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SURFACE MINING

DOCUMENTS
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HEARINGS

BEFORE THE

SUBCOMMITTEE ON MINERALS, MATERIALS, AND FUELS

OF THE

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS UNITED STATES SENATE

Pursuant to S. Res. 45

A National Fuels and Energy Policy Study

NINETY-SECOND CONGRESS

FIRST SESSION

ON

S. 77, S. 630, S. 993, S. 1160, S. 1240, S. 1498, S. 2455, and S. 2777

PENDING SURFACE MINING LEGISLATION

NOVEMBER 16, 17 AND DECEMBER 2, 1971

Serial No. 92–13

PART 1

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U.S. GOVERNMENT
INFORMATION
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CONTENTS

	Page
S. 77	3
Departmental reports:	
Agriculture	36
Budget	36
Interior	33
S. 630	37
Departmental reports:	
Agriculture	54
Interior	53
S. 993	55
S. 1160	72
Departmental reports:	
Agriculture	75
Interior	74
S. 1240	76
Departmental reports:	
Agriculture	80
Interior	79
S. 1498	81
Department of Agriculture report	112
S. 2455	113
S. 2777 (part 2)	823
H.R. 4556 (part 2)	845

STATEMENTS

Abdnor, J. S., chairman, Special Committee on Surface Mining	280
Andrews, Tom, Black Mesa Defense Fund, Santa Fe, N. Mex	233
Askins, Donald H., president of the Wise County Environmental Council, an affiliate member of the Conservation Council of Virginia	564
Avedisian, Armen G., chairman of the board of National Limestone Institute, Inc	221
Bagge, Carl E., president, National Coal Association; accompanied by Edwin R. Phelps, president, Peabody Coal Co.; Ralph W. Hatch, president, Hanna Coal Co.; and Paul Morton, president, Cannelton Coal Co	312, 341, 376
Summary	394
Baldwin, Malcomb, senior legal associate, the Conservation Foundation	501, 506
Borrelli, Peter, eastern representative of the Sierra Club	486
Branscome, James, director of Save Our Kentucky, Inc	223, 228
Brennan, Joseph P., director of research and marketing for the United Mine Workers of America; accompanied by L. J. Pnakovich, president, United Mine Workers of America, District 31; Kenneth F. Wells, Illinois State president, United Mine Workers of America; Tom Shirley, international representative; and William J. Tirnblazer, president, United Mine Workers of America, District 19	450
Campbell, S. James, vice president of the National Crushed Stone Association; executive vice president of Harry T. Campbell Sons' Co.; accompanied by Robert M. Scott, counsel for the association	494, 498
Cooper, Hon. John Sherman, a U.S. Senator from the State of Kentucky	541
Davey, William B., Deputy Administrator for Field Services, Soil Conservation, Department of Agriculture	310

Page

Dole, Hollis M., Assistant Secretary, Mineral Resources, Department of the Interior; accompanied by Elburt Osborn, Director of the Bureau of Mines ---------- 184, 193
Guidelines for State Environmental Regulations of Mining Operations Consistent with "The Mined Area Protection Act of 1971" ---------- 199
Emigh, G. Donald, chairman, Phosphate Lands Conference; accompanied by Dennis M. Olsen, Counsel for Phosphate Lands Conference; and Ralph A. Watson, Mineral Development Department, FMC Corp ---------- 475
Guckert, William E., director, Mine Reclamation Bureau of Land Protection and Reclamation, Department of Environmental Resources, Commonwealth of Pennsylvania ---------- 301, 309
Hansen, Hon. Clifford P., a U.S. Senator from the State of Wyoming ---------- 148
Hatch, Ralph, president, Hanna Coal Co ---------- 356
Hechler, Hon. Ken, a U.S. Representative in Congress from the State of West Virginia; accompanied by Ivan R. White, West Virginia House of Delegates ---------- 167, 175
Hunter, Louis, executive secretary, National Independent Coal Producers; accompanied by Gene Davidson, Joanne Coal Co., Albert, Ky ---------- 542
Johnson, Hugo E., president, American Iron Ore Association; accompanied by Ralph Magnuson, Jr., director, Environmental Activities, Cleveland-Cliffs Iron Co., and E. T. Binger, chairman of the board, Pittsburgh Pacific Co ---------- 290
Kaufman, Gail, League of Women Voters of Scranton; accompanied by Mrs. James K. Peck, Jr., Help Eliminate Life Pollutants, Inc.; and Mitchell Fowler, Navajo Indian ---------- 240
Proposed amendatory language to S. 2455 ---------- 270
Morton, Paul, president, Cannelton Coal Co ---------- 365
Nelson, Hon. Gaylord, a U.S. Senator from the State of Wisconsin ---------- 150, 153
Pankowski, Ted, Izaak Walton League; accompanied by Norman R. Williams ---------- 283
Peck, Mrs. James K., president of HELP ---------- 240
Phelps, Edwin R., president, Peabody Coal Co., St. Louis, Mo ---------- 343
Pickelner, Joel M., legislative information specialist of the National Wildlife Federation ---------- 237
Pnakovich, L. J., president, United Mine Workers of America, District 31 ---------- 472
Quarles, John, General Counsel and Assistant Administrator of Standards, and Enforcement, Environmental Protection Agency ---------- 214
Schweiker, Hon. Richard S., a U.S. Senator from the State of Pennsylvania ---------- 300
Thieme, Walter I., chairman of the board of American Aggregates Corp. of Greenville, Ohio ---------- 550
Train, Russell E., chairman, Council on Environmental Quality ---------- 140
Wachter, Frank C., chairman of the Committee on Public Affairs of the National Industrial Sand Association ---------- 547
Wells, Kenneth F., Illinois State president, United Mine Workers of America ---------- 471
Wyoming Mining Association ---------- 149

COMMUNICATIONS

Bracken, Frank A., Legislative Counsel, Department of the Interior:
Letter to Hon. Spiro T. Agnew, President of the Senate, dated May 14, 1971 ---------- 211
Letter to Hon. Carl Albert, dated May 14, 1971 ---------- 212
Nelson, Hon. Gaylord: Letter to Rogers C. B. Morton, Secretary of the Interior, dated November 5, 1971 ---------- 159
Ziolkowski, Leonard W., planning director, Economic Development Council of Northwestern Pennsylvania: Letter to Ernest D. Preate, Jr., HELP ---------- 259

ADDITIONAL INFORMATION

Page

Computations by NCA from data reported in U.S. Bureau of Mines, Minerals Yearbook, and Monthly Petroleum Statement, 1970 ---- 435
"Controls on Strip Mining," from the Christian Science Monitor, November 3, 1971 ---- 165
Dole, Hollis M., Assistant Secretary—Mineral Resources, Department of the Interior, attachments:
Table 1.—Number of mines in 1969 and average men working daily in 1969–70, by methods of mining, in the United States ---- 204
Table 2.—Coal production and method of mining in the United States, in 1969–70 ---- 205
Table 3.—Production of coal in the United States in 1970 by region, State, and method of mining ---- 206
Table 4.—Salient statistics on surface mining of coal in the United States, in 1969 ---- 207
Table 5.—Number of strip pits in the United States reporting production of bituminous coal and lignite in 1970, by tonnage category and State ---- 208
Table 6.—Materials (crude and waste) handled at surface mines in the United States in 1970, by State ---- 209
Table 7.—Sand and gravel sold or used by producers in the United States in 1970, by State ---- 209
Table 8.—Stone sold or used by producers in the United States in 1970, by State ---- 210
Table 9.—Production of clay in the United States in 1970, by State ---- 210
Table 10.—Mine production of recoverable copper in the United States in 1970, by State ---- 211
Table 11.—Usable iron ore produced in the United States in 1970, by State ---- 211
Table 12.—Mine production of phosphate-rock ore in the United States in 1970, by State ---- 211
Environmental statement to accompany the proposed "Mined Area Protection Act of 1971," by the Department of the Interior ---- 212
"Great Coal Rush: The Stripping of the West," by Ben A. Franklin, New York Times Service, dated August 29, 1971 ---- 161
Questions submitted by Senator Hansen and answers by Mr. Bagge ---- 450
"Strip Mining," by Mr. Nelson (for himself and Mr. McGovern), from the Congressional Record, April 5, 1971 ---- 164
The startling growth of strip mining, chart ---- 174
"The Strip Mine Problem," from the Washington Post, March 18, 1971 ---- 166
New York Times, November 1, 1971 ---- 166
Thieme, Walter I., representing, National Sand & Gravel Association—National Industrial Sand Association:
Appendix A.—States having surface mining statutes which include sand and gravel—Tonnage from U.S. Bureau of Mines, table ---- 554
Appendix B.—States having extensive local control (estimated at more than 50 percent of the jurisdictions) but no State control of sand and gravel extraction—Tonnage from U.S. Bureau of Mines, table ---- 554
Appendix C.—Publications of the National Sand & Gravel Association on rehabilitation of sand and gravel lands ---- 555
Suggested amendments to bills ---- 555
United Mine Workers of America, news releases, dated:
February 16, 1971 ---- 459
February 22, 1971 ---- 461, 462
September 14, 1971 ---- 463
September 26, 1971 ---- 464

SURFACE MINING

TUESDAY, NOVEMBER 16, 1971

U.S. SENATE,
SUBCOMMITTEE ON MINERALS, MATERIALS, AND FUELS OF THE
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D.C.

The subcommittee met at 9 a.m., pursuant to notice, in room 3110, New Senate Office Building, Senator Frank E. Moss (chairman of the subcommittee) presiding.

Present: Senator Moss.

Also present: Mary Jane Due, staff counsel; and Charles Cook, minority counsel.

Senator Moss. The hearing will come to order.

The reason we set the time for 9 a.m. is because we have a great number of witnesses that we want to hear today and tomorrow and we will have hearings later on, in about 2 weeks from now.

This is the first of a series of hearings to be held before the Subcommittee on Minerals, Materials, and Fuels on proposals now pending before the committee to regulate surface mining in the United States. Measures presently pending before the committee are S. 77, S. 630, S. 993, S. 1160, S. 1240, S. 1498, S. 2455, and S. 2777.

Reading that long list of numbers, you can see there is a lot of concern about the problems we will be discussing at these hearings and many different Senators have advanced various ways of dealing with the problem.

The hearing will continue through tomorrow. An additional day of hearing has been scheduled for December 2 at 10 a.m., at which we will be hearing witnesses particularly with regard to S. 1160 as well as the other bills.

The statistics available to us from the Department of Interior indicate that approximately 3.2 million acres had been disturbed by surface mining across the country. About 2 million acres are in need of some type of rehabilitation. Approximately 90 percent of the disturbed land is estimated to be in private ownership.

The report of the Interior Department estimated that the cost of basic reclamation of the disturbed 2,041,000 acres is $658,270,000. Additional work such as the construction of impoundments, planting, grading, and administrative costs brings the total to $1,211,112,000.

Federal legislative attempts to regulate and require the reclamation of surface-mined areas date back over 30 years.

We are faced with serious environmental problems and we must find solutions.

Too often these hearings result in battlelines being drawn between the environmentalists and the mining industry. We address ourselves

today to the legislative proposals seeking to resolve the impasse and find a workable solution to the problem.

Running throughout the arguments are deep philosophical issues and grave economic considerations. Fundamental in our deliberations are two facts:

(1) The economics of this country and its concomitant industrial growth are built upon and require the raw materials with which this country has been inordinately blessed; and

(2) There is a need for every man, women, and child in this country to have a quiet, beautiful place to reside and to seek recreation unmarred by pollution of air, water, and land. In this achievement of such a goal, lies the strength of the heart of our people.

In order to achieve the latter we must find some way to accommodate the former, because without the economic security and the production of the country there is neither the need nor the opportunity for the quiet place.

We can no longer remain wedded to the age-old processes and assumptions. Rather we must recognize and acknowledge new values and new ways.

We can no longer afford to have conservationists lined up against industry in a "you did" or "you didn't" confrontation.

The bills before us that I have read off will be placed in the record at this point including the reports of the Department of Interior.

(The documents referred to follow; except that text of S. 2777 is on p. 823.)

92D CONGRESS
1ST SESSION

S. 77

IN THE SENATE OF THE UNITED STATES

JANUARY 25, 1971

Mr. NELSON introduced the following bill; which was read twice and referred to the Committee on Interior and Insular Affairs

A BILL

To provide for the regulation of present and future surface and strip mining, for the conservation, acquisition, and reclamation of surface and strip mined areas, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Mined Lands Restoration and Protection Act of 1971".

SEC. 2. (a) The Congress finds and declares that the mining of minerals by the surface or strip method, both past and present, (1) destroys natural beauty, (2) damages the terrain for an indefinite period, (3) causes erosion of the soil, (4) contributes to water pollution, (5) adversely affects commercial and industrial development, (6) damages

real property, (7) destroys forests, wildlife habitat, and other natural resources, (8) menaces the public health and safety, (9) cannot be made subject to uniform conservation requirements because physical and chemical conditions on spoil areas and spoil-bank characteristics can differ from State to State, county to county, bank to bank, and even from spot to spot on a particular bank, and (10) creates, because of the diversity of State regulations, or the lack thereof, competitive disadvantages for firms operating in a given market area and thereby interferes with the orderly and fair marketing of minerals in commerce. The Congress further finds that these results are detrimental to the economy of the Nation.

(b) It is therefore the purpose of this Act to provide for participation by the Federal Government with State and local governments, private individuals and other interested parties in a long-range, comprehensive program to reclaim lands and waters damaged by surface and strip mining, to promote an effective continuing conservation land-use and management program, and to prevent further detriment to the Nation from such mining operations through—

(1) the establishment of criteria and standards for the reclamation, conservation, and protection of surface and strip mined areas;

(2) the encouragement of the States to enact, or

revise, and enforce laws, rules, and regulations for the regulation of future surface and strip mining operations in accordance with criteria and standards at least equivalent to the criteria and standards established pursuant to this Act;

(3) financial aid to provide for research and development, and technical advisory assistance, and the installation of demonstration projects;

(4) cooperative programs with State and other governmental agencies to provide Federal assistance for the reclamation and conservation of publicly and privately owned surface and strip mined lands;

(5) the acquisition of surface and strip mined lands where necessary in the public interest to achieve their reclamation and conservation;

(6) the promotion of public recreation, flood control, and soil erosion control, water pollution control, forestry, agriculture, restoration and preservation of natural beauty, enhancement of fish and wildlife habitat, and other natural resource values, and the public health and safety; and

(7) the elimination of competitive disadvantages for firms operating in a given market area which interfere with the orderly and fair marketing of minerals in commerce.

SEC. 3. For the purposes of this Act:

(a) The term "Secretaries" means the Secretary of the Interior and the Secretary of Agriculture;

(b) The terms "surface mining" and "strip mining" are interchangeable, and mean the mining of minerals after complete removal of the surface or overburden above the deposit to be mined in a series of rows or strips, and include "auger mining" when conducted in conjunction with such mining;

(c) The term "overburden" means the earth, rock, and other materials which lie above a natural mineral deposit;

(d) The term "spoil" means all overburden material removed from over the mineral after it is either deposited into the area from which the mineral has been removed, or deposited on undisturbed land;

(e) The term "spoil bank" means the material of whatever nature removed and deposited on the surface so that the underlying mineral may be recovered;

(f) The term "stripping pit" means any trench, cut, hole, or pit formed by removal of the surface or mineral as a result of surface or strip mining;

(g) The terms "person" or "operator" are interchangeable and mean person, partnership, association, corporation, or subsidiary of a corporation which owns, leases, or otherwise controls the use of land on which surface or strip mining

is conducted, which is engaged in the mining of minerals as a principal, and which is or becomes the owner of the minerals recovered as a result of such mining, and includes any agent thereof charged with the responsibility for the operation of such mine;

(h) The term "mine" means (1) an area of land from which minerals are extracted in nonliquid form, (2) private ways and roads appurtenant to such area, (3) land, excavations, and workings, structures, facilities, equipment, machines, tools, or other property, on the surface, used in the work of extracting such minerals from their natural deposits in nonliquid form, and (4) the area of land covered by spoil;

(i) The term "reclamation" means the reconditioning or restoration, when appropriate, of the area of land affected by surface or strip mining operations and such contiguous lands as may be necessary for an effective continuing use and management program, under a plan approved by the Secretaries;

(j) The term "commerce" means trade, traffic, commerce, transportation, or communication between any State, the Commonwealth of Puerto Rico, the District of Columbia, or any territory or possession of the United States and any other place outside the respective boundaries thereof, or wholly within the District of Columbia or any territory

or possession of the United States, or between points in the same States, if passing through any point outside the boundaries thereof;

(k) The term "State" means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, or a territory or possession of the United States;

(l) The term "area of land affected" means the area of land from which the overburden is removed, except that in stripping pits not more than one hundred feet in depth the area shall include the area occupied by the spoil banks; it also includes all lands affected by roads constructed to gain access and to haul minerals; and

(m) The term "operation" means all of the premises, facilities, roads, and equipment used in the process of producing minerals from a designated surface or strip mine area.

SEC. 4. Each surface or strip mine the products of which enter commerce, or the operations of which affect commerce, shall be subject to this Act.

SEC. 5. This Act shall be administered by the Secretary of Agriculture and the Secretary of the Interior as hereinafter provided. The Secretaries shall cooperate to the fullest extent practicable with each other and with other departments, agencies, and independent establishments of the Federal Government, with State and local governments and agencies, with interstate agencies, and with individuals or organizations. The Secretaries may request from any other Federal

department or agency any information, data, advice, or assistance which they may need and which can reasonably be furnished, and such department or agency is authorized to expend its own funds with or without reimbursement. The Secretaries may also request the advice of State and local agencies and persons qualified by experience or affiliation to present the viewpoint of persons or operators of surface or strip mines, and of persons similarly qualified to present the viewpoint of groups interested in soil, water, wildlife, plant, recreation, and other resources.

SEC. 6. (a) The President shall establish a national advisory committee to advise the Secretary of Agriculture and the Secretary of the Interior in the development or revision of standards and reclamation requirements as required by section 101 of title I of this Act, and in such other matters as the Secretaries may request. The National Advisory Committee shall include among its members an equal number of persons qualified by experience or affiliation to represent the viewpoint of persons or operators of surface and strip mines, and of persons similarly qualified to represent the viewpoint of other interested groups, Federal, State, and local agencies. The President shall designate the Chairman of the Committee.

(b) The Secretary of Agriculture and the Secretary of the Interior, if they deem it desirable, may establish regional advisory committees to assist them and the National Ad-

visory Committee. Each such regional committee shall consist of an equal number of persons qualified by experience or affiliation to represent the viewpoint of surface and strip mine operators and other interested groups, Federal, State, and local agencies.

(c) (1) Members appointed to such National Advisory Committee or regional advisory committees from private life shall each receive compensation at the rate of $100 per day for each day they are engaged in the performance of their duties as members of any such committee. All other members of any such committee shall serve without compensation.

(2) All members of any such committee shall be entitled to reimbursement for travel, subsistence, and other necessary expenses incurred by them in the performance of their duties as members of any such committee.

TITLE I—STANDARDS, RECLAMATION REQUIREMENTS, AND CRITERIA FOR THE PROTECTION AND MANAGEMENT OF STRIP AND SURFACE MINED AREAS

SEC. 101. (a) The Secretary of Agriculture and the Secretary of the Interior shall develop, or revise, after consultation with the National Advisory Committee appointed pursuant to section 6 (a) of this Act, (1) Federal standards and reclamation requirements for the reclamation, conservation, protection, and management of previously surface and

strip mined areas of private, State, and federally owned or controlled lands and waters, (2) Federal standards, and mining and reclamation requirements for the administration and regulation of all future surface and strip mining operations in the United States, and (3) criteria and priorities for the selection of projects and programs for affected areas of land and water in need of reclamation in those States which are eligible for assistance under the provisions of titles II, III, IV, or V of this Act.

(b) In establishing Federal standards, and mining and reclamation requirements for the administration and regulation of future strip and surface mining operations in the United States, the Secretaries shall consider requirements which will reasonably assure the attainment of the following objectives:

(1) The standards shall include, but not be limited to, grading, drainage, backfillings, plantings, revegetation, and any other measures or practices deemed by the Secretaries, after consultation with appropriate advisory committees, to be necessary to carry out the purposes of this Act.

(2) No person shall be permitted to commence operations to mine by strip or surface methods without first securing a permit or license from the Secretaries.

70-867 O - 72 - pt. 1 - 2

(3) Adequate law enforcement procedures shall be provided.

(4) The posting of an appropriate performance bond shall be required, forfeiture of which may automatically involve denial of future mining permits or licenses.

(5) Surface and strip mining operations and reclamation procedures shall be required to be preplanned, and approved by the Secretaries prior to issuance of a permit or license.

(6) The penalties provided herein shall apply for mining by strip or surface methods without a license or permit, and for willful refusal or failure to comply with the law, approved regulations, or the orders of a duly authorized authority.

(7) If warranted, the Secretaries may prohibit strip and surface mining in areas where reclamation is considered unfeasible because of physical considerations, such as ground-surface slope, but not limited thereto.

(8) Reclamation work shall be required to be integrated into the mining cycle, and appropriate time limits shall be established for the completion of reclamation.

(9) Periodic reports by the operator on the prog-

ress, methods, and results of reclamation efforts shall be required.

(10) Provision shall be made for the reporting and evaluation by the Secretaries of environmental changes in active and dormant strip and surface mining areas in order to provide data upon which the effectiveness of the reclamation requirements and their enforcement may be evaluated.

SEC. 102. (a) The Secretary of Agriculture and the Secretary of the Interior, after consultation with the national advisory committee established pursuant to section 6 (a) of this Act, shall publish in the Federal Register rules, regulations, model standards, and reclamation requirements promulgated by them pursuant to section 101.

(b) The provisions of section 553 of title 5, United States Code, shall be applicable to the rules, regulations, model standards, and reclamation requirements promulgated pursuant to this section.

(c) Any person or operator whose application for a license or permit has been denied by the Secretaries, or whose bond has been ordered forfeited by the Secretaries, or who has otherwise been aggrieved by an action of the Secretaries pursuant to the provisions of this Act, may appeal to the Secretaries for annulment or revision of such order or action,

and the Secretaries shall issue regulations for such appeals which shall include due notice and opportunity for a hearing.

(d) Any final order made by the Secretaries on appeal shall be subject to the judicial review by the United States court of appeals for the circuit in which the mine affected is located, upon the filing in such court of a notice of appeal by the operator aggrieved by such final order within twenty days from the date of the making of such final order.

(e) The appellant shall forthwith send to the Secretaries by registered mail or by certified mail a copy of such notice of appeal. Upon receipt of such copy of a notice of appeal the Secretaries shall promptly certify and file in such court a complete transcript of the record upon which the order complained of was made. The costs of such transcript shall be paid by the appellant.

(f) The court shall hear such appeal on the record made before the Secretaries, and shall permit argument, oral or written, or both, by both parties.

(g) Upon such conditions as may be required, and to the extent necessary to prevent irreparable injury, the United States court of appeals may, after due notice to and hearing of the parties to the appeal, issue all necessary and appropriate process to postpone the effective date of the final order of the Secretaries, or to grant such other relief as may be appropriate pending final determination of the appeal.

(h) The United States court of appeals may affirm, annul, or revise the final order of the Secretaries, or it may remand the proceedings to the Secretaries for such further action as it directs. The findings of fact by the Secretaries, if supported by substantial evidence on the record considered as a whole, shall be conclusive.

(i) Following adoption of rules and regulations by the Secretaries pursuant to the provisions of this section any person or operator who willfully fails or refuses to comply with such regulations shall be guilty of a misdemeanor, and upon conviction shall be sentenced to pay a fine of not less than $5,000 nor more than $10,000, or undergo imprisonment not exceeding six months, or both. Such fine shall be payable to the Secretaries, who shall credit it to the reclamation fund established under title VI of this Act.

SEC. 103. (a) Any State which, at any time, desires to secure the benefits of the financial assistance provided in titles II and III of this Act, and to develop and enforce standards, and mining and reclamation requirements for the administration and regulation of future mining operations by strip or surface methods within such State, shall submit to the Secretaries a State plan for the development of such standards and requirements and their enforcement.

(b) The Secretaries shall approve the plan submitted

by a State under subsection (a) of this section, or any modification thereof, if such plan—

(1) designates the State agency submitting such plan as the sole agency responsible for administering the plan throughout the State,

(2) provides for the development and enforcement of standards and reclamation requirements for regulating surface and strip mining, and for the conservation and reclamation of surface and strip mining areas in mines in the State which are or will be substantially as effective for such purposes as the standards and reclamation requirements which the Secretaries have established pursuant to this Act, and which provide for inspection at least annually of all such mines,

(3) contains assurances that such agency has, or will have, the legal authority and qualified personnel necessary for the enforcement of such standards and reclamation requirements,

(4) gives assurances that such State will devote adequate funds to the administration and enforcement of such standards and reclamation requirements,

(5) provides that the State agency will make such reports to the Secretaries in such form and containing such information as the Secretaries shall from time to time require.

(c) The Secretaries shall, on the basis of reports submitted by the State agency and his own inspection of mines, make a continuing evaluation of the manner in which each State having a plan approved under this section is carrying out such plan. Whenever the Secretaries find, after affording due notice and opportunity for a hearing, that in the administration of the State plan there is a failure to comply substantially with any provision of the State plan (or any assurance contained therein), he shall notify the State agency of his withdrawal of approval of such plan and upon receipt of such notice such plan shall cease to be in effect.

(d) (1) If any State is dissatisfied with the Secretaries' final action with respect to the approval of its State plan submitted under subsection (a) of this section, or with his final action under the second sentence of subsection (c) of this section, such State may, within sixty days after notice of such action, file with the United States court of appeals for the circuit in which such State is located a petition for review of that action. A copy of the petition shall be forthwith transmitted to the Secretaries by the clerk of the court. The Secretaries thereupon shall file in the court the record of the proceedings on which they based their action, as provided in section 2112 of title 28, United States Code.

(2) The findings of fact by the Secretaries, if supported

by substantial evidence on the record considered as a whole, shall be conclusive; but the court for good cause shown may remand the case to the Secretaries to take further evidence, and the Secretaries may thereupon make new or modified findings of fact and may modify their previous action, and shall certify to the court the record of the further proceedings. Such new or modified findings of fact shall likewise be conclusive if supported by substantial evidence.

(3) The court shall have jurisdiction to affirm the action of the Secretaries or to set it aside, in whole or in part. The judgment of the court shall be subject to review by the Supreme Court of the United States upon certiorari or certification as provided in section 1254 of title 28, United States Code.

(e) The provisions of sections 101 and 102 pertaining to the Federal standards and mining and reclamation requirements for the administration and regulation of future mining operations by strip or surface method shall not be applicable in any State in which there is a State plan approved under subsection (b) of this section.

SEC. 104. The Secretaries are authorized at any time to cause to be made in a surface or strip mine or previously surfaced or strip mined area such inspections and investigations as they shall deem necessary for the purpose of deter-

mining compliance with applicable rules, regulations, standards, and reclamation requirements.

SEC. 105. For the purpose of making any inspection or investigation authorized by this Act, authorized representatives of the Secretaries shall be entitled to admission to, and shall have the right of entry upon or through, any strip or surface mine or previously strip or surface mined area.

TITLE II—RECLAMATION AND CONSERVATION OF SURFACE AND STRIP MINED LANDS OWNED BY STATE AND LOCAL GOVERNMENTS IN THE UNITED STATES

SEC. 201. It is the purpose of this title to facilitate the reclamation and conservation of lands owned by State and local governments that have been adversely affected by strip and surface mining operations and have not been reclaimed prior to the date of enactment of this Act to a level commensurate with the criteria and standards established pursuant to the provisions of title I of this Act, by providing authority to the Secretary of Agriculture to enter into agreements with the States and local governments to provide financial and other assistance for their reclamation: *Provided,* That when the intended use of the lands to be reclaimed is for parks or fish and wildlife, the Secretary of Agriculture

shall enter into agreements respecting such lands only after consultation with the Secretary of the Interior.

SEC. 202. (a) (1) To carry out the purpose of this title, the Secretary of Agriculture is authorized to enter into agreements with the various States and local bodies of government for the conservation and reclamation of surface and strip mined lands presently owned or hereafter acquired by them.

(2) Each such agreement shall describe (A) the actions to be taken by the Secretary of Agriculture and by the State or local body of government, (B) the estimated cost of these actions, (C) the public benefits expected to be derived, including but not limited to the benefits of the economy of the State or local area, abatement or alleviation of land and water pollution, public recreation, fish and wildlife, and public health and safety, and (D) the share of the costs to be borne by the Federal Government and by the State or local body of government: *Provided,* That, notwithstanding any other provision of law, the Federal share of the cost shall not exceed the direct identifiable benefits which the Secretary of Agriculture determines will accrue to the public, and shall not in any event exceed 75 per centum of such cost: *Provided further,* That the share of the State or local body of government shall not consist of funds granted

under any other Federal program, and (E) such other terms and conditions as the Secretary of Agriculture deems desirable.

(b) The Secretary of Agriculture, in his discretion, may require as a part of any agreement under this section that adequate provision be made for access to and use by the public of lands reclaimed under the provisions of this title.

(c) Each agreement entered into under this section shall contain a reasonable assurance by the State or local body of government that the reclaimed lands which are devoted to public use will be adequately maintained.

SEC. 203. Whenever the Secretary of Agriculture, after reasonable notice and opportunity for hearing, determines that there is a failure to expend funds in accordance with the terms and conditions governing the agreement for approved projects, he shall notify the State that further payments will not be made to the State from appropriations under this Act until he is satisfied that there will no longer be any such failure. Until he is so satisfied the Secretary of Agriculture shall withhold any such payment to such State.

SEC. 204. The programs authorized to be assisted pursuant to this title shall be completed not later than January 1, 1988.

TITLE III—GRANTS TO STATES AND LOCAL AGENCIES AND OTHERS TO PROVIDE ASSISTANCE TO PROGRAMS OF RESEARCH AND DEVELOPMENT AND TECHNICAL ADVISORY ASSISTANCE

SEC. 301. It is the purpose of this title to facilitate the reclamation and conservation of lands and waters adversely affected by surface and strip mining operations by authorizing the Secretary of Agriculture and the Secretary of the Interior to make grants to the States, local governments, and others to be utilized in programs of research and development and in rendering technical advisory assistance.

