

1940's and 50's uranium mining on the Navajo Reservation had left abandoned underground mine openings, dangerous highwalls, radioactive waste piles, and undetonated explosives. Today, with reclamation complete, these hazards are eliminated and the site is being returned to native grazing land.

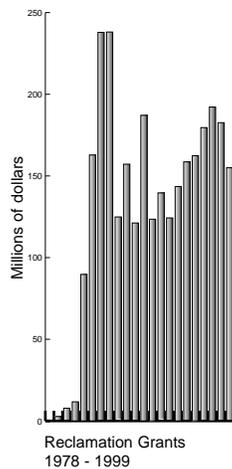
Abandoned Mine Reclamation (Environmental Restoration)

Reclamation of abandoned mine land affected by mining that took place before the Surface mining Law was passed in 1977

Title IV of the Surface Mining Law - the Abandoned Mine Land Reclamation Program -- provides for the restoration of lands mined and abandoned or left inadequately restored before August 3, 1977. Implementation is accomplished through an Emergency Program (for problems having a sudden danger that present a high probability of substantial harm to the health, safety, or general welfare of people before the danger can be abated under normal program operating procedures), and a non-emergency program. States and tribes with approved programs carry out these responsibilities.

Grants to States and Tribes

Beginning with Texas in 1980, the Office of Surface Mining began approving state reclamation programs. Currently, all primacy states except Mississippi have approved abandoned mine land reclamation programs. In addition, the Crow, Hopi, and Navajo Indian Tribes have approved programs. In 1999, the states and the tribes received grants totaling \$155,083,275 to carry out the Emergency and non-emergency Abandoned Mine Land programs.



Since 1979, when the states began receiving abandoned mine land administrative grants to operate their programs and construction grants to complete reclamation projects, \$2,770,824,573 has been distributed from the fund. Grant amounts for 1999 are shown in Table 1. On-the-ground abandoned mine reclamation accomplishments resulting from grant funding through 1999 are included in Table 4.

Simplified grant funding of state abandoned mine land programs started in 1994. This grant application process eliminates the requirement for separate advance approval of each reclamation

project before a grant is awarded to the state. States now receive amounts based on appropriated spending levels and are held accountable for using those funds in accordance with their approved abandoned mine land reclamation plans. The Office of Surface Mining is no longer involved in cumbersome and detailed pre-award scrutiny of state grant applications.

Minimum Program

The minimum-level program was established by Congress in 1988 to ensure funding of existing high priority projects in states where the annual distribution is too small for the state to administer a program.

During 1999, Alaska, Arkansas, Iowa, Kansas, Maryland, Missouri, North Dakota, and Oklahoma were eligible for minimum-level program funding and received such grants during the year. Minimum-level program funding remained at \$1,500,000 for 1999. The eight eligible programs received a total of \$7,844,825 in 1999. This funding supplements the formula-based grant and brings those eight states to the minimum-program level. Once minimum-program states and tribes complete their high priority projects listed in the National Inventory of Abandoned Mine Land Problems, their annual grants are limited to state-share funds.

State Set-Aside

Beginning in 1987, Public Law 100-34 authorized states to set aside up to 10 percent of the state-share portion of their annual abandoned mine land reclamation grants. Set-aside money was deposited into special trust funds and became available, along with interest earned, for use by the state for reclaiming abandoned mine land problems after August 3, 1992, the original expiration date for the collection of abandoned mine land reclamation fees.

TABLE 1: 1999 ABANDONED MINE LAND GRANTS* TO PRIMACY STATES AND INDIAN TRIBES

State/Tribe	Subsidence Insurance	10% Program Set-Aside	Administration ³	Project Costs ⁴	Emergency ⁵	1999 Total	1998 Total
Alabama	\$0	\$0	\$711,480	\$2,932,344	\$425,000	\$4,068,824	\$3,820,485
Alaska	0	0	495,270	1,437,771	25,000	1,958,041	1,689,241
Arkansas	0	0	320,504	1,179,496	13,500	1,513,500	1,513,000
Colorado	0	227,376	676,000	1,949,000	0	2,852,376	2,315,108
Illinois	0	829,065	1,224,298	6,876,521	621,000	9,550,884	9,115,235
Indiana	0	476,229	1,117,107	3,861,366	293,344	5,748,046	5,555,316
Iowa	0	0	236,252	1,433,335	0	1,669,587	1,530,149
Kansas	0	0	208,681	1,291,319	460,000	1,960,000	2,410,410
Kentucky	0	0	6,519,135	9,810,941	0	16,330,076	20,945,743
Louisiana	0	0	100,301	30,000	0	130,301	170,097
Maryland ¹	0	500,000	562,998	631,056	0	1,694,054	2,559,572
Missouri	0	61,773	576,467	1,319,765	49,771	2,007,776	2,075,421
Montana	0	0	461,834	3,050,406	125,000	3,637,240	3,742,599
New Mexico	0	160,412	1,020,262	1,520,000	0	2,700,674	1,656,009
North Dakota	0	114,673	229,456	1,233,282	50,000	1,627,411	1,620,539
Ohio	0	0	3,214,405	3,896,023	2,067,897	9,178,325	10,649,616
Oklahoma	0	0	341,991	1,158,009	89,629	1,589,629	1,795,398
Pennsylvania ¹	0	2,204,386	4,591,552	18,655,400	0	25,451,338	29,632,995
Texas	0	0	403,088	0	0	403,088	415,305
Utah	0	0	302,478	1,724,066	0	2,026,544	1,750,000
Virginia ²	0	380,000	1,616,370	2,702,460	1,500,000	6,198,830	6,144,099
West Virginia	0	0	6,458,043	16,006,983	3,680,807	26,145,833	36,358,602
Wyoming	0	0	376,072	23,819,395	0	24,195,467	23,064,346
Crow Tribe	0	0	128,888	394,943	0	523,831	1,826,343
Hopi Tribe	0	0	914,202	0	0	914,202	887,948
Navajo Tribe	0	0	459,606	547,792	0	1,007,398	9,437,565
Total	\$0	\$4,953,914	\$33,266,740	\$107,461,673	\$9,400,948	\$155,083,275	\$182,681,141

