAL	548	21,512	17,471	3,760	956	6,996	1,793	1,478	3,260,443	13,708	1,707	55	4,779	1,146	17,491	394	25,398	

*CERT is the Council of Energy Resources Tribes: Blackfeet, Cheyenne River Sioux, Fort Berthold (Mandan, Hidatsa, Arikara), Fort Peck (Assiniboin and Sioux), Northern Cheyenne, Jicarilla Apache, Laguna Pueblo, Rocky Boys (Chippewa and Cree), San Carlos Apache, Southern Ute, Ute Mountain Ute, White Mountain Apache and Wind River (Arapaho and Shoshone).

Includes AML projects funded through Acid Mine Drainage Plans, Coal Interim Site Funding, Clean Streams Initiatives, Coal Insolvent Surety Site Funding, Federal Reclamation Program Funding, Pre-SMCRA Grants Funding, State Emergencies, State Set-Aside Funding, Watershed Cooperative Agreements and Funding for Non-Coal projects."

Table 6B - 1978-2006 Abandoned Mine Land Reclamation Accomplishments

Priority 3 (Environmental Restoration)
(Statistics do not include OSM emergency project accomplishments)

Measurement	Acres								Number		Feet	Gallons/minute
	Bench	Industrial/ Residential/ Waster	Gob	Haul Road	Pit	Spoil Area	Slurry	Slump	Equipment/ Facility	Mine Opening	Highwalls	Water Problem
Alabama	23	15	216	2	0	9,726	5	9	8	50	32,435	379
Alaska	0	0	7	0	0	47	9	0	0	0	0	0
Arkansas	0	0	0	0	0	86	0	0	0	0	0	0
California	0	0	2	0	0	0	0	0	0	0	0	50
CERT Tribes	0	0	0	0	0	0	0	0	0	0	0	0
Colorado	3	6	162	0	131	829	0	0	7	18	2,028	1
Crow Tribe	6	0	35	12	32	27	0	4	0	2	2,245	0
Georgia	3	0	3	0	3	7	0	0	0	0	400	0
Hopi Tribe	0	0	26	15	10	10	0	0	0	0	51	0
Illinois	1	6	2,554	210	625	1,895	1,112	1	159	67	10,880	2,896
Indiana	0	108	1,521	227	376	2,257	1,102	4	211	28	14,976	5,105,428
Iowa	0	2	1	5	21	440	0	0	0	1	2,900	0
Kansas	0	0	89	0	23	316	10	0	1	0	3,200	0
Kentucky	564	0	233	0	4	820	66	5	61	69	2,240	60
Maryland	10	1	46	2	22	263	0	1	2	8	5,335	208
Michigan	0	0	27	1	1	10	0	11	1	0	0	0
Missouri	0	5	148	1	96	1,378	69	0	5	0	20,324	86
Montana	1	105	147	1	34	870	0	19	58	230	1,170	2,741
Navajo Nation	41	1	141	203	148	265	0	0	2	79	890	3
New Mexico	3	0	89	11	2	333	2	0	29	29	0	0
North Dakota	0	0	0	0	0	0	0	0	0	0	0	0
Ohio	2	0	197	0	19	425	0	0	3	19	9,620	100
Oklahoma	0	0	0	0	0	0	0	0	0	0	0	0
Oregon	0	0	0	0	0	0	0	0	0	1	0	0
Pennsylvania	0	0	67	0	116	2,695	1	27	22	31	8,258	270
Tennessee	76	1	67	8	114	678	0	4	15	3	3,230	360
Texas	0	0	8	0	0	552	0	0	0	0	0	0
Utah	4	7	255	4	8	55	1	16	64	0	550	20
Virginia	0	1	21	1	0	12	0	0	25	52	13,000	120
West Virginia	2	1	77	0	5	217	2	0	4	4	33,041	622
Wyoming	0	0	39	400	7,174	8,214	199	15	12	24	0	75
TOTAL	739	259	6,178	1,103	8,964	32,427	2,578	116	689	715	166,773	5,113,419

*CERT is the Council of Energy Resources Tribes: Blackfeet, Cheyenne River Sioux, Fort Berthold (Mandan, Hidatsa, Arikara), Fort Peck (Assiniboin and Sioux), Northern Cheyenne, Jicarilla Apache, Laguna Pueblo, Rocky Boys (Chippewa and Cree), San Carlos Apache, Southern Ute, Ute Mountain Ute, White Mountain Apache and Wind River (Arapaho and Shoshone).