SEC. 302. (a) The Secretary of Agriculture is authorized to make grants to States or local agencies and other public or nonprofit agencies and institutions (including State or private universities), for investigations, experiments, demonstrations, studies, and research projects with respect to the development of improved reclamation and conservation practices for the utilization and development of surface and strip mined lands, and for the development, preparation, and maintenance of a State program commensurate with the criteria and standards adopted pursuant to title I of this Act for the conservation, utilization, and development of surface and strip mined lands, and for rendering technical assistance to States and mining operators on these subjects.

(b) The Secretary of the Interior is authorized to make grants to States or local agencies and other public or non-profit agencies and institutions (including State or private universities), for investigations, experiments, demonstrations, studies, and research projects with respect to the development of improved mining techniques, for preparing and maintaining a continuing inventory of surface and strip mined areas and active mining operations on these subjects.

SEC. 303. (a) Any State or local agency or institution, desiring financial assistance under this title shall submit a proposal to the appropriate Secretary in such form and manner as he shall prescribe, and payments may be made only for those projects or programs approved by him.

(b) The appropriate Secretary may make payments from time to time in keeping with the rate of progress toward satisfactory completion of individual projects or the implementation of approved programs.

(c) No project or program to be assisted under the provisions of this title may be approved unless the State in which the project or program is to be undertaken has adopted State laws which meet the standards for the mining, reclamation, conservation, protection, and management of surface and strip mined lands established by the Secretaries pursuant to sections 101 and 102 of this Act, except in those instances where the appropriate Secretary determines that

no surface or strip mining occurs within the State which produces a significant detrimental effect upon the local environment.

SEC. 304. Sums appropriated or otherwise available for State projects and programs under this title shall be apportioned among the eligible States by the appropriate Secretary, whose determination shall be final. In determining the apportionment among such States the appropriate Secretary shall consider, among other things, the financial and administrative resources available to the State to undertake projects of the type authorized by this title, and the nature and extent of problems and adverse conditions brought about by surface and strip mining operations in the individual States most in need of solution within the individual States.

SEC. 305. The programs authorized to be assisted by this title shall be completed not later than January 1, 1988.

TITLE IV—RECLAMATION AND CONSERVATION OF PREVIOUSLY MINED LANDS OWNED BY PRIVATE INDIVIDUALS

SEC. 401. It is the purpose of this title to facilitate the reclamation and conservation of privately owned lands and water adversely affected by surface and strip mining operations and not reclaimed prior to the enactment of this Act to a level commensurate with the criteria and standards established pursuant to the provisions of title I of this Act, by

authorizing the Secretary of Agriculture to provide assistance to States, their political subdivisions, private organizations, and others for the reclamation and rehabilitation of such areas.

SEC. 402. (a) To carry out the purposes of this title the Secretary of Agriculture is authorized to:

(1) provide, upon the request of States, their political subdivisions, or legally qualified local agencies, technical assistance for developing project plans for the reclamation and rehabilitation of lands which were not reclaimed prior to the date of this Act to a level commensurate with the criteria and standards adopted pursuant to title I of this Act, and were not at the time they were mined subject to any legal requirements for their reclamation to a level commensurate with such criteria and standards; and

(2) cooperate and enter into agreements with, and to furnish financial and other aid to any agency, governmental or otherwise, or any person for the purpose of carrying out any project plan that has been approved by the Secretary of Agriculture and the cooperating State, soil and water conservation district, or other political subdivision or legally qualified local agency, subject to such conditions as may be prescribed by the Secretary of Agriculture.

(b) The Secretary of Agriculture may require as a condition to the furnishing of assistance thereunder to any landowner that the landowner shall:

(1) Enter into an agreement for a period of not to exceed ten years providing for the installation and maintenance of the needed reclamation works or measures;

(2) Install, cause to be installed, or permit the installation of the needed reclamation works or measures in accordance with technical specifications as approved by the Secretary; and

(3) Provide assurances satisfactory to the Secretary that such reclaimed and rehabiliated lands will be adequately protected against damages resulting from future surface mining operations.

SEC. 404. The financial contribution of the Federal Government toward the land treatment and construction costs for the reclamation and rehabilitation of lands in an approved project under this title shall not exceed 75 per centum of the total of such costs thereof.

SEC. 405. (a) Each project plan shall (1) describe the nature of the project and the actions to be taken by each of the public and private parties, (2) describe the public benefits expected to be derived, (3) specify the share of the costs to be borne by the Federal Government and by the other

participating parties, and (4) such other terms and conditions as are deemed necessary to protect the public interests.

(b) The Secretary of Agriculture, in his discretion, may provide in the agreements with landowners that the work to be done under the project plan may be contracted for or performed by the owner of the land involved, subject to rules and regulations adopted by the Secretary of Agriculture.

SEC. 406. The programs authorized by this title shall be completed not later than January 1, 1988.

TITLE V—ACQUISITION OF LAND AND THE RECLAMATION AND CONSERVATION OF PREVIOUSLY SURFACE OR STRIP MINED LANDS

SEC. 501. In order to facilitate the reclamation, conservation, protection, and management of lands that have been affected by surface mining operations and not reclaimed prior to enactment of this Act to a level commensurate with the criteria and standards adopted pursuant to title I of this Act, the Secretary of the Interior is authorized to acquire by donation, exchange, or purchase any such surface or strip mined lands or interests therein and such contiguous lands as may be necessary for an effective continuing conservation land use and management program.

SEC. 502. (a) The authority of the Secretary of the

70-867 O - 72 - pt. 1 - 3

Interior to acquire lands, as provided in this title, may be exercised only when he determines that:

(1) The land is located within or adjacent to the boundaries of an established Federal unit and which, because of conditions prevailing thereon, are damaging other lands and waters inside or outside such Federal unit; and should be reclaimed to a level commensurate with the criteria and standards adopted pursuant to title I of this Act;

(2) The land is within the boundaries of an approved project provided for in title IV of this Act and that:

(A) The owners of the land are unwilling or unable to join with the other landowners in the project area in an agreement to reclaim jointly the project lands;

(B) The owners of 75 per centum or more of the lands within the project have entered into a joint agreement with the Secretary of Agriculture to reclaim surface mined lands pursuant to some other title of this Act.

(3) No State or local governmental body desires to acquire the land in furtherance of a project to be undertaken pursuant to some other title of this Act; and

(4) The Federal Government should acquire the land in order to accomplish the purposes of this Act.

(b) With respect to lands acquired by the Secretary of the Interior pursuant to this title which are located adjacent to national forest lands, the Secretary of the Interior is authorized to transfer jurisdiction over such lands to the Secretary of Agriculture for administration by him in the same manner and to the same extent as are other lands within the national forest system.

SEC. 503. In the case of acquisition by purchase of property pursuant to this title, the property owner shall, unless he offers to sell at a lower price, be paid the fair market value as determined by the Secretary of the Interior. Owners of improved property acquired under the provisions of this title may reserve for themselves and their successors or assigns a right of use and occupancy for noncommercial residential purposes, as hereinafter provided, appropriate portions of the property not required for reclamation measures for a definite term not to exceed twenty-five years or, in lieu thereof, for a term ending at the death of the owner, or the death of his spouse, whichever is the later. The owner shall elect the term to be reserved. In such cases the owner of the property shall be paid the fair market value of the

property on the date of such acquisition less the fair market value on such date of the right retained by the owner: *Provided,* That such use and occupancy shall be subject to such general rules and regulations as may be established by the Secretary of the Interior.

SEC. 504. (a) The Secretary of the Interior shall conserve, reclaim, protect, improve, develop, and administer any property or interest therein acquired pursuant to this title and construct such structures thereon as may be necessary to adapt it to beneficial public use.

(b) Except to the extent otherwise herein provided, lands acquired for the purpose of this title within established Federal units shall become part of such unit and shall be administered in accordance with the laws and regulations applicable thereto.

(c) With respect to lands acquired under this title other than those within established Federal units, the Secretary of the Interior may, under such terms and conditions as he deems will best accomplish an effective continuing conservation land use and management program, sell, exchange, lease, or otherwise dispose of such property. When, in the judgment of the Secretary, reclamation of such property has been substantially accomplished, and such property should be administered by another Federal or State agency under conditions of use and administration which will best serve

the purpose of a conservation and land use program, the Secretary is authorized to transfer such property to any such agencies.

(d) With respect to any land or interest therein acquired for the purposes of this title, the Secretary may make dedications or grants for any public purpose, and grant licenses and easements upon such terms as he deems reasonable.

SEC. 505. Each Federal department and independent Federal agency head shall develop and carry out a program for the reclamation and conservation of federally owned lands under his jurisdiction that have been affected by surface and strip mining operations and are not reclaimed in accordance with the criteria and standards adopted pursuant to title I of this Act.

SEC. 506. The programs authorized by this title shall be completed not later than January 1, 1988.

TITLE VI—MISCELLANEOUS PROVISIONS

SEC. 601. There are authorized to be appropriated, out of any moneys in the Treasury not otherwise appropriated, such sums as may be necessary to carry out the provisions of this Act.

SEC. 602. All appropriations for the purposes of this Act, all moneys received under this Act from the sale or lease of federally owned reclaimed land, repayment and

interest costs by owners of nonfederally owned reclaimed land, all donations to the Federal Government for the purposes of this Act, all moneys received from fines or forfeitures, and other revenues resulting from the operations of the continuing conservation land use and management program shall be credited to a special fund in the Treasury to be known as the "Mined Lands Reclamation Revolving Fund". Such moneys shall be available, without fiscal year limitation, for carrying out the provisions of this Act, including purchase and reclamation of land.

SEC. 603. If any provision of this Act, or the applicability thereof to any person or circumstances is held invalid, the remainder of this Act, and the application of such provision or circumstances, shall not be affected thereby.

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., November 12, 1971.

Hon. HENRY M. JACKSON,
Chairman, Committee on Interior and Insular Affairs, U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: This responds to your request for the views of the Department on S. 77, S. 1498, and S. 2455 dealing with the adverse environmental aspects of mining operations.

We recommend against enactment of all of the above listed bills and recommend that S. 993, the Administration's proposal "To provide for the cooperation between the Federal government and the States with respect to environmental regulations for mining operations, and for other purposes" be enacted instead.

All of the listed bills contain aspects of similarity to the Administration's proposal, S. 993. That bill would encourage through Federal grants the States to regulate all types of mining activity including surface and underground, coal and most other minerals. (It excludes oil and gas). If the States fail within two years to propose a regulatory program which is approved by the Secretary of the Interior, the Secretary will promulgate and administer mined area protection regulations for that State.

S. 77 and S. 2455 differ from the Administration's proposal in that they cover only surface and strip mining and divide responsibility between the Secretaries of Interior and Agriculture (S. 77), or the Administrator of the Environmental Protection Agency (S. 2455).

S. 1498 differs from the Administration's proposal in that it vests Federal administrative responsibility in the Environmental Protection Agency, applies to coal mining only and gives sole regulatory responsibility to the Federal Government with respect to existing surface mines. It would prohibit altogether the opening of any new, inactive or abandoned surface coal mine.

Section 8 of S. 1498 prohibits all future coal mining in areas established as wilderness pursuant to the Wilderness Act. It further provides that underground coal mining on lands within the National Forest System shall be conducted only under regulations "which will assure that there will be no adverse effects" either on-site or off-site.

Titles II, IV and V of S. 77 and section 9 of S. 1498 provide for Federal assistance to reclaim and conserve areas damaged by past coal mining operations. Both bills require that such areas be owned by State or local governments, and authorize Federal funding. The Administration's bill applies only to damage caused by existing and future mining operations.

S. 1498 and S. 2455 provide for citizen suits to mandamus government officials who neglect or refuse to enforce the Act and allow suits against any person alleged to be in violation of the Act or the regulations.

Section 14 of S. 1498 directs Federal agencies through contracts or assistance programs to effectuate the purpose and policy of the Act and specifically prohibits contracting for coal from a mine where a condition giving rise to a conviction under the Act has not been corrected.

The following major differences between the bills are the basis for our recommendations stated above.

1. LIMITED COVERAGE

Each region of the country has its own particular environmental problems from mining. In many areas coal mining is the most troublesome, particularly open pit or strip mining. Other types of mining, however, also pose a substantial threat to the environment. Underground coal mines can constitute a major source of water pollution and underground coal fires both contaminate the air and waste a valuable resource.

The Administration's bill is truely national in its scope, dealing with the entire range of mining related environmental problems. We feel that the regulatory machinery to be created under these bills should deal with all these problems, and not simply those related to a particular type of mining.

2. FEDERAL ADMINISTRATION

The basic premise of the Administration's proposal is that environmental protection and reclamation can be accomplished most economically by building it into the mining operation rather than by patching up afterwards. It attempts

to substitute careful advance planning for costly control devices. Achieving this objective requires intimate knowledge of mining operations and the physical environment in which they are conducted. The Bureau of Mines, the Geological Survey, and the Bureau of Land Management of this Department possess paramount expertise in these areas and are best suited to guide State efforts in mined area protection and reclamation.

For this reason we oppose S. 1498 which places the program under the Environmental Protection Agency. That agency would, of course, under the Administration's proposal, retain its responsibility for enforcement of air and water standards against mining operators. It would also participate with the Departments of Agriculture and Commerce, the Tennessee Valley Authority and the Appalachian Regional Commission on an advisory committee created under the Act.

3. PRIMARY RESPONSIBILITY TO STATES

The environmental problems stemming from mining operations are essentially land use problems. Such problems are, under the Federal Constitution, primarily the responsibility of the States. Because of this and in keeping with the President's broad effort to return decision-making responsibility to State governments, the Administration's bill encourages the States to accept the responsibility for regulating mining operations within their borders. It offers Federal grants to cover up to 80% of the cost to the States of developing a program and a percentage of the costs of administering it during the first four years.

We oppose, therefore, S. 1498 which recognizes no State responsibility for surface mine regulation.

4. RESTORATION OF PAST MINING DAMAGE

As stated in the letter transmitting the Administration's proposal, the solution to the problem of healing damage inflicted in the past is largely one of spending taxpayers' dollars, since the party responsible is typically not available for legal action and the value of the land reclaimed does not generally justify the cost. All available remedies must be exhausted before tax revenues are spent and care must be taken to avoid windfalls to private owners.

We feel that the first priority in mined area protection must be to arrest the damage presently being inflicted on the land and that Federal funding to restore lands damaged in the past cannot be justified at this time.

5. PROHIBITION OF SURFACE COAL MINING

This Department strongly opposes the blanket prohibition in S. 1498 of surface mining of coal. This country is facing a crisis in mineral supply, particularly in the fuels area. Known reserves of oil and gas are being rapidly depleted. The potential of nuclear energy, while a hopeful long-term solution, has not been developed sufficiently to carry us through the critical period of the next 5 or 10 years. Domestic coal must supply a heavy share of the Nation's fuel needs both now and in the future.

Fortunately, this Nation is endowed with vast coal deposits, many of them lying at relatively shallow depths where underground mining is economically ludicrous if not physically impossible.

We do not mean to minimize the potential adverse environmental consequences of surface mining nor to imply that environmental degradation is necessary to maintain our standard of living. The letter transmitting the Administration's proposal unequivocally condemns those surface mining practices which have wasted the land and scarred the landscape, poisoned and choked the streams and fouled the air. This country cannot tolerate such abuses of the environment any longer.

The answer, however, is not a flat prohibition of surface coal mining but to find ways to avoid or reduce to acceptable levels the environmental damage. The technology is presently available for environmentally safe surface mining in many areas, particularly in the more arid, western States. The Administration's proposal calls for further research to expand the technology for mined area protection and reclamation. Moreover, the Administration's proposal contains authority to prohibit surface mining where the areas affected cannot be adequately

reclaimed. The regulations adopted by the State under the Administration's proposal must contain requirements designed to insure that the mining operation will not result in a violation of applicable water or air quality standards and will control or prevent specified types of environmental damage. We believe that the Administration's proposal provides a constructive method for meeting the needs of the environment without sacrificing unnecessarily our ability to acquire mineral resources on which this Nation's prosperity depends.

6. NATIONAL FORESTS

S. 1498 makes special reference to National Forests requiring that underground coal mining operations in them be conducted with "no adverse effects". The Administration's proposal requires that all mining on all Federal lands be conducted under regulations which assure at least the same degree of environmental protection and regulation as is required by the State in which the land is situated. It is essential that the Federal Government itself practice what it preaches to the States and we see no reason to limit this practice to National Forest lands.

7. CITIZENS SUITS

As a matter of general policy, we support citizen participation in enforcement of laws to protect the environment and the repudiation of defenses to environmental actions based on standing to sue and sovereign immunity. We have supported citizen suits in specific instances such as the Clean Air Amendments of 1970 (Public Law 91-604) and the Administration's proposed amendment to section 10 of the Federal Water Pollution Control Act (S. 1014 in this Congress).

The citizen suits which we have supported are limited to enforcement of specific environmental requirements which are capable of objective definition or precise measurement.

The Administration's proposed Mined Area Protection Act will result in a variety of types of environmental standards. Those designed to assure that air and water quality control standards are met may, as stated above, be enforced through existing or proposed provisions allowing citizen suits. Those regulations pertaining to the approval of a reclamation plan will require the judgment of a State official familiar with the mining operation and the local mining conditions. We do not feel that the courts should become involved in this area except to review, in the normal manner, abuses of administrative discretion.

8. Federal Procurement

Section 14 of S. 1498 parallels section 306 of the Clean Air Act, as amended, which prohibits Federal agencies from contracting with persons in violation of the Act until the condition is corrected. We agree with the principle embodied in this section, that the Federal government should not support through its procurement of goods a person's activities in violation of the Act. We feel, however, that if the operator in accordance with the applicable law is in the process of correcting a condition which has given rise to a conviction, under an approved schedule of compliance that he should not suffer the added penalty of being prohibited from selling to the Federal Government. Therefore, we would have no objection to including this section in the Administration's proposed "Mined Area Protection Act of 1971" provided the words "coal mine" in subsection 14(a) are changed to "mined area", the words "or any law or regulation promulgated pursuant thereto" are added after "Act" on line 16, and lines 20 and 21 are revised to read "administering agency certifies that the operator is operating in compliance with the applicable law and regulations".

Also, subsection 14(b) should be deleted as unnecessary and to assure maximum flexibility for the administrative promulgation of government wide procedures coordinated with those being developed to implement section 306 of the Clean Air Act.

The Office of Management and Budget has advised that there is no objection to the presentation of this report and that enactment of S. 993 would be in accord with the Administration's program.

Sincerely yours,

HOLLIS M. DOLE,
Assistant Secretary of the Interior.

EXECUTIVE OFFICE OF THE PRESIDENT,
OFFICE OF MANAGEMENT AND BUDGET,
Washington, D.C., November 15, 1971.

Hon. HENRY M. JACKSON,
Chairman, Committee on Interior and Insular Affairs, U.S. Senate, New Senate Office Building, Washington, D.C.

DEAR MR. CHAIRMAN: This is in response to your requests for the views of the Office of Management and Budget on the following legislation:

S. 77, a bill "To provide for the regulation of present and future surface and strip mining, for the conservation, acquisition, and reclamation of surface and strip mined areas, and for other purposes."

S. 630, a bill "To provide for the cooperation between the Secretary of the Interior and the States with respect to the future regulation of surface mining operations, and for other purposes."

S. 1160, a bill "Relating to the rehabilitation of areas damaged by deleterious mining practices, and for other purposes."

S. 1498, a bill "To provide for the control of surface and underground coal mining operations which adversely affect the quality of our environment, and for other purposes."

S. 2455, a bill "To regulate the practice of strip mining, to protect the environment, and for other purposes."

The Department of the Interior has submitted a related bill, S. 993—the "Mined Area Protection Act of 1971", for Congressional consideration, and as stated in the Department's reports on the legislation cited above, it recommends enactment of S. 993 in lieu of these bills. Enactment of S. 993 would be in accord with the program of the President.

Sincerely,

WILFRED H. ROMMEL,
Assistant Director for Legislative Reference.

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, D.C., November 17, 1971.

Hon. HENRY M. JACKSON,
Chairman, Committee on Interior and Insular Affairs,
U.S. Senate.

DEAR MR. CHAIRMAN: This is in response to your letter of October 6, 1971, requesting the views of this Department on S. 77, a bill "To provide for the regulation of present and future surface and strip mining, for the conservation, acquisition, and reclamation of surface and strip mined areas, and for other purposes."

This bill generally provides for the conservation and improvement of lands affected by surface mining operations.

The President's Environmental Message to the Congress, dated February 8, 1971, proposed a Mined Area Protection Act, S. 993, to establish Federal requirements and guidelines for State programs to regulate the environmental consequences of surface and underground mining. This proposal was submitted to Congress by the Secretary of the Interior and introduced on February 25, 1971, as S. 993. We recommend that the Administration's proposal be enacted.

The Office of Management and Budget advises that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely,

J. PHIL CAMPBELL,
Acting Secretary.

92D CONGRESS
1ST SESSION

S. 630

IN THE SENATE OF THE UNITED STATES

FEBRUARY 5 (legislative day, JANUARY 26), 1971

Mr. JACKSON introduced the following bill; which was read twice and referred to the Committee on Interior and Insular Affairs

A BILL

To provide for the cooperation between the Secretary of the Interior and the States with respect to the future regulation of surface mining operations, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Surface Mining Reclamation Act of 1971".

DEFINITIONS

SEC. 2. For the purpose of this Act, the term—

(a) "Secretary" means the Secretary of the Interior;

(b) "reclamation" means the reconditioning or

restoration of an area of land or water, or both, that has been adversely affected by surface mining operations;

(c) "commerce" means trade, traffic, commerce, transportation, transmission, or communication among the several States, or between a State and any other place outside thereof, or within the District of Columbia, or a possession of the United States, or between points in the same State but through a point outside thereof;

(d) "surface mine" means (1) an area of land from which minerals are extracted by surface mining methods, including auger mining, (2) private ways and roads appurtenant to such area, (3) land, excavations, workings, refuse banks, dumps, spoil banks, structures, facilities, equipment, machines, tools, or other property on the surface, resulting from, or used in, extracting minerals from their natural deposits by surface mining methods or the onsite processing of such minerals;

(e) "surface mined areas" means any area on which the operations of a surface mine are concluded after the effective date of a State plan or the regulations issued under section 8 of this Act, whichever is applicable;

(f) "person" means an individual, partnership, association, corporation, or other business organization;

(g) "State" includes a State of the United States,

the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, and Guam; and

(h) "State plan" or "plan" means the whole or any portion or segment thereof.

CONGRESSIONAL FINDING

SEC. 3. The Congress finds and declares—

(a) That extraction of minerals by surface mining is a significant and essential industrial activity and contributes to the economic potential of the Nation;

(b) That there are surface mining operations in the Nation that burden and adversely affect commerce by destroying or diminishing the availability of land for commercial, industrial, recreational, agricultural, and forestry purposes, by causing erosion and landslides, by contributing to floods and the pollution of waters, by destroying fish and wildlife habitat and impairing natural beauty, by counteracting efforts to conserve soil, water, and other natural resources, by destroying or impairing the property of citizens, and by creating hazards dangerous to life and property;

(c) That regulation by the Secretary and cooperation by the States as contemplated by this Act are appropriate to prevent and eliminate such burdens and adverse effects;

(d) That, because of the diversity of terrain, climate, biologic, chemical, and other physical conditions in mining areas, the establishment on a nationwide basis of uniform regulations for surface mining operations and for the reclamation of surface mined areas is not feasible;

(e) That the initial responsibility for developing, authorizing, issuing, and enforcing regulations for surface mining operations and for the reclamation of surface mined areas should rest with the States; and

(f) That it is the purpose of this Act to provide a nationwide program to prevent or substantially reduce the adverse effects to the environment from surface mining, to assure that adequate measures will be taken to reclaim surface mined areas after operations are completed, and to assist the States in carrying out such a program.

MINES SUBJECT TO ACT

SEC. 4. After the effective date of this Act, each surface mine, the products of which enter commerce or the operations of which affect commerce, and the surface mined area thereof shall be subject to this Act.

FEDERAL AND STATE COOPERATION

SEC. 5. (a) In furtherance of the policy of this Act, the Secretary is authorized, whenever he determines that it would effectuate the purposes of this Act, to cooperate

with appropriate State agencies in developing and administering State plans for the regulation of surface mines and the reclamation of surface mined areas, consistent with the provisions of section 7 of this Act, and to cooperate and consult with other Federal agencies in carrying out the provisions of this Act.

(b) In cooperating with appropriate State agencies under this Act, the Secretary may provide such agency (1) technical and financial assistance in planning and otherwise developing an adequate State plan for the regulation of surface mines and the reclamation of surface mined areas, (2) technical assistance and training, including necessary curricular and instructional materials, and financial and other aid for administration and enforcement of such a plan; and (3) assistance in preparing and maintaining a continuing inventory of surface mined areas and active mining operations within the State for the evaluation of current and future needs and the effectiveness of mining and reclamation regulatory measures.

(c) The amount of any grant the Secretary may make to any State to assist them in meeting the total cost of the cooperative program in each State shall not exceed 50 per centum of such cost: *Provided*, That such payment shall not be made for more than three years unless a State plan has been submitted and approved by the Secretary and there-

after such payment shall be contingent at all times upon the administration of the State program in a manner which the Secretary deems adequate to effectuate the purposes of this Act.

(d) The appropriate State agency with which the Secretary may cooperate under this Act shall be a single agency designated by the State to have responsibility for the administration and enforcement of a State plan approved under this Act: *Provided*, That the Secretary may, upon request of the Governor or other appropriate executive or legislative authority of the State, waive the single State agency provision hereof and approve another State administrative structure or arrangement if the Secretary determines that the objectives of this Act will be enhanced by the use of such other State structure or arrangement.

ADVISORY COMMITTEES

SEC. 6. (a) The Secretary may appoint advisory committees which shall include, among others, State representatives, persons qualified by experience or affiliation to present the viewpoint of operators of surface mines, and persons qualified by experience or affiliation to present the viewpoint of conservation and other interested groups, to advise him in carrying out the provisions of this Act. The Secretary shall designate the chairman of each committee.

(b) Advisory committee members, other than em-

ployees of Federal, State, or local governments, while performing committee business, shall be entitled to receive compensation at rates fixed by the Secretary, but not exceeding $100 per day, including traveltime. While so serving away from their homes or regular places of business, members may be paid travel expenses and per diem in lieu of subsistence at rates authorized by section 5703 of title 5, United States Code, for persons intermittently employed.

STATE PLAN

SEC. 7. (a) A State may, after public hearings, submit to the Secretary at any time a State plan or a proposal for a revision in a plan previously approved by the Secretary for the regulation of surface mines and the reclamation of surface mined areas located within the State. The Secretary shall, after giving appropriate Federal agencies a reasonable opportunity to review and comment thereon, approve a State plan or revision thereof if—

(1) He determines that, in his judgment, the plan includes laws and regulations which—

(A) promote an appropriate relationship between the extent of regulation and reclamation that is required and the need to preserve and protect the environment;

(B) provide that an adequate mining plan be filed with, and approved by, the State agency and a

70-867 O - 72 - pt. 1 - 4

permit be obtained to insure, before surface mining operations are commenced or continued, that they will be conducted in a manner consistent with said mining plan;

(C) contain, in connection with surface mines and surface mined areas, criteria relating specifically to (i) the control of erosion, flooding, and pollution of water, (ii) the isolation of toxic materials, (iii) the prevention of air pollution by dust or burning refuse piles or otherwise, (iv) the reclamation of surface mined areas by revegetation, replacement of soil, or other means, (v) the maintenance of access through mined areas, (vi) the prevention of land or rockslides, (vii) the protection of fish and wildlife and their habitat, and (viii) the prevention of hazards to public health and safety;

(D) promote the reclamation of surface mined areas by requiring that reclamation work be planned in advance and completed within reasonably prescribed time limits;

(E) provide for evaluation of environmental changes in surface mined areas in which surface mines are operating in order to accumulate data for assessing the effectiveness of the requirements established;

(F) provide adequate measures for enforcement, including criminal and civil penalties for failure to comply with applicable State laws and regulations; periodic inspections of surface mines and reclamation work; periodic reports by mining operators on the methods and results of reclamation work; the posting of performance bonds adequate to insure the land is reclaimed; and the revocation of permits for failure to comply with the terms of the permits or of the provisions of the regulations or laws under which permits are issued; and

(2) The Secretary determines that, in his judgment, the plan includes—

(A) adequate provision for State funds and personnel to assure the effective administration and enforcement of the plan and, if needed, the establishment of training programs for operators, supervisors, and reclamation and enforcement officials in mining and reclamation practices and techniques;

(B) provision for the making of such reports to the Secretary as he may require; and

(C) authorization by State law and that it will be put into effect not later than sixty days after its approval by the Secretary.

(b) After approval of a plan, the Secretary, on the basis of such inspections, investigations, or examinations as he deems appropriate and reports submitted by the State, shall make a continuing evaluation of the effectiveness of the approved plan and the enforcement thereof. Whenever he determines, after notice to the State agency referred to in subsection (d) of section 5, and opportunity for a hearing:

(1) that the State, in administering the plan, has failed to comply substantially with it or to enforce it adequately, he shall notify the State thereof and if within a reasonable time the State has not taken adequate measures, in his judgment, to correct the situation, he may withdraw his approval of the plan and issue regulations for such State under section 8 of this Act; and

(2) that a revision of an approved plan is appropriate to effectuate the purposes of this Act, he shall notify the State thereof, and if within a reasonable time the State has not revised said plan and obtained the approval of the Secretary thereon, he may withdraw his approval of the plan and issue regulations for such State under section 8 of this Act.

FEDERAL REGULATION OF SURFACE MINES

SEC. 8. (a) If, at the expiration of two years after the effective date of this Act, a State fails to submit a State plan, or a State has submitted a plan which has been dis-

approved and has within such period failed to submit a revised plan for approval, the Secretary, in consultation with an advisory committee appointed pursuant to this Act, shall issue promptly regulations for the operation of surface mines and for the reclamation of surface mined areas in such State: *Provided*, That if the Secretary has reason to believe that a State will submit an acceptable plan within one additional year after the expiration of the two-year period, he may delay the issuance of Federal regulations for such one-year period of time. If a State has within two years after the effective date of this Act submitted a plan for approval and the two-year period provided in the first sentence of this section has expired before the Secretary has approved or disapproved the plan, the Secretary shall delay the issuance of Federal regulations pending the approval or disapproval of the plan. The Federal regulations issued by the Secretary for a particular State shall be consistent with the principles set forth in subsection (a) (1) of section 7 of this Act.