*Funding for these grants is derived from the 1999 Distribution and funds recovered or carried over from previous years. Downward adjustments of prior-year awards are not included in the totals.

1. These 10% set-aside amounts are for Acid Mine Drainage set-aside funding rather than Future set-aside funding.

2. Administrative amount for Virginia includes \$172,916 for coalbed mapping grant.

3. Administrative amounts for most states/tribes contain non-emergency indirect costs which are applicable to their entire AML program. These costs cannot be broken down into separate cost categories.

4. The term "Project Costs" is now used instead of Construction. AML simplified grants do not contain specific construction cost breakdowns, but rather list all costs associated with a construction project as a project cost. This category contains both non-water supply and water supply project costs, and includes \$5,900,000 in funding for Appalachian Clean Streams Initiatives projects.

5. This category contains emergency project, administrative, and indirect costs. Indirect costs are not directly attributable to emergency project or administrative costs.

(Subsequent legislation has extended that date to September 30, 2004.) Statutory amendments contained in Public Law 101-508 created a new set-aside program that does not supersede the transfer of funds deposited under the original 1987 program. The funds set aside under the new program were available for use beginning in 1996, and only to reclaim eligible priority 1 and 2 abandoned coal mine land problems. In 1999, nine states set aside \$4,953,914.

► Located within the scenic Monument Valley and surrounded by a landscape of dramatic and colorful monoliths, this Navajo reclamation project eliminated 30 mine portals, seven vertical shafts, back-filled and covered two radioactive mine pits and one water retention pond, and eliminated 65 acres of radioactive mine waste. Native plants have been established on the regraded site, and when fully established, should provide a landscape similar to the surrounding area.



Subsidence Insurance

Public Law 98-473 authorized states and tribes with approved reclamation programs to use abandoned mine land funds to establish self-sustaining, individually administered programs to ensure private property against damage caused by land subsidence resulting from abandoned underground coal mines. Implementing rules were promulgated in February 1986. Under those rules, states can receive a subsidence insurance grant of up to \$3,000,000, awarded from the state's share of the Abandoned Mine Land Fund. In 1999, no subsidence insurance grants were issued. Through 1999, the Office of Surface Mining has granted a total of \$11,563,281 to Colorado, Indiana, Kentucky, Ohio, West Virginia, and Wyoming for this purpose.

Emergency Program

Emergency reclamation projects are those involving abandoned mine land problems that present a danger to public health, safety, or general welfare and which require immediate action to eliminate the problem.

Under Section 401(a) of the Surface Mining Law, the Secretary of the Interior is authorized to

spend money from the Abandoned Mine Reclamation Fund for emergency restoration, reclamation, abatement, control, or prevention of the effects of coal mining practices. Investigations of potential emergency problems (called "complaint" investigations) are undertaken by state reclamation agencies as part of their approved Abandoned Mine Land Program or by the Office of Surface Mining in other states. Complaint investigations are

referred to the Office of Surface Mining from a variety of sources including affected citizens, municipalities, emergency response agencies, and state non-emergency reclamation agencies. The Office of Surface Mining then confirms the emergency assessment, performs technical investigations, and obtains funds for declared emergencies. Of the 180 potential emergencies referred to the Office of Surface Mining in 1999, 136 became emergency projects; 20 were determined to be not of an emergency nature, not related to coal mining, or were reclaimed by the landowner; and 24 were still under investigation

on September 30, 1999. Those projects which were not emergencies; but, were otherwise eligible for reclamation were referred to the states for consideration as high priority projects.

In 1999, the states and the Office of Surface Mining declared 318 Abandoned Mine Land emergencies in 16 states (see Table 2). As usual, most emergencies occurred in Pennsylvania, followed by Kansas, West Virginia, Kentucky, and Ohio. Relatively dry conditions in the eastern U.S. reduced the numbers of projects in most states compared to prior years.

TABLE 2: EMERGENCY RECLAMATION PROJECTS

	1999 Projects		1978-1998 Projects		Total
	Federal	State	Federal	State	
Alabama	0	13	10	35	58
Alaska	0	0	0	0	0
Arkansas	0	2	1	12	15
California	0	0	4	0	4
Colorado	3	0	92	0	95
Illinois	0	13	51	198	262
Indiana	0	15	94	65	174
Iowa	0	0	18	0	18
Kansas	0	59	270	449	778
Kentucky	31	0	743	0	774
Louisiana	0	0	0	0	0
Maryland	0	0	14	0	14
Michigan	1	0	10	0	11
Mississippi	0	0	0	0	0
Missouri	0	0	6	0	6
Montana	0	1	7	12	20
Navajo Nation	0	0	6	0	6
New Mexico	0	0	15	0	15
North Dakota	0	1	15	7	23
Northern Cheyenne	0	0	2	0	2
Ohio	0	30	190	146	366
Oklahoma	0	5	47	3	55
Pennsylvania	96	0	1,779	0	1,875
Rhode Island	0	0	2	0	2
Southern Ute Tribe	0	0	1	0	1
Tennessee	0	0	12	0	12
Texas	0	0	5	0	5
Utah	0	0	0	0	0
Virginia	0	7	30	72	109
Washington	1	0	42	0	43
West Virginia	0	40	179	493	712
Wyoming	0	0	38	0	38
Total	132	186	3,683	1,492	5,493

