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**REPORT TO THE CONSERVATION AND
NATURAL RESOURCES SUBCOMMITTEE
COMMITTEE ON
GOVERNMENT OPERATIONS
HOUSE OF REPRESENTATIVES**

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**Problems Caused By Coal Mining
Near Federal Reservoir Projects**

B-177092

Corps of Engineers (Civil Functions)
Department of the Army

**BY THE COMPTROLLER GENERAL
OF THE UNITED STATES**

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~~094067~~ OCT. 2, 1973

B-177092

date of the report. Your release of the report will enable us to send the report to the Secretary and the four committees for the purpose of setting in motion the requirements of section 236.

Sincerely yours,

A handwritten signature in cursive script that reads "James B. Stacks". The signature is written in black ink and is positioned above the typed name and title.

Comptroller General
of the United States



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON D C 20548

B-177092

The Honorable Henry S. Reuss
Chairman, Conservation and Natural
Resources Subcommittee
Committee on Government Operations
House of Representatives

11/15/72

(2/11/53)

C

R

Dear Mr Chairman

We reviewed the problems associated with coal mining near eight Federal reservoir projects. We made our review pursuant to your request of November 14, 1972, as modified by subsequent discussions with your office.

As your office requested, we did not obtain written agency comments on this report. We did, however, discuss the matter with officials of the Corps of Engineers and considered their views in this report.

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Color photographs showing the conditions described in this report are enclosed in the envelope on the inside back cover of a limited number of copies

We do not plan to distribute this report further unless you agree or publicly announce its contents. We want to direct your attention to the fact that this report contains recommendations to the Secretary of the Army, which are set forth on pages 41 and 42. As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions he has taken on our recommendations to the House and Senate Committees on Government Operations not later than 60 days after the date of the report and the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the

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ABBREVIATIONS

EPA Environmental Protection Agency
GAO General Accounting Office
OCE Office of the Chief of Engineers

GLOSSARY

Broad- and general-form subordination estates	special deeds developed to acquire specific rights over the coal interests at Fishtrap The broad form places greater restrictions over coal interests than does the general form
Drainage basin	the area where water flows toward or into a main body of water
Estates	the interest or rights held or acquired in property
Fee acquisition	to acquire full and complete interest in a property
5-year flood frequency elevation	the height, identified in feet above sea level, where, experience shows, flood waters will reach every 5 years
Flood control pool	the part of the reservoir used to store and control flood waters
Flowage ease- ment	the right to flood a piece of real estate
Impoundment	the initial collection of water at the reservoir after the dam is constructed
Minimum pool	the part of the reservoir storage capacity set aside for sediment deposits, fish habitat, and a pool of water to maintain a constant flow downstream
Project area	the land to be acquired by the Corps within the boundaries of the maximum flood control elevation plus a buffer zone
Sediment	soil and other material eroded by rain and weather that is carried into, and eventually settles along the banks and bottoms of, streams
Subordination	acquiring restrictive rights to property, such as coal, on land to which the owner retains title

COMPTROLLER GENERAL'S REPORT TO
THE CONSERVATION AND NATURAL
RESOURCES SUBCOMMITTEE
COMMITTEE ON GOVERNMENT OPERATIONS
HOUSE OF REPRESENTATIVES

PROBLEMS CAUSED BY COAL MINING
NEAR FEDERAL RESERVOIR PROJECTS
Corps of Engineers (Civil Functions)
Department of the Army B-177092

D I G E S T

WHY THE REVIEW WAS MADE

R At the request of the Chairman of the Conservation and Natural Resources Subcommittee, GAO reviewed eight Federal water resources projects of the Corps of Engineers in Kentucky and West Virginia to

- determine problems resulting from coal mining near those projects,
- evaluate the Corps' actions to protect projects from the effects of such mining, and
- determine whether the Corps' land acquisitions complied with the 1962 Army-Interior Joint Reservoir Land Acquisition Policy

FINDINGS AND CONCLUSIONS

U S. coal resources total more than 3 trillion tons. In 1972, U S coal production totaled about 590 million short tons, about 65 percent of which were produced in the Appalachian region. The eight projects GAO reviewed are in that region (See pp 6 and 9)

All the projects GAO reviewed were in drainage basins where coal was being mined (See p 10)

GAO found that at one project--Fish-trap--extensive mining, both on Federal project lands and on privately owned lands in the project's drain-

age basin, had adversely affected the project and had hindered its ability to provide the planned benefits (See p 10)

At four projects--Dewey, R D Bailey, Carr Fork, and Buckhorn--GAO noted conditions indicating potential for development of problems similar to those at Fishtrap (See p 10)

GAO concluded that extensive coal mining within drainage basins of water resource projects adversely affected the projects' purposes and their environments (See p 10)

Major problems noted were

- sediment in streams and nearby bodies of water,
- deterioration of water quality by acid mine drainage, and
- degradation of the projects' esthetic aspects and surrounding environments (See p 10)

At Fishtrap GAO noted

- heavy buildups of sediment (see photograph on p 17),
- improperly constructed and maintained access roads (see photograph on p 19),
- coal dumped over hillsides as a means of transporting it to a

lower elevation (see photograph on p 22),

--coal refuse dumped on federally owned project lands (see photograph on p 23), and

--a series of hillside scars which destroyed the project's esthetic value (see photograph on p 20)

The Corps estimated that about \$1 2 million would be needed at Fishtrap to reclaim land disturbed by deep-mining operations and to construct dams to control sediment. The Corps, however, has not requested funding for such measures.

The Corps estimated that planned detailed sedimentation studies to identify and quantify major sources of sediment within the drainage basins for Fishtrap and Dewey would cost about \$520,000. Costs for these studies will be obligated from the Corps' operation and maintenance appropriation. (See p 25)

Because the excessive sediment at the \$53 8 million Fishtrap project may degrade the project's ability to provide its primary benefit--flood control--in the near future, the Corps needs to promptly develop and implement a plan to protect the project from further adverse effects of mining in the drainage basin (See p 41)

The Corps' procedures for regulating mineral development on project lands need to be strengthened to avoid the type of problems encountered at Fishtrap and to comply with the intent of the 1962 Army-Interior Joint Reservoir Land Acquisition Policy (See p 41.)

That policy provides that the Government acquire mineral rights in

reservoir projects only where development of the mineral rights would interfere with project purposes. It provides also that mineral rights that the Government does not acquire be subordinated to the Government's right to regulate their development in a manner that will not interfere with the project's primary purposes (See p 6)

Types of estate deeds used by the Corps to subordinate mineral rights affect the extent to which mining can be regulated. Most mineral rights were subordinated at Fishtrap by general-form estate deeds which were inadequate for precluding mining on project lands and which did not adequately protect the project's environment (See p 33)

Some mineral rights at Fishtrap were subordinated by broad-form estate deeds which gave the Corps a method of regulating mining activity. The Corps, however, has not effectively enforced those deed provisions (See p 35)

The Corps' ability to regulate mining on lands not acquired for project purposes but within the drainage basins was hampered because

--Federal mining laws were safety oriented and were directed toward protecting personnel but not property,

--State laws for regulating mining were limited to surface-mining operations,

--recourse to the provisions of related Federal legislation (Refuse Act of 1899) was not always

successful in protecting project purposes, and

--Federal-State coordination to protect projects from mining activities was limited to surface-mining operations (See p 43)

C The House Committee on Government Operations, in its report dated March 18, 1970, entitled "Our Waters and Wetlands How the Corps of Engineers Can Help Prevent Their Destruction and Pollution," had cited the need to more vigorously enforce the Refuse Act of 1899

GAO found that five actions had been brought against mine operators for violations of the Refuse Act at Fishtrap

By August 1973 a \$500 fine had been imposed in one case and a consent judgment had been entered in another case that enjoined the operator from discharging refuse into a stream. The remaining cases either were dropped or were pending (See pp 44 and 45)

Several bills have been introduced in the current session of the Congress which would provide for Federal regulation of surface-mining activities and surface disturbance resulting from deep mining. Such legislation could protect Federal water resource projects from the adverse effects of mining activities in their drainage basins (See p 43)

The Congress, in considering the pending legislation on Federal regulation of mining activities, may wish to give specific attention to protecting the Federal investment in

reservoir projects, particularly regarding the effects of deep-mining activities (See p 48)

RECOMMENDATIONS

The Secretary of the Army should direct the Corps to

--revise its regulations to provide guidance as to the types of estate deeds to be used in subordinating mineral rights and specific criteria for factors to be considered when minerals are developed,

--establish a system for monitoring compliance with restrictions imposed upon operators which may develop minerals on project lands,

--ascertain and take whatever actions are available to the Corps to correct the problem of mining operations being conducted without Corps approval on lands at Fishtrap where mineral rights were subordinated by broad-form estate deeds, and

--promptly develop and implement a plan to protect the Fishtrap project from further adverse effects of mining in the drainage basin (See pp 41 and 42)

AGENCY ACTIONS AND UNRESOLVED ISSUES

GAO discussed this report with Corps officials. They agreed with GAO's conclusions and promised to implement GAO's suggestions. The Corps is also obtaining information on the scope of the problems from all mineral development at its water resource projects (See p 42)

CHAPTER 1

INTRODUCTION

At the request of the Chairman, Conservation and Natural Resources Subcommittee, House Committee on Government Operations (see app I), as modified by subsequent discussions with the Chairman's office, we reviewed eight Federal water resource projects of the Corps of Engineers in Kentucky and West Virginia to (1) determine the nature and scope of problems resulting from coal mining near those projects, (2) evaluate the Corps' actions to protect Federal projects from the adverse effects of such mining, and (3) determine whether the Corps' land acquisition practices complied with the 1962 Army-Interior Joint Reservoir Land Acquisition Policy

CHANGES IN THE CORPS' LAND ACQUISITION POLICIES

Before 1953 the Corps' policy was to acquire fee title to most reservoir land up to the highest level that could be flooded (flood control pool) on the basis of the project's design. Rights to minerals under the reservoir land were also acquired in fee.

In October 1953 the Departments of the Army and the Interior adopted a joint land acquisition policy for reservoir projects under their jurisdictions. Under this policy the Corps generally acquired, in fee, land up to the 5-year flood frequency elevation and any additional land needed for limited public use of, and reasonable access to, the project and for operating and maintaining the project. The policy provided that flowage easements be acquired for land between the 5-year flood level and the top of the flood control pool because such land was subject to only occasional flooding. Rights to minerals under the land acquired in fee were also acquired in fee. Mineral rights under land where flowage easements were obtained were not acquired but were subordinated to the Government's right to regulate their development in a manner that would not interfere with project purposes, such as flood control and recreation.