(b) The Secretary shall publish in the Federal Register the regulations which he proposes to issue for a particular State. Interested persons shall be afforded a period of not less than sixty days after the publication of such regulations within which to submit written data, views, or arguments. Except as provided in subsection (c) of this section, the Secretary may, after the expiration of such period and after

consideration of all relevant matter presented, issue the regulations with such modifications, if any, as he deems appropriate.

(c) On or before the last day of a period fixed for the submission of written data, views, or arguments, any person who may be adversely affected by the regulations which the Secretary proposes to issue may file with the Secretary written objections thereto stating the grounds therefor and requesting a public hearing on such objections. The Secretary shall not issue regulations respecting which such objections have been filed until he has taken final action upon them as provided in subsection (d) of this section. As soon as practicable after the period of filing such objections has expired the Secretary shall publish in the Federal Register a notice specifying the provisions of the regulations to which such objections have been filed.

(d) If such objections requesting a public hearing are filed, the Secretary, after notice, shall hold a public hearing for the purpose of receiving evidence relevant and material to the issues raised by such objections. At the hearing any interested person may be heard. As soon as practicable after the completion of the hearing, the Secretary shall act upon such objections and make public his decision.

(e) The Secretary may from time to time revise such

regulations in accordance with the procedures prescribed in subsections (a) through (d) of this section.

TERMINATION

SEC. 9. If a State submits a proposed State plan to the Secretary after Federal regulations have been issued pursuant to section 8 of this Act, and if the Secretary approves the plan, such Federal regulations shall cease to be effective within the State sixty days after the approval of the State plan by the Secretary. Such Federal regulations shall again become effective if the Secretary subsequently withdraws his approval of the plan pursuant to subsection (b) of section 7 of this Act.

INSPECTIONS AND INVESTIGATIONS

SEC. 10. (a) The Secretary is authorized to cause to be made such inspections and investigations of surface mines and surface mined areas as he shall deem appropriate to evaluate the administration of State plans, or to develop or enforce Federal regulations, and for such purposes authorized representatives of the Secretary shall have the right of entry to any surface mine or upon any surface mined area.

(b) The head of each Federal agency shall permit by agreement authorized representatives of the State or the Secretary to have the right of entry to any surface mine or upon any surface mined area located on lands under his juris-

diction, unless the Secretary of Defense finds that such entry would not be in the interest of the national security.

REGULATIONS

SEC. 11. The Secretary may issue such regulations as are deemed necessary to carry out the purposes of this Act.

INJUNCTIONS

SEC. 12. At the request of the Secretary, the Attorney General may institute a civil action in a district court of the United States for a restraining order or injunction or other appropriate remedy (a) to prevent a person from engaging in surface mining operations without a permit from the Secretary required under section 8 of this Act, or in violation of the terms and conditions of such permit or the Federal regulations issued under section 8 of the Act; (b) to prevent a person from placing in commerce the products of a surface mine produced in violation of an approved State plan; or (c) to enforce the right of entry under section 10 of this Act. The district courts of the United States in which such person resides or is doing business or is licensed or incorporated to do business shall have jurisdiction to issue such order or injunction or to provide other appropriate remedy.

PENALTIES

SEC. 13. (a) If any person shall fail to comply with any regulation issued under section 8 of this Act for a period of fifteen days after notice of such failure, such person shall be liable for a civil penalty of not more than $100 for each and

every day of the continuance of such failure. The Secretary may assess and collect any such penalty, and upon application therefor may remit or mitigate any such penalty imposed.

(b) Any person who knowingly violates any regulation issued pursuant to section 8 of this Act shall, upon conviction, be punished by a fine not exceeding $2,500, or by imprisonment not exceeding one year, or by both.

(c) The penalties prescribed in this section shall be available to the Secretary in addition to any other remedies afforded to him under this Act in enforcing the regulations issued under section 8 of this Act.

RESEARCH

SEC. 14. The Secretary is authorized to conduct and promote the coordination and acceleration of research, studies, surveys, experiments, demonstrations, and training in carrying out the provisions of this Act. In carrying out the activities authorized by this section, the Secretary may enter into contracts with, and make grants to, institutions, agencies, organizations, and individuals, and collect and make available information thereon.

APPROPRIATIONS

SEC. 15. (a) There are authorized to be appropriated to the Secretary such sums as may be necessary to carry out the provisions of this Act.

(b) All appropriations and donations made pursuant to this Act, and all permit fees or other charges paid pursuant to section 8 of this Act, shall be credited to a special fund in the Treasury to be known as the mined lands reclamation fund. Such sums shall be available, without fiscal year limitation, for carrying out the provisions of this Act.

OTHER FEDERAL LAWS

SEC. 16. Nothing in this Act shall affect in any way the authority of the Secretary or heads of other Federal agencies under other provisions of law to include in any lease, license, permit, contract, or other instrument such conditions as may be appropriate to regulate surface mining operations and to reclaim surface mined areas on lands under their jurisdiction: *Provided,* That such conditions shall be at least equal to any law and regulation established under an approved State plan or to any regulation issued under section 8 of this Act for the State in which such lands are located. Each Federal agency shall cooperate with the Secretary and the States, to the greatest extent practicable, in carrying out the provisions of this Act.

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., September 17, 1971.

Hon. HENRY M. JACKSON,
Chairman, Committee on Interior and Insular Affairs, U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: This is in response to your request for the views of this Department on S. 630, a bill "To provide for the cooperation between the Secretary of the Interior and the States with respect to the future regulation of surface mining operations, and for other purposes."

We recommend that the bill not be enacted but that S. 993, the Administration's proposal, "To provide for the cooperation between the Federal government and the States with respect to environmental regulations for mining operations, and for other purposes", be enacted instead.

Both bills are designed to combat the adverse environmental effects of mining operations. These effects have been well documented and include unsightly spoil heaps, clogged and polluted streams, wasted land and scarred landscapes, mine fires and unintentional cave-ins causing surface subsidence.

There are many similarities between the two bills. Both would encourage States to establish a regulatory program which, if it met the statutory criteria and was approved by the Secretary of the Interior, would make the State eligible for Federal grants. Under both bills, if a State fails after two years to produce a regulatory program meeting the standards of the Act, the Secretary of the Interior is directed to issue Federal regulations governing mining operations in that State.

Both bills contain provisions for advisory committees, Federal inspections, penalties, and federally-sponsored research or training programs.

There are four differences between the two bills which constitute the basis for our recommendation that S. 993 be enacted and not S. 630.

1. SCOPE

The Administration's bill is broader in scope. It covers underground mines as well as surface mines, while S. 630 covers only the latter. The potential environmental hazards of underground mines are serious and, while the technology for dealing with them may not be as advanced as it is with respect to surface mines, it is important that the framework be established so that improvements in mining technology can be developed and applied to underground mining as rapidly as possible.

2. REGULATORY CRITERIA

The Administration's proposal contains certain criteria for approval of a State program not contained in S. 630. It contains provisions designed to control two major adverse effects of underground mining, fires and subsidence, and it requires that maps of underground mines be kept on file so that the danger of unintentional subsidence can be avoided. It requires that a permit be obtained by all mine operators. It requires provisions to avoid waste of mineral resources and to require that reclamation be made a part of the mining cycle. The Administration's bill specifically requires that the program be administered by a single State agency unless the Secretary approves an interstate agency. The State agency must coordinate with State agencies responsible for air, water and other environmental quality standards.

The Administration's bill further provides that State regulations be developed with full participation of all interested groups, that they be subject to regular review and updating and that they be compatible with regulations of adjacent States.

The Administration's proposal provides that the statutory criteria will be further elaborated by the Secretary through guidelines which will attempt to provide the operator of a mining operation sufficient flexibility to choose the most economically efficient means of meeting the requirements of the Act.

We feel that these provisions of the Administration's bill which spell out the criteria in greater detail and allow maximum latitude to the operator to select the best way for his particular operation to meet the environmental objectives is essential, particularly in those areas where the technology for environmentally safe mining is still being pioneered.

3. FUNDING

Both bills authorize appropriations as necessary. Under S. 630, Federal grants may not exceed 50 percent of the cost of developing, administering and enforcing the regulations. Under the Administration's proposal, the Federal assistance may cover up to 80% of the cost of developing the program during the year prior to its approval and a share of the costs of administering and enforcing the program during the four years following its approval. That share may be up to 60% the first year, 45% the second year, 30% the third year and 15% the fourth year. By that time it is expected that the heavy initial costs will have been met and that the program would become self-sustaining through permit fees if the State chooses to impose them. The Administration bill provides that if the Federal Government is obliged to administer a program for a State the cost will be recovered from permit fees.

4. FEDERAL LANDS

Neither bill would place Federal lands under the control of the State program although both would require that mining regulations on Federal lands be at least as stiff as those on State lands. The Administration's proposal states explicitly that Federal agencies are authorized to impose environmental regulations on all lands under their jurisdiction.

In view of the differences between the two bills and for the reasons discussed above, we prefer the Administration's proposal to S. 630.

The Office of Management and Budget has advised that there is no objection to the presentation of this report and that enactment of S. 993 would be in accord with the program of the President.

Sincerely yours,

W. J. PECORA,
Under Secretary of the Interior.

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, D.C., September 20, 1971.

Hon. HENRY M. JACKSON,
Chairman, Committee on Interior and Insular Affairs, U.S. Senate.

DEAR MR. CHAIRMAN: This is in response to your request for a report on S. 630, a bill "To provide for the cooperation between the Secretary of the Interior and the States with respect to the future regulation of surface mining operations, and for other purposes."

The President's Environmental Message to the Congress, dated February 8, 1971, proposed a Mined Area Protection Act to establish Federal requirements and guidelines for State programs to regulate the environmental consequences of surface and underground mining. This proposal was submitted to Congress by the Secretary of the Interior on February 10, 1971.

The proposed Mined Area Protection Act is somewhat broader in scope than S. 630, encompassing underground as well as surface aspects. Accordingly, we recommend that the Administration's proposal be enacted.

The Office of Management and Budget advises that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely,

J. PHIL CAMPBELL,
Under Secretary.

92D CONGRESS
1ST SESSION

S. 993

IN THE SENATE OF THE UNITED STATES

FEBRUARY 25 (legislative day, FEBRUARY 17), 1971

Mr. BYRD of West Virginia (for Mr. JACKSON) (for himself, Mr. ALLOTT, and Mr. COOPER) (by request) introduced the following bill; which was read twice and referred to the Committee on Interior and Insular Affairs

A BILL

To provide for the cooperation between the Federal Government and the States with respect to environmental regulations for mining operations, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Mined Area Protection Act of 1971".

TITLE I

SEC. 101. DEFINITIONS.—For the purpose of this Act, the terms—

(a) "Secretary" means the Secretary of the Interior;

(b) "mining operations" means (1) activities con-

ducted on the surface or underground for the exploration for or extraction of minerals from their natural occurrences, including strip or auger mining, dredging, quarrying, in situ distillation or retorting and leaching; and (2) the cleaning, concentrating, refining, or other processing or preparation (excluding smeltering) and loading for interstate commerce of crude minerals at or near the mine site. It does not include the extraction of minerals in a liquid or gaseous state by means of wells or pipes unless the process includes in situ distillation or retorting;

(c) "underground mining operations" means those mining operations carried out beneath the surface by means of shafts, tunnels, or other underground mine openings and such use of the adjacent surface as is incidental thereto;

(d) "surface mining operations" means those mining operations carried out on the surface, including strip or auger mining, dredging, quarrying, and leaching, and activities related thereto;

(e) "mined area" means the surface and subsurface of an area in which mining operations are being or have been conducted including private ways and roads appurtenant to any such area, land excavations, workings, refuse banks, tailings, spoil banks, and areas in which

structures, facilities, equipment, machines, tools, or other materials or property which result from, or are used in, mining operations are situated;

(f) "operator of a mining operation" means an individual, society, joint stock company or a partnership, association, corporation, or other organization controlling or managing a mining operation;

(g) "State" means a State of the United States, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, and Guam;

(h) "reclamation" means activity which is taken during and following a mining operation to avoid or correct adverse environmental effects of mining operations.

SEC. 102. CONGRESSIONAL FINDINGS AND DECLARATIONS.—The Congress finds and declares—

(a) that mining operations are essential activities affecting interstate commerce which contribute to the economic well-being, security and general welfare of the Nation;

(b) that there are mining operations on public and private lands in the Nation which adversely affect the environment by destroying or diminishing the availability of public and private land for commercial, industrial, recreational, agricultural, and forestry purposes, by

causing erosion and landslides, by contributing to floods and the pollution of waters and air, by destroying fish and wildlife habitat and impairing natural beauty, by frustrating efforts to conserve soil, water, and other natural resources, by destroying public and private property, and by creating hazards to life and property;

(c) that the initial and principal continuing responsibility for developing and enforcing environmental regulations for mining operations should rest with the States;

(d) that the cooperative effort established by this Act is necessary to the prevention and elimination of the adverse environmental effects of present and future mining operations; and

(e) that it is the purpose of this Act to encourage a nationwide effort to regulate mining operations to prevent or substantially reduce their adverse environmental effects, and to assist the States in carrying out programs for those purposes.

TITLE II—ENVIRONMENTAL REGULATIONS FOR MINING OPERATIONS

SEC. 201. STATE ENVIRONMENTAL REGULATIONS FOR MINING OPERATIONS.—(a) Each State, after public hearings and within two years of the date of enactment of this Act, may submit to the Secretary for review and approval

or disapproval in accordance with this section, State environmental regulations for mining operations on all lands within such State, except federally owned land or land held in trust by the United States for Indians. A State may at any time thereafter submit revisions to such regulations to the Secretary for review and approval or disapproval in accordance with this section. The Secretary shall approve the regulations or revision of such regulations submitted to him if in his judgment—

(1) the regulations require that each operator of a mining operation obtain a permit from a State agency established to administer the regulations, and file a mine reclamation plan describing the manner in which his reclamation activity will be conducted showing that such activity will be conducted in a manner consistent with the regulations;

(2) the regulations contain requirements designed to insure that the mining operation (i) will not result in a violation of applicable water or air quality standards, (ii) will control or prevent erosion or flooding, release of toxic substances, accidental subsidence of mined areas or land or rock slides, underground, outcrop, or refuse bank fires, damage to fish or wildlife or their habitat, or public or private property, waste of mineral resources, and hazards to public health and safety;

70-867 O - 72 - pt. 1 - 5

(3) the regulations require reclamation of mined areas by revegetation, replacement of soil, or other means; that a reclamation plan be prepared and approved in advance of initiation or continuance of mining operations, and that reclamation work be made an integral part of the mining operation and be completed within reasonably prescribed time limits;

(4) the regulations require posting of performance bonds in amounts at all times sufficient to insure the reclamation of mined areas in the event that the regulations are not complied with or that reclamation is not completed in accordance with the reclamation plan;

(5) the regulations provide for filing, updating, and permanent retention of engineering maps of all active surface and underground mining operations and of all inactive surface and underground mining operations for which engineering or other maps are available;

(6) the regulations provide that regular reports will be made to the Secretary concerning the progress made by the State in carrying out the purposes of this title;

(7) the regulations require regular monitoring by the State agency of environmental changes in mined areas to assess the effectiveness of the environmental regulations for mining operations;

(8) the regulations designate a single agency or,

with the Secretary's approval, an interstate organization upon which the responsibility for administering and enforcing the regulations is conferred by the State which will insure full participation of those agencies responsible for air quality, water quality, and other areas of environmental protection;

(9) the State agency or interstate organization responsible for the administration and enforcement of the regulations has vested in it the regulatory and other authorities necessary to carry out the purposes of this Act including, but not limited to, authority to prohibit mining operations where the area affected cannot be adequately reclaimed, to order cessation of mining operations, and to bring or request the bringing of civil and criminal actions for violation of applicable laws and regulations;

(10) the regulations were developed with full participation of all interested Federal departments and agencies, State agencies, local governments, and other interested bodies and groups;

(11) the regulations provide for regular review and updating, and for public notice and an opportunity for public participation in their revision;

(12) funding and manpower are or will be com-

mitted to the administration and enforcement of the regulations sufficient to carry out the purposes of this title;

(13) the regulations are authorized by law and will become effective no later than sixty days after approval by the Secretary;

(14) training programs will be established, as necessary, for persons engaged in mining operations and in enforcement of environmental regulations; and

(15) the regulations are compatible to the maximum extent practicable with approved regulations of adjacent States.

(b) The criteria set forth in subsection (a) of this section shall be further elaborated by the Secretary through guidelines which will be issued within thirty days after enactment of this Act and revised periodically as the Secretary deems appropriate. Such guidelines shall attempt to assure that State regulations provide the operator of a mining operation sufficient flexibility to choose the most economically efficient means of meeting the requirements of section 201 (a) (2) and shall be based on consideration of:

(1) the differences between the various States and regions;

(2) the effectiveness and experience gained under present State mining reclamation regulations and Federal regulations for Federal lands;

(3) the available technology for achieving the requirements of section 201 (a) (2) ;

(4) a comparison of the costs and benefits of achieving alternative levels of the requirements of section 201 (a) (2).

(c) To advise the Secretary in developing guidelines under subsection (b) of this section, there is established an advisory committee composed of representatives from the Departments of Agriculture and Commerce, the Environmental Protection Agency, the Tennessee Valley Authority and the Appalachian Regional Commission, and such other representatives as the Secretary may designate.

(d) The Secretary shall not approve regulations submitted by a State pursuant to this section until he has solicited the views of Federal agencies principally interested in such regulations. In case of serious disagreement between any Federal agency and the State in the development of the regulations the Secretary shall seek to mediate the differences. The Secretary shall approve or reject the State regulations within one hundred and eighty days after such regulations are filed. If no action is taken by the Secretary within the allotted time it shall be presumed, as a matter of law, that the State regulations are approved.

(e) If the Secretary approves the regulations or revision thereof submitted to him by a State for approval, he shall

conduct a continuing review and evaluation of the effectiveness of the regulations and the administration and enforcement thereof. As a result of the evaluation and review the Secretary may determine that—

(1) the State has failed to enforce the regulations adequately;

(2) the State's regulations require revision as a result of experience or the guidelines issued by the Secretary pursuant to section 201 (b) ;

(3) the State has otherwise failed to comply with the purposes of this Act.

Upon making such determination the Secretary shall notify the State and suggest appropriate action, remedies, or revisions to the regulations affording the State an opportunity for a hearing. If within a reasonable time, as determined by the Secretary, the State has not taken appropriate action as determined by the Secretary, the Secretary may withdraw his approval of the regulations, and issue regulations for such State under section 202 of this title. After withdrawal of his approval and pending the issuance of regulations under section 202 the Secretary may administer and enforce the State regulations. Following the issuance of regulations under section 202 and while they are in effect the Secretary is authorized to administer and enforce such regulations within such State.

SEC. 202. FEDERAL REGULATION OF MINING OPERATIONS.—(a) If, at the expiration of two years after the date of enactment of this Act, a State has failed to submit environmental regulations for mining operations, or has submitted regulations which have been disapproved and within such period has failed to submit revised regulations for approval, the Secretary shall promptly issue environmental regulations for mining operations within such State. The Federal regulations issued by the Secretary for a particular State shall meet the requireemnts of the principles set forth in subsection (a) of section 201 of this Act.

(b) Regulations under this section shall be issued pursuant to the Federal rulemaking procedures set forth in title 5, United States Code, section 553.

(c) The Secretary may from time to time revise such regulations in accordance with the procedure prescribed in title 5, United States Code, section 553.

SEC. 203. Where the Secretary administers and enforces the program for the State, or when the Secretary administers and enforces State regulations under section 201 (e) of this title, he shall recover the full cost of administering and enforcing the program through the use of mining permit charges to be levied against mining operations within the State.

SEC. 204. TERMINATION OF FEDERAL REGULATIONS.—If a State submits proposed State regulations to the Secretary

after Federal regulations have been issued pursuant to section 202 of this title and, if the Secretary approves such regulations, such Federal regulations shall cease to be applicable to the State at such time as the State regulations become effective. Such Federal regulations, as changed or modified by the Secretary, shall again become effective if the Secretary subsequently withdraws his approval of the State regulations pursuant to subsection (e) of section 201 of this title.

SEC. 205. INSPECTIONS AND INVESTIGATIONS.—The Secretary is authorized to make such inspections and investigations of mining operations and mined areas as he considers necessary or appropriate to evaluate the administration and enforcement of any State's regulations, or to develop or enforce Federal regulations, or otherwise to carry out the purposes of this Act, and for such purposes authorized representatives of the Secretary shall have the right of entry to any mining operation and into any mined areas. In order to enforce the right of entry into a specific mining operation or mined area the Secretary may obtain a warrant from the appropriate district court to authorize such entry.

SEC. 206. INJUNCTIONS.—At the request of the Secretary, the Attorney General may institute a civil action in a district court of the United States or the highest court in a United States territory for an injunction or other appropriate

order (1) to prevent any operator of a mining operation from engaging in mining operations in violation of Federal regulations issued under section 202 of this title or State regulations which the Secretary is authorized to enforce under section 201 (e) of this title; (2) to prevent an operator of a mining operation from placing in commerce the minerals produced by a mining operation in violation of State regulations approved under section 201 of this title; (3) to enforce a warrant issued under section 205 of this title; or (4) to collect a penalty under section 207 (a) of this title. The district court of the United States for the district in which such operator of a mining operation resides or is doing business shall have jurisdiction to issue such injunction or order.

SEC. 207. PENALTIES.—(a) If any person fails to comply with any regulation issued under section 202 of this title for a period of fifteen days after notice of such failure, the Secretary may order cessation of such person's mining operations and such person shall be liable for a civil penalty of not more than $1,000 for each day of continuance of such failure after said fifteen days.

(b) Any person who knowingly violates any regulation issued pursuant to section 202 of this title shall, upon conviction, be punished by a fine not exceeding $10,000 or by imprisonment not exceeding one year, or both.

(c) The penalties prescribed in this section shall be in addition to any other remedies afforded by this title or by any other law or regulation.

SEC. 208. RESEARCH.—The Secretary is authorized to conduct or promote research, or training programs to carry out the purposes of this title. In so doing, the Secretary may enter into contracts with institutions, agencies, organizations, or individuals and make grants to nonprofit organizations and collect and make available information resulting therefrom.

SEC. 209. GRANTS.—(a) The Secretary is authorized to make a grant to any State for the purpose of assisting such State in developing, administering, and enforcing environmental regulations under this title, provided that such grants do not exceed 80 per centum of the program development costs incurred during the year preceding approval by the Secretary and do not exceed 60 per centum of the total costs incurred during the first year following approval, 45 per centum during the second year following approval, 30 per centum during the third year following approval, and 15 per centum during the fourth year following approval, at which time the Federal grants shall cease.

(b) The Secretary is authorized to cooperate with and provide nonfinancial assistance to any State for the purpose

of assisting it in the administration and enforcement of its regulations. Such cooperation and assistance may include:

(1) technical assistance and training, including provision of necessary curricular and instructional materials, in the administration and enforcement of the State regulations or program; or

(2) assistance in preparing and maintaining a continuing inventory of mining operations and mined areas in such State for the purposes of evaluating the effectiveness of its environmental regulations for mining operations programs and identifying current and future needs of the State's activities under this Act.

SEC. 210. In extending technical assistance to States under section 209 and in the enforcement of regulations issued by the Secretary under section 202 concerning matters relating to the reclamation of areas affected by surface mining, the Secretary may utilize the services of the Secretary of Agriculture, and may transfer funds to cover the cost thereof.

SEC. 211. RULES AND REGULATIONS.—The Secretary is authorized to promulgate rules and regulations as he considers necessary to carry out the provisions of this title.

SEC. 212. AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Secretary such

sums as may be necessary to carry out the provisions of this Act.

TITLE III

SEC. 301. (a) The heads of all Federal departments or agencies which have jurisdiction over land on which mining operations are permitted are authorized to promulgate environmental regulations to govern such mining operations. Such department or agency heads shall issue regulations to assure at least the same degree of environmental protection and reclamation on lands under their jurisdiction as is required by any law and regulation established under an approved State program for the State in which such land is situated. Each Federal department and agency shall cooperate with the Secretary and the States, to the greatest extent practicable, in carrying out the provisions of this Act.

(b) Nothing in this Act or in any State regulations approved pursuant to it shall be construed to conflict with any of the following Acts or with any rule or regulation promulgated thereunder:

(1) the Federal Metal and Nonmetallic Mine Safety Act (80 Stat. 772; 30 U.S.C. 721–740);

(2) the Federal Coal Mine Health and Safety Act of 1969 (83 Stat. 742);

(3) the Federal Water Pollution Control Act, as amended (79 Stat. 903, 33 U.S.C. 1151–1175), the

State laws enacted pursuant thereto, or other Federal laws relating to preservation of water quality;

(4) the Clean Air Act, as amended (79 Stat. 992; 42 U.S.C. 1857); and

(5) the Solid Waste Disposal Act, as amended (79 Stat. 997; 42 U.S.C. 3251).

SEC. 302. SEPARABILITY.—If any provision of this Act or the applicability thereof to any person or circumstance is held invalid the remainder of this Act and the application of such provision to other persons or circumstances shall not be affected thereby.

92D CONGRESS
1ST SESSION

S. 1160

IN THE SENATE OF THE UNITED STATES

MARCH 9 (legislative day, FEBRUARY 17), 1971

Mr. HANSEN introduced the following bill; which was read twice and referred to the Committee on Interior and Insular Affairs

A BILL

Relating to the rehabilitation of areas damaged by deleterious mining practices, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in order to rehabilitate areas damaged by deleterious mining practices, the Secretary of the Interior is authorized to make grants to the several States to seal and fill voids in abandoned coal mines and abandoned oil and gas wells, and to reclaim and rehabilitate lands affected by the strip and surface mining and processing of coal and other minerals, including lands affected by waste piles, in accordance, to the extent applicable, with provisions of the Act of July 15, 1955 (69 Stat. 352), as amended by the Act of October

15, 1962 (76 Stat. 934), without regard to section 2(b) thereof or to any provisions therein limiting assistance to anthracite coal formations or to the Commonwealth of Pennsylvania. Grants under this Act shall be made wholly out of funds specifically appropriated for the purposes of carrying out this Act.

SEC. 2. Grants under this Act may be made in advance or by way of reimbursement, and shall be made in such manner and on such conditions as the Secretary of the Interior may determine necessary to carry out the provisions of this Act; except that the Federal share of mining area restoration projects, including reasonable planning and engineering costs, carried out under the first section of this Act, and conducted on lands other than federally owned lands shall not exceed 75 per centum of the total cost thereof. The non-Federal share of the total cost of any project carried out under this Act may include reasonable land acquisition costs incurred in acquiring land necessary for the purposes of implementing such project, if such land is acquired after the date of the enactment of this Act.

SEC. 3. For the purpose of making grants under this Act, there is authorized to be appropriated an amount required for carrying out the purposes of this Act for the three fiscal years ending June 30, 1974.

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., November 12, 1971.

Hon. HENRY M. JACKSON,
Chairman, Committee on Interior and Insular Affairs,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: This responds to your request for the views of this Department on S. 1160, a bill "Relating to the rehabilitation of areas damaged by deleterious mining practices, and for other purposes."

We recommend that this bill not be enacted but favor instead the enactment of S. 993, the Administration's proposed "Mined Area Protection Act of 1971".

S. 1160 would authorize the Secretary of the Interior to make grants to the several States to rehabilitate areas damaged by deleterious mining practices. Grants would be made for the purpose of sealing and filling voids in abandoned coal mines and abandoned oil and gas wells, and to reclaim and rehabilitate lands affected by strip or surface mining. Grants would be restricted to 75 percent of the total cost of any project, and the bill would authorize necessary appropriations for three years.

There are two distinct problems involved in meeting the challenge which mining operations can present to the environment:

(1) requiring ongoing and future mining activities to be conducted in a way as to minimize the environmental impact, and

(2) healing the wounds that have been inflicted by past mining operations.

The Administration's proposed bill deals only with the first problem, the solution to which is largely a matter of developing regulations which will require environmental considerations to be built into the mining operation. An integral part of this effort will be research programs promoted by the Secretary of the Interior with Federal funds.

The Administration's proposed bill recognizes that the initial responsibility for developing and enforcing regulations should rest with the States. It also recognizes, however, that the effort must be nationwide and based, to the fullest extent possible, on national standards, so that industry will be placed on an equal footing in every State.

The Administration's proposed bill therefore gives the States the opportunity to develop and submit regulations for approval by the Secretary of the Interior in accordance with certain specific criteria set forth in the bill.

If a State fails to develop an acceptable program within two years after enactment, the proposed bill authorizes the Secretary to promulgate regulations for mining operations within the State.

The problem of healing damage inflicted in the past is more complicated. Typically, the party responsible is not available for legal action to require him to repair the damage he has caused. Consequently the solution is largely a matter of spending taxpayers dollars. In order to justify a massive Federal grant program to clean up past mined-areas, a detailed cost-benefit analysis must be undertaken to assure that this problem deserves top priority among the great number of other environmental problems the solution to which requires Federal funds. The tools for such an analysis are in the formative stages. Until they have been further refined, it is felt that a restoration program is premature.

The Office of Management and Budget advises that there is no objection to the presentation of this report and that enactment of S. 993 would be in accord with the President's program.

Sincerely yours,

HOLLIS M. DOLE,
Assistant Secretary of the Interior.

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, D.C., November 17, 1971.

Hon. HENRY M. JACKSON,
Chairman, Committee on Interior and Insular Affairs,
U.S. Senate.

DEAR MR. CHAIRMAN: This is in response to your request for a report on S. 1160, a bill "Relating to the rehabilitation of areas damaged by deleterious mining practices, and for other purposes."

This Department recommends that the bill not be enacted.

The President's Environment Message to Congress, dated February 8, 1971, proposed a Mined Area Protection Act, S. 993, to establish Federal requirements and guidelines for State programs to regulate the environmental consequences of surface and underground mining. This proposal was submitted to Congress by the Secretary of the Interior on February 25, 1971. In transmitting that proposal, attention was called to the fact that there are two different problems involved in meeting the challenge which mining operations can present to the environment: (1) requiring ongoing and future mining activities to be conducted in a way as to minimize the environmental impact, and (2) healing the wounds that have been inflicted by past mining operations.

We recommended enactment of the Administration's proposal which deals only with the first problem, the solution to which is largely a matter of developing regulations that will require environmental considerations to be built into the mining operation.