Includes AML projects funded by the Federal Reclamation Program, Non-Coal project funding and Pre-SMCRA Grants.

**Table 7
Final Rules Published**

Title	Citation	Date Effective	Rule Text
Civil Penalty Adjustments	30 CFR Parts 723, 724, 845 and 846 70 FR 70698	11/28/2005	This rule adjusts the penalty amount of certain civil monetary penalties authorized by the Surface Mining Law. The rule implements the Federal Civil Penalties Inflation Adjustment Act of 1990 which requires that civil monetary penalties be adjusted for inflation at least once every four years.
Revisions to the State Program Amendment Process	30 CFR 732 70 FR 61194	11/21/2005	<p>This rule revises OSM's regulations pertaining to the processing of state program amendments submitted by a state. The specific regulations being revised govern the standards for determining when proceedings that lead to the substitution of federal enforcement for all or part of an approved state program should be initiated because of the state's failure to amend its program as directed.</p> <p>These revisions provide OSM with the discretion to consider additional relevant factors regarding the performance of the state in effectively maintaining its program before determining that proceedings leading to the substitution of federal enforcement are warranted. The rule also revises the regulations that govern the time periods and schedule for processing state program amendments.</p>
Topsoil Replacement and Revegetation Success Standards	30 CFR 816 and 817 71 FR 51684	9/29/2006	<p>This rule makes minor revisions to the regulations governing topsoil redistribution and revegetation success standards and will:</p> <ol style="list-style-type: none"> (1) encourage species diversity on reclaimed lands by allowing replacement of soil in variable thicknesses; (2) provide more flexibility to states in using new vegetative success standards and sampling techniques by removing the current requirement that such changes be included in the approved regulatory program; (3) define success standards for lands with an undeveloped land postmining land use; (4) remove shelter belts from the list of postmining land uses subject to success standards; (5) provide more flexibility to operators when they demonstrate compliance with time-in-place requirements by allowing them to consider all trees and shrubs in place at bond release, including volunteer trees and shrubs, and not requiring them to verify the length of time that individual trees and shrubs have been in place; and (6) make the timing of revegetation success measurements in areas receiving 26 inches of annual precipitation or less consistent with those in areas receiving more than 26 inches of annual precipitation.