In 1962 the Departments of the Army and the Interior jointly adopted a land acquisition policy which substituted fee acquisition for certain land for which easements were formerly acquired. The intent of the 1962 joint policy was to protect the economy by permitting the development of

minerals while protecting the environment from the adverse effects of such development. This policy provided, in part, that

"Mineral, oil and gas rights will not be acquired except where the development thereof would interfere with project purposes, but mineral rights not acquired will be subordinated to the Government's right to regulate their development in a manner that will not interfere with the primary purposes of the project, including public access "

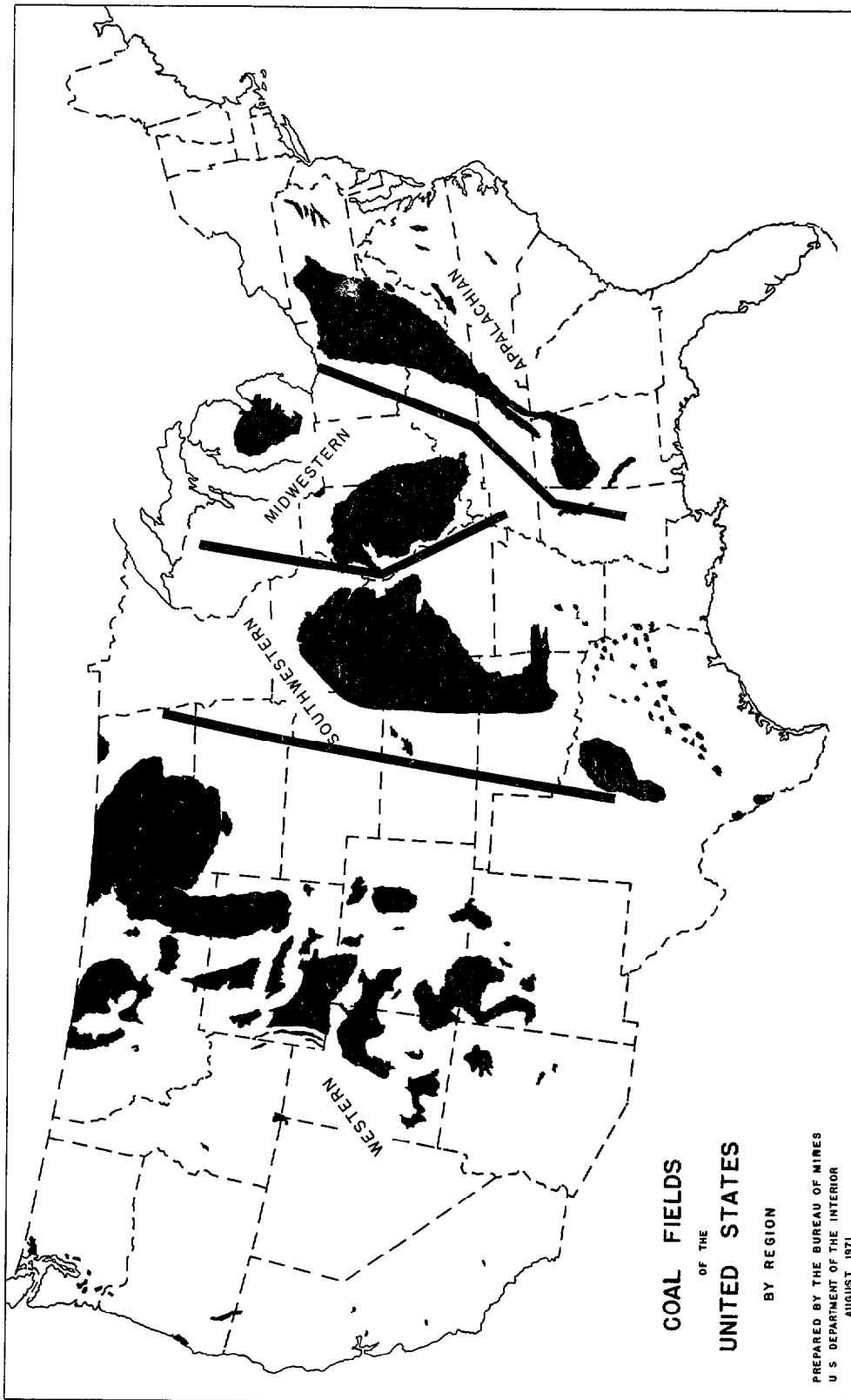
Under this policy the Corps acquires fee title to most of the land within the flood control pool and to additional land which may be needed to provide a freeboard (buffer zone) of 1 to 3 feet above the top of the flood control pool. The Corps also acquires fee title to all land within 300 feet horizontally from the top of the flood control pool when this land is not included in the freeboard. Mineral rights are acquired in fee only for the damsite and all construction sites. Mineral rights not acquired are subordinated.

The changes in the Corps' land acquisition policy since 1953 have been directed toward reducing the amount of subsurface minerals to be acquired in fee within the boundaries of Corps projects. However, the Corps' decision on how much land to acquire for project purposes within a particular drainage basin is based primarily on the amount of land that will be subject to flooding rather than on the nature and extent of minerals within the drainage basin.

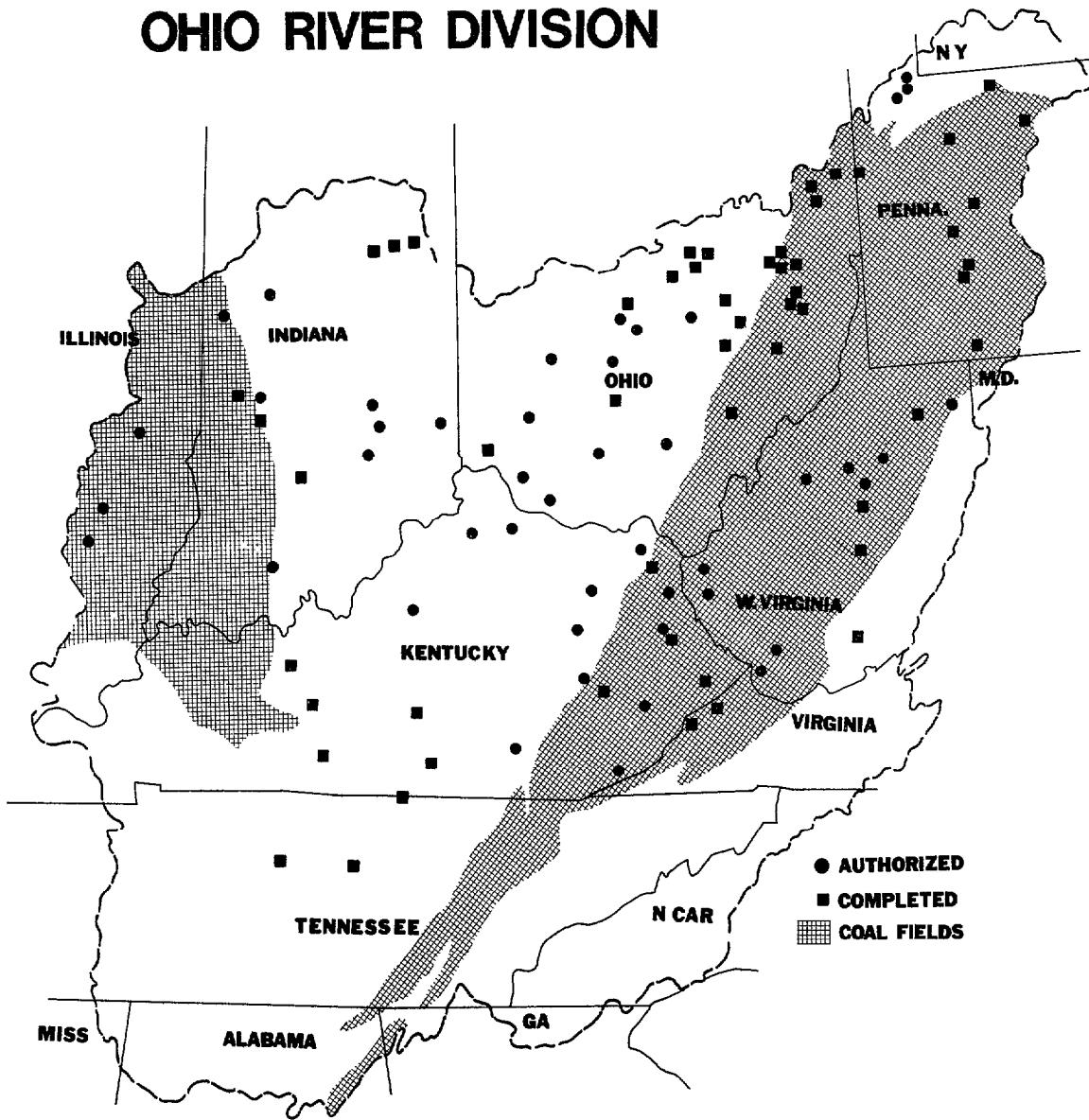
EXTENT AND LOCATION OF COAL RESERVES

U S coal resources total more than 3 trillion tons. The locations of these resources are shown on the map on p 7.

The Department of the Interior estimated that in 1972 U S coal production totaled about 590 million short tons, about 65 percent of which were produced in the Appalachian region. Most Corps projects in the Appalachian region are in the Corps' Ohio River Division. Corps projects in this Division and the locations of coal deposits are shown on the map on p 8.



OHIO RIVER DIVISION



SCOPE OF REVIEW

We reviewed eight water resource projects in the Louisville, Kentucky, and Huntington, West Virginia, district offices of the Corps of Engineers' Ohio River Division, Cincinnati, Ohio. Seven of the projects are in Kentucky and one-- R D Bailey--is in West Virginia. We reviewed projects in this division because the Chairman's request mentioned projects in this area. Also this area is one of the largest coal-producing areas in the country and contains many Corps projects.

We examined Corps records and reports, visited project sites, interviewed Corps officials, and met with State officials involved with regulating mining activities in Kentucky, Virginia, and West Virginia. Corps projects we reviewed were

<u>Project</u>	<u>Status</u>	<u>1972 total estimated cost</u>	<u>Total acres in drainage basin</u>	<u>Acres in project area</u>		
				<u>Fee and/or subordination</u>	<u>Flowage easement</u>	<u>Total</u>
Fishtrap	Completed	\$ 53,826,289	252,800	15,786	203	15,989
R D Bailey	Under construction	123,400,000	345,600	19,344	164	19,508
Buckhorn	Completed	12,318,300	261,120	4,970	915	5,885
Dewey	Completed	7,505,971	132,480	12,458	1,170	13,628
Carr Fork	Under construction	34,600,000	37,120	3,877	127	4,004
Cave Run	Under construction	45,100,000	528,640	31,033	3,281	34,314
Paintsville	Planned	31,100,000	59,200	13,900	54	13,954
Booneville	Planned	43,400,000	425,600	17,402	4,950	22,352

CHAPTER 2

EFFECT OF MINING NEAR

WATER RESOURCE PROJECTS

All the eight projects we examined were in drainage basins where coal was being mined. At one project--Fishtrap--extensive mining both on Federal project lands and on privately owned lands in the project's drainage basin had adversely affected the project and had hindered its ability to provide the planned benefits, such as flood control and recreation.