The problem of healing damage inflicted in the past is more difficult. Most of the lands now in need of reclamation were mined when there were no statutory requirements that they be reclaimed or where such statutory requirements were ineffective. Consequently, to relieve the adverse impacts on the environmental treatment of these lands may well require a considerable input of public funds. The investment of Federal funds will require a detailed cost-benefit analysis to determine the priority of this problem in comparison with other environmental problems requiring Federal funds.

This Department has a long history of conducting research and giving technical and financial assistance to private landowners in protecting land surface areas against erosion and runoff. Many of the lands on which we have provided assistance were surface mined. At such time that proposals for reclaiming lands affected by past surface mining may be submitted, this Department will anticipate aiding in the development of proposals for consideration by the Congress.

The Office of Management and Budget advises that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely,

J. PHIL CAMPBELL,
Acting Secretary.

70-867 O—72—pt. 1——6

92D CONGRESS
1ST SESSION

S. 1240

IN THE SENATE OF THE UNITED STATES

MARCH 16, 1971

Mr. CHURCH (for himself, Mr. JORDAN of Idaho, Mr. MANSFIELD, Mr. METCALF, and Mr. MOSS) introduced the following bill; which was read twice and referred to the Committee on Interior and Insular Affairs

A BILL

Relating to prospecting and exploring for minerals on public lands of the United States by means of bulldozers or other mechanical earthmoving equipment.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) on and after the date of the enactment of this Act, the Secretary of the Interior is authorized to designate and establish certain areas comprising the public lands (including national forest lands) of the United States within which no individual, company, or other organization shall enter for the purpose of prospecting or exploring for minerals with bulldozers or other mechanical earthmoving equipment, if the Secretary has first determined that—

(1) the fragile soil condition, steep slopes or high elevations of the lands comprising such area makes it inadvisable to permit the use of such equipment; or

(2) the use of such equipment in such area is likely to result in irreparable damage to the land surface thereof.

(b) No action taken by the Secretary of the Interior pursuant to subsection (a), with respect to the designation of an area within which no prospecting or exploring for minerals with the use of bulldozers or other mechanical earthmoving equipment shall be carried out, shall become effective until such time as the Secretary has published a detailed description of the boundaries of such area so designated in the Federal Register, which description shall be made available for public inspection at the closest Bureau of Land Management Office to the affected area.

SEC. 2. On and after the date of the enactment of this Act, no individual, company, or other organization shall enter upon the public lands (including national forest lands) for the purpose of prospecting or exploring for minerals with bulldozers or other mechanical earthmoving equipment, unless such individual, company, or organization has first filed in the office of the United States Bureau of Land Management in the district in which the lands to be prospected or explored are situated—

(1) a statement of intent, together with a detailed

description of the lands involved, the type of prospecting or exploring intended, and the type of bulldozers or other mechanical earthmoving equipment intended to be used; and

(2) a performance bond, in such amount as the Secretary of the Interior shall determine, to assure reasonable protection of the environment, including restoration or reclamation of the surface of the lands with respect to which such prospecting or exploration is carried out unless a valid discovery is made as a result thereof.

(3) in carrying out subsection 2(2) of this Act the Secretary shall establish procedure to assure that the amount of the performance bond in each case shall be fixed within sixty days of the filing of the statement of intent as provided in subsection 2(1).

SEC. 3. The Secretary of the Interior shall take no action pursuant to this Act affecting national forest lands unless he has first consulted with and received the approval of the Secretary of Agriculture with respect to any such proposed action so affecting such national forest lands.

SEC. 4. The Secretary of the Interior is authorized to issue such regulations as he determines necessary to carry out the provisions of this Act. Such regulations so issued shall be published in the Federal Register.

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., November 12, 1971.

Hon. HENRY M. JACKSON,
Chairman, Committee on Interior and Insular Affairs,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: Your Committee has requested a report on S. 1240, a bill "Relating to prospecting and exploring for minerals on public lands of the United States by means of bulldozers or other mechanical earthmoving equipment."

We recommend that S. 1240 not be enacted and that S. 2727, the Administration's proposed "Mining Law of 1971", S. 2401, the Administration's proposed "National Resource Land Management Act of 1971", and S. 993, the Administration's proposed "Mined Area Protection Act of 1971", be enacted instead.

Section 1 of S. 1240 would authorize the Secretary of the Interior to prohibit the exploration for minerals by bulldozer type equipment on certain public lands (including national forest lands) where he finds (1) that fragile soil conditions make it inadvisable to use such equipment, or (2) the use of mechanical equipment is likely to result in irreparable damage to the land surface. The Secretary would be directed to publish a detailed description of the boundaries of designated areas in the *Federal Register* and this description is to be made available for public inspection at the Office of the Bureau of Land Management nearest to the affected area.

Section 2 provides that no one shall enter upon the public lands for the purpose of mineral exploration with bulldozers or other earthmoving equipment unless he has filed with the Bureau of Land Management a statement of intent and a performance bond, in such amount as the Secretary shall determine, so as to assure reasonable protection of the environment. Section 3 of S. 1240 directs the Secretary to consult with the Secretary of Agriculture before taking action affecting national forest lands, and section 4 authorizes the Secretary to issue such regulations as he determines necessary to carry out the provisions of the Act.

The basic purpose of S. 1240 is to protect the public lands from the damage caused by mechanized prospecting permissible under the Mining Law of 1872. This Department recognizes that unregulated exploratory operations conducted with bulldozers and other earthmoving equipment can result in irreparable harm to the land resources, but believes that the scope of S. 1240 is too limited to accomplish the kind of comprehensive, coordinated regulation necessary to correct abuses under the present system.

On October 12, 1971, this Administration proposed to Congress a "Mining Law of 1971", introduced in the Senate as S. 2727. This bill emphasizes the Administration's concern that protection of the environment should be a major factor in any legislation to reform the mining laws. Section 10 of S. 2727 provides a program to regulate the environmental aspects of mining on public lands. It would require, among other things, that the operator file an operation plan with the Secretary for approval before he commences any activity which might cause a significant disturbance of the environment. The plan would be in accord with the regulations issued by the Secretary and designed to assure that the operation would not violate air and water quality standards and would control erosion, subsidence and other specified environmental damage. The regulations would require that reclamation be made an integral part of the operation while allowing the operator maximum flexibility to determine the most economically feasible means of achieving the environmental objectives.

This Department has also proposed a bill, S. 2401, which we believe provides a comprehensive plan for the management of federally owned lands consonant with the needs for environmental protection and effective land use planning. Enactment of S. 2401 would provide the Secretary of the Interior with regulatory and enforcement authority sufficient to meet these needs. Specifically, section 7(a)(2) of S. 2401 would direct the Secretary to require "performance bonds guaranteeing such reclamation of any person permitted to engage in extractive *or other activity* likely to entail significant disturbance to or alteration of the land." (Emphasis supplied.) This authority is broader in scope than that provided in S. 1240 and would include the mechanized exploration activities encompassed by S. 1240.

In addition, title II of S. 993, the "Mined Area Protection Act of 1971", proposed to the Congress by this Department on February 10, 1971 establishes standards for environmental regulation of mining operations by the states on non-

federally owned lands within the state. Section 101(b) defines "mining operations" to include "activities conducted . . . for the exploration for . . . minerals from their natural occurrences . . ." The environmental regulation standards set worth in title II of S. 993 specifically require reclamation plans and performance bonds to guarantee such reclamation. Moreover, section 301 of S. 993 requires all Federal departments having jurisdiction over lands on which mining operations are conducted to issue regulations governing such mining operations which are at least as stringent as those promulgated and approved pursuant to section 201. These wise bills, then, would provide for protection of mineral resource lands whether public or private. Enactment of S. 2727, S. 2401 and S. 993 would establish a coordinated, comprehensive program for the exploration and exploitation of mineral resources, as well as the protection of the environment, to a degree not attainable within the limited scope of S. 1240.

The Office of Management and Budget has advised that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely yours,

HOLLIS M. DOLE,
Assistant Secretary of the Interior.

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, D.C., April 17, 1971.

Hon. HENRY M. JACKSON,
Chairman, Committee on Interior and Insular Affairs, U.S. Senate.

DEAR MR. CHAIRMAN: As you asked, here is the report of the Department of Agriculture on S. 1240, a bill "Relating to prospecting and exploring for minerals on public lands of the United States by means of bulldozers or other mechanical earthmoving equipment."

The Department of Agriculture recommends enactment of S. 2727, the Administration's proposal to reform the mining laws, in lieu of S. 1240.

S. 1240 would authorize the Secretary of the Interior to designate and establish certain areas comprising the public lands (including the national forests) which would be closed to entry for minerals prospecting or exploring with bulldozers or other mechanical earthmoving equipment. Such areas would be fragile or steep areas where heavy equipment would cause irreparable surface damage.

In areas not closed to entry with bulldozers or mechanical earthmoving equipment, no minerals prospecting or exploration on public lands could be conducted by individuals, companies, or other organizations unless such parties file a statement of intent regarding the nature of proposed operations, and a performance bond in an amount determined by the Secretary of the Interior.

The Secretary of the Interior could take no action under S. 1240 affecting the National Forest lands administered by this Department without the consent of the Secretary of Agriculture.

On October 12, 1971, the Secretary of the Interior sent to the Congress this Administration's proposal to reform the mining laws, which is now embodied in S. 2727. This proposal, which would cover the National Forest lands we administer, embraces the objectives of S. 1240. It would authorize and direct the withdrawal from any mineral development of those lands which we determine have a higher use or which should be removed from disposition to protect or enhance their environmental quality. For those lands not withdrawn it authorizes the administering agency to require conditions in prospecting licenses, and in exploration, development, and production permits to minimize or avoid environmental disturbance. The Administration proposal would cover all activities relating to disposition of mineral materials, and not just use of bulldozers and mechanical earthmoving equipment.

For these reasons we believe S. 2727 would fully accomplish the purposes of S. 1240 and provide the complete and comprehensive reform of the mining laws that is so strongly needed now.

The Office of Management and Budget advises that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely,

J. PHIL CAMPBELL,
Acting Secretary.

92D CONGRESS
1ST SESSION

S. 1498

IN THE SENATE OF THE UNITED STATES

APRIL 5, 1971

Mr. NELSON (for himself and Mr. MCGOVERN) introduced the following bill; which was read twice and referred to the Committee on Interior and Insular Affairs

A BILL

To provide for the control of surface and underground coal mining operations which adversely affect the quality of our environment, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act shall be cited as the "Environmental Protection and Enhancement Act of 1971."

DEFINITIONS

SEC. 2. For the purposes of this Act, the term—

(1) "Administrator" means the Administrator of the Environmental Protection Agency;

(2) "Commerce" means trade, traffic, commerce, transportation, or communication between any State,

the Commonwealth of Puerto Rico, the District of Columbia, or any territory or possession of the United States and any other place outside the respective boundaries thereof, or wholly within the District of Columbia, or any territory or possession of the United States, or between points in the same States, if passing through any point outside the boundaries thereof;

(3) "Coal" includes bituminous coal, lignite, and anthracite;

(4) "Coal mine" means an area of land and all structures, facilities, machinery, tools, equipment, shafts, slopes, tunnels, excavations, and other property, real or personal, placed upon, under, or above the surface of such land by any person, used in, or to be used in, or resulting from, the work of extracting in such area coal from its natural deposits in the earth by any means or method, and the work of preparing or processing the coal so extracted, and includes custom coal preparation facilities;

(5) "Surface coal mine" means any surface mine from which coal is extracted from its natural deposits in the earth by surface mining;

(6) "Surface mining" means the mining of coal from a surface coal mine after removal of all or part of the overburden above the mineral deposit to be mined

in a series of rows or strips, and includes "auger mining" when conducted in conjunction with surface mining;

(7) "Overburden" means the earth, rock, and other materials which lie above a natural coal deposit;

(8) "Spoil" means any overburden material removed from a surface coal mine which is either deposited onto the surface coal mine area from which it is extracted or on land outside the boundaries of such mine;

(9) "Spoil bank" means the spoil deposited on the surface so that the underlying coal may be recovered;

(10) "Stripping pit" means any trench, cut, hole, or pit formed by removal of the surface or mineral as a result of surface coal mining;

(11) "Reclamation" or "reclaim" means the reconditioning or restoration, when appropriate, of all or part of the area of land affected by surface coal mining operations and includes such contiguous lands as may be necessary for an effective reclamation program;

(12) "Underground coal mining operations" means those mining operations carried out beneath the surface by means of shafts, tunnels, or other underground mine openings;

(13) "Operator" means any owner, lessee, or other person who operates, controls, or supervises a surface or underground coal mine;

(14) "Agent" means any person charged by an operator with responsibility for the operation of all or part of a coal mine;

(15) "Person" means any individual, partnership, association, corporation, firm, subsidiary of a corporation, or other organization;

(16) "Area of land affected" means that area of a surface coal mine from which the overburden is removed, except that in stripping pits not more than one hundred feet in depth the area shall include the area occupied by the spoil banks, and includes all lands affected by roads constructed to gain access thereto and to haul coal; and

(17) "Operation" means all the premises, facilities, roads, and equipment used in the process of extracting minerals from a designated surface or underground coal mine; and

(18) "State" includes a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Virgin Islands, American Samoa, Guam, Trust Territory of the Pacific Islands, and Indian tribes.

FINDINGS AND PURPOSE

SEC. 2. (a) The Congress finds and declares that an unregulated surface or underground coal mining operation—

(1) destroys or otherwise adversely affects entire communities and private residences and businesses,

(2) menaces and adversely affects the public health and safety,

(3) destroys natural beauty,

(4) damages or destroys the usefulness of the terrain for other purposes and in the case of surface coal mines leaves ugly highways that cannot be reclaimed,

(5) causes erosion of the soil,

(6) contributes to air and water pollution,

(7) adversely affects commercial and industrial development,

(8) damages or destroys agricultural use of the terrain,

(9) destroys forests, wildlife habitat, fishery resources and spawning grounds, and other natural resources,

(10) cannot in the case of surface coal mines, be made subject to uniform conservation requirements because physical and chemical conditions of spoil and spoil-bank characteristics differ from State to State, political subdivision, bank to bank, and even from spot to spot on a particular bank, and

(11) creates, because of the diversity of State regulations, or the lack thereof, competitive disadvantages for persons operating in a given market area and thereby interferes with the orderly and fair marketing of minerals

in commerce, and that these results are detrimental to the economy of the Nation.

(b) The Congress finds and declares that the public has a right to enjoy a safe and healthy human environment and to expect that the Federal Government, the States, and local government will utilize all practicable means and measures to protect and enhance the quality of our environment.

(c) It is, therefore, the purpose of this Act to provide for participation by the Federal Government with State and local governments, private individuals and other interested persons in a comprehensive program to prevent further damage to the lands, waters, and natural resources of the Nation from unregulated or inadequately regulated surface and underground coal mining operations, to reclaim lands and waters damaged by surface coal mining, and to promote an effective continuing conservation land-use and management program through—

(1) the establishment of criteria and standards for the reclamation, conservation, and protection of abandoned or inactive surface coal mines;

(2) the termination of surface coal mine operations in accordance with this title;

(3) the establishment of means and measures, including, but not limited to, financial and technical assistance and enforcement, to protect, foster, and promote

that right set forth in subsection (b) of this section in order to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the requirements of present and future generations of Americans;

(4) financial aid to provide for research and development, and technical advisory assistance, and the installation of demonstration projects;

(5) cooperative programs with State and local governments to provide, where appropriate, Federal assistance for the reclamation and conservation of publicly and privately owned surface and underground coal mines;

(6) the promotion of the public health and safety and public recreation, flood control, and soil erosion control, air and water pollution control, forestry, agriculture, restoration and preservation of natural beauty, enhancement of fish and wildlife habitat, and other natural resources values; and

(7) the elimination of competitive disadvantages for persons operating in a given market area which interfere with the orderly and fair marketing of coal in commerce.

COAL MINES SUBJECT TO ACT

SEC. 4. Each coal mine, the products of which enter commerce, or the operations or products of which affect

commerce, and each operator of such mine, shall be subject to the provisions of this Act.

SURFACE COAL MINES

SEC. 5. (a) On and after the enactment date of this Act, no person shall open in any State any new, inactive, or abandoned surface coal mine for the purpose of conducting surface coal mining operations thereon.

(b) (1) On and after the enactment date of this Act, any operator of a surface coal mine who is conducting operations therein to extract coal from such mine shall develop and submit to the Administrator a plan for the effective reclamation of such surface mine. Such plan shall be submitted by the operator within sixty days after such enactment.

(2) The Administrator shall promulgate, within thirty days after enactment of this Act, regulations governing the content of any reclamation plan submitted to him under this subsection. As a minimum, such regulations shall prescribe (A) the prevention of all adverse offsite effects from such mining and (B) effective requirements for the planned reclamation of such mines and for the termination of all surface coal mining operations at all surface coal mines within six months after the date of enactment of this Act, except those operations necessary to carry out any approved plan.

(3) The Administrator shall approve any plan sub-

mitted to him under this section if he determines that it meets the requirements of such regulations. The failure of any operator of a surface coal mine to submit to the Administrator an approvable reclamation plan under this section shall not relieve or be construed as relieving such operator of his obligation under this Act to carry out effective reclamation of such mine and to terminate surface coal mining operations at such mine within six months after the date of enactment of this Act. If an operator does not comply with the plan or submit it for approval, the Administrator may reclaim such lands and the operator shall be liable to the United States for all such costs of reclamation and the Administrator shall sue for the same in the appropriate district court which shall have jurisdiction.

NATIONAL STANDARDS FOR UNDERGROUND COAL MINES

SEC. 6. (a) The Administrator shall within ninety days after the date of enactment of this Act, publish proposed regulations prescribing national environmental control standards for underground coal mines opened on or before the enactment of this Act and for such mines opened or activated after the date of enactment of this Act and for contiguous areas affected by operations within such mines.

(b) After a reasonable time for interested persons to submit written comments thereon (but no later than ninety days after the publication of such proposed regulations), the

Administrator shall by regulation promulgate such regulations with such modifications as he deems appropriate to carry out the purpose of this Act. Such regulations may be revised in the same manner as promulgated.

IMPLEMENTATION PLANS

SEC. 7. (a) (1) Each of the several States shall, after reasonable notice and public hearings, adopt and submit to the Administrator, within six months after the promulgation of reasonable regulations under section 6(a) of this Act, a plan which provides for the effective implementation, maintenance, and enforcement of such regulations within such State.

(2) The Administrator shall, within four months after the date required for submission of a plan under paragraph (1) of this subsection, approve or disapprove such plan or any portion thereof. The Administrator shall approve such plan, or each portion thereof, if he determines that it was adopted after reasonable notice and public hearing and that—

(A) it is in conformance with the regulations promulgated under section 6 of this Act;

(B) it includes provisions—

(i) for the issuance of permits or licenses by the State for all underground coal mining operations subject to such regulations and for the review and renewal thereof at a minimum of every three years;

(ii) for the posting by the operator of each underground coal mine of an adequate performance bond to provide for the appropriate reclamation of such mine simultaneously with such mining operations (whether or not such operator completes mining operations at such mine), and the forfeiture of which shall automatically result in the denial of future permits or licenses applied for by such operator or his successors in interest to conduct operations at any other such mine in said State;

(iii) for mining operations to be planned and approved prior to the issuance or renewal of any license or permit;

(iv) for reports which shall be available to the public by the operator of the mine concerning compliance with his permit or license;

(v) for prohibiting the opening of any new underground coal mine or expanding the operations of any such existing mine where the State finds that such mining would result in, or contribute to, the violation of applicable air or water quality standards or where such mining would be detrimental to the public health or welfare; and

(vi) for insuring that during operations at such mine effective controls will be established and

70-867 O - 72 - pt. 1 - 7

maintained to prevent environmental damage consistent with the purposes of this Act;

(C) it includes limitations, schedules, and timetables for compliance with such plan and such other measures as may be necessary, including, but not limited to, land use controls, to insure attainment and maintenance of the regulations promulgated under section 6 of this Act;

(D) it includes provision for establishment and operation of appropriate devices, methods, systems, and procedures necessary to (i) monitor, compile, and analyze data on surface mining operations and reclamation work, and (ii) upon request, make such data available to the Administrator and to the public;

(E) it provides necessary assurances that the State will have adequate personnel, funding, and authority to carry out such implementation plan;

(F) it provides for revision, after public hearings, of such plan (i) from time to time as may be necessary to take account of revisions of such regulations or the availability of improved or more expeditious methods of achieving such regulations; or (ii) whenever the Administrator finds on the basis of information available to him that the plan is substantially inadequate to achieve such regulations; and

(G) it includes such other provisions as the Administrator may require to carry out the purposes of this Act.

(b) (1) The Administrator shall, after consideration of any State hearing record, promptly prepare and publish proposed regulations setting forth an implementation plan, or portion thereof, for a State if—

(A) the State fails to submit an implementation plan within the time prescribed;

(B) the plan, or any portion thereof, submitted by such State is determined by the Administrator not to be in accordance with the requirements of this section, or

(C) the State fails, within sixty days after notification by the Administrator or such longer period as he may prescribe, to revise an implementation plan as required pursuant to a provision of its plan referred to in subsection (a) (2) (F).

(2) If such State held no public hearing associated with or respect to such plan (or revision thereof), the Administrator shall provide opportunity for such hearing within such State on any proposed regulation. The Administrator shall, within six months after the date required for submission of such plan (or revision thereof), promulgate and enforce any such regulations unless, prior to such promulgation, such State has adopted and submitted a plan (or revision)

which the Administrator determines to be in accordance with the requirements of this section.

UNDERGROUND COAL MINES IN NATIONAL FORESTS AND WILDERNESS AREAS

SEC. 8. (a) Underground coal mining operations on lands within the national forest system shall be conducted in a manner that will not damage or destroy any area within the system or the natural resources of such area. Each operator of any existing or planned underground coal mine shall submit to the Secretary of Agriculture a plan for his approval that will insure that no mining shall be allowed on such area after one hundred and twenty days from the enactment of this Act, until regulations are promulgated which will assure that there will be no adverse effects, such as subsidence, acid mine drainage, or any adverse onsite or offsite effects from such mining. Such regulations shall also provide for both a certification by the operator, at no less than six-month intervals, that such regulations are being followed, and the posting of a bond which will be sufficient to cover the cost of all restoration work in the event the regulations are not followed.

(b) No person shall hereafter be permitted to conduct any underground coal mining operations in any area heretofore or hereafter established as a wilderness area pursuant to, or by, the Wilderness Act.

RECLAMATION AND CONSERVATION OF ABANDONED AND INACTIVE SURFACE AND UNDERGROUND COAL MINED LANDS OWNED BY STATE AND LOCAL GOVERNMENTS IN THE UNITED STATES

SEC. 9. (a) It is the purpose of this section to facilitate, where appropriate, the reclamation and conservation of lands owned by State and local governments that have been adversely affected by surface and underground coal mining operations, and that have not been reclaimed prior to the date of enactment of this Act to a level commensurate with the criteria and standards to be established pursuant to this Act by the Administrator, and by providing authority to the Administrator to enter into agreements with the States and local governments to provide financial and other assistance for their reclamation and conservation. When the intended use of the lands to be reclaimed is for parks, recreation, or fish and wildlife purposes, the Administrator shall enter into agreements respecting such lands only after consultation with the Secretary of the Interior.

(b) (1) To carry out the purpose of this section, the Administrator is authorized to enter into agreements with the various State and local governments for the conservation and reclamation of abandoned and inactive surface and underground coal mined lands owned or hereafter acquired by them, and for providing technical and financial assistance

thereto. Before entering into such agreements he shall satisfy himself that such conservation and reclamation of a particular area is feasible and consistent with the purpose of this section.

(2) Each such agreement shall describe (A) the actions to be taken by the Administrator and by the State or local government; (B) the estimated cost of these actions; (C) the public benefits expected to be derived, including, but not limited to, the benefits to the economy of the State or local area, abatement or alleviation of land and water pollution, public recreation, fish and wildlife, and public health and safety; (D) the share of the costs to be borne by the Federal Government and by the State or local government; except that, notwithstanding any other provision of law, the Federal share of the cost shall not exceed the direct identifiable benefits which the Administrator determines will accrue to the public, and shall not in any event exceed 90 per centum of such cost and the share of the State or local government shall not consist of funds granted under any other Federal program; and (E) such other terms and conditions as the Administrator deems desirable.

(3) The Administrator shall require as a part of any agreement under this section that adequate provision be made for access to, and use by, the public of lands reclaimed under the provisions of this Act.

(4) Each agreement entered into under this section

shall contain a reasonable assurance by the State or local government that the reclaimed lands which are devoted to public use will be adequately maintained.

(5) Whenever the Administrator, after reasonable notice and opportunity for hearing, determines that there is a failure to expend funds in accordance with the terms and conditions governing the agreement for approved projects, he shall notify the State that further payments will not be made to the State from appropriations under this Act until he is satisfied that there will no longer be any such failure.

(6) The programs authorized to be assisted pursuant to this Act shall be completed not later than January 1, 1980.

(c) The Administrator is authorized to pay not more than 90 per centum of the actual cost of the acquisition of surface or underground coal mined lands by a State or local government to carry out the purpose of this section. In selecting such lands for such cost sharing, the Administrator shall (1) require such feasibility studies as he deems appropriate, (2) give preference to areas which have the greatest present or potential value for public use for recreation, fish and wildlife, and other public purposes, and (3) be satisfied that all reasonable efforts have been made and exhausted to require the operator of such lands to reclaim them pursuant to this Act, or to donate such lands free to the State or local government.

(d) The Administrator shall take legal remedies against any operator of a coal mine for the costs of reclaiming such lands (where such reclamation was required but not performed under previously existing agreements) to the extent of any Federal grant made for such reclamation. For the purpose of this subsection, Congress finds and declares that such lands impede commerce and adversely affect the public health and welfare.

FEDERAL ENFORCEMENT

SEC. 10. (a) (1) Whenever, on the basis of any information available to him, the Administrator finds that any operator is in violation of any requirement of an applicable implementation plan, the Administrator shall notify the operator in violation of the plan and the State in which the plan applies of such finding and publish such finding. If such violation extends beyond the thirtieth day after the date of the Administrator's notification, the Administrator shall issue an order requiring such operator to comply with the requirements of such plan or he shall bring a civil action in accordance with subsection (b) of this section.

(2) Whenever, on the basis of information available to him, the Administrator finds that violations of an applicable implementation plan are so widespread that such violations appear to result from a failure of the State in which the plan applies to enforce the plan effectively, he shall so notify

the State. If the Administrator finds such failure extends beyond the thirtieth day after such notice, he shall give public notice of such finding. During the period beginning with such public notice and ending when such State satisfies the Administrator that it will enforce such plan (hereafter referred to in this section as "period of federally assumed enforcement"), the Administrator may enforce any requirement of such plan with respect to any person—

(A) by issuing an order to comply with such requirement, or

(B) by bringing a civil action under subsection (b) of this section.

(3) Whenever, on the basis of any information available to him, the Administrator finds that any operator is in violation of section 5 or 8 of this Act, he shall issue an order requiring such person to comply with such section or requirement, or he shall bring a civil action in accordance with subsection (b) of this section, requiring such operator to comply with such sections.

(4) An order issued under this section shall take effect immediately. A copy of any order issued under this section shall be sent to the State in which the violation occurs. Any order issued under this section shall state with reasonable specificity the nature of the violation, specify a time for compliance which the Administrator determines is reasonable,

taking into account the seriousness of the violation and any good faith efforts to comply with applicable requirements. In any case in which an order or notice under this section is issued to a corporation, a copy of such order shall be issued to appropriate corporate officers.

(5) All notices or orders issued or the termination thereof under this section shall be published in the Federal Register.

(b) The Administrator may commence a civil action for appropriate relief, including a permanent or temporary injunction, whenever any operator—

(1) violates or fails or refuses to comply with any order issued under subsection (a) of this section; or

(2) violates any requirement of an applicable implementation plan during any period of federally assumed enforcement more than thirty days after having been notified by the Administrator under subsection (a) (1) of this section of a finding that such person is violating such requirement; or

(3) violates section 5 or 8 of this Act; or

(4) fails or refuses to comply with any requirement of this Act or any regulation issued hereunder.

Any action under this section may be brought in the district court of the United States for the district in which the defendant is located or resides or is doing business, and

such court shall have jurisdiction to restrain such violation and to require compliance. Notice of the commencement of such action shall be given to the appropriate State.

(c) (1) Any operator or agent of an operator who knowingly (A) violates any requirement of an applicable implementation plan during any period of federally assumed enforcement more than thirty days after having been notified by the Administrator under subsection (a) (1) of this section that such person is violating such requirement, or (B) violates or fails or refuses to comply with any order issued by the Administrator under subsection (a) of this section, or (C) violates section 5 or 8 of this Act, shall be punished by a fine of not more than $25,000 per day of violation, or by imprisonment for not more than one year, or by both. If the conviction is for a violation committed after the first conviction of such person under this paragraph, punishment shall be by a fine of not more than $50,000 per day of violation, or by imprisonment for not more than two years, or by both. One-half of said fine shall be paid to any person giving information which shall lead to a conviction and he may sue for the same.

(2) Any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this Act or who falsifies, tampers with, or

knowingly renders inaccurate any monitoring device or method required to be maintained under this Act, shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than six months, or by both.

(d) (1) The operator of a surface mine who violates section 5 or 8 of this Act or any implementation plan or portion thereof or fails or refuses to comply with any order issued under this section shall be assessed a civil penalty by the Administrator which penalty shall not exceed $10,000 for each such violation. If any violation is a continuing one, each day of such violation shall constitute a separate violation for the purpose of computing the applicable civil penalty. The Administrator shall have the power to compromise, mitigate, or remit such penalties.

(2) Whenever the Administrator has reason to believe that a person has become subject to the imposition of a civil penalty under the provisions of this subsection, he shall notify such person in writing (A) setting forth the date, facts, and nature of each act or omission with which the person is charged, (B) specifically identifying the particular provision or provisions of the section, rule, regulation, order, or plan involved in the violation, and (C) advising of each penalty which the Administrator proposes to impose and its amount. Such written notice shall be sent by

registered or certified mail by the Administrator to the last known address of such person. The person so notified shall be granted an opportunity to show in writing, within such reasonable period as the Administrator shall by regulation prescribe, why such penalty should not be imposed. The notice shall also advise such person that upon failure to pay the civil penalty subsequently determined by the Administrator, if any, the penalty may be collected by civil action.