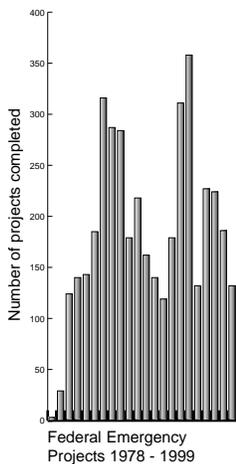


TABLE 3: 1999 FEDERAL RECLAMATION PROJECT OBLIGATIONS

During 1999, states obligated \$9.4 million on emergency abatement, while the Office of Surface Mining obligated \$8.0 million on emergency projects. The greatest expenditure of Office of Surface Mining emergency funds was in Kentucky (see Table 3). The \$5.2 million spent in Kentucky exceeded the Congressionally-imposed "cap" of \$4.5 million to be expended in each state per year, and received additional funding from "carryover" of unexpended Abandoned Mine Reclamation Funds from previous years.

Following passage of the Surface Mining Law, the Office of Surface Mining did all emergency reclamation; however, as state programs were approved, many took over emergency programs as well. In 1999, the following states were implementing emergency programs: Alabama, Alaska, Arkansas, Illinois, Indiana, Kansas, Missouri, Montana, North Dakota, Ohio, Oklahoma, Virginia, and West Virginia. The Office of Surface Mining funds the states with emergency programs using federal share funds (in addition to formula-based allocations) to complete the projects. The Office of Surface Mining continues to operate the emergency programs in California, Colorado, Iowa, Kentucky,

State or Tribe	Emergency	High Priority	Total 1978-99*
Alabama	\$0	\$0	\$13,934,015
Alaska	0	0	194,638
Arkansas	0	0	84,904
California	14,283	121,550	1,839,384
Colorado	32,516	0	1,947,899
Georgia	0	45,774	3,627,478
Illinois	0	0	5,376,749
Indiana	0	0	4,032,023
Iowa	0	0	1,339,759
Kansas	0	0	5,094,172
Kentucky	5,274,053	0	101,359,484
Maryland	0	0	2,806,888
Michigan	36,825	168,844	2,942,118
Missouri	0	0	8,015,909
Montana	0	0	729,058
New Mexico	0	0	2,364,696
North Carolina	0	0	205,407
North Dakota	0	0	1,723,933
Ohio	0	0	18,295,299
Oklahoma	0	0	1,232,159
Oregon	0	0	42,275
Pennsylvania	2,528,932	0	105,987,051
Rhode Island	0	0	556,229
South Dakota	0	0	27,255
Tennessee	1,216	927,349	21,960,552
Texas	0	0	289,849
Utah	0	0	123,791
Virginia	0	0	10,139,469
Washington	61,470	149,378	6,768,157
West Virginia	0	0	29,023,226
Wyoming	0	0	1,067,101
Cheyenne River Sioux Tribe	0	0	2,812,372
Crow Tribe	0	0	1,097,895
Fort Berthold Tribe	0	0	69,972
Fort Peck Tribe	0	0	147,991
Hopi Tribe	0	0	1,263,409
Jacarillo Apache Tribe	0	9,000	59,998
Navajo Tribe	0	0	2,222,792
Northern Cheyenne Tribe	0	0	585,044
Southern Ute Tribe	0	0	94,206
Rocky Boy Tribe	0	0	60,188
Uintah/Ouray Tribe	0	0	138,738
Ute Mountain Tribe	0	0	14,300
White Mountain Apache Tribe	0	0	1,838
Wind River Tribe	0	0	73,267
Zuni Tribe	0	0	125,009
Undistributed	0	0	105
Total	\$7,949,295	\$1,421,895	\$361,898,051

* Includes prior year contract deobligations and upward adjustments.



◀ The Oklahoma Partnership approach to reclamation of abandoned mine land is a joint effort of the Oklahoma Abandoned Mine Land Reclamation Program and the Agriculture Department's Natural Resources Conservation Service. By sharing resources, both people and money, the two agencies reduced costs, eliminated duplication of services, and achieved outstanding abandoned mine reclamation. Here at this reclaimed site in Rogers County, the combined effort resulted in the elimination of three hazardous highwalls and a significant source of acid mine drainage that was flowing into the Claremore municipal water supply.



▲ Members of the Oklahoma Partnership have proven that there is less administrative overhead *by combining several jobs into one*, reduced construction costs *since only one contractor was used instead of many*, less technical support costs *local staff are used with reduced travel needed*, and more timely construction *many small projects are funded at once rather than doing one or two each year*. Members of the Izett and Hendrix project team are (from left to right): Mike Kastl, Oklahoma Abandoned Mine Land Reclamation Program Coordinator; Kevin Norton, Natural Resources Conservation Service; Charlotte Stieber, Abandoned Mine Land Program; Arnold Hamilton, Natural Resources Conservation Service; Bob Heidlage, Abandoned Mine Land Program; Gene Bollinger, Abandoned Mine Land Program; and Lyle Shingleton, Abandoned Mine Land Program.