At four projects--Dewey, R D Bailey, Carr Fork, and Buckhorn--we noted conditions which indicated potential for the development of problems similar to those at Fishtrap.

We concluded that extensive coal mining within drainage basins, both on and off project lands, of water resource projects adversely affected the projects' purposes and their environments. The major problems we noted were

- sediment in streams and other bodies of water,
- deterioration of water quality by acid mine drainage, and
- degradation of the projects' esthetic aspects and their environments.

The Chairman of the Subcommittee has been concerned about the effects of coal mining on Federal projects and since December 1971 has corresponded with the Corps about regulating mineral development at Federal water resource projects and implementing the provisions of the 1962 Army-Interior Joint Reservoir Land Acquisition Policy (See app. II.)

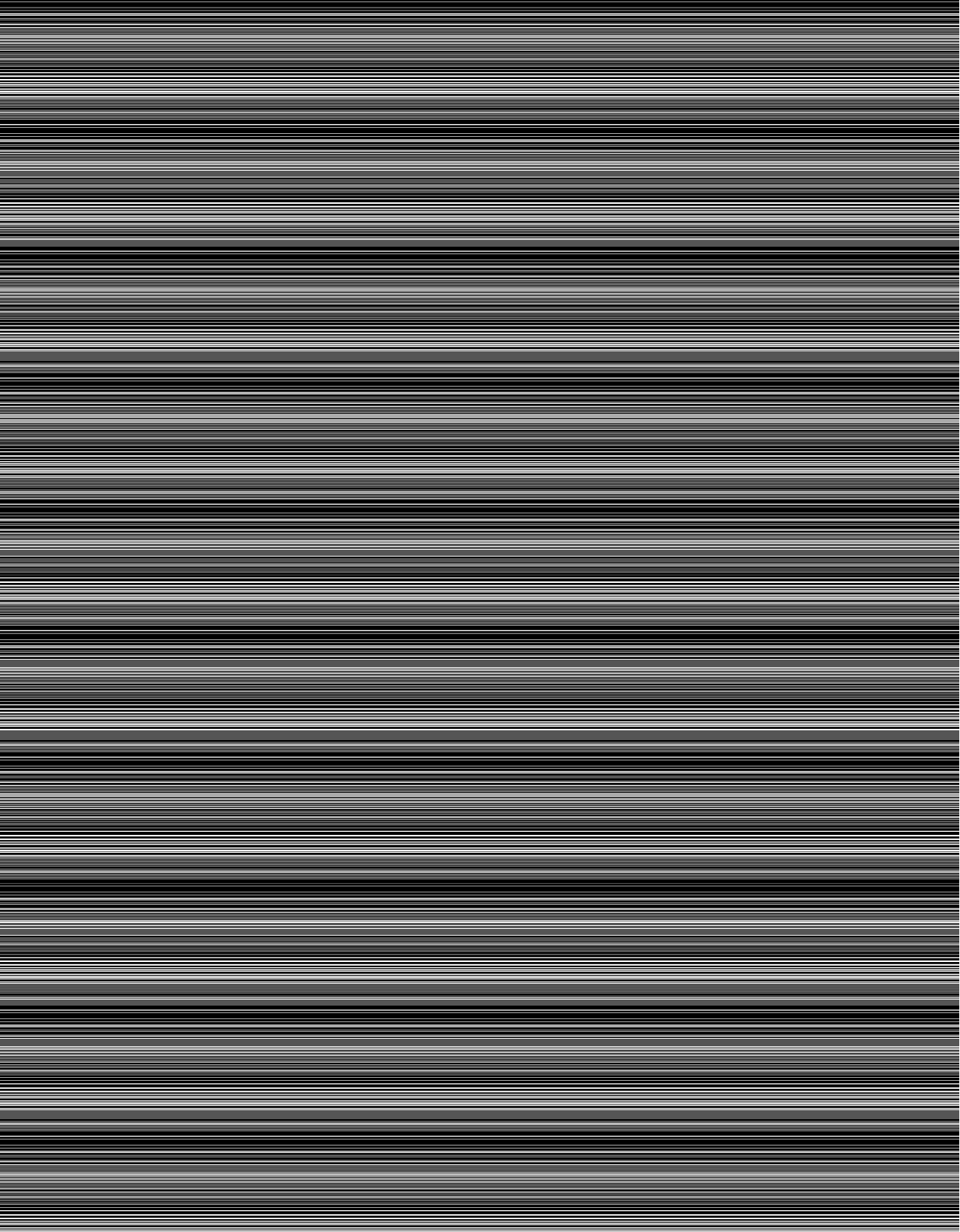
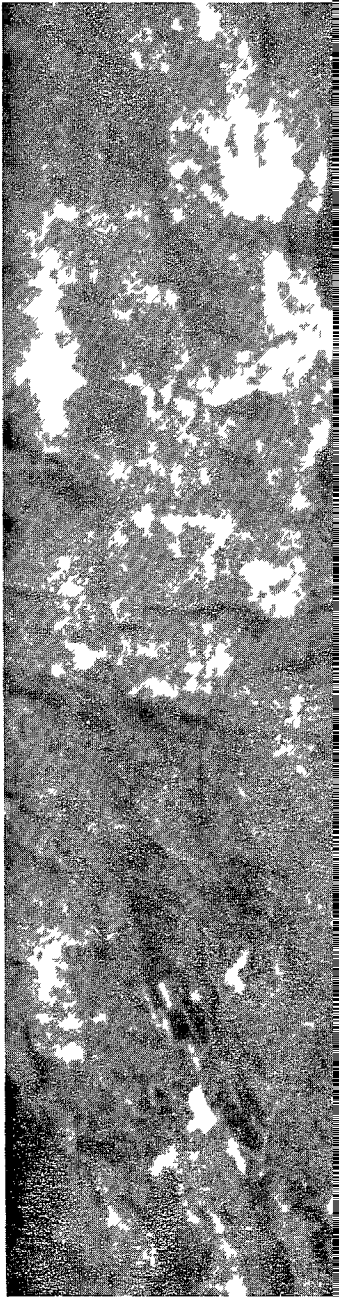
The following table shows that many surface mines and deep mines are in the drainage basins of the six Corps projects which were completed or under construction.

<u>Project</u>	<u>Total acres in drainage basin</u>	<u>Acres in project area</u>	<u>Estimated number of mines in drainage basin</u>		
			<u>Surface</u>	<u>Deep</u>	<u>Total</u>
Fishtrap	252,800	15,989	128	281	409
R D Bailey	345,600	19,508	38	87	125
Buckhorn	261,120	5,885	37	30	67
Dewey	132,480	13,628	14	49	63
Carr Fork	37,120	4,004	27	34	61
Cave Run	528,640	34,314	(a)	(a)	60

^aInformation not obtained

For surface mining, the overburden (earth, rock, and other material) above the coal seam is removed and the coal is extracted by stripping or augering. For deep mining, the coal is extracted by digging underground shafts.

One of the problems was discarded overburden which is cast over the side of the hill or is stockpiled on the outermost part of the shelf or bench created by a surface-mining operation. Much of this overburden may slide down the hill as it is loosened by rain or by freezing and thawing. Unless controlled or stabilized, the discarded overburden can cause land erosion, sediment in streams, and unsightly scarring of mountainous terrain and can deter the growth of vegetation and wildlife. Photographs of surface- and deep-mining operations in the drainage basins of certain projects we reviewed are on pages 12, 13, and 14.



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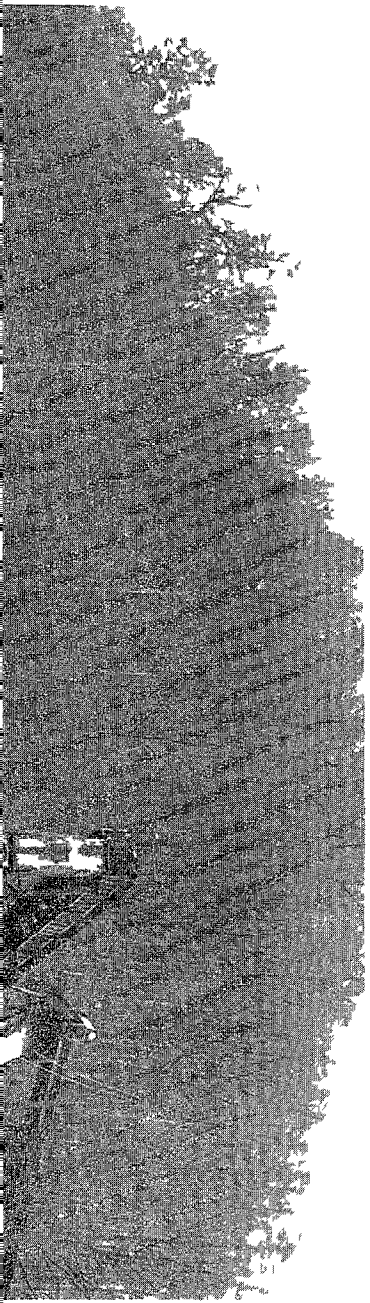
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How such structures as tipples, chutes, conveyors, and washing facilities are constructed and maintained affects the amount of sediment going into streams. Because such structures are generally unenclosed, coal dust particles escape and are blown onto hillsides and eventually wash into streams. Such practices as dumping dirt, rocks, and other refuse over hillsides when clearing areas for mining operations also produce sediment. Constructing access roads also contributes to the sediment. Each of these conditions also adversely affects the project's esthetic aspects.

Coal deposits are usually accompanied by toxic materials which form sulphuric acid when exposed to air and water. This acid and other compounds resulting from mining operations can have severe adverse effects on the environment. A 1969 report by the Appalachian Regional Commission stated that almost 80 percent of the acid drainage in Appalachia came from abandoned mines. When acid is present in water in sufficient concentrations, it kills fish, fish-food organisms, and aquatic plants, damages recreational and esthetic values, causes corrosive damage to equipment exposed to the water, and requires expensive treatment when acid-polluted water is to be used for municipal and industrial purposes.

Although Cave Run, Paintsville, and Booneville had some coal mines in their drainage basins, we did not attempt to identify problems at those projects because they were in early planning or land acquisition and construction stages and because the coal reserves in their drainage basins were of little value. Problems resulting from mining activities at Fishtrap, Dewey, R D Bailey, Carr Fork, and Buckhorn follow

FISHTRAP

The excessive sediment and degraded environment at Fishtrap were caused by coal mining on Corps-project land and throughout the drainage basin. Most of the mines are deep mines rather than surface mines, as shown in the following table.