(3) On the request of the Administrator, the Attorney General is authorized to institute a civil action to collect a penalty imposed pursuant to this section. The Attorney General shall have the exclusive power to compromise, mitigate, or remit such civil penalties as are referred to him for collection.

INSPECTIONS, MONITORING, AND ENTRY

SEC. 11. (a) For the purpose (i) of developing or assisting in the development of any implementation plan, or any regulation, or (ii) of determining whether any person is in violation of any requirement of such a plan or any other provision of this Act—

(1) the Administrator may require the operator of any coal mine to (A) establish and maintain such records, (B) make such reports, (C) install, use, and maintain such monitoring equipment or methods, (D) sample such emissions (in accordance with such meth-

ods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe), and (E) provide such other information as he may reasonably require; and

(2) the Administrator or his authorized representative, upon presentation of his credentials—

(A) shall have a right of entry to, upon, or through any coal mine or any premises in which any records required to be maintained under paragraph (1) of this subsection are located, and

(B) may at reasonable times have access to and copy any records, inspect any monitoring equipment or method required under paragraph (1).

(b) Any records, reports, or information obtained under subsection (a) shall be available to the public, except that upon a showing satisfactory to the Administrator by any person that records, reports, or information, or particular part thereof, to which the Administrator has access under this section if made public, would divulge methods or processes entitled to protection as trade secrets of such person, the Administrator shall consider such record, report, or information or particular portion thereof confidential, except that such record, report, or information may be disclosed to other officers, employees, or authorized representatives of the

United States concerned with carrying out this Act or when relevant in any proceeding under this Act.

CITIZEN SUITS

SEC. 12. (a) Except as provided in subsection (b) of this section, any person may commence a civil action on his own behalf—

(1) against any person (including (i) the United States, and (ii) any other governmental instrumentality or agency to the extent permitted by the eleventh amendment to the Constitution) who is alleged to be in violation of (A) any implementation plan or section 5 or 8 of this Act or (B) an order issued by the Administrator or a State with respect to such plan or sections, or

(2) against the Administrator where there is alleged a failure of the Administrator to perform any act or duty under this Act which is not discretionary with the Administrator.

(b) The district courts shall have jurisdiction, without regard to the amount in controversy or the citizenship of the parties, to enforce such plan or section, or such order, or to require the Administrator to perform such act or duty, as the case may be.

(c) Nothing in this section shall restrict any right

which any person (or class of persons) may have under any statute or the common law to seek enforcement of this title or to seek any other relief, including relief against the Administrator or any State agency.

APPEARANCE

SEC. 13. The Administrator shall request the Attorney General to appear and represent him in any civil action instituted under this Act to which the Administrator is a party. Unless the Attorney General notifies the Administrator that he will appear in such action, within a reasonable time attorneys appointed by the Administrator shall appear and represent him.

FEDERAL PROCUREMENT

SEC. 14. (a) No Federal agency may enter into any contract with any operator who is convicted of any offense under this Act for the procurement of goods, materials, and services to perform such contract at any coal mine at which the violation which gave rise to such conviction occurred. The prohibition in the preceding sentence shall continue until the Administrator certifies that the condition giving rise to such a conviction has been corrected.

(b) The Administrator shall establish procedures to provide all Federal agencies with the notification necessary for the purpose of subsection (a).

(c) In order to implement the purposes and policy of

this Act, the President shall, not more than one hundred and eighty days after enactment of this Act, cause to be issued an order (1) requiring each Federal agency authorized to enter into contracts and each Federal agency which is empowered to extend Federal assistance by way of grant, loan, or contract to effectuate the purpose and policy of the Act in such contracting or assistance activities, and (2) setting forth procedures, sanctions, penalties, and such other provisions, as the President determines necessary to carry out such requirement.

(d) The President may exempt any contract, loan, or grant from all or part of the provisions of this section where he determines such exemption is necessary in the paramount interest of the United States and he shall notify the Congress of such exemption.

(e) The President shall annually report to the Congress on measures taken toward implementing the purpose and intent of this section, including but not limited to the progress and problems associated with implementation of this section.

GENERAL PROVISION RELATING TO ADMINISTRATIVE PROCEEDINGS AND JUDICIAL REVIEW

SEC. 15. (a) For the purposes of obtaining information, the Administrator may issue subpenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents, and he may administer oaths. Upon a showing satisfactory to the Administrator by such owner

70-867 O - 72 - pt. 1 - 8

or operator that such papers, books, documents, or information or particular part thereof, if made public, would divulge trade secrets or secret processes of such owner or operator, the Administrator shall consider such record, report, or information or particular portion thereof confidential, except that such paper, book, document, or information may be disclosed to other officers, employees or authorized representatives of the United States concerned with carrying out this title, or when relevant in any proceeding under this Act. Witnesses summoned shall be paid the same fees and mileage that are paid witnesses in the courts of the United States. In case of contumacy or refusal to obey a subpena served upon any person, the district court of the United States for any district in which such person is found or resides or transacts business, upon application by the United States and after notice to such person, shall have jurisdiction to issue an order requiring such person to appear and give testimony before the Administrator to appear and produce papers, books, and documents before the Administrator, or both, and any failure to obey such order of the court may be punished by such court as a contempt thereof.

(b) (1) A petition for review of action of the Administrator in promulgating any regulation under this Act may be filed only in the United States Court of Appeals for the District of Columbia. A petition for review of the Adminis-

trator's action in approving or promulgating any reclamation plan or any implementation plan may be filed only in the United States Court of Appeals for the appropriate circuit. Any such petition shall be filed within thirty days from the date of such promulgation or approval, or after such date if such petition is based solely on grounds arising after such thirtieth day.

(2) Action of the Administrator with respect to which review could have been obtained under paragraph (1) shall not be subject to judicial review in civil or criminal proceedings for enforcement.

(c) In any judicial proceeding in which review is sought of a determination under this Act required to be made on the record after notice and opportunity for hearing, if any party applies to the court for leave to adduce additional evidence, and shows to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for the failure to adduce such evidence in the proceeding before the Administrator, the court may order such additional evidence (and evidence in rebuttal thereof) to be taken before the Administrator, in such manner and upon such terms and conditions as to the court may deem proper. The Administrator may modify his findings as to the facts, or make new findings, by reason of the additional evidence so taken and he shall file such modified or new findings, and his recommenda-

tion, if any, for the modification or setting aside of his original determination with the return of such additional evidence.

EMPLOYEE PROTECTION

SEC. 16. (a) No person shall discharge or in any other way discriminate against or cause to be discharged or discriminated against any employee of a surface mine or any authorized representative thereof by reason of the fact that such employee or representative (1) has notified the Administrator or his authorized representative of any alleged violation or danger, (2) has filed, instituted, or caused to be filed or instituted any proceeding under this Act, or (3) has testified or is about to testify in any proceeding resulting from the administration or enforcement of the provisions of this Act.

(b) Any such employee or representative who believes that he has been discharged or otherwise discriminated against by any person in violation of subsection (a) of this section may, within thirty days after such violation occurs, apply to the Secretary of Labor for a review of such alleged discharge or discrimination. A copy of the application shall be sent to such person who shall be the respondent. Upon receipt of such application, the Secretary of Labor shall cause such investigation to be made as he deems appropriate. Such investigation shall provide an opportunity for a public hearing at the request of any party to enable the parties to present information relating to such violation.

The parties shall be given written notice of the time and place of the hearing at least five days prior to the hearing. Any such hearing shall be of record and shall be subject to section 554 of title 5 of the United States Code. Upon receiving the report of such investigation, the Secretary shall make findings of fact. If he finds that such violation did occur, he shall issue a decision, incorporating an order therein, requiring the person committing such violation to take such affirmative action to abate the violation as the Secretary of Labor deems appropriate, including, but not limited to, the rehiring or reinstatement of the employee or representative to his former position with back pay. If he finds that there was no such violation, he shall issue an order denying the application. Such order shall incorporate the Secretary's findings therein. Any order issued by the Secretary under this paragraph shall be subject to judicial review in accordance with section 11 of this Act. Violations by any person of subsection (a) of this section shall be subject to the provisions of section 11 of this Act.

(c) Whenever an order is issued under this section, at the request of the applicant, a sum equal to the aggregate amount of all costs and expenses (including the attorney's fees) as determined by the Secretary of Labor to have been reasonably incurred by the applicant for, or in connection with, the institution and prosecution of such proceedings, shall be assessed against the person committing such violation.

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, D.C., November 17, 1971.

Hon. HENRY M. JACKSON,
Chairman, Committee on Interior and Insular Affairs,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: This is in response to your letters of October 27, 1971, requesting the views of this Department on S. 1498, a bill "To provide for the control of surface and underground coal mining operations which adversely affect the quality of our environment, and for other purposes," and S. 2455, a bill "To regulate the practice of strip mining, to protect the environment, and for other purposes."

These bills generally provide for the conservation and improvement of lands affected by surface mining operations.

The President's Environmental Message to Congress, dated February 8, 1971, proposed a Mined Area Protection Act, S. 993, to establish Federal requirements and guidelines for State programs to regulate the environmental consequences of surface and underground mining. This proposal was submitted to Congress by the Secretary of the Interior and introduced on February 25, 1971, as S. 993. We recommend that the Administration's proposal be enacted.

The Office of Management and Budget advises that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely,

J. PHIL CAMPBELL,
Acting Secretary.

92D CONGRESS
1ST SESSION

S. 2455

IN THE SENATE OF THE UNITED STATES

AUGUST 5 (legislative day, AUGUST 3), 1971

Mr. Moss introduced the following bill; which was read twice and referred to the Committee on Interior and Insular Affairs

A BILL

To regulate the practice of strip mining, to protect the environment, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That for the purposes of this Act, the term—

(1) "operator" means any person engaged in strip mining in connection with the extraction of minerals;

(2) "person" means any individual, partnership, firm, association, company, society, joint stock company, corporation, or other entity;

(3) "reclamation" or "reclaim" means the process of restoring an area of land affected by strip mining to a condition that it may be used for at least the same pur-

poses for which it was used prior to the beginning of the strip mining;

(4) "commerce" means trade, traffic, commerce, transportation, or communication between any State, the Commonwealth of Puerto Rico, the District of Columbia, or any territory or possession of the United States and any other place outside the respective boundaries thereof, or wholly within the District of Columbia or any territory or possession of the United States, or between points in the same States, if passing through any point outside the boundaries thereof;

(5) "surface mine" means (A) any area of land from which minerals are extracted from their natural deposits by strip mining, (B) private and public ways and roads appurtenant to such area, and (C) lands, excavations, workings, refuse banks, dumps, spoil banks, structures, facilities, equipment, machines, tools, or other property on the surface, resulting from, or used in, extracting minerals from their natural deposits by strip mining methods or the onsite processing of such minerals;

(6) "Administrator" means the Administrator of the Environmental Protection Agency;

(7) "Secretary" means the Secretary of the Interior;

(8) "strip mining" includes auger mining; and

(9) "State" means a State of the United States, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, Guam, and the District of Columbia.

TITLE I—FEDERAL ENVIRONMENTAL REGULATIONS FOR SURFACE MINING OPERATIONS

EFFECTIVE DATE

SEC. 101. (a) On and after the effective date of this subsection, no person shall engage in or carry out any action involving the extraction of minerals from a surface mine subject to the provisions of this Act by strip mining methods, unless such person has first obtained a permit from the Secretary in accordance with the provisions of this Act.

(b) On and after the effective date of this subsection, each surface mine, the products of which enter commerce or the operations of which affect commerce, shall be subject to the provisions of this Act.

(c) In furtherance of the policy of this Act, the Secretary shall, whenever he determines that it would effectuate the purposes of this Act, cooperate and consult with appropriate Federal and State agencies.

MANDATORY STANDARDS

SEC. 102. (a) Within ninety days following the date of the enactment of this Act, the Secretary, in consultation with the Administrator and the Secretary of Agriculture,

shall, in accordance with the procedures set forth in this section, develop, promulgate, and revise as may be appropriate, mandatory standards covering mining operations subject to this Act, including reclamation programs in connection therewith, except that such standards and revisions shall not become effective until approved by the Administrator. Such standards shall insure, among other things, that the mining operation in connection with any surface mine subject to this Act (1) will not result in a violation of applicable water or air quality standards, (2) will control or prevent erosion, flooding, and pollution of water, release of toxic substances, accidental subsidence of mined areas or land or rock slides, damage to fish or wildlife or their habitat, or public or private property, waste of mineral resources, and hazards to public health and safety, and (3) will prevent air pollution by dust or burning refuse piles or otherwise.

(b) In the development of such standards, the Secretary shall consult with other interested Federal agencies, representatives of State agencies, appropriate representatives of mining operators and miners, other interested persons and organizations.

(c) Such standards shall be based upon criteria developed on the basis of research, demonstrations, experiments, and such other information as may be appropriate.

(d) Such standards shall not become effective unless

the Secretary has first published such standards in the Federal Register and afforded interested persons a period of not less than thirty days after publication to submit written data or comments. Except as provided in subsection (e) of this section, the Secretary shall, upon the expiration of such period and after consideration of all relevant matter presented, promulgate such standards with such modifications as he may deem appropriate.

(e) On or before the last day of any period fixed for the submission of written data or comments under subsection (d) of this section, any interested person may file with the Secretary written objections to a proposed standard, stating the grounds therefor and requesting a public hearing by the Secretary on such objections. As soon as practicable after the period for filing such objections has expired, the Secretary shall publish in the Federal Register a notice specifying the proposed standards to which objections have been filed and a hearing requested, and shall review such standards and objections in accordance with subsection (f) of this section.

(f) Promptly after and such notice is published in the Federal Register by the Secretary under subsection (e) of this section, the Secretary shall issue notice of and hold a public hearing for the purpose of receiving relevant evidence. Within sixty days after completion of the hearing,

the Secretary shall issue a report setting forth his findings of fact and views on such objections and shall make such report public. Thereafter the Secretary may promulgate such standards with such modifications, or take such other action, as he deems appropriate. Any such standard so promulgated shall be effective upon publication in the Federal Register.

(g) The Secretary may establish special standards governing the method of mining subject to this Act on steep slopes.

APPLICATIONS FOR PERMITS

SEC. 103. (a) Each application for a permit under this title shall be made in writing to the Secretary, upon forms prepared and furnished by him. The application, in addition to such other information as may be required by any Federal regulation issued pursuant to this Act, shall contain:

(1) the name and address of the applicant;

(2) a description of the land upon which the applicant proposes to engage in strip mining operations, stating the name of the State, county, township, and municipal corporation, if any, in which such land is located; the location of its boundaries; and any further description so that the lands may be located and distinguished from other lands with certain sufficiency;

(3) an estimate of the number of acres of land involved;

(4) the name and address of the owner of the land upon which the applicant proposes to engage in strip mining;

(5) the written consent of the owner of the surface of the land upon which the applicant proposes to engage in strip mining to enter upon such land by the applicant or his agents and any officer, employee, or agent of the Federal Government within a period of five years after the operation is completed or abandoned for the purpose of inspection and reclamation;

(6) a statement of whether any strip mining permits are now held by the applicant and the numbers of the permits;

(7) a statement of whether the applicant, any subsidiary affiliate, or persons controlled by or under common control with the applicant has ever held a strip mining license or permit issued by any State which has been suspended or revoked or has ever had a strip mining bond or security deposited in lieu of bond forfeited; and

(8) a complete plan of reclamation for the area of land to be affected, including, but not limited to, the method of strip mining, engineering technique, the character and description of the equipment, prevention of harmful surface water drainage, prevention of water

accumulation in the pit, backfilling, grading, resoiling, revegetation, a time schedule for completion of each of the phases, and an estimate of the cost of reclamation per acre.

(b) The application for a permit under this section shall be accompanied by a fee in such amount as shall be prescribed by Federal regulations issued pursuant to this Act.

APPROVAL OF APPLICATIONS

SEC. 104. (a) Upon the filing of an application in accordance with section 103 of this title, the Secretary shall investigate and may approve or disapprove the application. No permit application shall be approved if the Secretary finds on the basis of the information set forth in the application or from information available to him and made available to the applicant that the requirements of this Act, or standards, rules and regulations adopted thereunder, will not be observed, or that there is no probable cause to believe that the reclamation of the area of affected land can be achieved.

(b) No permit application shall be approved unless the plan of operation and reclamation required under section 103 (a) (8) of this title is approved. The Secretary may approve a reclamation plan that complies with the requirements of this Act, and standards, rules and regulations issued pursuant thereto. Nothing in this Act shall be construed as prohibiting the Secretary from approving any

reclamation plan which provides for the retention of certain access roads.

(c) The Secretary shall notify the applicant by registered mail within thirty days after the receipt of the complete application whether the application has been approved. If the Secretary fails to notify the applicant within the prescribed period, the applicant may request in writing a hearing before the Secretary. The hearing shall be held within thirty days after receipt of the request.

(d) If the application is approved, the Secretary shall determine the amount of bond per acre that the operator shall furnish before a permit is issued. The amount of bond shall be stated in the notice of approval sent to the applicant.

(e) If the application is not approved, the Secretary shall state the reasons for its disapproval and may propose modifications, delete areas, or reject it entirely. If the applicant disagrees with the decision of the Secretary, he may request in writing a hearing before the Secretary. The Secretary shall hold the hearing within thirty days after receipt of the request.

BONDING REQUIREMENTS

SEC. 105. (a) After a permit application has been approved, but before a permit is issued, the applicant shall file with the Secretary the bond for performance, on a form prescribed and furnished by the Secretary, payable to the

Secretary and conditioned that the operator shall faithfully perform all the applicable requirements of this Act and standards, rules and regulations issued pursuant thereto. The amount of the bond required for each permit shall depend upon the reclamation requirements, and shall be determined by the Secretary as provided in section 104 of this title. Liability under the bond shall be for the duration of strip mining at the operation and for a period of five years thereafter, unless released sooner as provided in section 110 of this title. The bond shall be executed by the operator and a corporate surety licensed to do business in the State where such operation is located; except that the operator may elect to deposit cash, negotiable bonds of the United States Government or such State, or bonds of the United States Government or such State, or negotiable certificates of deposit having a par value equal to or greater than the amount of the surety bond and issued by any bank organized or transacting business in the United States.

(b) Cash or securities so deposited shall be deposited upon the same terms as the terms upon which surety bonds may be deposited. If one or more negotiable certificates of deposit are deposited with the Secretary in lieu of the surety bond, he shall require the bank which issued any certificate to pledge securities of the aggregate market value equal to the amount of such certificate or certificates, which is in

excess of the amount insured by the Federal Deposit Insurance Corporation. Such securities shall be security for the repayment of such negotiable certificate of deposit.

(c) Upon the receipt of the deposit of cash or securities, the Secretary shall immediately place the deposit with the Secretary of the Treasury, who shall receive and hold the deposit in safekeeping in the name of the United States, in trust for the purpose for which the deposit was made. The operator making the deposit may from time to time demand and receive from the Secretary of the Treasury, on the written order of the Secretary of the Interior, the whole or any portion of the deposit if other acceptable securities of at least the same value are deposited in lieu thereof. The operator may demand of the Secretary of the Treasury and receive the interest and income from the securities as they become due and payable. When deposited securities mature or are called, the operator may request that the Secretary of the Treasury convert the securities into other acceptable securities, and the Secretary of the Treasury shall do so.

(d) After the permit application has been approved, and the bond or deposit filed, the Secretary shall issue a permit to the applicant.

(e) Any permit issued pursuant to this title prior to the effective date of section 101 (a) of this Act shall be valid for a period of one year following such effective date. Any per-

70-867 O - 72 - pt. 1 - 9

mit issued on or after such effective date shall be valid for a period of one year from its date of issue.

PERMIT RENEWALS

SEC. 106. (a) Any holder of a strip mining permit who wishes to continue the operation beyond the original permit period shall apply to renew his permit within sixty days prior to the anniversary date of the permit issuance. An additional fee in an amount provided for by regulations issued pursuant to this Act shall be filed with such application.

(b) The Secretary shall renew the permit if the operation is in compliance with this Act and standards and rules and regulations issued pursuant thereto. The Secretary shall notify the applicant whether the permit has been approved within thirty days after the application for renewal has been filed. If the Secretary fails to so notify, the applicant may request in writing a hearing before the Secretary. The hearing shall be held within twenty days after the receipt of the request.

REVOCATION OF PERMITS

SEC. 107. The Secretary may revoke any permit if, after a hearing, he determines that the operator has violated any provision of this Act or any standard or rule or regulation issued pursuant to this Act.

RECLAMATION

SEC. 108. (a) Every applicant shall reclaim the land affected by his strip mining in accordance with his plan submit-

ted pursuant to section 103 (a) ~~(109)~~ of this title, and standards, rules and regulations issued pursuant to this Act.

(b) The purpose of this section is to restore the area of land affected to at least the same use as the land had before the mining. Any method of reclamation other than provided in this section may be proposed to the Secretary and shall be used only if he so approves. The Secretary may approve an alternative plan if the plan does not violate the purpose of this section.

REPORTS

SEC. 109. On or before the expiration of each ninety day period following the effective date of section 101 (a) of this title, the operator of a strip mining operation shall file a report with the Secretary on a form provided by the Secretary that accurately states the number and location of acres of land mining, and the number and location of acres of land reclaimed. An annual report with the same type of information shall be filed with the Secretary not later than the first day of February of each year for the previous year.

RELEASE OF BONDS

SEC. 110. (a) When the planting of an area of land affected is completed and the first growing season has or is almost terminated, the permittee may file a request, on a form provided by the Secretary, for the release of bond. The request shall state—

(1) the location of the area and number of acres;

(2) the permit number;

(3) the amount of bond; and

(4) the type and date of planting of vegetative cover and the degree of success of growth.

(b) Within twenty days following any such request, the Secretary shall provide for an inspection and evaluation of the reclamation of the area affected by such request. The individual making such inspection and evaluation shall report his findings and recommendations to the Secretary. If the Secretary finds that the reclamation meets the requirements of this Act he shall send by registered mail to the permittee a release of the bond or other security covering the area of reclaimed land. He shall also at the same time send a copy of the release to the Secretary of the Treasury. Upon presentation of the release to the Secretary of the Treasury by the permittee to whom it was issued, the Secretary of the Treasury shall deliver to the permitee or his authorized agent the amount of bond or other security.

(c) If the Secretary does not approve the reclamation performed by the permittee, the Secretary shall notify the permittee by registered mail within twenty days after the request is filed. The notice shall state the reasons for unacceptability and shall recommend actions to remedy the failure.

(d) No bond shall be released until the provisions of this section are met.

PENAL PROVISIONS

SEC. 111. (a) Whoever knowingly violates any provision of this title, or any standard or regulation issued pursuant thereto, shall, upon conviction, be punished by a fine of not more than $, or by imprisonment for not more than years, or by both.

(b) Whenever a corporation or other entity violates any such provision, standard, or regulation, any director, officer, or agent of such corporation or entity who authorized, ordered, or carried out such violation, shall be subject to the same fines and imprisonment as provided for under subsection (a) of this section.

TITLE II—STATE ENVIRONMENTAL REGULATIONS FOR SURFACE MINING OPERATIONS

STATE ENVIRONMENTAL REGULATIONS FOR SURFACE MINING OPERATIONS

SEC. 201. (a) Each State may submit to the Secretary for review and approval or disapproval in accordance with this title, State environmental regulations for mining operations involving the extraction of minerals from a surface mine by strip mining methods on all lands within such State. A State may at any time thereafter submit revisions to such regulations to the Secretary for review and approval or dis-

approval in accordance with this title. The Secretary shall approve the regulations or revision of such regulations submitted to him if in his judgment—

(1) the regulations require that each operator of a surface mine obtain a permit from a State agency established to administer the regulations, and file a mine reclamation plan comparable to that required under section 103 (a) (8) of title I of this Act describing the manner in which his reclamation activity will be conducted and showing that such activity will be conducted in a manner consistent with the regulations;

(2) the regulations contain requirements designed to insure that the mining operation in connection with such surface mine (A) will not result in a violation of applicable water or air quality standards, (B) will control or prevent erosion, flooding, and pollution of water, release of toxic substances, accidental subsidence of mined areas or land or rock slides, damage to fish or wildlife or their habitat, or public or private property, waste of mineral resources, and hazards to public health and safety, (C) will prevent air pollution by dust or burning refuse piles or otherwise, and (D) will insure the maintenance of access through mined areas;

(3) the regulations require reclamation of mined areas of surface mines by revegetation, replacement of

soil, or other means; that a reclamation plan be prepared and approved in advance of initiation or continuance of mining operations, and that reclamation work be made an integral part of the mining operation and be completed within reasonably prescribed time limits;

(4) the regulations require posting of performance bonds in amounts at all times sufficient to insure the reclamation of mined areas in the event that the regulations are not complied with or that reclamation is not completed in accordance with the reclamation plan;

(5) the regulations provide for filing, updating, and permanent retention of engineering maps of all active surface mining operations and of all inactive surface mining operations for which engineering or other maps are available;

(6) the regulations provide that regular reports will be made to the Secretary concerning the progress made by the State in carrying out the purposes of this title;

(7) the regulations require regular monitoring by the State agency of environmental changes in mined areas to assess the effectiveness of the environmental regulations for surface mining operations;

(8) the regulations designate a single agency upon which the responsibility for administering and enforcing

the regulations is conferred by the State and which will insure the full participation of those agencies responsible for air quality, land reclamation, water quality, and other areas of environmental protection;

(9) the State agency responsible for the administration and enforcement of the regulations has vested in it the regulatory and other authorities necessary to carry out the purposes of this title, including, but not limited to, authority to prohibit surface mining operations where the area affected cannot be adequately reclaimed, to order cessation of such mining operations, to revoke permits for failure to comply with the terms of the permits or of the provisions of the regulations or laws under which permits are issued, and to bring or request the bringing of civil and criminal actions for violation of applicable laws and regulations;

(10) the regulations were developed with full participation of all interested Federal departments and agencies, State agencies, local governments, and other interested bodies and groups;

(11) the regulations provide for regular review and updating, and for public notice and an opportunity for public participation in their revision;

(12) funding and manpower are or will be committed to the administration and enforcement of the

regulations sufficient to carry out the purposes of this title;

(13) the regulations are authorized by law and will become effective no later than sixty days after approval by the Secretary and the Administrator;

(14) training programs will be established, as necessary, for persons engaged in surface mining operations and in enforcement of environmental regulations; and

(15) the regulations are compatible to the maximum extent practicable with approved regulations of adjacent States.

(b) The criteria set forth in subsection (a) of this section shall be further elaborated by the Secretary through guidelines sufficient to prevent or substantially reduce the adverse effects to the environment from strip mining. In establishing such guidelines, the Secretary may take into account (1) the most effective and economically efficient means of meeting the requirements of section 201 (a) (2) of this title, (2) the differences between the various States and regions, and (3) the effectiveness and experience gained under State and Federal mining reclamation regulations. Such guidelines shall be issued within sixty days after the date of the enactment of this Act and revised periodically as shall be necessary to carry out the purpose of this subsection and the other provisions of this Act. Such guidelines and

revisions shall not become effective until they have been approved by the Administrator.

(c) The Secretary shall not approve regulations submitted by a State pursuant to this section until he has solicited the views of Federal agencies principally interested in such regulations. In case of serious disagreement between any Federal agency and the State in the development of the regulations the Secretary shall seek to mediate the differences. The Secretary shall approve or reject the State regulations within one hundred and eighty days after such regulations are filed. If no action is taken by the Secretary within the allotted time it shall be presumed, as a matter of law, that the State regulations are approved.

(d) Following the approval by the Secretary of the regulations submitted by any State pursuant to this title, and during the period that such regulations are in effect, the provisions of title I of this Act shall not be applicable within such State with respect to the operation of any surface mine therein involved in the extraction of minerals by strip mining methods; except that such approval shall not affect any civil or criminal action commenced prior to such approval.

(e) If the Secretary approves the regulations or revision thereof submitted to him by a State for approval, he shall conduct a continuing review and evaluation of the effec-

tiveness of the regulations and the administration and enforcement thereof. As a result of the evaluation and review the Secretary may determine that—

(1) the State has failed to enforce the regulations adequately;

(2) the State's regulations require revision as a result of experience or the guidelines issued by the Secretary pursuant to section 201 (b) ;

(3) the State has otherwise failed to comply with the purpose of this Act to prevent or substantially reduce the adverse effects to the environment from strip mining.

Upon making such determination, the Secretary shall notify the State and suggest appropriate action, remedies, or revisions to the regulations affording the State an opportunity for a hearing. If within a reasonable time, as determined by the Secretary, the State has not taken appropriate action as determined by the Secretary, he shall withdraw his approval of the regulations and, effective on the date of publication in the Federal Register of notice of such withdrawal, the provisions of title I of this Act shall be applicable within such State to surface mining operations involving the extraction of minerals by strip mining methods.

(f) Notwithstanding any other provision of this title, the Secretary shall not approve any regulations or revisions

thereof submitted by any State pursuant to this title, unless such regulations or revisions have been approved by the Administrator.

TITLE III—MISCELLANEOUS

CIVIL ACTIONS

SEC. 301. (a) Any person may commence a civil action on his own behalf—

(1) against the United States or any State, or any agency or other instrumentality thereof, or persons, to the extent permitted by the eleventh amendment to the Constitution, in connection with the violation of any provision of this Act, or any standard or regulation issued by the Secretary or any State pursuant thereto; any order issued by or through the Secretary or by any State in accordance with or pursuant to the authority contained in this Act; or any standard or regulation issued by the Secretary of any State pursuant thereto; or

(2) against the Secretary where there is an alleged failure of the Secretary to perform any act or duty under this Act which is not discretionary with the Secretary.

(b) The United States district courts shall have jurisdiction, without regard to the amount in controversy or the citizenship of the parties, to enforce such provisions, standards, regulations, or orders, or to require the Secretary to perform such act or duty, as the case may be.

(c) Nothing in this section shall restrict any right which any person (or class or persons) may have under any statute or the common law to seek enforcement of the provisions of this Act, or any standard or regulation established or promulgated pursuant thereto, including relief against the Secretary or any State agency.

(d) The Secretary shall request the Attorney General to appear and represent the Secretary in any civil action instituted under this Act to which the Secretary is a party. Unless the Attorney General, within a reasonable time, notifies the Secretary that he will appear and represent the Secretary in such action, attorneys appointed by the Secretary shall appear and represent him.