**Table 8
Significant Court Decisions**

Court Decisions	Citation	Decision Text
Cane Tennessee, Inc. v. United States	No. 06-5045 (Fed. Cir.)	Appellant Cane Tennessee, Inc., claims that the Secretary of the Interior's designation of certain lands as unsuitable for surface coal mining operations under SMCRA Section 522(e) effected a permanent regulatory taking of Cane's coal reserves and mining rights, which are located in close proximity to Fall Creek Falls State Park in Tennessee. Cane is appealing various decisions in which the United States Court of Federal Claims ultimately ruled in favor of the government, concluding that the designation did not effect a regulatory taking. More specifically, the court found that Cane lacked "reasonable investment-backed expectations" to mine the subject property and that, due to the fact that Cane's property had significant value even after the lands unsuitable designation, the economic impact of the designation was not sufficiently serious to constitute a taking. Cane's appeal has been fully briefed.
National Mining Association v. Kempthorne	No. 06-5199 (D.C. Cir)	In this case, the National Mining Association (NMA) challenges the Office of Surface Mining's (OSM's) December 17, 1999, rule that defines the circumstances under which a person has "valid existing rights" (VER) to conduct surface coal mining operations on lands listed in SMCRA Section 522(e). On May 4, 2006, the United States District Court for the District of Columbia ruled in favor of the government and upheld OSM's rule. The court held that NMA had failed to show that OSM's VER rule was contrary to the clear intent of Congress, arbitrary, capricious, or otherwise inconsistent with the law. The court also held that OSM's interpretation of valid existing rights is a permissible construction of the statute and that the agency reviewed all the relevant data in reaching its conclusion. On June 30, 2006, NMA noted an appeal of the district court's decision.
Ohio Valley Environmental Coalition v. Kempthorne	No. 06-1122 (4th Cir.)	This case is before the United States Court of Appeals for the Fourth Circuit on the government's appeal of a September 30, 2005, decision of the United States District Court for the Southern District of West Virginia granting the plaintiffs' motion for summary judgment. At issue is the validity of OSM's December 1, 2003, decision to approve a West Virginia program amendment that deleted the State's definition of "cumulative impact" and added a definition of "material damage to the hydrologic balance outside the permit areas." Neither SMCRA nor the federal regulations require definition of these terms; the federal regulations in fact leave determinations on these issues to the States, either on a programmatic or case-by-case basis. Despite the fact that neither definition was mandated by Federal law or regulations, however, the district court held that OSM's approvals of the deletion and the addition constituted a "clear error of judgment." The government argues that the standard applied by the court is inappropriate in the context of OSM's review of a state program amendment.
Ohio Valley Envntl. Coalition, et al. Bulen	No. 03-2281 (S.D. W. Va.)	Plaintiffs challenge the U.S. Army Corps of Engineers' reissuance of Clean Water Act (CWA) Nationwide Permit 21 (NWP 21) on multiple grounds. NWP 21, which was reissued by the Corps on January 15, 2002, authorizes "[d]ischarges of dredged or fill material into waters of the US associated with surface coal mining and reclamation operations provided the coal mining activities are authorized by the DOI, Office of Surface Mining (OSM), or by states with approved programs under Title V of the Surface Mining Control and Reclamation Act." Plaintiffs allege that the Corps' reissuance of NWP 21 violates the Clean Water Act, the National Environmental Policy Act, and the Administrative Procedure Act. On July 8, 2004, the district court ruled that NWP 21 violates section 404(e) of the CWA. On November 23, 2005, a three-judge panel of the U.S. Court of Appeal for the Fourth Circuit unanimously reversed the district court's decision. The Fourth Circuit held that the Corps complied with CWA § 404(e) when it issued NWP 21 and, therefore, reversed the district court's contrary ruling and remanded the case to the district court for consideration of plaintiffs' remaining claims.

**TABLE 9
FEDERALOVERSIGHT OF STATE PROGRAMS**

Violations cited by the Office of Surface Mining¹

State	Site Visits	Notice of Violations	Failure-To-Abate Cessation	Imminent Harm Cessation
Alabama ²	70	0	0	0
Alaska	0	0	0	0
Arkansas	3	0	0	0
Colorado	9	0	0	0
Illinois	101	0	0	0
Indiana	69	0	0	0
Iowa	0	0	0	0
Kansas	6	0	0	0
Kentucky ³	380	4	2	0
Louisiana	4	0	0	0
Maryland	38	0	0	0
Mississippi	2	0	0	0
Missouri ⁴	47	0	0	0
Montana	8	0	0	0
New Mexico	4	0	0	0
North Dakota	19	0	0	0
Ohio	114	0	0	0
Oklahoma	15	0	0	0
Pennsylvania ⁵	277	2	1	0
Texas	11	0	0	0
Utah	7	0	0	0
Virginia	95	0	0	0
West Virginia	170	0	0	0
Wyoming	9	0	0	0
TOTAL	1,458	6	3	0

¹ Excludes any Notices of Violation or Cessation Orders that have been vacated.