	<u>Deep mines</u>	<u>Surface mines</u>
On Corps-project land	48	3
Off Corps-project land	<u>233</u>	<u>125</u>
Total	<u>281</u>	<u>128</u>

Extensive sediment was first noticed at Fishtrap in the fall of 1971, 3 years after impoundment, when large deposits of sediment were found in areas where tributary streams entered the reservoir. A 1972 study by the Corps concluded that, if sediment continued to accumulate at the then-existing rate, the minimum pool--that necessary for storing sediment and preserving the fishing habitat--would be filled within 7 years. Additional sediment will encroach upon that part of the reservoir which is needed for the primary purpose of the project--flood control. On the basis of the project's design, this function was to last for 75 years. If sediment continues at the present rate, the primary purpose of the \$53.8 million Fishtrap project may be encroached upon 7-1/2 times faster than planned.

A secondary purpose, recreational development, has also been adversely affected. Plans for a recreational and public access area have been canceled because sediment about 6 feet thick accumulated in 1 year where a tributary runs into the reservoir. (See photograph on p. 17)

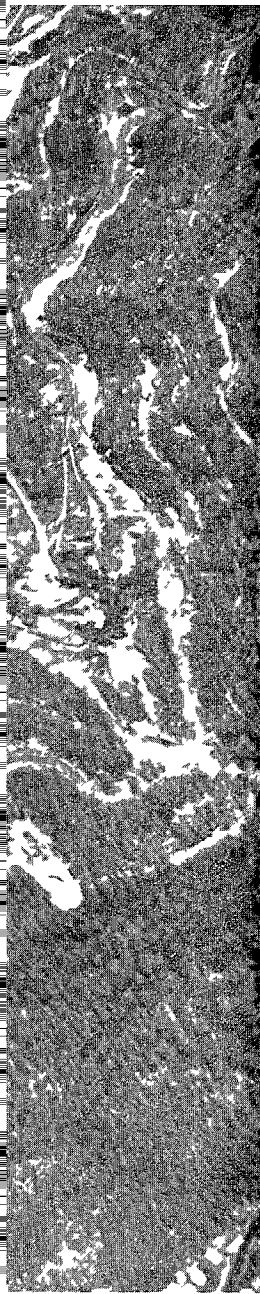


The extensive network of roads throughout the project that served the deep-mining operations on Corps-project land was a major source of sediment We found that

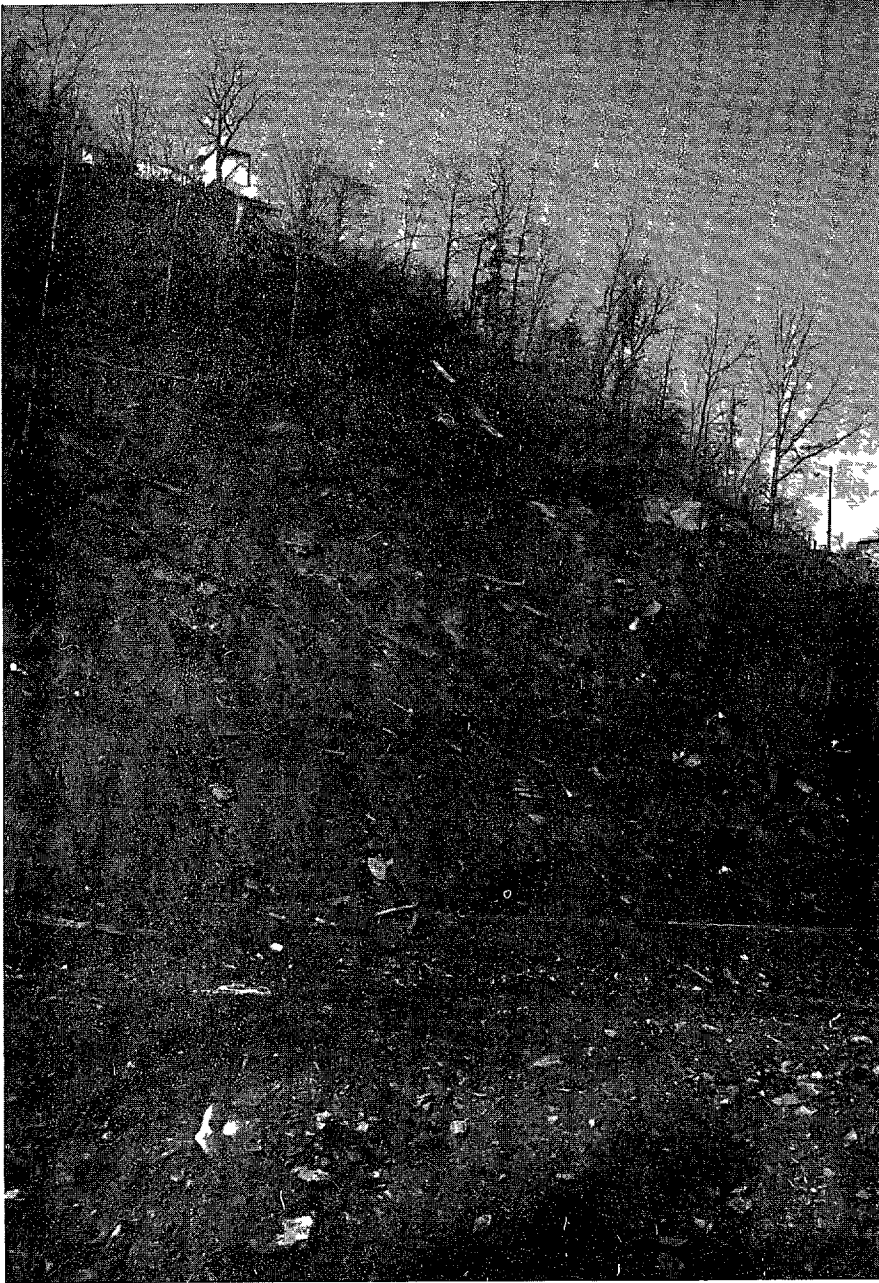
- The roads almost totally lacked drainage structures, such as ditches and pipes
- The roads' excavated back slopes were excessively steep.
- Excess cut material dumped over the roads' downhill slope contributed to an unstable condition and greatly increased the possibility of slides
- Natural drainage had been blocked by downed brush and timber
- The roads lacked rock or other base material to support the loads they carried
- Almost no attempt had been made to reclaim land
- Soil erosion was not controlled

The vast network of roads changed Fishtrap from a primitive-appearing lake with steep, wooded, undeveloped sides to a lake having a series of horizontal and diagonal hillside scars (See photographs on pp 19 and 20)





Sediment also results from dumping coal and refuse over a hillside. Coal is dumped over a hillside to transport it to a lower elevation, refuse is dumped to dispose of it. As a result of such practices, hillsides become blackened and bare, the land erodes, and sediment accumulates in the reservoir. These practices are shown in the photographs on pages 22 and 23. Unreclaimed, abandoned mines and related facilities, in addition to contributing to sediment and potential acid mine drainage, are esthetically displeasing.



COAL DUMPED OVER HILLSIDE ON CORPS-PROJECT LAND AT FISHTRAP

SOURCE GAO



In May 1972 the Huntington district engineer issued certain requirements governing mining on project land and asked for voluntary compliance by coal operators. These requirements called for the operators' submitting their plans of mining operations to the Corps for approval before beginning operations. In December 1972 the Corps found that the coal operators were generally ignoring the requirements.

We discussed these requirements with the U S attorney for the Eastern District of Kentucky, a Corps legal official, and one of the major coal operators at Fishtrap. The consensus was that the requirements were unenforceable because they had not been included in the estates when the rights to the minerals were subordinated.

Water quality reports reveal no serious acidity of water entering the Fishtrap reservoir, however, soils in the area are of a type that can produce acid mine drainage. As more and more surface area is disturbed, the potential for acid mine drainage will increase.

Corps officials estimate that about two-thirds of the problems at Fishtrap originate from mining activities off Corps-project land. The Corps plans to have a sedimentation study made at Fishtrap during fiscal year 1974 to identify and quantify the major sources of sediment within the drainage basin.

A Corps district study on measures to reduce or eliminate the sediment problems estimated that 499 acres had been disturbed by deep-mining operations and that about \$1.2 million would be needed to reclaim the disturbed land and to construct dams to control the sediment. A Corps official told us that as of August 1973 the Corps had not requested funds from the Congress for such measures.

DEWEY

Mining is not permitted on Corps-project land at Dewey, however, mining is extensive within the drainage basin in areas adjacent to the project. The amount of land disturbed by surface mining has been increasing in the last few years. For example, in 1971 the State issued permits covering 86 acres and in 1972 issued permits covering 256 acres. As of January 1973, the State had reviewed applications for mining on 132 additional acres. There were also 38 active deep mines and 12 railroad loading facilities within the drainage area.

Sediment was found in one location at Dewey during the winter drawdown of the pool in 1972. Corps officials attributed the sediment to increased surface disturbance from extensive coal mining.

To determine the impact that mining operations are having on sediment at Dewey, the Corps will make a preliminary study early in fiscal year 1974 and a detailed study, similar to that made at Fishtrap, in fiscal year 1975. The Corps estimated the Fishtrap and Dewey studies would cost about \$520,000. A Corps official told us that the Corps would obligate funds for the studies from its operation and maintenance appropriation, but the Corps' fiscal year 1974 budget request does not specifically request funds for the studies.

R D BAILFY

This project is scheduled for completion in June 1976. At the time of our review, no sediment problems had been noted. The Corps intends to restrict mining on Corps-project land, but there is great potential for future mining outside project boundaries of the drainage basin because, the Corps estimated, there are extensive deposits of recoverable coal in the drainage basin.

The Corps has indicated that, even though this project is still under construction, the quality of water entering the proposed impoundment has been degraded by pollutants associated with extensive coal mining throughout the drainage basin. The Corps estimated that as many as 2,500 sources of acid mine drainage were in the project basin. These

sources include both abandoned and active mines, spoil piles of low-grade and waste coal, and thousands of acres of unreclaimed strip and auger mines. (See photographs on pp 28, 29, and 30)

CARR FORK

Mining is not permitted on Corps-project land at Carr Fork. Although the drainage basin is relatively small (37,120 acres), it has many surface and deep mines that could cause sediment after impoundment. There is also potential for acid mine drainage into two tributaries flowing into the project. The Corps identified the source of this acid drainage as abandoned deep mines in the drainage basin but not on Corps-project land. Corps officials stated that the amount of acid flowing into the basin was not enough to adversely affect the project. Because the soil in the drainage basin has a high acid content, however, abandonment of additional mines throughout the drainage basin could create a problem. (See photograph on p 31.)

BUCKHORN

There is no mining on Corps-project land at Buckhorn. Although the Buckhorn project was completed in 1960, we noted no potential problems at this project. Extensive mining in the drainage basin is not expected because the coal reserves have a low market value due to their high sulphur content. Also the lack of sufficient access roads into and within the drainage basin would increase the cost to transport the relatively low-value coal.