INJUNCTIVE RELIEF

SEC. 302. During the period commencing with the date of the enactment of this Act and ending upon the expiration of the 120-day period following such date of enactment, the Attorney General, at the request of the Secretary, may institute a civil action in a United States district court for an injunction or other appropriate order to prevent any operator of a surface mine subject to this Act from engaging in mining operations which would result in immediate and irreparable damage to the environment. The United States district court for the district in which such operator resides or is doing business shall have jurisdiction to issue such injunction or order.

RECLAMATION FUND

SEC. 303. (a) There is hereby created in the Department of the Treasury a fund to be known as the Strip Mining Land Restoration Fund (hereinafter referred to as the "fund"). Any fee or fine which has been collected pursuant to title I, and any bond or deposit which has been forfeited under title I, shall be deposited in the fund.

(b) Moneys in the fund may be expended by the Secretary for the purposes authorized under this section.

(c) The Secretary may acquire by purchase, donation, or otherwise, land, or any interest therein, which has been affected by strip mining and has not been reclaimed. Title to all lands acquired shall be taken in the name of the United States, but no deed shall be accepted or purchase price paid until the title thereof has been approved by the Attorney General.

(d) The Secretary shall prepare plans and specifications for the reclamation of lands acquired pursuant to this section. In preparing a plan of reclamation, the Secretary may call to his assistance, temporarily, any engineers or other employees in any Federal department or agency. The engineers and employees shall not receive any additional compensation other than that which they receive from such departments or agencies by which they are employed, but they shall be reimbursed for their actual and necessary expenses incurred while working under the direction of the Secretary.

(e) The Secretary shall reclaim the lands, according to the prepared plans, as moneys become available in the fund.

(f) The Secretary may use moneys from the fund for the engineering, administrative, and research costs necessary for reclamation of the lands.

(g) If there is money in the fund because of forfeiture of the surety bond or other securities deposited by an applicant in connection with any lands involved in a mining operation subject to this Act and such lands are not reclaimed by him as required by title I of this Act, the Secretary shall first use such money for reclamation of the land covered by the forfeited bond or deposit.

RESEARCH

SEC. 304. The Secretary is authorized to conduct or promote research, or training programs to carry out the purposes of this Act. In so doing, the Secretary may enter into contracts with institutions, agencies, organizations, or individuals and make grants to nonprofit organizations and collect and make available information resulting therefrom.

GRANTS

SEC. 305. (a) The Secretary is authorized to make a grant to any State for the purpose of assisting such State in developing, administering, and enforcing environmental regulations under title II of this Act.

(b) The Secretary is authorized to cooperate with and

provide nonfinancial assistance to any State for the purpose of assisting it in the administration and enforcement of its regulations under title II of this Act. Such cooperation and assistance may include:

(1) technical assistance and training, including provision of necessary curricular and instructional materials, in the administration and enforcement of the State regulations or program; or

(2) assistance in preparing and maintaining a continuing inventory of surface mining operations and surface mined areas in such State for the purposes of evaluating the effectiveness of its environmental regulations for surface mining operations and identifying current and future needs of the State's activities under this Act.

SEC. 306. In extending technical assistance to States under section 305 and in the enforcement of regulations issued by the Secretary or any State concerning matters relating to the reclamation of areas affected by surface mining, the Secretary may utilize the services of other Federal departments and agencies and may transfer funds to the appropriate departments or agencies to cover the cost thereof.

RULES AND REGULATIONS

SEC. 307. The Secretary, in consultation with Administrator and the Secretary of Agriculture, is authorized to

issue such rules and regulations as he deems appropriate to carry out the provisions of this Act.

EFFECTIVE DATES

SEC. 308. Subsections (a) and (b) of section 101, and section 113 of this Act shall take effect upon the expiration of the one hundred and eighty-day period following the date of its enactment. All other provisions of this Act shall take effect upon the date of its enactment.

AUTHORIZATION

SEC. 309. There are authorized to be appropriated such sums as may be necessary to carry out the provisions of this Act.

70-867 O - 72 - pt. 1 - 10

Senator Moss. The Department of Interior has made recommendations for certain bills and consequently on others have recommended they not pass.

In an effort to correct a clerical error and oversight in the printing of S. 2455, there was a new bill in the nature of a substitute introduced and it has a clerical error in it which we will correct for the record.

In S. 2455, as originally printed, page 13, line 1, the figure 10 that is in parentheses should be "8" in parentheses. So strike the 10 and put 8 in there, otherwise the printing is correct.

As I indicated we have many very important witnesses and we have requested today in this hearing that witnesses who have lengthy statements place the entire statement in the record and summarize down to approximately 10 minutes of oral presentation. If we do this we will be able to complete the number on the list for each of these 2 days.

This is a busy time in the Senate and we are likely to have interruptions during the day with roll call votes. When we do that we simply have to recess for 10 or 15 minutes while the Senators go and vote and then come back and resume, which of course stretches out the time.

Our first witness today is going to be Hon. Russell Train, chairman of the Council on Environmental Quality. Judge Train is probably the foremost spokesman in this Nation today on environmental quality. We have asked him to testify first because of that fact but also because he has pressure of an airplane schedule and getting to Boston and my colleague, Senator Nelson, has graciously relinquished and urged that Judge Train be heard first. So we will hear from Mr. Train.

STATEMENT OF HON. RUSSELL E. TRAIN, CHAIRMAN, COUNCIL ON ENVIRONMENTAL QUALITY

Mr. Train. Thank you, Mr. Chairman. Let me express first of all my very real appreciation for your courtesy in scheduling this early hour and for putting me on first to permit me to keep my other commitments and also let me express my appreciation to distinguished Members of the Senate and House of Representatives who have also cooperated in permitting us to keep this schedule.

Mr. Chairman, I appreciate the opportunity to appear before you on behalf of the Council on Environmental Quality to discuss the subject of controlling the environmental effects of mining. The attention recently focused on the environmental effects of mining has evoked not only a public demand that something be done, but also an unusually broad range of suggestions about what in fact should be done.

The administration's proposed Mined Area Protection Act of 1971 (S. 993, S. 1176) makes a comprehensive attack on the adverse environmental effects of both surface and underground mining. It would give each State a 2-year opportunity to develop effective regulations, pursuant to Federal guidelines, for the environmental aspects of mining activities. It thus recognizes the initial responsibility of the States in this area, but it also establishes nationwide criteria to guide the States and to assure that the mining industry is placed on an equal footing in each State. If a State fails to develop an acceptable regula-

tory program, or fails to enforce its regulations, the bill calls for the Secretary of the Interior to promulgate and enforce regulations for both surface and underground mining within the State.

I believe it is urgent that we begin now a coordinated, nationwide effort to ensure that mining operations are compatible with a long-range concern for the environmental quality of our land. For reasons that I will explain, the council believes that, of the bills before you, the administration's proposal is best designed to institute that effort.

Protection of our land involves the control of a great number of interrelated activities. For this reason the keystone of the President's 1971 environmental program in the land use area, the proposed National Land Use Policy Act of 1971, is an effort to develop at the State level the governmental machinery to control the use of the most important land areas.

That proposal, on which we are looking for action from your full committee, would encourage the States to anticipate and channel the uses of critical areas, lands around key public facilities, large-scale developments, and developments of regional benefit. However, even with this institutional improvement, there will still be a need to deal directly with specific important land use problems.

The President's program contains four major proposals to deal with such problems: A legacy of parks program to increase the availability of recreational open space, particularly in and near the cities where most of our population lives; a group of proposals to preserve historic buildings and to facilitate restoration of other worthwhile older structures; a Power Plant Siting Act to require advance planning of power facility sites in order to reconcile power needs with prevention of environmental harm; and the Mined Area Protection Act, which would control the environmental effects of surface and underground mining. Together, these proposals would help to bring more rationality in the way we use our land.

The broad environmental problems caused by mining operations cover a broad spectrum of environmental damage. Surface mining, without adequate restoration, has left millions of acres of our land scarred and unstable. The legacy of underground mining is undermined land—not only in the sparsely populated countryside but also in over 200 urban areas—whose use is limited by the danger of subsidence. Underground mine fires and burning coal waste piles contribute to air pollution, endanger health and safety, destroy valuable coal reserves, and impair wildlife habitat. Silt and acid mine drainage from surface and underground mining damage streams and lakes, killing fish and wildlife and impairing recreational values. And most important are the human consequences of all this damage—destroyed landscapes, social environments that depopulate the countryside, depressed employment and investment opportunities, and unacceptable hazards to public health and safety. When the newspapers report homes being crushed by landslides, environmental damage has become personal tragedy.

The amount of damage already done is unacceptable—and provides the strongest argument for acting now to stop the growth of the backlog of land needing treatment. The land undermined by underground mining alone probably exceeds 7 million acres—with 2 million acres

already suffering some subsidence and another two-thirds of a million acres expected to subside by the year 2000. The Bureau of Mines estimates that new underground mining will affect 4 million more acres of land in the meantime. Our actions now can prevent those 4 million acres from becoming a burden on future generations.

The spread of surface mining is more spectacular. Advances in technology have enabled surface mining to increase its share of total coal output in the United States from virtually zero early in this century to nearly 30 percent 10 years ago and over 40 percent in 1970. By some estimates, it may exceed 50 percent this year. Coal is being stripped from the earth at an accelerating rate by ever more mammoth equipment—such as a giant power shovel known as "Big Muskie," said to be the world's largest and able to take 220 cubic yards of earth in a single bite. Mounting energy needs will provide a continued impetus for such strip mining by mechanical monsters. And vast deposits of strippable coal—including desirable low-sulfur coal—in the West assure that the environmental effects of surface coal mining will be a national, not merely an eastern problem. Further, the possible development of our oil shale reserves would involve substantial amounts of surface and underground mining in several western States where there is little such activity now.

Although coal mining is the most dramatic example, surface and underground mining for other minerals has similar environmental consequences. The Department of the Interior has estimated that the land potentially affected by all mining may increase from 10 million acres in 1965 to over 20 million acres by the year 2000.

I believe the need for Federal action to deal with these problems is clear, recognizing the primary interest of the States in protecting lands within their borders. Considered together, the extractive industries are virtually nationwide. Many of their environmental effects cross State lines. Acid mine drainage and sediments from eroded soils add significantly to the pollution of our interstate waters. Most important, mineral products compete on national markets where differing State regulatory schemes can result in crippling cost disadvantages.

About 28 States have adopted some form of regulation of the environmental aspects of mining. But in many cases these regulations cover only a few minerals, and most cover only surface mining, not underground. Enforcement has been uncertain and has varied from State to State. The specter of competitive disadvantage that has chilled State initiative can only be removed by strong Federal leadership to assure that adequate action will be taken everywhere.

The administration's proposed Mined Area Protection Act of 1971 deals with the whole of the environmental challenge from mining. It would regulate the environmental effects of both surface and underground mines. And it would extend not only to coal but to other minerals as well. Several of the bills before you have a more narrow focus:

S. 77 would authorize Federal regulation of surface mining only. The regulations would be issued jointly by the Secretaries of Agriculture and Interior, with authority for the States to take over if they developed effective programs. S. 77 would also authorize Federal payment of up to 75 percent of the costs of rehabilitating lands previously damaged by strip mining.

S. 630, which I discuss below, would encourage State regulation of surface mining only, with backup Federal authority in case a State failed to act.

S. 1160 would not regulate future mining, but would authorize Federal grants to the States to reclaim mined lands. It would expand the scope of a similar program now limited to the Appalachian region.

S. 1240 is directed to the specific problem of the use of heavy equipment in prospecting on the public lands. It would authorize the Secretary of the Interior to control this practice.

S. 1498 would prohibit the opening of any new, inactive, or abandoned surface coal mine. It would also direct the Administrator of the Environmental Protection Agency to regulate the environmental effects of existing surface coal mines and to approve State plans for regulating underground coal mines.

S. 2455 would authorize Federal regulation of surface mining only. The regulations would be prescribed by the Secretary of the Interior, subject to the approval of the Administrator of the Environmental Protection Agency. Again, the States would be authorized to take over if they developed effective programs.

These more narrowly focused proposals do not adequately take account of the interrelationships between different mining activities. In particular, foreclosing surface coal mining would mean more reliance on other forms of mining which have not at all been proven to be less damaging to human values. Congress is familiar with the serious health and safety problems of underground mining, which can be reduced but not eliminated by strong Government regulation. And the environmental consequences of underground mining, such as subsidence and acid mine drainage, can be very serious without adequate controls. In light of the cost advantages of surface mining, it may prove cheaper in human and economic terms to require surface miners to be environmentally responsible than to rely solely on underground mining. Unless we can prove that either form of mining has an overall superiority to the other, we must require that each be conducted consistently with our environmental goals.

There has been previous recognition of the need for a Federal role and the appropriateness of a cooperative Federal-State program. The previous administration proposed in the 90th Congress a bill entitled the "Surface Mining Reclamation Act of 1968" (S. 3132). Based on a thorough Interior Department study, it paralleled our bill in authorizing Federal assistance to the States for the establishment of regulatory programs, with backup Federal regulation if a State failed to take appropriate action. That earlier proposal has been reintroduced as S. 630 and is before you now. In at least four respects, we believe the proposal we have submitted is superior to it:

First, the earlier proposal covered only surface mining, neglecting the environmental effects of underground mining.

Second, our proposal contains improved criteria for State programs—emphasizing the need for attention to environmental concerns from the very beginning of mining operations as well as after-the-fact reclamation—and it authorizes the Secretary of the Interior to issue further guidelines elaborating these criteria. An example of this improvement is the provision in S. 993 requiring that the responsible State agency have authority "to prohibit mining operations where the

area affected cannot be adequately reclaimed." (Sec. 201 (a)(9).) I note that S. 2455 contains very similar criteria, applicable only to surface mining.

Third, our proposal recognizes the extra costs of starting up a State program by authorizing 80 percent Federal financing of first-year costs, with assistance on a declining scale thereafter.

Fourth, our proposal expressly authorizes and requires all Federal agencies to issue, for land within their jurisdiction, mining regulations at least as strict as the regulations issued under an approved State program for the State in which the land is located.

This comprehensive attack on the environmental effects of mining is not a punitive measure, and will not cut off the supply of minerals on which our society depends. Rather, it will effectuate the principle enunciated in the President's second state of the Union address, that "to the extent possible, the price of goods should be made to include the costs of producing and disposing of them without damage to the environment." The costs of preventing environmental damage from mining are real costs of our use of minerals. To require, through regulation, that mining bear these costs is, as the President said, "not to abandon growth, but to redirect it."

The price of not acting is to watch the continued destruction of our land, water, and air by mining operations. Each day that effective regulation is delayed, mining scars an additional 750 acres of land—adding to the Nation's backlog of unreclaimed land. This means that since the President transmitted this proposal in his Environmental Message of February 8, 210,000 acres of land have been affected by mining, an area five times the size of the District of Columbia. The pace is accelerating. We cannot afford to delay any longer.

That concludes my prepared statement, Mr. Chairman.

Senator Moss. Thank you very much, Mr. Train, for a very good statement. Is the administration bill concerned with the acres that are already damaged, or is it simply prospective in application?

Mr. Train. The administration bill, Mr. Chairman, only deals with prospective regulations of strip mining. We believe this is the critical need at the present time and this is where we should put our priority for action at this time. It does not deal with what I have described as the backlog of affected lands that involves another whole range of problems that I could go into, if you wish.

Senator Moss. Yes.

The administration bill grants the States 2 more years in which to act on regulations. I understand about 28 States already adopted some sort of surface mining legislation. Do you think that because of the urgency of the problem that maybe 2 years is too long a time to give the additional States time to move?

Mr. Train. I don't think that the 2 years represents a judgment as to the urgency or nonurgency of the problem but it represents a recognition of the realistic ability of the States to legislate in view of the schedules of the meetings of their legislatures. I think that 2 years represents probably the essential minimum for that action across the board.

I think that obviously we would be urging prompt State action, just as rapidly as possible and where adjustments can be made simply

by regulation, then every encouragement should be given to the States to do so.

One of our concerns, if I might say, about S. 2455, which would institute Federal regulation immediately as I recall, and then where the States develop adequate State systems, the Federal regulations would be withdrawn at the end of the 2-year period. One of our concerns about that is, as you point out, some 28 States do have regulatory systems at the present time. Few if any are completely adequate in our view, but they do have systems. They should build on those systems, in our view, until, in a sense, instituted Federal regulations with the effective date of action by Congress would wipe all of that off the books in a sense, institute a Federal system which would then revert back to State control after a period of time under the concept of that bill.

I suspect this might involve considerable disruption and perhaps unnecessary disruption in the orderly development of State programs.

Senator Moss. One of the problems with leaving it wholly to States is that to some degree States are competitive in seeking industry and, therefore, they have some motivation to be little more lax in regulation of industry because more would be attracted to their State than the neighboring States.

I am wondering whether giving them the extra 2 years might increase this backlog of unclaimed lands you are talking about before the Federal action would be mandatory.

Mr. TRAIN. There is no question that it would have some effect in that direction. I repeat, I think it is important to create every possible incentive for prompt State action to minimize that problem.

Mr. Moss. How good has the enforcement been of these State laws that are on the books? Has it been spotty or rather effective?

Mr. TRAIN. I feel sure the Department of the Interior witnesses could address themselves with more experience to that question, Mr. Chairman. My understanding is that the enforcement has been very varied and very spotty, and, of course, this is a major portion of the problem, and this is the reason why our legislation would not permit States simply to put a legislation system on the books and thereby avoid real regulation. It would have to, in fact, have an effective enforcement system in practice, otherwise the Federal Government would step in. So enforcement is a key element in the whole picture.

Senator Moss. Does the administration have now in the planning stage some way of attacking this backlog and getting it cleaned up? What are we going to do about that?

Mr. TRAIN. I believe from the studies that have been underway in the Department of the Interior, and I cannot tell you the exact status of those, Mr. Chairman.

Senator Moss. There is a vast problem in the number of acres you have cited that have been disturbed and have not been placed in an acceptable condition. They remain disturbed.

Mr. TRAIN. There is absolutely no question about that. There are many very undesirable situations of that type around the country. One of the problems, of course, is that title is often shifted in these lands. The owner who did the mining may well not any longer be holding title to the land. Questions of who should bear the expense

of the reclamation. If land is reclaimed, who should properly benefit and whether a new owner should simply be the beneficiary of what could be a windfall in terms of the reclamation of his land at public expense. There are a number of questions of this sort. I'm not pretending at this point to present judgment but simply to mention, to indicate the range of questions that are involved.

Senator Moss. Well, thank you very much. We had a slide presentation here in the committee just a week or so ago of what they are doing in Germany on restoring the land in open-pit cuts for low-grade coal. I know we do similar things in various places in this country, but I thought it was a particularly good demonstration of what can be done to utilize the energy resources and to place the land back in at least as good a condition and in some instances in better condition than existed before it was disturbed.

Well, I don't know whether my colleague, Senator Hansen, who wasn't able to hear all of your statement, has any questions or remarks, but I will ask him.

Senator HANSEN. Thank you very much, Mr. Chairman. I am sorry indeed I was not privileged to be here to hear all of Mr. Train's testimony. I can assure you I will read it with great interest. I do have a statement that I would like to ask be included in the record. I see no purpose being served in taking the committee's time for me to read it. If I may without objection, I would like to ask it be inserted in the record.

Senator Moss. It will be placed in the record immediately following your remarks.

Senator HANSEN. I would also like to ask that a statement by the Wyoming Association—which I understand will also be submitted to the committee, or perhaps has been to the Committee on Interior and Insular Affairs in the U.S. House of Representatives—be included in the record following my statement.

It might very well be that some of the overall interests I have, Mr. Chairman, are subjects that you have already covered; and if you have, I apologize. But in a general way let me say to you, as I have talked with different mining groups and with different State representatives, I reached the conclusion that it seems to be recognized that problems differ in different States. The problems that are met or at least must be confronted in West Virginia, where there is a high degree of rainfall and leaching of mined-out areas, are not duplicated necessarily in each of the other 49 States. Certainly they are not duplicated in my State of Wyoming. So some of the problems that I suspect would be of real concern and should be to all of us and particularly to those persons living in West Virginia, might not have any appreciable impact in a dry, arid State where the condition isn't similar. As you may know, we have what we call the Great Divide Basin in Wyoming. It straddles the Continental Divide, and it is a rather sizable area, I have forgotten how many square miles, 4,000 or more, that has no rainfall. All of the water that falls in that basin evaporates. I think the figures over a long period of time show this may be around 7 inches a year. Obviously, in that sort of situation, measures that would be called for in a State with a high amount of rainfall would not necessarily be applicable there.

I refer you to your statement here on the bottom of page 1. It does recognize the initial responsibility of the States in this area, but it also establishes nationwide criteria to guide the States and to assure that the mining industry is placed on an equal footing in each State. With respect to the observations I have just made, do you mean to imply by this that, generally speaking, the same standards will be required by the Federal Government of each of the States?

Mr. TRAIN. The same broad criteria would apply to all the States, but it would be my understanding, and I'm sure the Department of the Interior witness will be able to expand on this, that the intention is to so design these criteria that they will lead to our national objectives of protecting the environment from the effects of mining, but at the same time leave sufficient flexibility, that account can be properly taken of the real differences, such as you have described: In the circumstances, climatic, geologic, I suppose, soilwise, and so forth among the different States.

We are not recommending certainly at this time a single set of specific, detailed rules that must be applied and complied with nationwide. We are recommending criteria for national application.

Senator HANSEN. I can understand full well the desirability of uniform standards. If we assume we have two States, *a* and *b*, side by side, and one State should impose very tough or very strict requirements that would, incidentally, be quite expensive, and the sister State did not impose those economic burdens and environmental responsibilities on the miners in its State, then I can see that operators in one area as compared with those in another would be at a distinct advantage or disadvantage, whichever State you happen to be in. So in that regard I think there is something to be said for uniformity. On the other hand, I recognize this. We would not be able, in many parts of Wyoming, to achieve the burden type of ground cover over a reclaimed area that would be possible in most parts of Appalachia. We just don't have enough moisture ever to bring that kind of thing into existence.

Mr. TRAIN. I presume the standard would be that which would be sought—and I am really sort of guessing at this point, Senator—the standard to be sought under the criteria would be restoration as nearly as possible to the type of vegetation and soil conditions that obtain prior to the mining activity in the particular area involved. There would certainly be no attempt to require an Appalachian-type forest in areas of Wyoming.

Senator HANSEN. There isn't any feeling insofar as you are concerned that we need to, or indeed we should try to, cut back on the output of our coal mines as an example, is there? I mean, I am thinking about the energy, the growing energy, requirement of the country. It seems to me if we are going to do the job that must be done to clean up the air and water and remove the litter from the landscape, much more rather than less energy will be required. And I see no immediate source for this extra energy that I think can serve as well as coal can serve.

Mr. TRAIN. There is no question, Senator, that we will be relying upon coal for the production of energy for a great many years to come, and relying, I would assume, to an increasing extent.

Senator HANSEN. And your objective simply is to see that we do the best job we can do in restoring the surface in reclamation efforts. rather than to try to actually put mine operations out of existence: is that a fair statement?

Mr. TRAIN. Well, that is a very broad generalization, and I would certainly agree with the generalization. It may well be that under some circumstances the damage from mine operations could not be repaired because of the particular circumstances, and the extent of the damage would be considered unacceptable. Under those circumstances, in particular places and under particular circumstances, and under those circumstances it would be quite expected that mining would not be able to be undertaken. But as a generalization, the purpose of this legislation is to regulate and regulate effectively and not ban.

Senator HANSEN. Thank you very much, Mr. Chairman.

STATEMENT OF HON. CLIFFORD P. HANSEN, A U.S. SENATOR FROM THE STATE OF WYOMING

Mr. Chairman, surface mining in my State of Wyoming is now of vital importance to the State's economy and is growing by leaps and bounds. According to the U.S. Bureau of Mines, there are 23 billion tons of strippable reserves in seven major coal areas of the State.

Cutoffs used to define strippable reserves were:

1. Minimum coal bed thickness of five feet.
2. Overburden-to-coal ratios of less than 10 cubic yards of overburden per ton of coal.
3. Total overburden thickness of less than 120 feet, except where reserves occur in multiple beds or a single thick bed.

According to the Bureau, Wyoming has the largest coal resources of any State—546 billion tons within 6,000 feet of the surface.

The Bureau also predicts that strip mining of coal in the west will quintuple by 1974. There are just no alternatives to the continuing demand for energy and the vast and relatively cheaply producable deposits of low-sulfur coal and lignite in the Western States offer the best hope now and in the future for the nation's insatiable energy demands.

Not only are these deposits now furnishing fuel to power plants in Chicago, Iowa, Minnesota and other States but will fuel huge power plants now under construction in the State. These new mine-mouth plants will furnish power to other states through high voltage transmission lines. Also this vast source of energy holds out the promise of a long-term solution to the natural gas shortage now facing the nation. Construction plans for two large coal gasification plants in New Mexico have already been announced.

Strip mining in the nation now furnishes 35 percent of the industry's output and certainly must continue to grow if the nation is to grow.

During hearings some weeks back on the President's energy message it was you, Mr. Chairman (Senator Moss) who directed a question to Undersecretary of Interior Pecora as to how does one as a matter of policy evaluate the tradeoffs between surface and underground mining in view of the health and safety hazards to the miners underground and the environmental disturbance by the strip miner.

Dr. Pecora's answer was as straight to the point as your question, Mr. Chairman, and, in effect concluded that an open pit large surface operation is far safer, more efficient and better adapted for restoration and reclamation than underground mines and the problems of underground galleries and drifts and tunnels so that eventually one must look forward to some surface subsidence if the underground operations are not too deep.

In Rock Springs, Wyoming there is a serious subsidence problem under the townsite and the Bureau of Mines and Dowell have spent considerable money during the past year in an experimental back-filling project there. This has, of course, been a problem in other areas, too.

As to safety, the Wyoming State Inspector of Mines furnished me a recent report on fatal and non-fatal accidents in Wyoming coal mining operations for the period 1960–1970.

It showed during the 11 years that strip mining accounted for 33,654,000 tons of coal compared with 1,817,000 tons from underground. There were three fatal accidents from strip mining operations and the same number underground.

There were 82 nonfatal accidents reported for strip mining and 89 for underground. The incidence would be one fatal accident for 11 million tons strip mined and one per 600,000 tons underground.

Nonfatal would be one for about 400,000 tons stripped and one for each 20,500 tons underground.

The University of Wyoming this last September issued a Research Journal on Reclamation of Strip Mine Soil Banks in Wyoming. The cooperative study with Kemmerer Coal Company was begun in 1964 with two objectives.

1. To determine adaptability of native or introduced plant species for revegetating overburden piles.

2. To determine if fertilization, mulching, snow fencing for water accumulation, and/or various mechanical soil treatments would significantly affect vegetation establishment and growth.

The report is a most comprehensive one and will, I am sure, be invaluable to surface miners in Wyoming and the west in their land restoration work.

Wyoming, of course, has its own land restoration law as do most other western states and it has been accepted in good faith by the mining industry.

The Wyoming Mining Association is of the opinion that the regulation of surface mine reclamation activities remain the prerogative of the individual states and have asked that I submit their statement for inclusion in the Record of this hearing. The Association cooperated with Governor Stanley Hathaway in drafting mined-land reclamation legislation. The law requires a reclamation plan and a mining permit before mining. It provides for inspections, annual reports, enforcement provisions and for a bond to guarantee the reclamation of land disturbed by mining activities. The law applies to all lands, private, state and Federal.

Mr. Chairman, I agree with the position of the American Mining Congress that if Federal legislation is enacted, it should set minimum standards but leave the primary responsibility for passing and enforcing specific surface mining laws to the individual states. Such laws must take into account the diversity of terrain, weather and other conditions which exist in each state. It would be almost impossible, Mr. Chairman, to come up with any workable legislation on a national level.

Mr. Chairman, the record is perfectly clear for those who care to see it that surface mining and sensible land restoration are compatible and the alternatives are unacceptable—we must have the energy now and in the years ahead.

STATEMENT OF THE WYOMING MINING ASSOCIATION

The Wyoming Mining Association is a trade association consisting of 40 mining companies, 78 service companies and 440 indivdual members and it represents the interests of those engaged in the Wyoming mining industry. The Association appreciates this opportunity to submit its views on proposed legislation to regulate surface mining activities. Rather than to comment on specific bills now under consideration by the Committee, our comments will refer to the broad principles believed to be important when considering legislation of this nature.

This Association recommends that the regulation of surface mine reclamation activities remain a prerogative of the individual States. Slightly over half of the States have enacted legislation on this subject and no State can long delay positive action in the face of public sentiment in favor of this type of legislation. This indicates that there is little need for Congressional action as proposed in the bills now before the Committee. While some of the existing State mined-land reclamation laws may not meet all of the criteria proposed, it is reasonable to assume that improvements will be made by the respective legislatures.

It is our belief that the people—the voters—in each of the States should be interested with the problems of the conservation of their resources. They are

directly concerned. They know the variables that must be considered. They are knowledgeable and competent in the field of conservation. Through State Government people can develop good mined-land reclamation measures as well as other conservation improvements. State regulations should apply to all lands within State boundaries—private, State and Federal.

There are many objections to Federal efforts to regulate mined-land reclamation. A major one is the great variety of conditions—soil, topography, climate, etc., which will affect conservation measures. Nation-wide regulations will be impractical. Another is that it takes from the people within a State, some measure of their direct participation in the government of their State. The citizen of a Western State has little knowledge or competency in the mined-land conservation problems of an Eastern State. However, he does have considerable knowledge of his own State and should have the responsibility for the conservation of its resources.

The Wyoming Mining Association has some positive views on the value of State-regulation of mined-land reclamation. Beginning in 1965, the Association initiated some discussions on the subject. Voluntary reclamation programs were encouraged. One company granted $25,000.00 to the University of Wyoming for a research on the revegetation of surface mined lands.

Later, the Association cooperated with Governor Stanley K. Hathaway in drafting mined-land reclamation legislation. The 1969 Legislature adopted this legislation. While the Wyoming Law may not meet the approval of everyone, it is a good law and will be improved upon in the light of experience with it. Enforcement of the law is in the hands of the State Administration. It requires a reclamation plan and a mining permit before mining, it provides for inspections, annual reports, enforcement provisions and for a bond to guarantee the reclamation of land disturbed by mining activities. This applies to all lands—private, State and Federal.

This brief statement relative to the Wyoming Open Cut Mined Land Reclamation Law is intended to emphasize that States can and should enact such laws and that they should be encouraged to do so rather than to deny them this prerogative.