Maryland, Michigan, New Mexico, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Washington, and Wyoming as well as on all tribal lands.

Non-Emergency Program

Under Sections 402 and 407 of the Surface Mining Law, the Secretary of the Interior is authorized to

expend Abandoned Mine Reclamation Fund monies for non-emergency reclamation of high priority problems that present an extreme danger to the public. A non-emergency is defined in the Surface Mining Law regulations (30 CFR 870.5) as "a condition that could reasonably be expected to cause substantial harm to persons, property, or the environment." Until 1980, when states and Indian tribes began to receive approval for their Abandoned Mine Land programs, all non-emergency reclamation was administered by the Office of Surface Mining. However, since that time, state and tribal programs have assumed responsibility for correcting abandoned mine land problems and currently expend 98 percent of non-emergency reclamation funds. During 1999 the Office of Surface Mining

initiated 9 non-emergency projects in California, Georgia, Michigan, Tennessee, Washington, and Jicarilla Apache lands in New Mexico.

The Office of Surface Mining sometimes enters into agreements with other state and federal agencies to cooperate in the reclamation of abandoned mine land problems. In 1999, the Office of Surface Mining entered into an agreement with the National Park Service to close a mine portal in the New River Gorge of West Virginia.

Table 4 summarizes both emergency and non-emergency abandoned coal mine reclamation project accomplishments through 1999. The Abandoned Mine Reclamation Fund also is used to reclaim problems created by non-coal mines. To be eligible for funding, a non-coal project must be a priority 1 (threat to health and safety), or the state or Indian tribe must certify it has addressed all known coal-related problems. Non-coal reclamation project accomplishments are included in Table 4.

Post-Surface Mining Law Reclamation

As authorized by the 1999 appropriations, federal civil penalties collected under Section 518 of the Surface Mining Law were used to reclaim lands mined and abandoned after August 3, 1977. In 1999, the Office of Surface Mining funded two civil penalty reclamation projects, one in Colorado and one in Kentucky, costing a total of \$80,242. An additional \$296,332 in unobligated funds will be carried over for use in year 2000 reclamation projects.

Appalachian Clean Streams Initiative

The Appalachian Clean Streams Initiative was started in the fall of 1994 by the Office of Surface Mining. The Initiative supports

TABLE 4: 1978-1999 ABANDONED MINE LAND RECLAMATION ACCOMPLISHMENTS

Priority 1 and 2 (Protection of Public Health, Safety and General Welfare) and State Emergency Projects