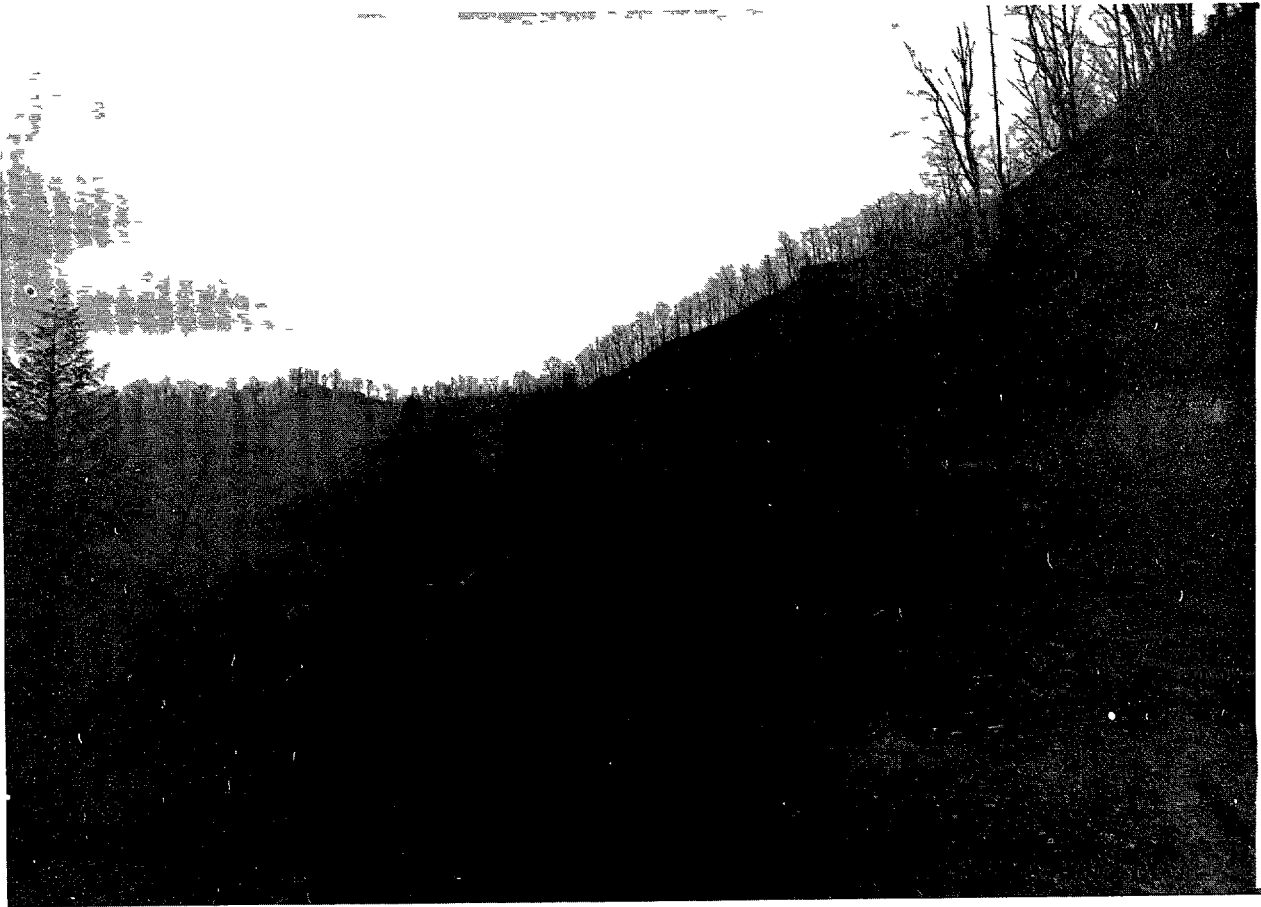
In 1967 the Corps compared the sedimentation rate with the rate expected in the initial project design and found that the rate was less than expected.

If the market value of the coal reserves increases and if more efficient mining techniques are developed, mining off Corps-project land could increase. Such mining could adversely affect the project.

. . . .

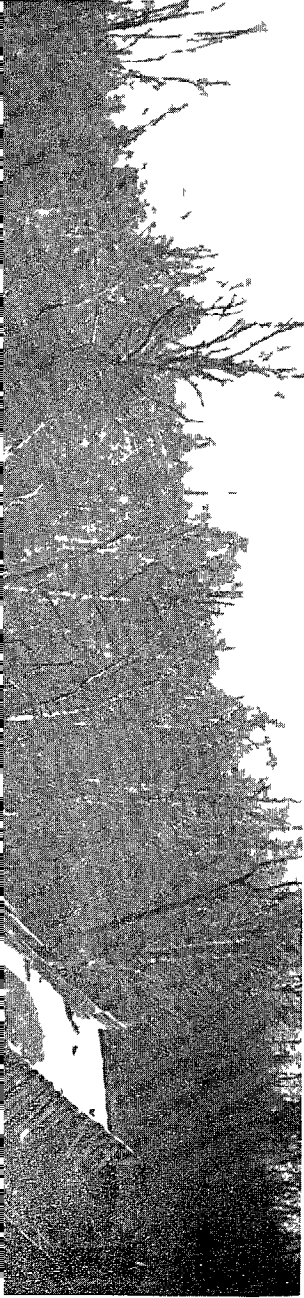
The problems at Fishtrap and potential similar problems at the other projects stem from coal-mining activities both

on and off project lands in the drainage basins. The need for the Corps to regulate mining on project lands is discussed in chapter 3. The problems of regulating mining on other land in the drainage basins are discussed in chapter 4.

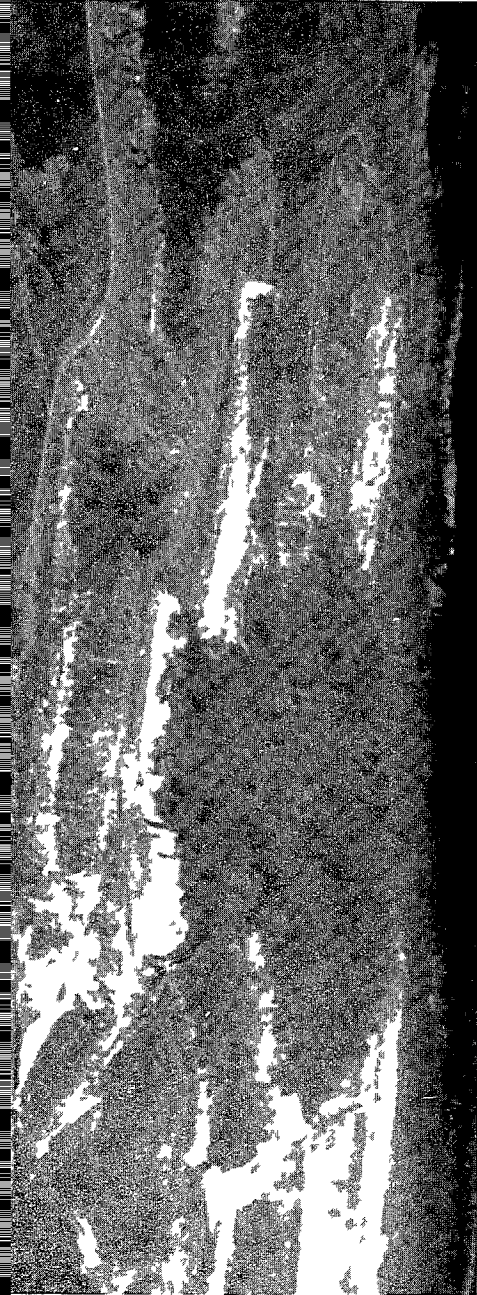


ABANDONED SURFACE MINE AND UNRECLAIMED LAND ON R D BAILEY LAND

SOURCE G







CHAPTER 3

IMPROVEMENTS NEEDED IN

IMPLEMENTING THE 1962 JOINT POLICY

The intent of the 1962 Army-Interior Joint Reservoir Land Acquisition Policy was twofold to protect the economy and the environment by (1) permitting the development of minerals within project boundaries while (2) protecting the primary purposes of the project from adverse effects of such development.

Implementing instructions issued by the Office of the Chief of Engineers (OCE) restated the essence of the 1962 joint policy but did not include specific guidance for regulating mineral development within project boundaries in a manner which would insure noninterference with the primary purposes of a project

Because of this lack of specific guidance, the Corps failed to regulate mining activities at Fishtrap to adequately protect project purposes

METHOD OF ACQUIRING MINERAL RIGHTS AT CORPS PROJECTS UNDER THE 1962 JOINT POLICY

Six of the eight projects we reviewed were subject to the 1962 joint policy. Under this policy, mineral rights acquired in fee are generally limited to the damsite and construction areas even though substantial quantities of minerals may underlie the remainder of the land that has been acquired for the total project. To protect project purposes, the Corps usually restricts or subordinates mineral rights, few mineral rights are left unrestricted

<u>Project</u>	<u>Acres acquired</u>		<u>Acres left outstanding</u>			
	<u>in fee (note a)</u>		<u>Subject to</u>		<u>Unrestricted</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Fishtrap	3,290	21	10,412	65	2,250	14
R D Bailey	843	5	18,243	94	258	1
Paintsville	13,900	100	-	-	-	-
Booneville	17,402	100	-	-	-	-
Cave Run	31,033	100	-	-	-	-
Carr Fork	1,310	34	2,567	66	-	-

^aDoes not include easement acreage

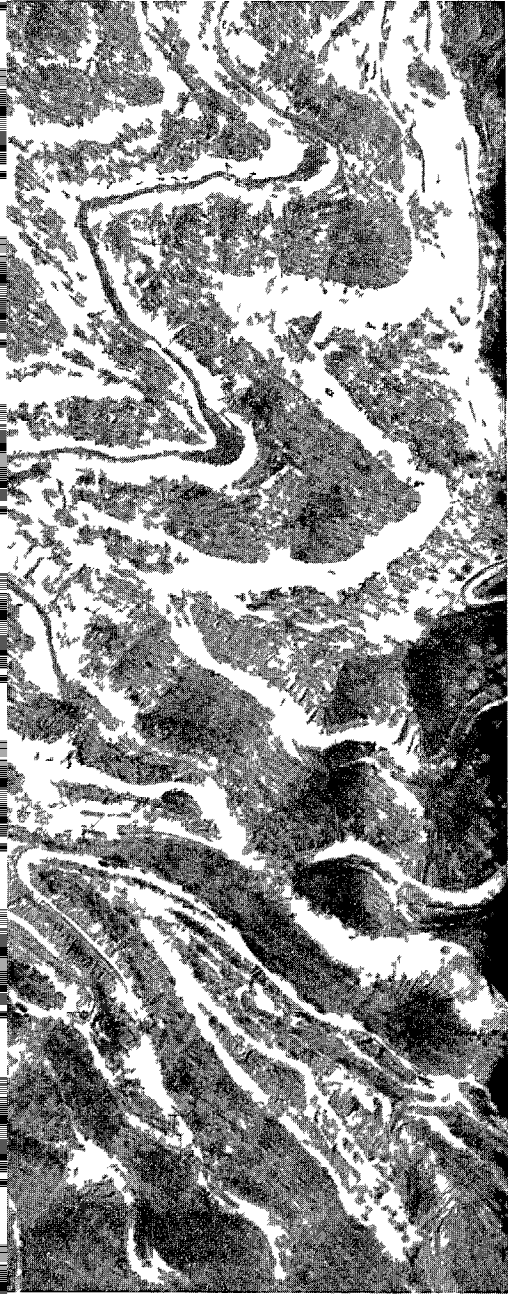
We believe that the Corps' method of acquiring land and subordinating mineral rights at Fishtrap did not adequately protect the project from the adverse environmental effects of mineral development. Problems on Corps-project land occurred either because the estate deeds generally used in subordination of mineral rights to protect project purposes did not sufficiently restrict mining activity or because the Corps did not enforce the provisions of the estate deeds when more restrictive forms of estate deeds were used

Of the 10,400 acres subordinated at Fishtrap, 300 acres were subordinated by special estate deeds and 10,100 were subordinated on the basis of general-form or broad-form estate deeds, as shown below.