² Includes one inspection pertaining to AML Reclamation Fee Collections

³ Includes seven inspections, four NOVs & two FTA COs pertaining to AML Rec. Fee Collections

⁴ Includes only Office of Surface Mining oversight inspections. See Table 10 for regulatory inspections.

⁵ Includes four inspections, two NOVs & one FTA CO pertaining to AML Rec. Fee Collections

**TABLE 10
REGULATORY PROGRAM STATISTICS**

State/Indian Lands	Regulatory Staffing ¹	New Permits ²	New Acreage Permitted ^{2 & 5}	Total Acreage Permitted ²	Inspectable Units ²	Complete Inspections ²	Partial Inspections ²	Notices of Violation ²	Failure-To-Abate COS ²	Imminent Harm COS ²	Bond Forfeitures ²	Acreage of Phase I Bond Released ²	Acreage of Phase II Bond Released ²	Acreage of Phase III Bond Released ²
Alabama	27.00	13	5,283	84,400	217	2140	539	123	10	0	5	2064	1369	2406
Alaska	3.88	0	0	9,099	11	27	57	1	0	0	0	0	0	0
Arkansas	3.95	0	0	1,670	12	48	98	4	0	0	0	0	0	0
Colorado	24.00	1	1,518	162,750	46	169	287	3	0	0	0	76	887	44
Crow Tribe ⁴	0.45	0	1,713	7,209	1	3	6	0	0	0	0	0	0	0
Georgia ⁴	0.00	0	0	0	6	1	0	0	0	0	0	0	0	0
Hopi Tribe ⁴	2.30	0	0	6,137	1	6	7	0	0	0	0	0	0	0
Illinois	31.70	7	2,441	60,900	92	403	868	26	0	0	1	5,082	5,123	6,787
Indiana	44.00	3	672	258,230	109	545	1,206	52	2	0	1	2,680	3,552	3,412
Iowa	3.00	0	0	2,960	16	20	8	0	0	0	0	0	0	115
Kansas	3.20	2	507	4,830	12	46	90	3	0	0	0	0	0	12
Kentucky	299.00	87	89,490	1,764,200	1,931	7,834	14,487	484	36	14	5	12,828	5,978	14,006
Louisiana	2.40	0	0	42,930	2	8	14	1	0	0	0	0	0	0
Maryland	11.60	3	624	6,426	72	364	613	57	31	0	1	75	82	118
Mississippi	2.25	0	0	5,809	1	4	10	0	0	0	0	0	0	0
Missouri ³	6.30	1	76	13,315	31	120	183	0	0	0	7	1,080	2,173	1,565
Montana	16.96	1	175	62,490	15	79	118	4	0	0	0	1,581	1,502	0
Navajo Nation ^{4&6}	5.00	1	6,200	82,863	18	64	37	11	0	0	0	0	0	0
New Mexico	9.00	1	15,000	86,830	10	40	80	3	0	0	0	3,160	3,160	319
North Dakota	7.70	1	5,931	103,680	32	127	534	1	0	0	0	395	395	395
Ohio	34.98	27	5,331	102,700	329	1,305	2,358	130	2	4	1	2,807	4,408	3,680
Oklohomaa	21.10	1	498	22,900	62	263	390	20	0	0	0	0	1,574	2,667
Pennsylvania	243.00	64	8,770	417,849	1,820	6,695	9,183	592	9	17	7	6,036	4,597	4,394
Tennessee ⁴	37.00	4	1,558	30,200	351	558	805	75	12	0	0	459	696	782
Texas	32.00	0	13,368	270,200	30	123	247	15	0	0	0	2,345	2,794	2,974
Utah	19.50	0	548	2,682	33	117	224	12	0	0	0	11	0	0
Ute Mountain Ute Tribe ⁴	0.00	0	0	175	1	4	6	0	0	0	ND	ND	ND	ND
Virginia	78.00	33	9,853	81,200	479	1,957	2,817	185	2	2	1	687	938	3,780
Washington ⁴	N/A	0	0	14,910	2	8	21	6	0	0	0	0	0	0
West Virginia	281.20	43	8,713	334,087	2,258	13,721	13,257	963	59	15	13	5,547	2,716	2,021
Wyoming	29.70	1	13,369	367,600	36	143	253	4	1	0	0	3,002	0	0
TOTAL	1,280.17	294	191,638	4,411,231	8,036	36,942	48,803	2,775	164	52	42	49,915	41,944	49,477

¹ Number of regulatory program staff as of June 30, 2006.