	Clogged Streams ¹	Clogged Stream Lands ²	Dangerous Highwalls ³	Dangerous Impoundments ⁴	Dangerous Piles & Embankments ²	Dangerous Slides ²	Dangerous Gases ⁴	Hazardous Equipment and Facilities ⁴	Hazardous Water Bodies ⁴	Industrial/Residential Waste ²	Portals ⁴	Polluted Water: Agricultural & Industrial ⁴	Polluted Water: Human Consumption ⁴	Subsidence ²	Surface Burning ²	Underground Mine Fires ²	Vertical Opening ⁴
Alabama	2.4	135.5	179,960.0	1.0	40.0	20.1	0.0	453.0	58.0	22.8	915.0	1.0	13.0	33.4	62.9	0.0	363.0
Alaska	0.0	0.0	6,120.0	4.0	3.5	0.0	0.0	58.0	2.0	4.0	6.0	0.0	0.0	0.0	0.0	0.0	3.0
Arkansas	0.5	0.0	48,526.0	1.0	608.0	0.0	0.0	2.0	56.0	19.0	20.0	0.0	0.0	4.0	4.0	0.0	77.0
California	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.0	0.0	0.0	0.5	0.0	0.0	39.0
CERT *	0.1	0.0	7,170.0	0.0	474.8	0.0	0.0	6.0	30.0	9.0	72.0	0.0	0.0	34.0	0.0	0.0	18.0
Colorado	0.0	0.0	51,492.0	0.0	18.6	0.0	0.0	1.0	0.0	2.0	496.0	3.0	0.0	45.5	35.0	78.5	276.0
Crow Tribe	0.0	1.0	1,915.0	1.0	54.6	22.0	0.0	32.0	1.0	0.0	14.0	3.0	0.0	16.0	0.0	0.0	5.0
Georgia	0.0	0.0	6,950.0	3.0	2.5	0.0	0.0	0.0	0.0	0.0	112.0	0.0	1.0	0.1	0.0	0.0	11.0
Hopi Tribe	0.0	0.0	14,302.0	0.0	0.0	0.0	0.0	8.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0	1.7	2.0
Idaho	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Illinois	19.6	1,242.2	21,011.0	7.0	191.2	2.5	19.1	271.0	2.0	71.4	139.0	11.0	1.0	49.1	36.0	0.0	656.3
Indiana	14.1	109.0	102,665.4	6.0	638.3	1.0	3.0	89.0	7.0	22.0	48.0	6.0	6.0	92.0	8.5	0.0	308.0
Iowa	5.9	556.0	52,490.0	1.0	811.9	0.0	0.0	4.0	22.0	10.0	1.0	12.0	2.0	2.0	0.0	0.0	20.0
Kansas	0.8	8.5	105,147.0	1.0	107.5	1.0	0.0	2.0	1.0	20.8	0.0	3.0	0.0	22.1	4.0	0.0	574.0
Kentucky	42.9	8,428.7	20,872.0	98.7	299.7	1,871.2	0.0	194.0	28.0	54.0	1,443.0	6.0	3,910.0	49.9	214.8	82.8	105.0
Maryland	3.2	41.0	29,680.0	0.0	98.8	22.5	0.0	12.0	11.0	14.5	17.0	3.0	1.0	8.5	1.0	0.0	2.0
Michigan	0.0	0.0	950.0	0.0	0.0	0.0	0.0	7.0	2.0	0.0	0.0	0.0	1.0	0.3	8.0	0.0	33.0
Missouri	10.8	1,407.8	63,502.0	6.0	478.9	0.0	0.0	27.0	10.0	70.5	26.0	32.0	15.0	2.6	19.0	2.0	116.0
Montana	3.3	9.9	6,910.0	3.0	81.8	0.9	0.0	195.0	0.0	73.6	723.0	17.0	12.0	473.0	301.9	68.9	434.0
Navajo Nation	0.0	0.0	0.0	1.0	1.0	7.0	0.0	4.0	0.0	0.3	152.0	0.0	0.0	5.0	3.0	0.0	7.0
New Mexico	0.0	0.0	0.0	0.0	2.5	0.0	0.0	16.0	0.0	0.0	237.0	1.0	1.0	30.3	35.0	32.0	80.0
North Carolina	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0
North Dakota	0.0	0.0	47,049.0	4.0	303.0	35.0	0.0	14.0	18.0	2.0	13.0	6.0	0.0	1,189.5	1.0	0.0	88.0
Ohio	29.1	4,783.5	35,784.0	6.0	96.0	330.9	2.0	38.0	6.0	34.0	178.1	1.0	10.0	55.5	80.5	0.3	152.0
Oklahoma	11.8	0.0	191,694.0	0.0	0.0	0.0	0.0	13.0	163.0	5.5	101.0	3.0	2.0	4.8	0.0	0.0	75.0
Oregon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	12.0	0.0	0.0	0.1	0.0	0.0	3.0
Pennsylvania	49.6	129.7	567,346.0	42.0	539.7	25.9	0.0	296.0	103.0	17.0	233.0	1.0	28.0	2,326.5	122.2	914.8	445.0
Rhode Island	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0
South Dakota	0.0	0.0	135.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	5.0	0.0	0.0	0.6	0.0	0.0	1.0
Tennessee	0.0	147.0	16,655.0	0.0	200.0	55.8	0.0	31.0	9.0	11.0	192.0	0.0	5.0	6.0	27.5	0.0	10.0
Texas	0.0	0.0	3,285.0	0.0	987.0	0.0	0.0	0.0	5.0	0.0	6.0	0.0	0.0	6.0	0.0	0.0	21.0
Utah	13.6	9.0	3,425.0	1.0	134.5	0.0	19.0	150.0	0.0	2.0	500.0	2.0	0.0	5.0	42.8	29.0	23.0
Virginia	68.0	819.5	16,253.5	19.0	252.7	208.6	0.0	207.0	2.0	2.0	809.0	0.0	420.0	7.4	27.3	0.0	96.0
Washington	0.0	0.1	0.0	0.0	3.0	0.0	0.0	7.0	0.0	0.0	30.0	0.0	0.0	6.3	15.0	0.0	74.0
West Virginia	38.2	148.8	178,977.0	295.0	3,200.1	414.5	4.3	368.0	5.0	33.8	1,641.0	28.0	1,032.0	227.0	398.4	18.3	116.3
Wyoming	0.5	0.0	9,011.0	1.0	500.0	0.0	0.0	15.0	0.0	1.0	186.0	0.0	0.0	277.5	9.0	92.1	187.0
Total	314.4	17,977.2	1,789,276.9	501.7	10,129.6	3,018.9	47.4	2,527.0	541.0	502.2	8,364.1	139.0	5,460.0	4,986.5	1,456.8	1,320.4	4,425.6

TABLE 4: 1978-1999 ABANDONED MINE LAND RECLAMATION ACCOMPLISHMENTS, CONTINUED

Priority 3 (Environmental Restoration)