<u>Type of estate deed</u>	<u>Acres</u>
General form	8,300
Broad form	<u>1,800</u>
Total	<u>10,100</u>

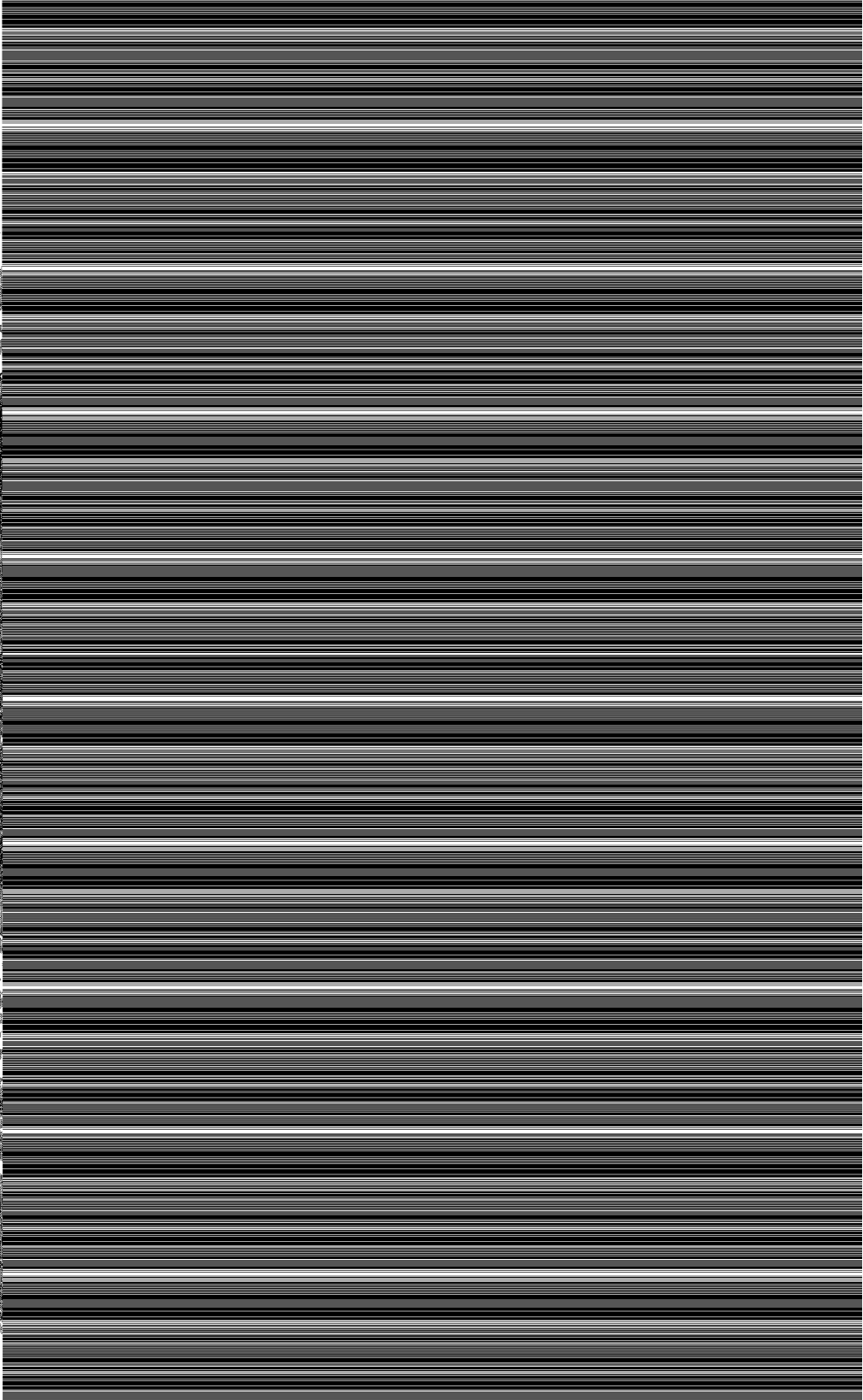
The general-form estate deeds prohibit strip mining on the entire 8,300 acres and restrict the construction and maintenance of structures and improvements below the 830-foot elevation (flood control pool elevation plus buffer zone) without prior approval by the Corps' district engineer. About 7,000 of these 8,300 acres--about 84 percent of the acres subordinated by general-form estate deeds--are above the 830-foot elevation, however, and auger and deep mines may operate on them without restriction.

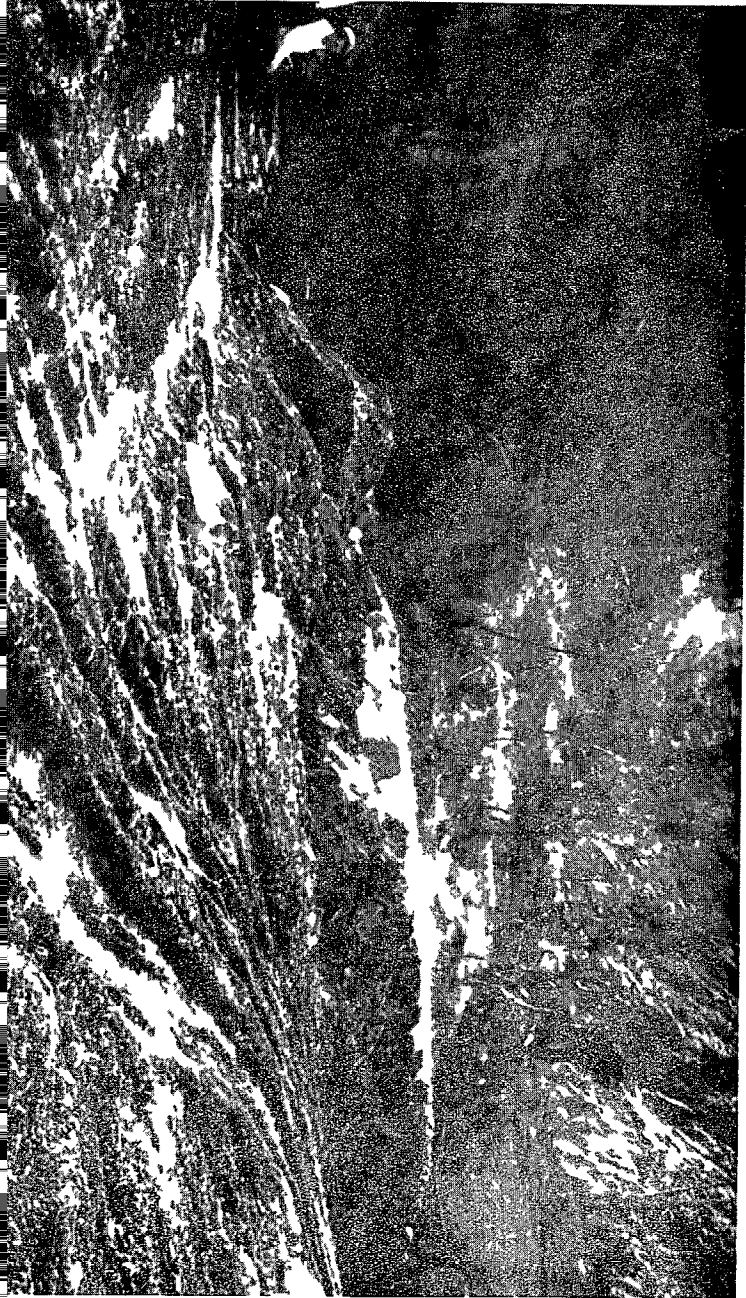
The general-form estate deed is therefore not always effective in regulating mining in that, although it prohibits strip mining, it permits unregulated auger and deep mining within project boundaries and, in fact, in close proximity to the flood control pool. We noted that most of the mining activity at Fishtrap took place on these 7,000 acres. (See photographs on pp. 19, 20, and 34.)