² State program statistics are for the one-year period, July 1, 2005 - June 30, 2006, except where noted (federal statistics for Crow, Georgia, Hopi, Navajo, Tennessee and Washington. See footnote 4.

³ MO resumed full primacy February 1, 2006. As a result of substitution of federal enforcement in Missouri, OSM was the regulatory authority in the state until February 1, 2006, when Missouri assumed full primacy. As a result, 34 of the 120 complete inspections were made by OSM (14 between July 1, 2005 and September 30, 2005, and 20 between October 1, 2005 and January 31, 2006). In addition, OSM made 67 of the 183 partial inspections (35 between July 1, 2005 and September 30, 2005, and 32 between October 1, 2005 and January 31, 2006). The remaining 86 complete inspections and 116 partial inspections were made by the state of Missouri between February 1, 2006, and June 30, 2006."

⁴ Federal statistics are for the one-year period, October 1, 2005 - September 30, 2006.

⁵ New acreage permitted includes acreage permitted for incidental boundary revisions and other revisions or amendments that add acreage, in addition to acreage for new permits.

⁶ The figure for total permitted acreage for the Navajo Nation in 2005 was reported incorrectly in the 2005 Annual Report. The correction is reflected in the figure provided for 2006 above.

**TABLE 11
REGULATORY GRANT FUNDING FY2006 OBLIGATIONS¹**

State/Tribe	2006 Federal Funding		Cumulative Through 2006 Federal Funding ²
	2006	2005	2006
Alabama	\$ 1,022,211	\$ 987,979	\$ 29,031,657
Alaska	\$ 183,601	\$ 188,518	\$ 6,276,914
Arkansas	\$ 145,457	\$ 149,353	\$ 3,992,277
Colorado	\$ 1,903,776	\$ 1,954,760	\$ 35,368,979
Crow Tribe	\$ 29,387	\$ 30,174	\$ 1,203,905
Hopi Tribe	\$ 169,439	\$ 173,977	\$ 2,208,775
Illinois	\$ 2,375,884	\$ 2,439,511	\$ 60,958,596
Indiana	\$ 1,787,798	\$ 1,920,252	\$ 38,362,142
Iowa	\$ 125,378	\$ 128,736	\$ 3,076,324
Kansas	\$ 109,642	\$ 112,578	\$ 3,200,718
Kentucky	\$ 1,992,212	\$ 12,313,367	\$ 309,053,024
Louisiana	\$ 163,018	\$ 167,384	\$ 4,061,003
Maryland	\$ 575,520	\$ 590,933	\$ 13,619,358
Michigan	\$ -	\$ -	\$ 135,458
Mississippi	\$ 13,459	\$ 113,729	\$ 1,441,440
Missouri	\$ 245,767	\$ 162,675	\$ 8,955,308
Montana	\$ 1,043,335	\$ 1,050,741	\$ 20,477,258
N. Cheyenne Tribe	\$ -	\$ -	\$ 86,888
Navajo Nation	\$ 436,973	\$ 448,675	\$ 5,135,009
New Mexico	\$ 718,290	\$ 737,526	\$ 15,082,421
North Dakota	\$ 513,659	\$ 501,284	\$ 13,027,959
Ohio	\$ 1,967,353	\$ 2,020,039	\$ 64,854,853
Oklahoma	\$ 919,448	\$ 1,018,398	\$ 21,214,736
Pennsylvania	\$ 10,387,573	\$ 10,665,756	\$ 248,073,600
Rhode Island	\$ -	\$ -	\$ 158,453
Tennessee	\$ -	\$ -	\$ 5,340,085
Texas	\$ 1,399,190	\$ 1,317,376	\$ 27,157,852
Utah	\$ 1,698,219	\$ 1,743,698	\$ 34,303,588
Virginia	\$ 3,174,421	\$ 3,259,433	\$ 77,953,374
Washington	\$ -	\$ -	\$ 4,893
West Virginia	\$ 11,199,595	\$ 10,520,169	\$ 157,266,143
Wyoming	\$ 2,064,742	\$ 2,120,036	\$ 40,490,319
TOTAL	\$ 56,365,347	\$ 56,837,056	\$ 1,251,573,305