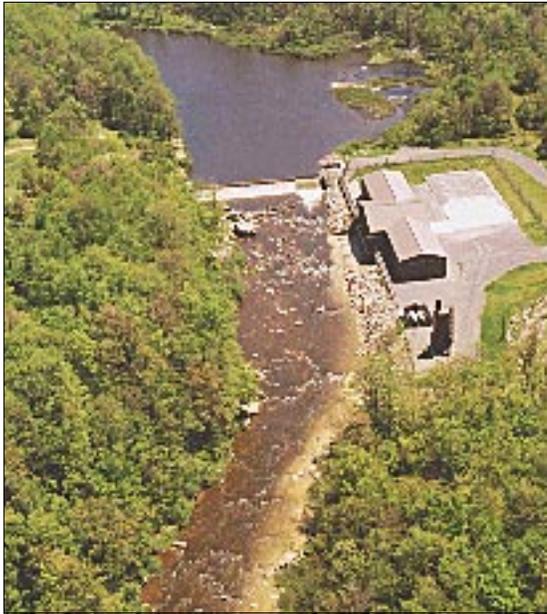
	Bench ²	Equipment & Facilities ⁴	Gob ²	Haul Road ²	Highwall ²	Industrial/Residential Waste ²	Mine Opening ⁴	Pit ²	Slump ²	Slurry ²	Spoil Area ²	Water ⁵
Alaska	0.0	0.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0	9.0	47.0	0.0
Alabama	22.5	8.0	213.1	1.5	26,475.0	14.0	48.0	0.3	10.3	5.1	9,031.1	380.0
Arkansas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
California	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CERT*	0.0	2.0	4.0	0.0	1,500.0	0.0	1.0	7.0	0.0	0.0	80.0	0.0
Colorado	3.0	7.0	101.5	0.0	2,027.5	5.0	18.0	82.9	0.0	0.0	829.0	1.0
Crow Tribe	5.6	0.0	26.8	12.7	1,995.0	0.0	2.0	12.5	3.6	0.1	23.0	0.0
Georgia	8.0	0.0	2.5	0.0	550.0	0.0	0.0	3.0	0.0	0.0	7.0	0.0
Hopi Tribe	0.0	0.0	24.9	14.7	551.0	0.0	0.0	9.7	0.0	0.0	10.1	0.0
Iowa	0.0	0.0	1.0	5.0	0.0	1.0	1.0	18.5	0.0	0.0	439.5	0.0
Illinois	1.0	136.0	2,364.7	168.0	10,010.0	6.0	45.0	566.1	1.4	1,107.0	1,871.6	765.4
Indiana	0.0	169.0	1,246.4	63.0	6,590.0	72.1	18.0	57.3	2.0	654.5	2,150.9	109.3
Kansas	0.0	1.0	89.0	0.0	3,200.0	0.0	0.0	23.4	0.0	10.0	273.6	0.0
Kentucky	624.2	50.0	231.9	0.4	2,000.0	0.0	69.0	4.0	5.0	58.0	1,030.1	0.0
Maryland	0.0	1.0	21.0	1.0	3,650.0	0.0	3.0	0.0	0.5	0.0	212.0	73.0
Michigan	0.0	1.0	26.5	0.6	0.0	0.0	0.0	1.0	11.0	0.0	10.0	0.0
Missouri	0.0	4.0	142.4	1.4	18,169.0	2.9	0.0	88.9	0.3	69.0	1,309.8	86.0
Montana	0.8	58.0	146.2	0.5	1,170.0	75.8	42.0	17.8	18.5	0.0	842.1	240.5
Navajo Nation	0.8	2.0	111.6	10.2	0.0	1.0	43.0	17.4	0.0	0.0	163.5	0.0
North Dakota	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Mexico	3.0	11.0	53.0	6.0	0.0	0.0	4.0	2.0	0.0	2.0	2.0	0.0
Ohio	0.0	3.0	101.3	0.0	9,220.0	0.0	19.0	17.0	0.0	0.0	447.3	0.0
Oklahoma	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oregon	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Pennsylvania	0.0	21.0	51.7	0.0	13,328.0	0.0	19.0	77.9	25.6	1.0	1,748.4	90,308.0
Tennessee	76.0	15.0	67.0	8.0	130.0	0.0	0.0	47.0	3.0	0.0	325.0	360.0
Texas	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	152.0	0.0
Utah	4.0	64.0	255.0	3.0	550.0	7.0	0.0	8.0	16.0	1.0	55.0	20.3
Virginia	0.0	24.0	14.3	1.3	13,000.0	1.0	22.0	0.0	0.0	0.0	3.0	120.0
Washington	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West Virginia	0.0	0.0	19.5	0.0	19,540.0	0.0	4.0	5.0	0.0	0.0	152.6	622.0
Wyoming	0.0	3.0	30.4	1.0	1,300.0	11.0	4.0	10.0	0.0	0.0	385.6	400,002.0
Total	748.9	580.0	5,360.2	298.3	134,955.5	196.8	363.0	1,076.7	97.2	1,916.7	21,601.2	493,087.5

* CERT is the Council of Energy Resources Tribes which includes: Blackfeet; Cheyenne River Sioux; Fort Berthold (Mandan, Hidatsa, and 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).

UNITS OF MEASURE: 1. Miles, 2. Acres, 3. Feet, 4. Count, 5. Gallons/minute

SOURCE: Abandoned Mine Land Inventory System (AMLIS) as submitted by the States/Indian tribes for their Abandoned Mine Land programs and the Office of Surface Mining Regional Coordinating Centers for the Federal Reclamation Program.

local efforts to eliminate environmental and economic impacts of acid mine drainage from abandoned coal mines. The mission of the Initiative 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 mine drainage. During 1999, \$5.9 million was distributed to 11 states



▲ The Blackwater River Limestone Drum Station has eliminated acid mine drainage in this West Virginia river. Much of the coal mining along this stream occurred during the 1960's, before passage of the Surface Mining Law and when there was very little mine reclamation completed. The station provides treatment with a rotary drum system that uses six water-powered cylinders to grind limestone aggregate into a slurry. As the river's flow changes the drums automatically adjust their slurry output.

(Alabama, Illinois, Indiana, Iowa, Kentucky, Maryland, Missouri, Ohio, Pennsylvania, Virginia, and West Virginia) for 20 acid mine drainage clean-up projects. This funding provided the incentive for other sources to contribute to the projects, and during 1999 this funding grew to over \$14 million. There are currently 50 Clean Streams Initiative projects that have been funded by the Office of Surface Mining. During 2000, projects in Oklahoma will also be eligible for Clean Streams funding.