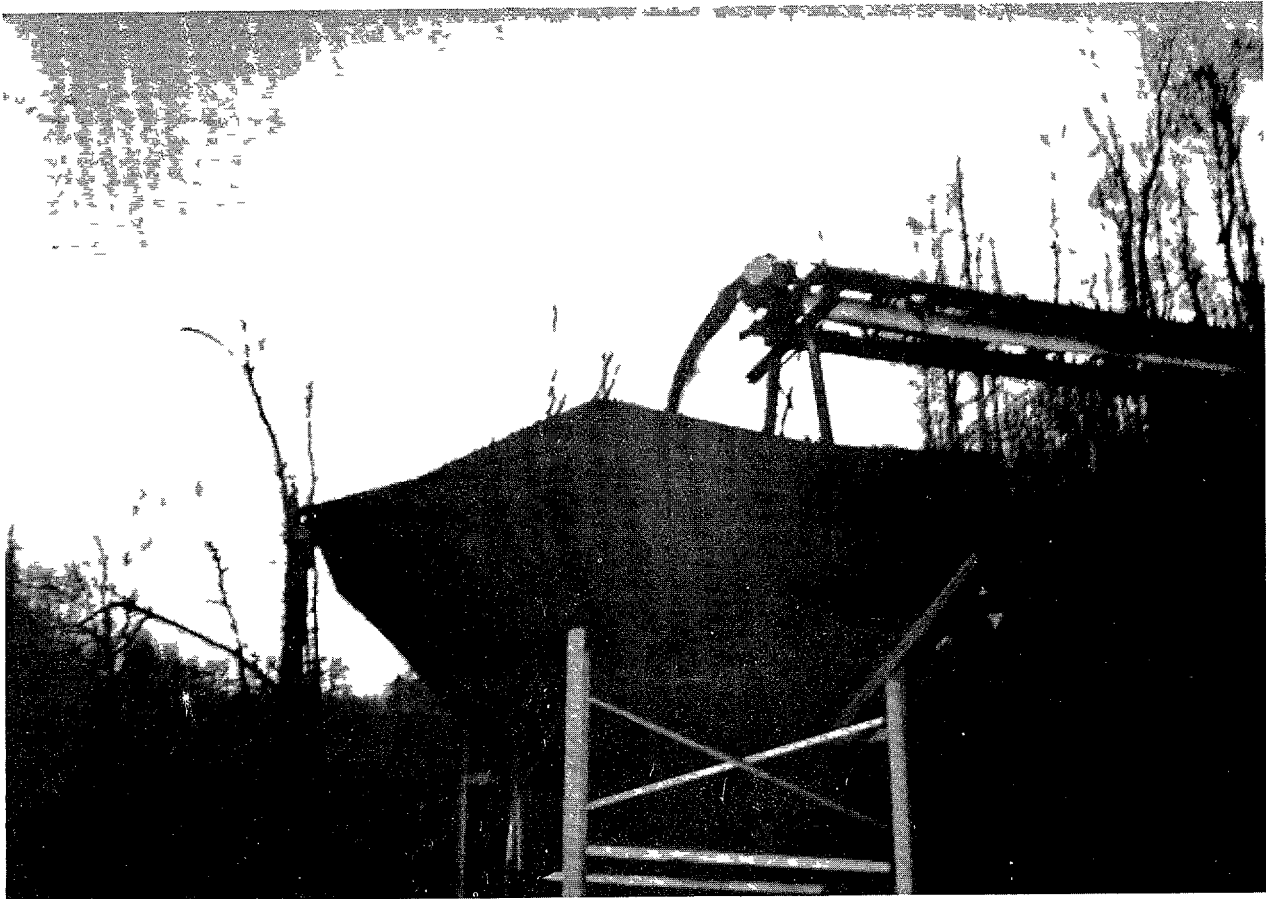


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Broad-form estate deeds, which are more restrictive than general-form estate deeds, were used for 1,800 acres set aside for recreational purposes. Broad-form estate deeds prohibit strip mining at all elevations and require prior Corps approval for the construction of structures, improvements, and roads at any elevation. Although broad-form estate deeds appeared to enable appropriate regulation of mining activities, we found that deed provisions were not being enforced. We identified six mining operations on land where the mineral rights had been subordinated by broad-form estate deeds. The mine operators in these cases had not requested approval from the Corps for the structures and roads nor had the Corps required such approval. Corps district officials were aware of these unauthorized activities but could not explain why they had not required prior approval. Corps operating officials at the project site had little knowledge of the deed restrictions.

We visited two of these operations and found (1) active and abandoned structures, (2) a road which had been recently bulldozed, (3) a slate pile dumped over a hillside, (4) hillsides blackened with coal dust escaping from unenclosed coal chutes, and (5) a poorly maintained road. (See photographs on pp. 36, 37, and 38.)







COAL TIPPLE CONSTRUCTED ON CORPS PROJECT LAND AT FISHTRAP COVERED
BY BROAD-FORM ESTATE DEED

SOURCE GAO

We discussed these mining operations with OCE officials. They told us that they would immediately advise the Huntington district engineer that the Corps had the authority to regulate mining activity where broad-form estate deeds had been used and would find out why the provisions of the deeds had not been enforced. They also said that the district engineer would be directed to take whatever actions are possible to correct the situation.

At R. D. Bailey, the Corps is planning to acquire, in fee, rights to coal located around the damsite and in construction areas. The remaining mineral rights are to be left outstanding subject to subordination.

The Corps had planned to use an estate deed similar to the general-form deed used at Fishtrap to subordinate all rights to coal, except those at planned recreational sites where the Corps intended to prohibit disturbing the surface of the land to extract coal. In March 1972, however, the Corps suspended the subordination of rights to coal at R. D. Bailey because of the problems at Fishtrap and the potential for similar problems at R. D. Bailey.

The Huntington district subsequently submitted revised forms of estate deeds to OCE for approval. These estate deeds would prohibit both strip and auger mining and would require coal operators deep-mining coal to follow rules and regulations for facilities and road construction, timber clearing, erosion control, and reclamation and mining practices. The Corps' prior approval would be required for mining operations.

The Corps estimates that the proposed method of acquiring greater rights to restrict coal mining will cost the Corps about three times more than the method originally proposed.

The rights to coal underlying about one-third of the project land at Cair Fork will be acquired in fee. Generally, rights will be acquired around the damsite and in construction areas. The rights to coal under the remaining land will be left outstanding subject to subordination. The Corps plans to use an estate deed which will prohibit entry upon, or use of, the land for extracting coal.

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The Corps plans to buy all coal rights at Paintsville, Booneville, and Cave Run where coal reserves are minimal, because subordination costs will nearly equal acquisition costs. A Corps official told us that, if the coal reserves at Booneville became valuable enough, due to changes in economic conditions, the Corps would consider subordinating the mineral rights to permit their development in accordance with the 1962 joint policy.

CONCLUSIONS

In view of the adverse effects that mineral development can have on the environment and in view of the dual intent of the 1962 joint policy to protect the economy and the environment, regulating mineral development becomes very difficult and important.

The Corps has not issued specific guidance for regulating mineral development where economic conditions dictate that such development should be permitted

To insure that districts meet the intent of the joint policy, the Corps should provide specific guidance as to the types of estate deeds to be used in subordinating mineral rights and criteria for those factors, such as handling disturbed surface materials and waste and constructing roads and structures, which have to be considered when minerals are developed

The types of estate deeds used to subordinate minerals directly affect the extent to which mining can be regulated on Corps-owned land. We believe that the general-form estate deeds used at Fishtrap did not adequately regulate mining nor adequately protect the project's environment. Also the Corps should try to correct the problem of mining operations being conducted without Corps approval at Fishtrap where mineral rights were subordinated by broad-form estate deeds

Because the excessive sediment at the \$53.8 million Fishtrap project may degrade the project's ability to provide its primary benefit--flood control--in the near future (see p 16), the Corps needs to promptly develop and implement a plan to protect the project from further adverse effects of mining in the drainage basin.

RECOMMENDATIONS TO THE SECRETARY OF THE ARMY

We recommend that the Secretary of the Army direct the Corps to

- revise its regulations to provide guidance as to the types of estate deeds to be used in subordinating mineral rights and specific criteria for the factors, such as handling disturbed surface materials and waste and constructing roads and structures, to be considered when minerals are developed,

- establish a system for monitoring compliance with the criteria and regulations imposed upon operators which may develop minerals on project lands,
- ascertain and take whatever actions are available to the Corps to correct the problem of mining operations being conducted without Corps approval on lands at Fishtrap where mineral rights were subordinated by broad-form estate deeds, and
- promptly develop and implement a plan to protect the Fishtrap project from further adverse effects of mining in the drainage basin.

AGENCY COMMENTS

We discussed this report with OCE officials They said that

- Our report appeared to be accurate, and they agreed with our conclusions and suggestions.
- All Corps district engineers had been asked to determine the scope of current and potential problems from all mineral development at water resource projects in their respective districts, this data should be received by December 1973.
- Corps regulations would be revised to provide the specific guidance and criteria we suggested.
- A system for monitoring compliance would be implemented
- The revised regulations would be issued by June 1974.
- The Fishtrap sedimentation study had been started and that protection plans would be developed as the study results became available

CHAPTER 4

FACTORS AFFECTING THE CORPS' ABILITY

TO PROTECT PROJECTS FROM

MINING ACTIVITIES IN DRAINAGE BASINS

Mining activities on non-Federal lands in the drainage basin of a water resource project can seriously affect the project's operational capability. Further, the problem of regulating mining on such lands is difficult because

- Federal mining laws are safety oriented and are directed toward protecting personnel but not property
- State laws for regulating mining are limited to surface-mining operations
- Recourse to the provisions of related Federal legislation (Refuse Act of 1899 (33 U S C 407)) was not always successful in protecting project purposes
- Federal-State coordination to protect projects from mining activities was limited to surface-mining operations

Several bills have been introduced in the current session of the Congress which would provide for Federal regulation of surface-mining activities and surface disturbances resulting from deep mining. Such legislation could protect Federal water resource projects from the adverse effects of mining activities in their drainage basins.

Since there are no Federal laws which regulate mining on non-Federal land, this function has become the responsibility of the States in which the drainage basins are located and the Corps depends on the States to regulate mining. Such regulatory control is limited, however, because the States covered by our review have no laws, other than those which are safety related, governing deep-mine operations.

The drainage basins of the projects we reviewed are in Kentucky, Virginia, and West Virginia. Each of these

States has surface-mining laws and regulations. The laws establish State agencies to review, approve, and monitor mining operations and to enforce the regulations. The regulations generally require State approval of surface-mining operations, establish criteria for acceptable operating methods (such as roadbuilding and excavation), and impose requirements for reclaiming disturbed land.

One tool available to the Corps for regulating mining activities which would adversely affect water resources projects is the Refuse Act of 1899.

We noted that the House Committee on Government Operations, in its report dated March 18, 1970, entitled "Our Waters and Wetlands: How the Corps of Engineers Can Help Prevent Their Destruction and Pollution" (H Rept 91-917, 91st Cong 2d sess), had directed attention to the need to vigorously enforce the Refuse Act of 1899. The Committee report said that the Refuse Act provided a broad charter of authority and a powerful legal tool for preventing the pollution of navigable waters and noted that

- A violator of the act was subject to criminal prosecution and a fine not exceeding \$2,500 nor less than \$500, or imprisonment for not less than 30 days nor more than 1 year, or both.
- The Supreme Court has ruled that the Federal Government may obtain an injunction requiring a polluter, who had discharged a foreign substance into a navigable waterway, to cease future discharges and remove the polluting substance already discharged.¹
- In addition to imposing criminal sanctions to punish for discharges and obtaining injunctions to preclude future discharges, the Government can protect the navigable waters from pollution or degradation by calling upon the polluter to clean up the discharge voluntarily. If the polluter does not do the cleanup work, the Government can do it and, if the polluter's

¹United States v Republic Steel Corp , 362 U S 482 (1960)

discharges were willful or negligent, can bill the polluter for the Government's cost ¹

The Committee report recommended that

- 1 "The Corps of Engineers should vigorously enforce the Refuse Act of 1899 which prohibits discharge of refuse into navigable waters and deposit of polluting materials on their banks "
- 2 "Both the Corps of Engineers and the Federal Water Pollution Control Administration [now the Environmental Protection Agency] should request the Attorney General to institute injunction suits against all persons whose discharges or deposits (except minor ones) violate the Refuse Act and are not promptly cleaned up or stopped by the polluter "
- 3 "The Corps of Engineers should proceed to increase its capability, including seeking the necessary contingency funds, to enable it to promptly remove or clean up pollutional discharges and deposits and to seek reimbursement of the costs thereof from persons who willfully or negligently made or caused such discharges or deposits "

The Corps has initiated legal action against five mine operators for violation of the Refuse Act at Fishtrap As of August 1973 the status of these actions was as follows

- One conviction with a fine of \$500
- One consent judgment which enjoined the operator from discharging refuse into a stream, charges on these violations were subsequently dismissed
- One action in which the charges were dropped
- Two actions were still pending

¹Wyandotte Transportation Co v United States, 389 U S 191 (1967).