¹ Figures have been adjusted for rounding.

² Includes obligations for AVS, TIPS, Kentucky Settlement and other Title V cooperative agreements. Figures for FY 2006 do not include downward adjustments of prior year awards. However, cumulative figures are net of all prior year downward adjustments.

**Table 13
Appropriations¹**

	2006	2005
Regulation & Technology		
Environmental Restoration	\$ 155,676	\$ 158,763
Environmental Protection	\$ 78,615,393	\$ 79,820,407
Technology Dev. & Transfer	\$ 14,683,460	\$ 13,299,632
Financial Management	\$ 480,820	\$ 485,165
Executive Dir. & Admin	\$14,874,887	\$14,504,671
	<hr/>	<hr/>
Subtotal	\$ 108,810,236	\$ 108,268,638
Abandoned Mine Reclamation		
Environmental Restoration	\$ 167,609,244	\$ 169,318,757
Technology Dev. and Transfer	\$ 3,864,298	\$ 3,021,433
Financial Management	\$ 6,142,282	\$ 8,444,158
Executive Dir. & Admin	\$7,632,038	\$7,421,477
	<hr/>	<hr/>
Subtotal	\$ 185,247,862	\$ 188,205,825
Total OSM Budget	\$ 294,058,098	\$ 296,474,463
Transfer to United Mine Workers Fund	\$ 59,003,833	\$ 66,533,254
	<hr/>	<hr/>
Total	\$353,061,931	\$363,007,717

¹ The appropriation figures include reprogramming and rescissions for 2005 and rescissions for 2006.

TABLE 12 SMALL OPERATOR ASSISTANCE PROGRAM (SOAP) 2006 GRANT AWARDS ¹				
State	Grant Amount 2006	Grant Amount 2005	Operators	Projects Started
Alabama	\$35,000	\$60,000	2	2
Kentucky	\$0	\$606,000	18	18
Maryland	\$0	\$35,000	0	0
Ohio	\$0	\$50,000	2	2
Pennsylvania	\$79,602	\$669,000	40	53
West Virginia ²	\$35,000	\$96,994	2	0
TOTAL	\$149,602	\$1,516,994	64	75

¹ Amounts do not include downward adjustments of prior-year awards.

² The figure for West Virginia in 2005 was reported incorrectly in the 2005 annual report. The corrected amount is shown above.

FIGURE 1 CLEAN STREAMS PROGRAM PROJECTS				
State	Supplemental State Grants Started In 2006	Supplemental State Grants Completed Since 1994*	Watershed Agreements Started in 2006	Watershed Agreements Completed Since 1999
Alabama	3	8	0	1
Illinois	0	4	0	0
Indiana	0	22	0	4
Iowa	0	4	1	0
Kansas	0	0	0	0
Kentucky	1	12	0	0
Maryland	0	10	6	14
Missouri	0	4	0	0
Ohio	1	21	1	8
Oklahoma	0	2	0	0
Pennsylvania	0	39	7	46
Tennessee	0	0	0	2
Virginia	0	2	0	4
West Virginia	1	15	5	13
TOTAL	6	143	20	92

* Fifteen projects begun with Supplemental State Grants funding prior to FY 2006 had not been previously reported but are included in the cumulative total above (Iowa - 3; Ohio - 3; Pennsylvania - 7; and West Virginia - 2).