Watershed Projects
As part of the Appalachian Clean Streams Initiative in 1999, \$750,000 was included in the budget to fund acid mine drainage watershed projects with local organizations that undertake acid mine drainage reclamation projects. These funds provide money to complete projects designed to improve water quality. The watershed projects were funded through cooperative agreements ranging between \$5,000 - \$80,000, in order to assist as many groups as possible in beginning actual construction projects to clean streams impacted by acid mine drainage. In 1999, 11 watershed cooperative agreements were awarded as follows:

Organization and Project	Amount
Headwaters Charitable Trust Mill Creek Watershed, Clarion River Pennsylvania	\$80,000
Headwaters Charitable Trust Little Toby Creek Watershed, Clarion River Pennsylvania	\$80,000
The Conservation Fund Mill Run Watershed Maryland	\$65,000
The Nature Conservancy Everhart Seep Maryland	\$80,000
Shamokin Creek Restoration Alliance Carbon Run Site 42 Pennsylvania	\$22,000
Black Diamond Resource Conservation and Development, Inc. Upper Guest River Virginia	\$80,000
Rural Action, Inc. Rock Run 24 Project Ohio	\$80,000
Four Rivers Resource Conservation and Development Area, Inc. Enos Runway Project, Patoka South Fork Indiana	\$44,762
AMD & ART, Inc. Blacklick Creek/Vintondale Discharge Pennsylvania	\$68,000
Friends of the Cheat, Inc. McCarty Highwall Project West Virginia	\$77,915
Lower Paint Creek Association Johnson Knob Refuse West Virginia	\$72,323

Progress on these projects was wide-spread. For example, two Indiana projects, Wheeler Creek and Lick Creek were completed and the water quality once again restored. At another project Boy

Scouts supported by volunteers, started neutralization of a 52-acre acid-ravaged lake. Using soda ash and other chemicals to neutralize the acid mine drainage, the lifeless lake and over two miles of creek are being reclaimed.

Summer Watershed Internship Program

Ten summer interns working in five different states began the first summer season for a new watershed assistance initiative. Each intern was sponsored and hosted by a local watershed group working on acid mine drainage. The Office of Surface Mining signed ten \$2,500 cooperative agreements with non-profit watershed organizations, providing stipend dollars and some expenses for each intern. The Office of Surface Mining set standards for interns and then worked with each watershed group to develop and define individual summer projects that would leave the watershed group stronger, the water cleaner, and the intern better educated.

Results of this first summer program were remarkable. There were four interns working with their watershed groups in West Virginia, three in Pennsylvania and one each in Tennessee, Indiana and Ohio. Watersheds were monitored for acid mine drainage contaminants. Comprehensive Watershed Plans, the first step in the funding process for cleanup in many states, were drafted. Local citizens were organized, energized, and put to work in their own back yards, many promising to carry on the work long after the intern returned to school. In several locations, an end-of-summer watershed festival (often the first ever held) crowned the effort and gave several interns experience in event organizing and local fund-raising as well.

While the Office of Surface Mining set the standards for interns and reviewed applications, most interns selected were nearby residents, many without experience in acid mine drainage, in spite of their science majors and previous experience. Most were college seniors and, in virtually every case their presence in the watershed attracted a host of new and supportive partnerships. Several state agencies provided training, supervisory oversight, equipment, and often covered the cost of laboratory analysis for stream samples. Other federal agencies also provided training and mapping services; loaned valuable testing equipment; and, in one case, provided housing for interns. Private sector firms sometimes paid the cost of lab analysis; and provided training, transportation, and support for the local watershed celebrations. Most important, many local citizens turned out to help and remain at work today after interns have finished their summer work.

For interns, the experience was significant. Every one of these students took back to their respective schools a new awareness of and respect for the challenges of dealing with acid mine drainage. One intern, initially headed for a pharmacol-

ogy job, decided that microbiology and acid mine drainage remediation were more challenging. Another is now completing an acid mine drainage senior thesis and planning graduate work that will keep her in the field.

For 2000, the Office of Surface Mining is committed to expanding this successful program and will be seeking additional partnerships to carry this opportunity even further. Assistance will include recruiting candidates, and working to make sure the projects selected are the best that can be offered. By linking solid academic content, real watershed achievement, local leadership, and federal agency support, the Office of Surface Mining Summer Watershed Internship will continue to bring effective assistance to the groups that are leading the way for cooperative elimination of acid mine drainage in Appalachia.

Inventory of Abandoned Mine Land Problems

The Surface Mining Law, as amended by the Abandoned Mine Reclamation Act of 1990 (Public Law 101-508), requires the Office of Surface Mining to maintain an inventory of eligible abandoned coal mine lands that meet the public health, safety, and general welfare criteria of Section 403(a)(1) and (2). This inventory is maintained and updated to reflect reclamation accomplishments as required by Section 403(c).

◀ A second method of treatment at the Blackwater River Station is a doser which uses powdered limestone stored in a 50-ton silo. This is a backup system for high river flow events. As the slurried limestone enters the water (shown here), it dissolves and provides alkalinity to neutralize water passing through the drum station. Since the station began operation in 1994, the pH downstream increased to nearly 6.0 for the first time in 35 years. Almost overnight this treatment facility turned a formerly dead section of the Blackwater River into a high quality trout fishery.