In summary, the Wyoming Mining Association respectfully recommends the following to the Committee.

1. That States be permitted to retain their authority over the conservation measures to be required on lands disturbed by mining operations. This should apply to all lands within the State—private, State and Federal.

2. That the Federal Government encourage the reclamation of lands disturbed by mining operations in past years by extending cooperation to the States in correcting these problems. Possibly research activities and financial participation with the States could be very helpful in relaiming lands disturbed in years gone by.

Respectfully submitted,

WYOMING MINING ASSOCIATION,
R. W. BEAMER, *Executive Secretary.*

Senator Moss. Thank you very much, Mr. Train, we do appreciate your testimony and look forward to continuing to work with you.

Mr. TRAIN. Thank you again, Mr. Chairman.

Senator Moss. You are excused and the Honorable Gaylord Nelson, the Senator from Wisconsin, will be our next witness. Senator Nelson has been a leader in the conservation area; before he came to the Senate he was Governor of the State of Wisconsin and his State was one of the first, I think, to get into conservation regulations on a large scale. Therefore we are pleased to have Senator Nelson who continues his interest and activity. We will hear from you now, Senator.

STATEMENT OF HON. GAYLORD NELSON, A U.S. SENATOR FROM THE STATE OF WISCONSIN

Senator NELSON. Mr. Chairman, you have 16 more witnesses including me and at the rate of 10 minutes per witness you are already far behind, although it is appropriate, of course that the spokesman for

the administration have time to respond to your questions. I will be very brief. I ask that this statement be printed in full in the record and also a letter written to the Secretary of the Interior respecting the Western mines, plus some editorial material in support of the concept of establishing controls over mining in this country.

Senator Moss. That may be done. Your statement in full and the additional data that you mentioned will be printed in the record.

Senator Nelson. Mr. Chairman, I think that in the past 6 years, in 1965 I introduced legislation on strip mining and in the past 6 years, there has been a dramatic change in attitude, I think, on the strip mining issue. For everyone, from environmentalists to industry itself, the question is no longer whether Congress should act but how. With coal stripping increasing at an accelerated pace, the urgency of the situation is universally recognized and the environmentalist and human tragedy of strip mining itself has been brought home to the entire Nation by the eloquent persistence and by the work of many environmental, human welfare, and other public interest groups, and by the continuing coverage on this issue.

The subcommittee chairman's measure, S. 2455, includes, I think, a very sound definition of reclamation and in the subcommittee's hearings and deliberations, it could seem important as to whether and with what requirements these standards can be met and if they can be met.

If it is determined that meaningful reclamation is achievable, and as the chairman knows, there is some serious debate about that, at the very minimum it would seem to me the following would seem to be some of the essential requirements.

A ban on so-called contour mining for coal; a prohibition of any surface mining without a permit issued by the Environmental Protection Agency or, if the State adopts a federally approved implementation plan meeting all of the requirements of Federal law, then it should apply to a State permit; a requirement of reclamation plans for strip mining which assures that the land will be restored to a condition allowing its original use and potential to be fulfilled; a nationwide inventory of all potentially strippable areas; a moratorium on the Federal issuance of coal leases and exploration permits on U.S. public lands out West until a comprehensive environmental review is done as required under section 102 of the National Environmental Policy Act.

Reclamation of abandoned strip mined lands, financed by reclamation funds supported by Federal moneys and reclamation fees collected from the mining industry based on their environmental impact; establishment of underground mining controls similar to those for surface mining; special Federal protections and aids to assure the restoration of any jobs that might be displaced by surface mining controls.

Provision for full public participation at every step of the process and for citizen suits at least for nondiscretionary provision for the legislation.

With a great rising concern about strip mining that has been demonstrated from all across the Nation this past year, it is clear that the American people are not going to be satisfied with halfway measures on this grave environmental abuse. Thus far, the greatest strip mining and greatest concern is centered on Appalachia, a region where a wealth of coal and beauty has been bound together.

Strip mining is bringing a destruction on a scale comparable to that of war itself. It is environmental warfare. Now, the same possibility for tragedy is posed for the American West. Vast beds of coal underlying 13 Western States constitute 77 percent of the strippable reserves in this country. With the Nation's insatiable energy requirements, these vast deposits are now becoming feasible to exploit. Already leases for coal stripping have been obtained by private interests on 3,500 square miles of U.S. public and acquired Indian lands with the vast bulk of it in the West.

I needn't recite the statistics, some of which have been put in the record by members of this committee and Judge Train as well. I would simply ask this material be printed in full in the record so that the committee may proceed with its hearings in time to conclude the witness list today. Thank you.

Senator Moss. Thank you very much, Senator, for your statement. It is very complete and the full statement will be made part of the record. We know of your constant effort in this field. Do any of these bills as you read them, address themselves to the backlog that we were talking about earlier with Chairman Train, of cleaning up what we have already done that is so bad?

Senator Nelson. The bill that I introduced addresses itself to that question. I think one of our problems is what is the cost and it will vary, of course, depending upon the nature of the terrain. I would think at the very minimum, I recognize that Judge Train expressed the opinion that the urgent critical problem right now is controls over the future. However, there are urgent problems where stripping has already gone on because in the whole Ohio River watershed, in several thousands of streams draining into that watershed, there are pollutants going into the river basin now. So I would think some provision ought to be made in any bill for proceeding at least on pilot projects of restoration in those areas where no restoration has ever been attempted and where it is maybe more difficult than it is in some of the areas, say Ohio.

Second, at the very minimum, in addition to pilot projects that we ought to have a rather comprehensive survey of what is the size—dimension of that problem. In that study and survey, I think it is important to crank in what are the profit sides of the ledger, so to speak, in terms of restoration.

In terms of the utilization of the land for other purposes, scenic beauty, restoration, reforestation. All too frequently we do our cost accounting by considering what is the out-of-pocket cost of performing a certain function without computing the profit to be made by doing that.

As the Senator from Utah knows very well, in discussing the question of water pollution, for example, we are always talking of what is the cost of cleaning up the water. It comes anywhere from $75 to $100 to $200 billion to clean up the water to the highest current state of the art, all over the United States for a period of 20 years or thereabout. Nobody seems to stop and say, "What is the profit made from cleaning it up and the cost of not cleaning it up."

If you are going to continue to pollute the waters and in the East and Midwest, around Chicago, west coast and gulf, you utilize your water supply 5, 10, 15, 20 times as we will, what is the cost of clean-

ing up the water each time you use it versus the cost of requiring the installation of equipment to keep it clean in the first place.

Second, what is the profit to be made, so to speak, with respect to the enhancement of recreation opportunities? These kinds of questions ought to be cranked into any study. I would think though it might be very difficult in terms of matching funds immediately to do a massive job of restoration, because the argument will be made that the future stripping is much more important.

I would think it would be very important in any bill to do some pilot projects and a comprehensive evaluation, study and evaluation of the nature and dimension of the problem that these bills are doing something about.

Senator Moss. Thank you very much, Senator. Senator Hansen, do you have any questions?

Senator HANSEN. No questions, thank you.

Senator Moss. Thank you, we appreciate it very much.

(The material referred to follows:)

STATEMENT OF HON. GAYLORD NELSON, A U.S. SENATOR FROM THE STATE OF WISCONSIN

Mr. Chairman and members of the Subcommittee, thank you for the opportunity to testify on the strip mining bills, including S. 77 and S. 1498 which I have proposed.

In 1965, I first introduced a bill, S. 2688, for strip mining controls, including requirements for Federal licensing of all surface mines and for reclamation. The measure was revised and reintroduced from Congress to Congress along with other proposals, and hearings were held.

In the six years since, there has been a dramatic change in attitude on the strip mining issue. For everyone from environmentalists to the industry itself, the question is no longer whether Congress should act, but how. And with coal stripping increasing at an accelerated pace, the urgency of the situation is universally recognized.

What has happened is that the American public has become educated and concerned about the environmental crisis in general and the incredible destruction of strip mining in particular, and the institutions of this society are finally beginning to respond. The nationwide environmental awakening was represented and stimulated by Earth Day, 1970, with the participation of millions of people, young and old. Because of the vast, peaceful outpouring of public concern, the environmental issue was made a part of the national political dialogue for the first time.

And the environmental and human tragedy of strip mining itself has been brought home to the entire nation by the eloquent speeches and persistent efforts of the Ken Hechlers and Harry Caudills, by the work of many environmental, human welfare, and other public interest groups, and by continuous, hard-hitting newsaper coverage.

Strip mining's permanent destruction of the values of the land has not only been a crime against the environment, but an incredible economic waste. It levies a cost against the future far beyond any short-term profit that has been gained.

Thus, from an environmental point of view, I support a ban on the coal strip mining, by far the largest mining activity with the greatest impact. In addition to reintroducing my legislation to set controls on all surface mining, I introduced this year in the Senate the bill to ban the coal stripping.

If in the committee's judgment, it is concluded that reclamation in certain circumstances is possible, and the outright coal stripping ban is not adopted, at the very least, a strong, effective regulatory measure with tough reclamation requirements, inspections and enforcement is essential.

The Subcommittee Chairman's measure, S. 2455, includes a sound definition of reclamation, and in the Subcommittee's hearings and deliberations, it would seem important to determine whether and with what requirements this standard can be met.

If it is determined that meaningful reclamation is achievable, at the very minimum the following would seem to be essential requirements:

A ban on so-called contour mining for coal;

A prohibition of any surface mining without a permit issued by the Environmental Protection Agency or, if a state adopts a Federally-approved implementation plan meeting all the requirements of the Federal law, a state permit instead;

A requirement of reclamation plans for strip mining which assures that the land will be restored to a condition allowing its original use and potential to be fulfilled;

A national inventory of all potentially strippable areas;

A moratorium on the Federal issuance of coal leases and exploration permits on the U.S. public lands out West until a comprehensive environmental review is done as required under Section 102 of the National Environmental Policy Act;

Reclamation of abandoned strip mined lands, financed by Reclamation Funds supported by Federal monies and reclamation fees collected from the mining industry based on their environmental impact;

Establishment of underground mining controls similar to those for surface mining;

Special Federal protections and aids to assure the restoration of any jobs that might be displaced by surface mining controls;

Provisions for full public participation at every step of the process of regulations and controls, and for citizens suits at least for non-discretionary provisions of the legislation.

With the great and rising concern about strip mining that has been demonstrated from all across the nation in just this past year, it is clear that the American people are not going to be satisfied with halfway measures on this grave environmental abuse.

And instead of being allowed to continue passing along to the American taxpayer and to future generations the mounting damage bill, the strip mining industry must be required to internalize these costs, and must bear the burden of proof that reclamation of these lands can and will be done.

Thus far, the greatest strip mining and the greatest concern have centered in Appalachia, a region where a wealth of coal and of natural beauty seem to have been inextricably bound together.

But far more than just the ravaging and pollution of the region's scenic and other natural resources, the strip mining is bringing the disruption and displacement of a people and all that they care about and all that sustains them.

It is a story of the destroying of a part of the earth and all its resources. Appalachia has been bought at bargain basement prices for the few. And for the people of that region and the entire country, no amount of money could pay for what already has been lost.

In short, the pillage and plunder of strip mining in Appalachia are bringing destruction on a scale comparable to that of war itself. It is environmental warfare on our own country.

Now, the same tragedy is posed for the American West. Vast beds of coal underlying thirteen Western states constitute 77 percent of the strippable reserves of this country. With the nations' insatiable energy demands, and with developing technology to convert coal to gas or other fuels, these vast deposits are now becoming feasible to exploit. Already, permits for coal exploration or leases for coal stripping have already been obtained by private interests on 3,500 square miles of U.S. public and acquired and Indian lands, with the vast bulk out West.

It is quickly becoming apparent that vast portion of the region could become a mammoth strip mine. Substantial underground coal mining is probable as well. Without proper environmental protections, the West is in danger of becoming another Appalachia.

The huge scale of the planned Western strip mining for coal becomes dramatically clear when one notes that some of the largest energy companies in the country—Mobil Oil, Peabody Coal Corp., Atlantic Richfield, the Sun Oil Co., and the Carter Oil Co. among others—have already obtained large leases on the public coal deposits.

Reportedly, a confidential survey by a private gas association has already pinpointed 176 prospective sites for huge plants to convert coal to gas, mostly in the coal areas spread throughout the West.

With these gigantic strip mining—coal gasification complexes, the face of the West would be reworked, with thousands of square miles of public and private lands drastically altered, possibly eliminating other uses forever.

Without reclamation, these lands held by the American public would in effect not be leased but sold as consumable, disposable goods. And there is serious question as to whether strip mined lands can actually be reclaimed.

If pollution were to result from the coal stripping and processing, and adequate controls were not established, the consequences could prove devastating in an already water scarce region.

Many of the major river basins in the country could be affected by the massive coal operations: the Colorado River Basin, with coal areas in Arizona, Colorado and New Mexico; the Arkansas River Basin, by coal areas in Oklahoma and Arkansas as well as in Colorado; the Platte River Basin, by coal areas in Wyoming; the Snake River Basin, by coal areas in Wyoming; and the Missouri River Basin, by coal and lignite areas in Montana, Wyoming, North Dakota, and South Dakota.

November 5, I wrote a letter to Russell Train, chairman of the Council on Environmental Quality and to Secretary of the Interior Rogers Morton urging a halt to the issuance of Federal permits and leases and Bureau of Reclamation water permits for coal strip mining on the public lands in the West until an environmental review under the National Environmental Policy Act (NEPA) is made.

While some environmental study steps have been taken, and others considered, and a Section 102 statement under NEPA is being done on the power generating complex using coal from Black Mesa in Arizona, the comprehensive environmental reviews necessary under the National Environmental Policy Act to determine the cumulative impact of coal strip mining out West and whether the lands can be reclaimed simply have not been done.

And while I am aware that the low sulphur coal in the West and coal gasification offer potential environmental and energy supply benefits, my concern is that in our efforts to solve the energy questions, we do not trade one set of environmental and energy problems for another.

I request that a copy of my letter on the Western coal leases and permits be included in the hearing record at the end of these remarks.

Also, Mr. Chairman, last August, Ben Franklin of the New York Times did an excellent piece on this development, and I ask that his article also be printed in the record when this statement is concluded.

Thus in this Congress, we find ourselves at a watershed time in the history of the strip mining concern: backed by a concerned, aware public, we must act to halt the destruction in Appalachia and in other strip mining areas, and prevent similar devastation in the West.

And the strip mining issue poses a crucial test not only of environmental policies and commitment, but of the ability of public agencies to act effectively in the public interest.

Time and again, we have seen Federal agencies who were established to act on behalf of the public become handmaidens to the narrow, profit-seeking goals of private interests.

But with the broadscale intervention of the American public, legislative, administrative and judicial actions have been taken in the environmental area that were more effective and far-reaching than I think any of us would have imagined possible just a few years ago.

In effect, we are now on the way to establishing as national policy the principle that no one has the right to pollute, and are putting the laws on the books necessary to back it up.

Our next big environmental step must be to establish the similar principle that no one has the right to destroy or harm the land, and with continued strong and coordinated public support, I believe this can be done.

The surest way to stop the destruction of the landscape by coal mining—by far the largest mining activity with the greatest overall impact—is to ban the stripping. And from an environmental standpoint, I support a ban on the coal strip mining.

This year, in addition to reintroducing my bill, S. 77, to set controls on all surface mining and to prohibit it where reclamation is not possible, I introduced in the Senate the bill by Congressman Hechler to ban the coal stripping.

Cosponsoring this measure, S. 1498, with me, are Senators McGovern, Kennedy, Humphrey, Case and Harris.

As I noted in my floor statement on the introduction of S. 1498, of all the proposals, the measure to ban stripping for coal most effectively raises a fundamental question of whether reclamation is possible, and thus must be seriously considered.

The nationwide debate that this measure has stimulated has already been highly informative and important in the legislative process, and I think that in its deliberations the Subcommittee can benefit greatly from the delineation of the issues that is taking place.

If an outright coal stripping ban is not adopted, at the very least, a strong, effective regulatory measure with rigorous and very specific requirements is essential.

Otherwise, in the coal rush that would follow, the hope represented by the current public effort against strip mining abuse would turn to despair and disillusionment, knocking away one more vital underpinning in the foundation of government credibility.

I request that recent editorials in the Christian Science Monitor, the Washington Post, and the New York Times which note the great public interest and the need for action be printed in the hearing record at the end of these remarks, along with a copy of my statement on the introduction of S. 1498.

Short of an outright ban on all coal stripping, the following would seem to me to be minimum provisions for a strip mining bill:

Ban so-called contour mining for coal, stipulating the specific degree of slope that will be the cutoff point.—Among others, the Conservation Foundation has suggested the cutoff as a slope of 13 degrees or more, marking the point at which highwalls and benches are created, causing the most severe environmental results. The 13 degree distinction exists in Kentucky and Pennsylvania laws, whose controls are among the strongest in the states.

Especially useful comments on the economic effects of a ban on contour mining were made by CF"s Malcolm Baldwin in his statement in House hearings. He estimated that contour mining—on slopes 13 degrees and above—accounts for about 20 percent of our domestic coal production.

This need could be filled by increasing coal production from underground mines or by converting—temporarily if need be—to other fuel sources such as residual fuel oil, by adjusting our import quotas and by encouraging more residual oil production from domestic refineries.

Studies also show that most deep mines work two shifts and that changes to three shifts a day, six days a week, would alone produce an additional 150 million tons of coal a year, more than enough to fill any energy gap created by the banning of contour mining.

Another 50 million tons of coal a year could be made available within six months from expansion of deep mines and so-called punch mining in existing contour mines.

Another possibility would be establishing quotas on our own coal exports.

Finally, a special board could be created to investigate and recommend solutions, including possible variances from phase out deadlines, where a genuine energy supply hardship could be shown by a particular utility or industry.

Prohibit any surface mining without a Federal permit, or, where a state has adopted a federally approved plan meeting all the requirements of Federal law, a state permit.—Permits would be required for mining on all public and private lands. Similar to the water quality bill just passed by the Senate, permits would be issued only on assurance of compliance with the requirements of the Federal law and all regulations, along with water and air quality standards.

As under the water bill, permits would be issued initially from the Federal level, but the program could be taken over by the state if the state adopts a Federally-approved implementation plan which meets all the requirements of the act.

Though the permit system would apply to all surface mining, requirements would vary according to the resources being mined.

In line with the important concepts stated by the President in submitting his reorganization plans last year that enforcement should be kept separate from development functions, the Environmental Protection Agency should be designated the administering agency for the permit system.

Inasmuch as other committees have retained oversight of portions of EPA with which they have historically been concerned, this would not appear to pose interference with this committee's minerals jurisdiction.

The current status of state strip mining control laws around the country provides dramatic justification for primary authority at the Federal level.

In Appalachian states, where there has been ample time to test the laws, the problem has been lack of adequate appropriations, shortage of inspectors, and consistently weak enforcement, with failure to adequately review and where necessary deny permit applications, or revoke permits or licenses where appropriate.

The state programs have also been characterized by inadequate performance bonds allowing only the most superficial efforts to pass for reclamation, failure to impose bond forfeiture where it is merited, and yielding to industry pressures to be released prematurely from reclamation liability.

In the Western states, where massive coal strip mining is posed, requirements are even more lax. Reportedly, in Wyoming only $20,000 per year has been budgeted for all inspection activities for all strippable minerals in the state.

In Colorado, the performance bond to be imposed is not to exceed $100 an acre, far short of what is necessary.

In North Dakota, the performance bond is set at only $200 per acre, and the reclamation plan aparently does not have to be submitted prior to the date of the issuance of the permit.

In Montana, in addition to funding and personnel shortages, performance bonds are still far short of meaningful requirements.

Reportedly, New Mexico and Utah have no laws as yet to govern coal strip mining.

Require for a strip mining permit a reclamation plan which will assure that the land will be restored to a condition that would allow its original uses and potential to be fulfilled.

Far too frequently, what has passed for reclamation in the past has been a "green lie," revegetation and regrading of the most cosmetic sort, ignoring vital ecological and resource factors that will actually determine the future of that area.

If strip mining controls and reclamation are to be successful at all, strip mining legislation must be specific, assuring deadlines for completion of reclamation as well as minimum performance bonds which are high enough so that a public agency can do the reclamation adequately if the mining company forfeits.

And as other Federal program experience has clearly shown, no strip mining control program will succeed without tough inspection and enforcement.

As an example, a prerequisite to any strip mining approvals should be assurance that the enforcement agency has adequate funds and inspectors, and it would seem to be fair to require the strip miners themselves to contribute toward the inspection program.

Tight inspection procedures should be established: for instance, it would seem reasonable to require that inspections of reclamation progress be made as frequently as every two weeks, that they come at irregular times, unannounced, and that the inspectors be rotated.

A national inventory and classification of all areas with potentially strippable minerals.—A primary aim of such a study would be determination of which areas were possible to reclaim in strip mining, based on factors such as acidity, aridity, elevation, and timberland which would have to be clearcut before mining.

Such a study could be conducted within 18 months, and based on its conclusions, issuance of strip mining permits in certain areas might be withheld until such time as technology had advanced to the point where such lands could be reclaimed.

Especially if it were assigned the strip mining permit reponsibility, the Environmental Protection Agency should conduct the study.

A moratorium on the issuance of coal leases and exploration permits on the U.S. public lands out West until a comprehensive environmental review is done as required under Section 102 of the National Environmental Policy Act.

In checking with the Bureau of Land Management recently, our office learned that no environmental impact statements have been filed on the coal leasing on the Western BLM lands, even though the National Environmental Policy Act

specifically requires such statements for "major Federal actions significantly affecting the qualing of the human environment." A Section 102 report is being prepared in the Black Mesa operation on Indian lands in Arizona.

In response to my letter mentioned earlier, the President's Council on Environmental Quality yesterday confirmed to my office that it is concerned about the matter and is looking into it further with Interior Department agencies.

It should be noted that many of the Western coal leases were granted before passage of the National Environmental Policy Act and what major acreages were leased even before Interior regulations requiring on-site studies were issued in 1969.

In regard to building in environmental requirements for these prior leases before any mining begins, I would point out that Section 103 of the NEPA requires all Federal agencies to review their current policies and regulations and propose such measures as necessary to bring their authority and policies into conformity with NEPA. It would seem to me that Section 103 would thus require a review of the environmental impact and requirements of the past leases.

The same permit and reclamation requirements should be established for mining on the Federal public lands as are proposed here for the state and private lands. In the case of the Federal public lands, it would seem appropriate to require EPA certification of Bureau of Land Management leases and permits.

Reclamation of so-called "orphan" lands that were strip mined and left some time ago, and of lands affected by underground mining.—The reclamation would be financed by a Fund supported in part by reclamation fees levied on the mining industry.

Already, the inventory of lands ravaged from strip mining exceeds an area the size of Connecticut, and the destruction is accelerating.

As proposed in both S. 77 and S. 1498, a Reclamation Fund would be established to carry out this program. The Fund would be financed by Federal contributions and by reclamation fees which would be levied on current and future mining operations based on the amount and duration of impact their activities would have on the environment and on other land use. The reclamation should be administered by the Soil Conservation Service of the U.S. Department of Agriculture.

In addition to a serious commitment to enforce the 1969 Coal Mine Health and Safety Act of 1969, underground mining controls similar to those for the strip mining must also be established.—These should include provisions for a permit system and reclamation plans with specific requirements, as well as a provision to prohibit any underground mining operation in wilderness areas established pursuant to or by the 1964 Wilderness Act.

Land undermined by underground mining probably exceeds 7 million acres, with some 2 million acres expected to experience subsidence by the year 2000. Fires and silt and acid mine drainage are also important underground mining effects. These devastating problems reflect a combination of difficult geologic and hydrologic conditions, a recalcitrant industry, and economic disadvantages experienced by deep-mine operators unable to compete with an unregulated stripping industry.

Special Federal protections and aids must be established to assure the restoration of any jobs that might be displaced by surface mining controls.

In achieving a decent environment in this country, we need not sacrifice the human welfare, and I have long strongly supported measures to reconcile any potential conflict between these aims.

For instance, I proposed an amendment to the water quality bill to establish a program of long-term, low interest Federal loans to small businesses that might be adversely affected in meeting water pollution controls. The proposal was adopted by the Senate 92–0.

Regarding strip mining, Congressman John Seiberling has introduced amendments in the House to aid workers who are laid off due to a mine shutdown. Authority would be given to the Secretary of Labor to provide readjustment payments to an adversely affected worker. A worker would be eligible for this readjustment allowance for up to 52 weeks. In addition, a relocation allowance may be granted to a laid-off worker who can find work outside of a specified commuting distance.

In addition, reclamation could also provide a major employment opportunity for any men who may be out of work from the effects of strip mining controls,

and any such workers should have a priority in reclamation jobs. Special training and relocation assistance should be provided for this purpose.

Public participation must be fully provided for at every step of the process of regulations and controls.—This must include non-discretionary authority for citizens suits against responsible Federal officials for violations of any provisions in the legislation, a provision similar to that already included in the water quality bill passed by the Senate. In addition, public hearings should be held on request before the issuance of any permits, and there should be public notification and the opportunity for a public hearing prior to the release of a mining company from liability for reclamation.

Mr. Chairman, the Subcommittee is to be commended for holding these hearings on this important matter, and once again, I appreciate the opportunity to comment.

U.S. SENATE,
COMMITTEE ON FINANCE,
Washington, D.C., November 5, 1971.

Hon. ROGERS C. B. MORTON,
Secretary of the Interior,
Washington, D.C.

DEAR MR. SECRETARY: It is quickly becoming apparent that the American West is on the verge of a radical transformation. And the future that is posed for it will not be as glamorous as the colorful era of its frontier past.

Vast portions of the region are about to become a mammoth strip mine that could make the ravaged coal mined areas of the Appalachians look like hen scratchings. Substantial new underground coal mining is posed as well.

Reportedly, 77 percent of the remaining strippable coal reserves of the United States underlies 13 Western states. With the nation's insatiable energy demands, and with developing technology to convert coal to gas or other fuels, these vast deposits are now becoming feasible to exploit.

According to a recent press report, leases or permits for coal mining or exploration have already been obtained by private interests on 2390 square miles of the U.S. public lands.

The huge scale of the planned Western strip mining for coal becomes dramatically clear when one notes that some of the largest energy companies in the country—Mobil Oil, Peabody Coal Co., Kerr McGee Corp., U.S. Steel Corp., El Paso Natural Gas Corp., Atlantic Richfield, the Sun Oil Co. and the Carter Oil Co. among others—have already obtained large leases on the public coal deposits.

Reportedly, a confidential survey by a private gas association has already pinpointed 176 prospective sites for huge plants to convert coal to gas, mostly in the coal areas spread throughout the West.

With these gigantic stripmining-coal gasification complexes, planned for commercial operation for the 1980s, if not before, the face of the West would be reworked, with thousands of square miles of public and private lands drastically altered, possibly eliminating other uses forever.

If strip mine reclamation were to prove impossible, or economically infeasible, particularly in arid regions, these lands held by the American public are in effect not being leased but sold as consumable, disposable goods.

If pollution were to result from the coal stripping and processing, and adequate controls were not established, the consequences could prove devastating in an already water scarce region.

Many of the major river basins in the country would be threatened by the massive coal operations: The Colorado River Basin, with coal areas in Arizona, Colorado and New Mexico; the Arkansas River Basin, by coal areas in Oklahoma and Arkansas as well as in Colorado; the Platte River Basin, by coal areas in Wyoming; the Snake River Basin, by coal areas in Wyoming; and the Missouri River Basin, by gigantic coal and lignite areas in Montana, Wyoming, North Dakota, and South Dakota.

And ultimately, the pollution from much of the Western coal mining would find its way to the Mississippi River, one of the major waterways of the world that even now we are spending tens of millions of dollars trying to clean up.

If, while producing fuel for the urban areas of the U.S., the Western gasification plants were to discharge substantial wastes, further serious contamination of the

air, water and land could be spread across one of the last unspoiled environments of the country.

Yet a check by my office with the Federal agencies that have cleared the massive leasing of public coal lands and are aiding development of commercially feasible coal gasification, reveals that they haven't even seriously begun to review in any comprehensive way the tremendous environment factor involved.

For instance, according to the Bureau of Land Management, no environmental impact statements have been done on the coal leasing on the Western BLM lands, even though the National Environmental Policy Act specifically requires such statements for "major Federal actions significantly affecting the quality of the human environment."

Yet since the Environmental Policy Act became law on January 1, 1970, the Bureau has granted at least 16 coal leases and some 160 exploration permits for the coal on the public lands.

While technical, on-site evaluations reportedly are being done under Interior regulations as a basis for some reclamation requirements, there is little opportunity for public discussion in this process. Further, this piecemeal approach simply cannot deal with the broad questions of the long-term, cumulative environmental and social effects of massive strip mining for coal in the West, and provides little or no chance for the consideration of alternatives. Additionally, major acreages were leased before even these Interior regulations for on-site studies were issued in 1969.

The critical importance of doing Section 102 statements at the earliest possible stage in the decision-making process is illustrated by another coal mining situation, this one involving the strip mining by the Peabody Coal Company on Indian lands in New Mexico. There, although a Section 102 statement is being done and is already revealing serious environmental problems, the study was started after the fact, after the mining had actually begun.

Equally important as the strip mining is the coal gasification, which poses as momentous a change in the nation's energy and environmental picture as the proposed Alaska pipeline, oil shale development, or breeder reactors. Yet environmental impact statements on coal gasification are being prepared only on the tiny pilot plants being built by the Office of Coal Research and the Bureau of Mines. To our knowledge, the question of the cumulative pollution potential of the commercial gasification plants which could be 100 times the size of these test projects and may be scattered all over the West is not being considered.

While I am aware that the low sulphur coal in the West and coal gasification offer potential environmental and energy supply benefits, my concern is that in our haste to resolve the energy question, we do not trade one set of environmental and energy problems for another.

In fact, the need to develop a more effective energy policy in this country is just one more compelling reason for taking a comprehensive look at all the environmental implications at the earliest possible stage in any energy development.

Thus, I am writing to urge that a comprehensive Federal review under Section 102 of NEPA be started immediately on all the environmental questions involved in strip mining for coal on the Western public lands, with thorough consideration for the cumulative impact as well as for lease by lease effects.

It would seem to me that until this study is completed, the Bureau of Land Management should be directed to issue no further leases or exploration permits on these public lands and to approve no further mining plans on any existing coal leases. And the Bureau of Reclamation should be directed to issue no further permits for water withdrawals from its projects for the coal mining and processing plans for the same period.