**FIGURE 2
WATERSHED COOPERATIVE AGREEMENTS**

State	Project Name/Description	Grant Amount
Illinois	Regional Economic Development Corp.	\$ 20,000
Iowa	Roozeboom AML Site Pathfinders RC&D	\$ 100,000
Kansas	See-Kan RC&D	\$ 80,000
Maryland	Chubb Run Seep Mitigation Project Garrett Co. Community Action/Yough Watershed	\$ 34,200
	Railroad Street AMD Remediation Project Georges Creek Watershed Association	\$ 100,000
	Owens South AMD Remediaton Project Western Maryland RC & D	\$ 100,000
	Owens North AMD Remediaton Project Western Maryland RC & D	\$ 91,000
	Mill Run Pulse Limestone Georges Creek Watershed Association	\$ 10,000
	Lanaconing AMD Remediation Project Western Maryland RC & D	\$ 28,500
Ohio	Harsha North Rural Action Inc.	\$ 98,500
Pennsylvania	Orchard Limestone Drain Rehabilitation Pocono Northeast RC & D Council	\$ 54,000
	Brandy Camp Upgrade Toby Creek Watershed Association	\$ 100,000
	Wingfield Pines AMD Remediation Project Allegheny Land Trust	\$ 100,000
	Findleyville Shreves Run (Amendment) Southern Alleghenies Conservancy	\$ 43,525
Tennessee	Bear Creek #1 Cumberland Mountain RC & D	\$ 98,000
	Bear Creek #2 Cumberland Mountain RC & D	\$ 99,000
West Virginia	Lambert Run Oldaker Site 8/8a Project Guardians of the West Fork	\$ 96,000
	Pringle Run - Jessop Portals #1 Project Friends of the Cheat	\$ 73,739
	Morris Creek - Blacksnake Hollow Project Morris Creek Watershed Association	\$ 100,000
	Morgan Run - DeAntonis Project Friends of the Cheat	\$ 73,739
	Middle Fork Greens Run - Blood Lagoon Friends of the Cheat	\$ 100,000
	Dempsey Branch Project Plateau Action Network	\$ 99,797
	TOTAL	\$ 1,700,000

**FIGURE 5
NTTP COURSES AND ENROLLMENT**

COURSE NAME	SESSIONS	Students
Acid-forming Materials AML Workshop	1	11
Acid-forming Materials: Fundamentals	1	29
Advanced Blasting	1	16
AML Design Workshop: Dangerous Highwalls	1	13
AML Design Workshop: Dangerous Openings	1	14
AML Design Workshop: Drilling and Grouting	2	33
AML Design Workshop: Fires	0	0
AML Design Workshop: Landslides	1	9
AML Design Workshop: Subsidence	0	0
AML Partnering Workshop	1	30
AML Realty: Special Session for PA	1	38
AML Reclamation and Health Physics	1	17
AML Reclamation Projects	1	13
AML Workshop: Subsidence	1	10
AMLIS: Entering and Retrieving Information	3	36
Appalachian Regional Field Issues Workshop	1	35
Applied Engineering Principles	2	34
Blasting and Inspection	1	37
Bonding Workshop: Cost Estimation	1	28
Coalfield Communications	4	122
Coalfield Communications Workshop	1	25
Effective Writing	3	60
Enforcement Procedures	1	19
Enforcement Tools and Applications	2	34
Erosion and Sediment Control	2	22
Evidence Preparation and Testimony	1	18
Expert Witness	1	14
Forensic Hydrologic Investigation	2	43
Geofluvial Workshop	1	119
Geology and Geochem of AFM	2	48
Geomophology Inspectors' Workshop	1	19
Historic and Archeological Resources	2	31
Hydrology Workshop (MCR)	1	28
Instructor Training	1	15
NEPA Procedures	1	24
Passive Treatment	1	24
Permitting Hydrology	1	17
Principles of Inspection	1	30
Quantitative Hydrology	1	23
Roundtable on Financial Assurance (IMCC)	1	43
SMCRA and the ESA	1	14
Soils and Revegetation	2	45
Subsidence	2	33
Surface and Groundwater Hydrology	2	33
Underground Injection Workshop	1	48
Underground Mine Mapping Workshop	1	24
Underground Mining Technology	2	36
Wetlands Awareness	2	32
TOTAL	65	1,446