The Office of Surface Mining maintains its inventory on the Abandoned Mine Land Inventory System (AMLIS), a computer system that creates reports on abandoned mine land accomplishments and problems that still require reclamation. 1999 was the fifth year the states and Indian tribes managed their own data, entering it electronically into the Office of Surface Mining's inventory system. This process resulted in 585 records added, 890 modified, and 100 deleted.

As of September 30, 1999, the system contained information for over 15,168 problem areas, mostly related to abandoned coal mines. A problem area is a geographic area, such as a watershed, that contains one or more abandoned mine problems. Problem area boundaries are delineated by the extent of their effect on surrounding land and water, not just the abandoned mine sites.

The Surface Mining Law requires the Abandoned Mine Land Program to concentrate its efforts on high priority coal sites (those affecting health, safety, and general welfare, Priority 1 and 2). Although the Abandoned Mine Land Program is one of the nation's most successful environmental restoration programs, with over \$1.2 billion worth of coal-related high priority problems reclaimed, 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. As of September 30, 1999, a breakdown of (Priority 1, 2, and 3) costs from the Abandoned Mine Land Inventory System is as follows:

Completed	\$1.5 billion	16.0 percent
Funded	\$0.3 billion	3.0 percent
Unfunded	\$7.9 billion	81.0 percent
Total	\$9.7 billion	100.0 percent

During 1999, the Bureau of Land Management decided to store its abandoned mine inventory in a specially modified version of the Office of Surface Mining inventory system. People accessing either the Office of Surface Mining or Bureau of Land Management



▲ The Socorro West Mine Safeguard project outside Socorro, New Mexico reclaimed abandoned mine shafts, adits, and stope openings. Because the mine workings were home to a large population of bats, gates were constructed that allow ventilation and bat entry; but, keep people safely out.

▼ The dangerous open vertical shafts have been covered with bat gates and people who visit the site no longer have to fear they will fall into an open mine shaft. With public ownership and good rock-climbing opportunities in the area, the land around the mine site is used for both cattle grazing and recreation.



version of the system will have access to both agencies' abandoned mine land inventories. Using the geographic information system capabilities, it will be possible to query both databases. Future plans also include access to the U.S. Forest Service abandoned mine inventory. The ability to create maps showing the locations of other federal agencies' abandoned mine problems along with the Office of Surface Mining inventory was demonstrated at the Interior Department's 1999 Conference on the Environment.

Reclamation Awards

After more than 20 years of abandoned mine land reclamation funded under the Surface Mining Law, thousands of dangerous health and safety problems throughout the country have been eliminated. To enhance communication about achievements in abandoned mine land reclamation, the Office of Surface Mining has presented awards to those individuals responsible for completion of the most outstanding reclamation. This year, 55 individuals responsible for four award-winning projects received recognition for their work. Awards for the following projects were presented at the 1999 annual meeting of the National Association of Abandoned Mine Land Programs.

National award

■ Navajo Abandoned Mine Land Reclamation Department's Monument Valley 2 AML Reclamation Project on the Navajo reservation, near the Arizona/Utah border. This project reclaimed a highly toxic radioactive open-pit uranium mine site which endangered the local Navajos and their livestock, and posed a general threat to wildlife and water resources in the surrounding area. Today, after reclamation, the site is free of sources of water pollution, soil erosion,

sedimentation, and radiation emission, and is once again open to the community for livestock grazing.

Regional awards

■ West Virginia Division of Environmental Protection's Blackwater River Limestone Drum Reclamation Project near the town of Davis (Appalachian Region). This project eliminated one of the major sources of acid mine drainage in the state, and reestablished the Blackwater River as one of West Virginia's premier trout fishing areas. The project also improved water quality in other downstream rivers, including the Cheat and the Ohio.

■ Oklahoma Abandoned Mine Land Reclamation Program in partnership with the Natural Resources Conservation Service, Rural Abandoned Mine Program (Mid-Continent Region) for developing the Oklahoma Partnership Approach to Reclamation of Abandoned Mine lands. The two agencies pooled personnel and resources to complete a joint project that reclaimed 26 acres of abandoned mine land on five separate sites in Rogers County, including one site where acid mine drainage was polluting the Claremore city water supply.

■ The New Mexico Abandoned Mine Land Bureau's Socorro West Mine Safeguard Project, (Western Region) for reclaiming 24 underground mine shafts, adits, and other dangerous openings at the abandoned Nancy and Black Canyon manganese mine sites. The reclamation included installing bat gates which help to preserve the habitat for one of the country's largest populations of Townsend's big-eared bats.

Goal 1. Better Abandoned Mine Land Reclamation: Repair, reclaim and restore as much land and water as possible that was degraded by past mining in order to provide America with cleaner and safer land and water and to provide employment and economic opportunities in depressed coal regions.

Performance Measure	1998 Actual	1999 Plan	1999 Actual
Number of acres reclaimed annually by the Abandoned Mine Land Program	7,201 acres	7,400 acres	10,949* acres

Measuring the final results of the Abandoned Mine Land Program is a difficult task. The intermediate measure of "acres reclaimed" is used as an indicator of success and a safe and clean environment. Over 130,000 acres of health and safety coal-related problems such as underground fires, subsidence, highwalls, landslides, and open shafts have been reclaimed under this program. In 1999, 10,949 acres were reclaimed, a continuation of an upward annual trend in addressing the remaining inventory of problems.

* This accomplishment includes all acres reported reclaimed in 1999. Actual reclamation reported by states and tribes for 1999 may have occurred in prior years. Due to the length of time it takes to complete these projects, it is common for completion to occur one to three years after initiation.