Corps officials informed us that the Refuse Act provided little protection to project lands from problems caused by mining. One difficulty was gathering evidence. For example, the Corps must pinpoint the responsibility to a single operator and this often is difficult due to the number of mining operations near the same body of water.

The U S attorney for the Eastern District of Kentucky told us that it was difficult to prepare a case against an operator under the Refuse Act because of the need to prove that a particular mining operation on a certain hill was responsible for the pollution entering a stream. He added that it was very rare when only one operator was located along a particular stream or tributary.

Corps officials believed that the fines levied under the act represented a small deterrent to keeping mine operators from discharging refuse into streams. In addition, Corps officials stated that manpower limitations precluded the Corps from actively pursuing violations.

The Federal Water Pollution Control Act Amendments of 1972 (86 Stat 816) provided for a revised program requiring permits for discharging pollutants into navigable waters and integrated therein the permit program of section 13 of the 1899 act. The revised program is administered by the Administrator of the Environmental Protection Agency (EPA), but a State may administer its own permit program for navigable waters within its jurisdiction upon approval of its program by the Administrator of LPA.

The penalties under the 1972 amendments are considerably more severe than under the 1899 act. A violator is subject to a fine of not less than \$2,500 nor more than \$25,000 for each day of violation or to imprisonment for not more than 1 year, or both. The penalty after a first conviction is a fine of not more than \$50,000 for each day of violation or imprisonment for not more than 2 years, or both.

On May 16, 1973, EPA issued regulations implementing the discharge permit program authorized by the 1972 amendments. The regulations require that a permit be obtained from EPA, or a State agency which has had its program approved by EPA, before the discharges covered by the act may be made. The regulations include provisions for

- monitoring of discharges by EPA or a responsible State agency,
- public notification of permits being issued, and
- public access to all information relating to issuing a permit

According to EPA officials, the 1972 amendments apply to pollutants discharged by active-mining operations, such as those by coal-processing plants, but not to runoff, such as that caused by excessive rainfall, from active or abandoned coal-mining operations

In 1970 the Corps' Huntington and Louisville districts, in attempting to protect projects from problems associated with surface mining, entered into cooperative agreements with Kentucky that allow the Corps to review all permit applications for surface mining within a project's drainage basin. Also a Corps representative may accompany the State inspector on all inspections and report any violations of existing laws and regulations. In addition, the Corps can express its approval of or objection to the proposed mine operation within a specified period. Final disposition of the proposed mining operation rests with the State.

Since the agreements with Kentucky have been in effect, the Corps has reviewed over 200 applications for surface-mining permits in Kentucky. As a result of Corps comments on these applications, 14 have been withdrawn by the operators and 13 have been rejected by the State.

Corps officials said they were working with Virginia and West Virginia to develop similar arrangements.

CONCLUSIONS

Sediment and related problems associated with mining activities originate, to a large extent, from mining off Corps-project land. Coordination with State agencies with respect to regulating surface mining gives the Corps some control over such mining, however, this coordination is limited to surface mining. We believe that these arrangements are a step in the right direction. It should be noted, however, that final action on enforcement rests with the State and that the agreements do not cover deep mining.

1

Federal water resource projects in areas having coal deposits have been adversely affected by the mining of those deposits, and the extent to which such adverse effects can be controlled is limited. The Congress, in considering the pending legislation on Federal regulation of mining activities, may wish to give specific attention to protecting the Federal investment in reservoir projects, particularly regarding the effects of deep-mining activities.

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NINETY SECOND CONGRESS
Congress of the United States
House of Representatives
 CONSERVATION AND NATURAL RESOURCES SUBCOMMITTEE
 OF THE
 COMMITTEE ON GOVERNMENT OPERATIONS
 RAYBURN HOUSE OFFICE BUILDING ROOM B349 B
 WASHINGTON D C 20515

November 14, 1972

Mr Elmer B Staats
 Comptroller General of the United States
 General Accounting Office
 441 G Street, N W
 Washington, D C 20548

Dear Mr Staats

Several weeks ago our Subcommittee staff met with representatives of your agency with regard to a study being conducted by the GAO concerning the 1962 Army-Interior Joint Reservoir Land Acquisition Policy (27 F R 1734). At that meeting we brought to your staff's attention considerable correspondence which we have had with the Corps of Engineers regarding several reservoirs under its jurisdiction. We noted that our investigations had thus far revealed that Section 5 of the 1962 Joint Policy was not being carried out to the extent contemplated by that section. Indeed, in the case of one reservoir, Fishtrap Lake in Kentucky, the Corps' failure to carry out the requirements of Section 5 resulted in severe damage to the project.

The Carr Fork and R D Bailey reservoir projects, in Kentucky and West Virginia respectively, are now under construction and are also threatened by mine activities within and outside project boundaries. The District Engineer informally told us that at least one Corps project in Ohio was also threatened by mine activities.

Enclosed is a copy of the Corps' very thorough report entitled "Evaluation of Mining Activities and Resultant Siltation Problem, Fishtrap Lake, Kentucky", dated January 1972. That report outlines, on pages 21-26, the remedies available to the Corps after the costly damage has occurred. None is very satisfactory. Also enclosed is a copy of a letter dated May 11, 1972 from Col Kenneth E McIntyre, the Corps' District Engineer, Huntington District, West Virginia, to our Subcommittee, transmitting copies of a form letter and an attachment entitled "Requirements for Mineral Exploitation on United States Government-Owned Lands, Fishtrap Lake, Kentucky", which Col McIntyre states were sent to each coal operator conducting mining operations and to each mineral owner, at that Lake. We are informed by the Corps that this after-the-fact piecemeal regulation has not been successful.

1 In our letter of September 27, 1972 to the Corps, we requested that the Corps publish regulations to carry out the 1962 Joint Policy on mineral activities in order "to avoid repetition of the Fishtrap experience". The Corps has not yet responded to that request.

We want, regardless of the Corps' response to our request, additional data on the scope of the problem. We therefore would appreciate the GAO's looking into this matter with regard to other Corps reservoirs. We do not have any other particular reservoirs in mind, but envisage that after a preliminary examination and discussion with the District Engineers in Louisville, Kentucky and Huntington, West Virginia, you might select several reservoirs for a more careful study. The scope of the inquiry was outlined to your staff. Enclosed for your information is a copy of our correspondence with the Corps on this matter, which clearly sets forth the concerns and recommendations of our Subcommittee (List attached)

2 In conducting the foregoing investigation of the Corps' reservoirs, please review the Corps' negotiations, execution and administration of a contract with the N & W Railroad to relocate that line's tracks outside the boundaries of the Corps' R D Bailey Lake project in West Virginia. We understand that the relocation of the line is being done by the railroad's contractor and not a Corps contractor, that there have been considerable delays in performance, and that the Government's costs have substantially increased, since the Corps-N & W Railroad contract was executed. Our letter of September 27, 1972 to the Corps (pages 4, 5) had asked several questions about this matter, but we have not yet received the Corps' response.

3 We are also informed that the Bureau of Reclamation does not have regulations governing mineral development on project lands under its jurisdiction, despite the requirements of Section 5 of the 1962 Joint Policy. Enclosed is a copy of Part 211 (Policy and Basic Requirements) of the Bureau's Manual of Reclamation Instructions. Paragraph 211.1.7E states that "mineral rights not acquired will be subordinated to the Government's right to regulate their development in a manner that will not interfere with the primary purposes of the project, including public access." However, as stated above, the Bureau does not now have regulations governing mineral development. Furthermore, as shown by the enclosed copies of (a) a deed (Childs and Singleton to United States, May 23, 1968, Utah County, Utah) and (b) a subordination agreement (Gulf Oil Corporation to United States, July 23, 1970, Wasatch County, Utah), the instruments the Bureau obtains contain differing provisions concerning the extent of subordination and in both instances these provisions are not the same as what paragraph 211.1.7E specifies. Thus, the 1968 deed contemplates that the "exploration or exploitation of such gas, oil and minerals shall be approved" by the Government, but such approval is not correlated to the purpose specified in paragraph 211.1.7E, while the 1970 subordination agreement does not acknowledge that the Government has any right to regulate mineral development of the land, other than the company's promise to prospect for, drill, mine and remove gas and oil and occupy the surface "in a manner which will not interfere with the construction, operation, and maintenance of the project" and to take precautions "to prevent pollution" of the reservoir water.

Mr. Elmer B Staats


Page three

November 14, 1972

Although we are uncertain as to the extent to which mineral development exists or is reserved on Bureau of Reclamation lands, we would appreciate having GAO also investigate what the Bureau has done and plans to do to carry out the requirements of Section 5 of the 1962 Joint Policy. We think that the recommendations which we have made to the Corps concerning this matter are equally appropriate for the Bureau of Reclamation.

Please provide to us a report of your findings and recommendations. Before finalizing your report, we would appreciate your discussing your findings with our Subcommittee staff.

Sincerely,


HENRY S REUSS
Chairman
Conservation and Natural Resources
Subcommittee

Enclosures

GAO note The enclosures have been omitted

APPENDIX II

CORRESPONDENCE BETWEEN THE
 CONSERVATION AND NATURAL RESOURCES SUBCOMMITTEE
 AND THE CORPS OF ENGINEERS RELATING TO THE
 REGULATION OF MINERAL DEVELOPMENT AT
 FEDERAL WATER RESOURCE PROJECTS

<u>Date</u>	<u>Correspondence</u>
December 23, 1971	To Lt. Gen F J Clarke from the Chairman of the Subcommittee
January 4, 1972	To Lt Gen F J Clarke from the Chairman of the Subcommittee
February 22, 1972	To the Chairman of the Subcommittee from Lt Gen F J Clarke
March 2, 1972	To Lt Gen F J Clarke from the Chairman and the Ranking Minority Member of the Subcommittee
April 13, 1972	To the Chairman of the Subcommittee from Lt Gen F J Clarke
April 21, 1972	To the Chairman of the Subcommittee from Maj Gen A P Rollins
April 27, 1972	To the Chairman of the Subcommittee from Lt Gen F J Clarke
May 5, 1972	To Lt Gen F J Clarke from the Chairman and Ranking Minority Member of the Subcommittee
August 10, 1972	To the Chairman of the Subcommittee from Lt Gen F J Clarke
September 27, 1972	To Lt Gen F J Clarke from the Chairman and Ranking Minority Member of the Subcommittee

APPENDIX II

<u>Date</u>	<u>Correspondence</u>
December 8, 1972	To the Chairman of the Subcommittee from Lt. Gen. F J. Clarke
July 16, 1973	To Lt Gen F. J Clarke from the Chairman of the Subcommittee