**FIGURE 3
NUMBER OF WATERSHED INTERNS**

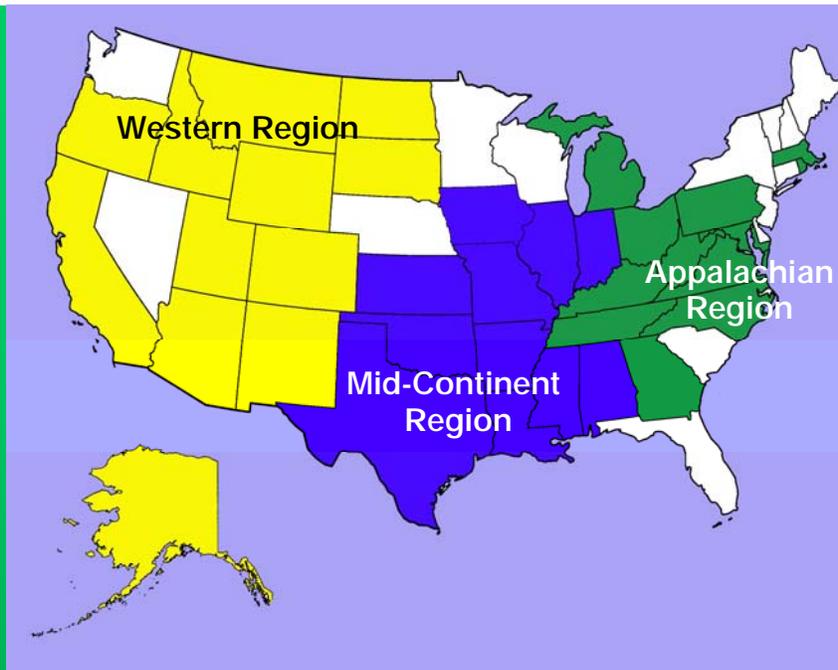
State	2006	2005	2004	2003	2002	2001	2000	1999
Alabama	1	1	1	1	1	0	3	0
Colorado	1	0	0	0	0	0	0	0
Indiana	0	0	0	0	1	1	0	1
Kentucky	1	0	0	0	0	1	2	0
Maryland	1	2	2	1	2	2	1	0
Ohio	0	2	1	5	4	3	2	1
Oklahoma	0	1	0	0	0	0	0	0
Pennsylvania	6	5	7	9	8	12	5	3
Tennessee	5	4	3	1	3	1	3	1
Virginia	2	1	1	3	3	2	1	0
West Virginia	5	6	8	6	9	11	6	4
Totals	22	22	23	26	31	33	23	10

**FIGURE 4
INVENTORY COSTS¹**

Inventory Costs	Dollars (Billion \$)	Percentage	Dollars (Billion \$)	Percentage
	2006	2006	2005	2005
Completed	2.4	21.1	2.3	20.5
Funded	0.3	2.6	0.2	1.8
Unreclaimed ²	8.7	76.3	8.7	77.7
Total	11.4	100	11.2	100

¹ Includes priority 1, 2 and 3 coal and non-coal costs.

² Includes all programs except RAMP and Federal emergencies.



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Hay is harvested on land reclaimed by the Wash Ridge Coal Company near Pleasant View in Whitley County, Kentucky. Hay for a cattle operation has been harvested for 3 years since the mine site was reclaimed.



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