A similar Section 102 study should also be started immediately on all the environmental questions involved in coal gasification. It should include a thorough review and comparison of the air and water pollution potential of all the possible gasification processes, the possible cumulative pollution effects from a large number of gasification plants, and the state of technology and regulations for controlling such pollution.

The gasification reviews should also take into account the possible environmental effects of associated industrial developments—such as strip mining on state and private lands as well—on the future of land and resource use and population growth and distribution in the West.

And in view of the potential impact of the strip mining and coal gasification on the entire Western region, thorough public hearings should be held to gain citizens' views before completion of the environmental impact studies.

My office was told by several Federal officials that the scope of the environmental impact studies on the leasing and coal gasification was so limited because of a scarcity of funds. If this is the case, the issue is important enough that special funds should be earmarked for the effort, and if they are not available in existing budgets, I would introduce a bill for such moneys immediately. I would appreciate any information on the funding situation.

The vital importance of the vast U.S. public lands and minerals in the West to any strip mining and coal gasification ventures once again place the Federal government in a key position of responsibility in a matter of enormous environmental implications to the nation.

And recent court decisions on the application of the National Environmental Policy Act make clearer than ever the NEPA requirements on all Federal agencies to fully and comprehensively address the environmental implications of proposed Federal actions and possible alternatives from the earliest stages of decision-making.

If we do not insist now on full compliance with the letter and spirit of the Environmental Policy Act, the traditional focus of bureaucracies on their own missions will prevail, and the Act will be eroded into so many meaningless words.

We understand that the Interior Department is considering the step of more comprehensive environmental reviews on these matters, and of course would appreciate any announcement in this regard.

I would appreciate any consideration you can give these comments and proposals. A similar letter has been sent to Russell E. Train, Chairman of the Council on Environmental Quality.

Sincerely yours,

GAYLORD NELSON, *U.S. Senator.*

[From the New York Times Service, Aug. 29, 1971]

GREAT COAL RUSH: THE STRIPPING OF THE WEST

(By Ben A. Franklin)

WASHINGTON, D.C.—A new stage in the development of the American West is beginning on the arid plains and badlands that flank both slopes of the Rocky Mountains.

On thousands of square miles of vacant land—much of it in federal ownership, or in government land grants to Indian tribes and railroads—a feverish coal rush is on.

The scramble is for coal leases and rights that will open an enormous and virtually untapped reserve of cheap western fuel to strip mining.

On a scale far larger than anything seen in the East, where acreage totaling half the area of New Jersey has been peeled off for coal near enough to the surface to be strip mined, portions of six western states—Arizona, Colorado, Montana, New Mexico, North Dakota and Wyoming face a topographic and environmental upheaval.

It is being brought on by the nation's apparently insatiable demand for energy, by the air pollution crisis in urban centers, by new technology in the conversion of coal to clean fuels, and by the economies of bulldozing rather than tunneling for coal that are available in the west.

In resolving the energy and air pollution problems, however, vast areas of isolated open spaces in the west may be drastically altered.

The visual impact of strip mining is invariably stunning. On flat or rolling terrain, mammoth power shovels crawl day and night through great trenches, lifting, wheeling and depositing the unwanted strata above the coal seam into thousands of uninterrupted acres of geometrically perfect windrows of spoil banks.

In mountain coalfields where seams may lie horizontally through timbered slopes far above the valley bottom, the contour strip mines are notched in continuous, sinuous strips around the mountainsides. Trees and earth and rock are cast down the mountain flanks to expose the strippable edge of the coal bed.

The legacy of upheaval remains. Silt fills streams for thousands of miles. Sulphur bearing coal, left in place and exposed to the elements, yields a long lasting trickle of sulfuric acid which chemically burns streams and kills aquatic

life. Viewed from the air over a "hot" acidic strip mine, pools of rainwater glow in weird shades of red and orange.

The debate over strip mining has been gathering since the late 1950s, when larger and larger earth moving machinery made its growth economically feasible and gave it a cost advantage over underground mining.

Conservationists say with passion that stripping destroys the very roots of men's souls—the land. The mining industry sees it, with similarly strong conviction, as the best way to tap a vital national resource which, as one strip mining executive put it recently, "God put it there for man's use—it's a sin to waste it."

According to one government geologist here, the six states and others in the west—Oklahoma, Texas and even a patch of Washington—"are on the brink of not years, but generations of strip mining for coal that will make the excavation for the Panama Canal look like a furrow in my backyard vegetable garden."

The first wave has begun. In 1970, for the first time in the 100 year history of coal mining in America, a Western mine—the Navajo Strip Mine of the Utah Construction and Mining Co. near Farmington, N.M.—became the largest single producer in the country. Its output from Indian coal lands was more than six million tons for the Four Corners Electric Power Complex, an environmentally controversial steam-electric station serving New Mexico, Arizona, Nevada, and southern California.

Even lignite—the lowest rank of coal in energy per ton—is having a sudden boom.

Still undisturbed beneath the wheat and grasslands of western North Dakota wait 50 billion tons of lignite—equivalent in total energy to all the better grades of coal left to be mined in the four largest producing States, West Virginia, Kentucky, Pennsylvania and Illinois.

LOW IN SULPHUR

The Bureau of Mines has recently disclosed that Pennsylvania and Illinois have no low sulphur stripping coal left at all. The reserve in West Virginia is only about 1.2 billion tons.

Western coal is low in sulphur—A boon to electric utilities caught between soaring power demand and new air pollution regulations that forbid the burning of sulphur contaminated fuel. Accordingly, last year for the first time, some low sulphur Western coal was hauled by rail as far east as Chicago.

But according to government coal men, an immense strip mine explosion west of the Mississippi River that, by comparison, will make this excavation for electric power stations look like a mere desert gulch, is coming in the 1980s for a giant new coal consuming industry, gasification.

Official forecasts here say that 20 years from now perhaps 300 million tons of coal a year—half of last year's total United States production—will be processed at huge, refinerylike plants, surrounding by massive strip mines in the Western coal fields. The product will be quadrillions of cubic feet of pipeline quality, pollution free gas. The government and the mining and gas industries are now committed to this basic change.

Coal gasification will replace the country's dwindling supply of natural gas from wells, now estimated to be only about a 15 year reserve. Consumed in power plants and industrial boilers in the east, the gas will reduce air pollution. And pumped through pipelines that might otherwise be empty, it will save the pipeline industry from collapse.

Millions, perhaps billions, of dollars are thus finally ripening in coal beds under Western sagebrush, where the mineral has lain for 130 million years.

The speculative market in Western strip mine leases to dig it, and in permits to explore for more, has suddenly become a bonanza.

In the 12 months that ended in July, 1970, the increase in prospecting permits issued by the Interior Department's Bureau of Land Management for coal exploration on federal land—national forests, grassland, desert and range—shot up by 50% to the greatest number in history, covering 733,576 acres.

Prospecting permits on Indian reservations, issued separately by the Bureau of Indian Affairs, went from none to exploration rights covering 500,000 more acres. Such permits are convertible to firm mineral leases if coal is found.

Nearly one million acres of public and Indian coal land in the West is already leased. Leases from private owners, chiefly the transcontinental, land grant railroads, may cover an equal area.

The forces behind the sudden migration of coal mining to the West are complex.

ATOMIC POWER LAGS

First, despite the wide acceptance during the 1960s of visionary forecasts for nuclear electric power, half the nation's electricity is still generated by coal fired steam turbines.

Dr. Glenn T. Seaborg, retiring chairman of the Atomic Energy Commission, recently conceded that the poor record of the nuclear-electric program means that coal will fuel an even greater portion of the enlarged generating capacity required for the next three decades.

Other important factors are mining costs and volume.

Strip mining production of coal in the country has advanced very rapidly in the last few years, from about one-third of the annual tonnage in 1968 to 40 or 42% last year. According to the Bureau of Mines, the cost advantage over deep mined coal is on the order of three to one.

SEVENTY-SEVEN PERCENT OF U.S. RESERVES

Productivity per worker runs as high as five to one in favor of strip mining, and is going higher under the Federal Coal Mine Health and Safety Act of 1969, which requires deep mines to take expensive steps to curb the high rate of death and injury.

Moreover, particularly for gasification, huge guaranteed volumes of cheap, strip mined coal are essential.

The Bureau of Mines has just cautiously disclosed in an unpublished compendium that beneath 13 states west of the Mississippi River there lies 77% of the country's economically strippable coal reserves of 45 billion tons. The Western coal is in seams 12 times thicker, on the average, than in the East. And 25.5 billion tons of it is low sulphur coal.

Already in a break with transportation tradition, the historic flow of coal from Appalachian mines to Lake Erie ports to docks at Superior, Wis., or Duluth, Minn., has begun to turn around.

Burlington Northern, Inc., the merged railway system—and also one of the largest private owners of Western coal reserves through 19th century federal land grants—has been loading low sulphur coal from the Peabody Coal Co.'s Big Sky Strip Mine at Colstrip in eastern Montana. The coal goes by train to the docks at Superior and is shipped by lake steamer to Taconite Harbor, Mich., a movement that would have been economically unthinkable a few years ago.

Strip mined Montana coal is under contract to fuel steam-electric plants as far east as Cohasset, Minn., and Hammond, Ind., east of Chicago. To reduce the sulphur dioxide emissions from its stacks, Commonwealth Edison of Chicago has contracted for 22 million tons of Montana coal and is testing New Mexico coal that comes 1,500 miles by rail.

These revolutionary changes in what is probably the nation's most conservative industry, designed to tide over the immediate crisis of electric power versus air pollution, are regarded here as only beginnings.

In recent years, some federal coal leases have gone for under $1 an acre. Lately, however, Bureau of Land Management lease prices have advanced so rapidly that a recent successful bid of $257.50 an acre by a land buying affiliate of the Ashland Oil Co. for coal rights to 7,600 acres or 13 square miles, near Hanna, Wyo.—was only briefly called a "precedent shattering high price." The precedent lasted two weeks, when Cordero Mining Co., a Sun Oil subsidiary, nearly doubled it by paying $505 an acre for another 10 square mile parcel in Wyoming.

INDIAN LAND CHEAP

But particularly on Indian reservations, there have also been what one official of the Bureau of Indian Affairs here calls "some damn lucky breaks" for Eastern coal companies bidding for leases of tribal coal reserves.

Last September, Westmoreland Resources, Inc., had to bid an average of only $7.87 an acre for 32,300 acres of coal rights held by the Crow Indian Reservation, Montana.

Within months, that syndicate had sold options to buy 300 million of its 900 million tons of Montana coal reserves to the Colorado Interstate Gas Co., the pipeline division of the Colorado Interstate Corp.

Other vast coal reserves in the West are owned by the railroads. Government land grants to the railroads, which have remained dormant and unsalable for 100 years, are suddenly valuable.

By far the greatest acreage of coal leaseholds is being acquired on speculation.

An unpublished "working paper" prepared at the Interior Department shows that the 10 largest holders of federal coal leases control 49% of the 773,000 acres of public domain turned over to mining interests or land speculators as of July 1, 1970, and that very little of their acreage is being mined.

The interior study says that those 10 leaseholders control 97% of the leases in Montana and North Dakota, 91% in New Mexico and Oklahoma, 79% in Utah, 75% in Colorado and 77% in Wyoming.

On Aug. 4, the Interior Department signed an agreement with the gas industry that will add $80 million in federal funds to $40 million from gas and pipeline companies for a four year acceleration of existing work on small scale pilot coal gasification plants. Some $176 million more in federal money has been set aside for the next step—construction of a full scale demonstration plant.

Meanwhile, the coal industry is working hard to picture the environmental prospect for the West as benign, if not uplifting.

Carl E. Bagge, a former member of the Federal Power Commission who now heads the National Coal Association, an influential Washington based industry group, has been inveighing speeches against "reckless," "radical," "emotional" conservationist attacks on strip mining.

Bagge has been pointing out in his Western travels that the strip mining industry means to do better there than in the ravaged coal fields of the East, and that the tempo of Western nature is slower—there is less timber, less rainfall, less visual discontinuity in stripping buttes and badlands than Appalachian hickory forests or Indiana cornfields.

[From the Congressional Record, Apr. 5, 1971]

By Mr. Nelson (for himself and Mr. McGovern):

S. 1498. A bill to provide for the control of surface and underground coal mining operations which adversely affect the quality of our environment, and for other purposes. Referred to the Committee on Interior and Insular Affairs.

STRIP MINING

Mr. NELSON. Mr. President, recently Congressman Ken Hechler of West Virginia introduced a bill to ban strip mining for coal in the United States in 6 months. Today I am introducing the same bill in the Senate, with the Senator from South Dakota (Mr. McGovern) as a cosponsor. Although other measures are pending before us, including my proposal, S. 77, to deal with the environmentally devastating practice of strip mining, Congressman Hechler's measure also merits the consideration of the Senate.

In introducing his bill, Congressman Hechler has raised the question whether strip-mined lands can ever be effectively restored, especially in mountainous areas.

The damage from strip mining, Congressman Hechler argues, "is so great that even the best of reclamation practices does not eliminate some of its ugly scars."

Already, an estimated 1.8 million acres have been disturbed by strip mining in this country. And at presently accelerating rates, the figure will reach 5 million acres, an area about the size of New Jersey, by 1980, the Interior Department estimates.

Yet the Department finds that only 56,000 acres have thus far been reclaimed after strip mining.

If the damage from strip mining cannot be undone, the consequence is not only the loss of natural beauty, but a permanent handicap on the economy of the strip mined area. What promise of future economic strength and diversity can there be in an area whose landscape is left polluted and barren forever, with reclamation efforts making only the most superficial progress toward recovery?

Is this country willing to trade away the future of whole regions and their people just to provide the supposed easiest, cheapest way out of meeting our endless resource demands?

What price Appalachia? What price the areas of the 37 States with significant coal or lignite deposits in them?

These are the questions that must be considered just as seriously as any other economic issue that may be raised in the coming debate over action on strip mining. Indeed it is true that human resources, and jobs, and the quality of life, and the strength of the economy are in the balance in these grave environmental matters. And in the long run, this country will find that paying the price now of environmental cleanup is going to be far less than continuing to pay the gigantic and rapidly mounting annual toll in damages from environmental problems we continue to ignore.

In considering strip mining legislation, Congress must frankly ask whether reclamation is possible, and if so, in what circumstances. And we must also review the environmental impact and the cost of recovery involved in the alternative of underground mining.

Thus, I introduce the measure to ban all strip mining for coal because it raises serious questions which must be considered in any action on this critical unresolved environmental and human problem confronting the Nation.

And if environmental action on strip mining causes an economic impact on a mined area in the short run, I would support Federal aid to help in the transition.

Because I have explained my own measure in earlier statements in this and previous Congresses, I will only briefly review it here: In addition to banning surface mining in areas where reclamation is not feasible, this proposal would regulate present and future strip mining through a Federal-State program which would set and require compliance with standards, and provide financial assistance for reclamation.

[From the Christian Science Monitor, Nov. 3, 1971]

CONTROLS ON STRIP MINING

For those who have not seen a stripmine operation firsthand—the barren mountains of useless "overburden," the mudslides, the uprooted trees, the silted creeks and adjacent land erosion, the threatened property of helpless landowners whose forebears sold the mineral rights of their land years ago, and the scars of acid-mine drainage—we commend a series of articles just completed by Monitor correspondent Jo Ann Levine. Her on-the-scene investigation of the injury being done to nature and private citizens, under cloak of the law, tells the sorry story in grim detail.

Some two million acres of land have already been devastated in the United States by surface-mine strippers, many of them quick-cash opportunists with no other interest than to get the coal, get their profits, and get out. By 1980, at the present rate, another three million acres will have been torn up unless strong legislative action to prevent it takes place at the federal level.

The battle is on between conservationists and tightly allied, heavily financed vested interests such as the United Mine Workers Union, the National Coal Association, electric power utility companies, and the big oil, coal and steel corporations.

Arguments are put forth that American power needs are growing faster than the usual deep-mine coal operators, oil and gas producers, or even nuclear-power plants can supply. But the 52 million tons of coal exported annually from this country belie that argument. As for the slogan "coal means jobs," Rep. Ken Hechler (D) of West Virginia, counters that "strip mining means temporary jobs." Population data prove his point, showing that the fastest exodus of people from Appalachia occurs in the strip-mining areas.

Representative Hechler has introduced a bill in Congress that would totally outlaw all strip mining within six months. In addition he calls for 90 percent federal help in reclaiming stripped land.

His bill is given little chance of passage. Considering the massive political power of those arrayed against it, that assessment is probably correct. A Nixon bill, which would extend to all surface-mined minerals, is far softer—too soft, in fact. It would give states two years to tighten up laws and draw up plans to minimize environmental damage from stripping, or else be subject to federal controls. It makes no provision for reclamation of areas already wasted.

Aside from the two-year period, which would give operators that much more time to destroy additional thousands of acres, the plan's reliance on state legislative action is unrealistic. Local interests have historically kept laws to control strip-mining operations from getting past state legislatures. West Virginia is one

exception, having passed some useful controls in the past year—as against original efforts to abolish the practice entirely. But these laws were forced through only after years of exploitation had already ruined vast areas of that once-beautiful mountain state.

We would urgently press for the strongest possible federal controls. Recognizing that a total abolition is probably a political impossibility, we believe Congress should put rigorous land reclamation standards on all strip mining, making the economics of the business such that small-time opportunists would be forced out entirely. Larger, more responsible operators should have to reclaim the earth for other use. We also concur with Representative Hechler that administration of a strict federal law should be put under the Environmental Protection Administration, and not left to the Department of Interior, which has in the past shown rather tender concern for those interests which it is supposed to regulate.

[From the Washington Post, Mar. 18, 1971]

THE STRIP MINE PROBLEM

"Our class has been reading and discussing the problem of strip mining," wrote a sixth grader from Colerain, Ohio to Rep. Ken Hechler last month. "I think it is like a wildfire destroying the forests and land in the United States. Since we live in eastern Ohio, we know how it is spreading and leaving scars on the surface of the earth. We hope Congress does not feed this fire." The words are only those of a child, and only one of thousands of pleas received daily on Capitol Hill. Yet, in the last few years, public worry and outrage over strip mining have been twin clouds in a gathering storm. The West Virginia Secretary of State, John D. Rockefeller IV, recently stood behind a bill that would abolish surface mining "completely and forever." Three large conservation groups have filed suit against the Tennessee Valley Authority, the country's largest user of stripped coal. In West Virginia's largest strip mine county—Boone—a poll among residents, according to Business Week magazine showed 10 to 1 against the practice. Representative Hechler has introduced a bill, with 35 co-sponsors from 16 states, that would federally outlaw stripping.

All this concern is well placed, and it is to be hoped more citizens and institutions will add their voice. Yet, however sad and disgusting the devastation is (nearly two million acres to date), dealing with the total realities of strip mining—political, economic, cultural and legal—is a major complexity. This is not unique; no environmental problem exists in a vacuum, solvable with the simplicity of one aopproach. Regarding stripping, for example, the nation needs coal for its electricity but it also needs beautiful land for its soul. Mining areas can use jobs for its citizens, but it can also use jobs for workers in the tourist industry—provided something is left of the land to tour.

With the bulldozers and shovels continuing the gouging daily, it is clear that this Congress must produce legislation either to stop the practice or to require land-reclamation programs that really do reclaim the land. Aside from Representative Hechler's bill—a strong one—several others have been offered, including the administration's, Senator Nelson's, Senator Jackson's, Representative Saylor's and one soon from Representative Dingell. The Senate Interior Committee is preparing for hearings.

Until now, the technology of destruction has had an almost open throttle in supplying coal by strip mining. Some small reclamation projects by the Appalachian Regional Commission and a few companies have been operating; but usually, the land is left for dead once the coal companies move on. Aside from the barren land, a Bureau of Mines official estimates that some 5,700 miles of Appalachian streams have been contaminated by mine acids. Instant solutions are of course impossible, but no reason exists for not having solutions two or three years from now. No reason, except if Congress chooses to "feed this fire" instead of putting it out.

[From the New York Times, Nov. 1, 1971]

Strip mining used to be a small part of the coal mine industry in this country. But economic pressures and the invention of improved machinery have produced such rapid expansion that last year two-fifths of the nation's coal production

came from strip mines. Huge machines several stories high have already clawed and gouged enough land to make a swath a mile wide from New York to San Francisco.

The effect on the natural environment is devastating. Soil displaced, trees uprooted, hillsides washed away, streams chocked with silt or poisoned by acids are the usual consequences of strip mine techniques. Conventional underground mining also has its adverse effects, but with careful planning those ill effects are much more easily controlled.

The costs, consequences and possible control of strip mining are the subject of public hearings now under way in Congress. The two principal proposals are an Administration measure which would require the states to set up codes of regulation for strip mines under broad Federal supervision and a bill offered by Representative Hechler of West Virginia and backed by 90 co-sponsors which would ban strip mining entirely after six months.

Most strip mined land can be reclaimed if enough money is spent in doing so, but estimates of cost vary wildly. Coal companies can point to instances of brilliantly successful land reclamation, but Representative Hechler and other critics ridicule these "showcase projects." Certainly there are many more polluted streams and ruined valleys in the older coal mining states of West Virginia and Kentucky than there are handsome restored landscapes. Western states from North Dakota to Arizona where strip mining on a large scale is only now being introduced face the same sorry fate, as Senator Gaylord Nelson has warned.

Given the raw economic power massed in Congress on behalf of strip mining, there is little prospect that an outright ban can be effected. But the Administration bill needs to be tightened at the very least. Two years is an unnecessarily long time for the states to come up with acceptable standards when the problem is already upon them. Nor is the production-oriented Bureau of Mines the right Federal agency to supervise the states in the performance of an ecological requirement.

Indignation and anxiety about strip mining are on the increase across the nation wherever the new giant machines make their appearance. Congress has been dilatory in confronting this problem. The public expects the House and Senate Interior Committees to draft a strong regulatory bill. If they do not, public sentiment will surely force the total ban on strip mining which the industry fears. Regulation and reclamation have to be seen to be working—and soon—if strip mining is to survive as a way of producing coal.

Senator Moss. Our next witness is our colleague from the House, the Honorable Ken Hechler, Congressman from West Virginia. Your activities are well known; you are the leading spokesman for complete abolition of strip mining and you have done this with great courage. You come from a State with vast reserves of coal and one that has suffered from strip mining but one whose State's economy depends on coal. Therefore, we are anxious to hear from you, Ken.

STATEMENT OF HON. KEN HECHLER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WEST VIRGINIA, ACCOMPANIED BY IVAN R. WHITE, WEST VIRGINIA HOUSE OF DELEGATES

Mr. HECHLER. Mr. Chairman, I have with me and it will only take both of us a total of 10 minutes, a member of the West Virginia House of Delegates, Ivan R. White, a former coal miner and also disabled by pneumonoconiosis.

Senator Moss. Pleased to have you, Mr. White.

Mr. HECHLER. I would like Mr. White to make one or two observations on the human side of strip mining and how it has affected some of the people in the West Virginia area.

Senator Moss. We will be pleased to hear from you, Mr. White.

Mr. WHITE. Thank you, sir. There are so many that come to my mind but the most recent was Friday of last week. The Corps of Engi-

neers and myself went to check the water in the slag. There was one little community by the name of Greenwood and they had a slide over on the railroad and it came down and covered the railroad track and stopped the stream until the stream came over into the community and was flooding the community.

So the strippers came down with the shovel to remove the slag from the stream and this lady that lived near the stream, she thought, and I suppose they were intending to dump some of the slag next to her yard. She was upset because the week before that the strippers had destroyed a cemetery. They went back to clean off the cemetery and it was totally gone. The cemetery was destroyed.

So she told the man who was operating the shovels, "If you dump one dipper full of that mud over next to my yard, I am going to shoot you off of that shovel and I will kill you."

Let me say this, during the last session of our legislature, the strippers told us that we were too emotional. I ask you, could you blame this mother being emotional about what they had done to this cemetery? Then the flood that came down to coat her yard was probably the sediment that came from the cemetery.

This is just one issue. I will take no more time, thank you.

Senator Moss. Thank you, Mr. White. You go ahead, Mr. Hechler.

Mr. HECHLER. S. 1498, which I endorse, provides that the strip mining of coal is to be phased out 6 months after the enactment of the bill and includes a number of environmental safeguards covering the underground mining of coal.

Up until recently most people have thought of strip mining as being a peculiarly Appalachian problem. Representing the largest coal-producing State in the Nation, I can testify that strip mining has ripped the guts out of our mountains, polluted our streams with acid and silt, uprooted our trees and forests, devastated the land, seriously disturbed or destroyed wildlife habitat, left miles of ugly highwalls, ruined the water supply in many areas, and left a trail of utter despair for many honest and hard-working people.

Now strip mining is a national problem, with the land being ripped up and strippable reserves available in 28 States. The members of this subcommittee should visit stripped areas, and not only those where they are led to showcase reclamation projects where great sums of money have been spent to prove a point not generally applicable, or where reclamation has been carried out on strip mined areas which used some of the older, smaller machinery to mine. This committee is well acquainted with the damages caused by clearcutting, and all you have to do is to multiply these environmental damages many times to get a concept of the devastation caused by strip mining.

This committee deserves the thanks of millions of Americans who share with pride the vast domain of our public lands. It is critical that this committee move quickly and decisively to protect America's public lands against the Damoclean sword of strip mining poised above them, ready to gouge, rip, tear, and decapitate. Nearly 1 million acres of public and Indian coal lands in the West are already leased. The Bureau of Land Management indicates that there was a 50-percent increase in coal prospecting permits on Federal lands in the fiscal year ending July 1970. In that year, strip coal prospecting permits hit

733,576 acres. In the same period, the Bureau of Indian Affairs issued coal exploration prospecting permits on 500,000 additional acres—which was precisely 500,000 acres more than the prior year.

As guardians of the public lands, this committee will, I trust, look seriously into these ominous developments. What belongs to all the people must be preserved for the people.

There is heavy pressure to expand the practice of strip mining into western lands. I hope that the members of this committee representing Western States will take a sober look at what strip mining has already done to Appalachia before you eagerly embrace the systematic destruction of your own land, streams, and forests.

The arguments of economics are constantly being thrown back at those of us who are determined to stop this self-destructive hara-kiri. In West Virginia and throughout the Appalachian area, we are told that strip mining means jobs, profits, payrolls and taxes, so why destroy an industry to please some nature nuts? It is true that we need jobs, and people have been leaving West Virginia in great numbers. If strip mining were so healthy for West Virginia's economy, I would think more people would stay and be attracted to come into our State. As a matter of fact, of the 10 West Virginia counties which had the highest production of strip mined coal between 1960 and 1970, nine out of the 10 had losses of population ranging between 6.2 percent and 29 percent—or an average loss of 17.6 percent. This is a loss of nearly three times the statewide average loss in population between 1960 and 1970—6.2 percent.

The jobs in strip mining are temporary jobs, for when the coal is stripped out not only are the jobs gone but the land is gone too, and this makes the entire area unattractive for the tourist industry. Likewise, people do not flock to live in stripped-out areas where the water is polluted and the land ruined.

In all the discussions of the economics of strip mining and the energy crisis, too little attention has been paid to the human side of the dreary tragedies in strip mined areas.

A quarter of a mile off the road up a hollow in Fayette County, W. Va., Mr. and Mrs. Harvey Kincaid settled, bought and paid for a nice home in a clean neighborhood. Over a period of 13 years they remodeled the house a little at a time. "Then the strippers came 4 years ago with their big machinery and TNT," said Mrs. Kincaid. "First they send in loggers to strip all the good timber out and then they come with their bulldozers * * *. When the rains come and there isn't anything to stop the drainage, the mountains slide and the spoil banks fall down to the next highwall and so on until the whole mountain slides. There is a small creek in the hollow and when the spring rains come, its banks won't hold the water. So where does it go—into people's yards, into their wells, under and into their houses. You have rocks, coal, and a little bit of everything in your yards."

Mrs. Kincaid went on: "Then the damage comes to your house because of so much dampness. The doors won't close, the foundation sinks and cracks the walls in the house, your tile comes up off your floors, your walls mold, even the clothes in your closets. Then your children stay sick with bronchial trouble." Mr. and Mrs. Kincaid moved 4 miles up the road, and 1 month after moving into their new

house the same strip mining company started blasting away, cracking the walls and foundations.

I wish each member of this committee could talk with Mr. and Mrs. Kincaid personally. I wish that the members of the committee could also talk with the thousands of other families in 28 States where the strip mining of coal is ripping up the land.

This is a human problem. It is hurting my people, and your people. I am shocked at the weak apologies and milk-and-water solutions being seriously advanced by the administration. How can you justify, as the administration bill does, a 2-year period beyond the passage of Federal legislation, during which the strippers know they can continue and escalate their devastation unchecked?

A few months ago a 16-inch rock crashed through the home of Glen Holliday at Stotesbury, W. Va. The rock resulted from a blast from a nearby strip mining operation of Ranger Fuel Corp. of Beckley, W. Va. The rock tore a hole in the roof the size of a washbucket, and luckily missed his five children who were in an adjoining room. "The rock must have had a lot of force to it because it came straight down through the roof and put a hole in the floor," according to Holliday. "If anyone in the family had been there it would have killed them."

The newspaper publicity made the coal company very apologetic, and they sent a good carpenter to repair the roof. But everybody in the vicinity lives in fear of what may happen next.

In Amherstdale, W. Va., in my congressional district, mud and rockslides come down from a hilly strip mine after almost every rain. The yards and lawns of the townspeople are coated with the gooey remains of the strip mine. I have had scores of letters from the unfortunate residents of Amherstdale, but nobody wants to offend a company which is a political power in the area. An elderly man took a shortcut through a muddy area 3 years ago, he got stuck, and nobody heard his cries. They found his body in the morning.

Mrs. Harold Almond of Buchhannon, W. Va., wrote me: "In a county not far from here, the mines have completely ruined the water supply and the people have become so apathetic that they just pour more Clorox in the water and go on." Mr. and Mrs. A. H. Harshbarger of Stollings, W. Va., wrote me: "Strip mining occurred up the creek several years ago. Now the bare mountainsides are left. When it rains, rocks, soil, and plants wash down. They have filled up Dingess Run until it can no longer take care of the excess water which runs off the mountainsides in rainy weather. We are bothered by frequent floods since stripping was done."

A cancer of the earth is spreading across our Nation. This cancer has already brought the death of mighty Appalachian mountains and rushing rivers. It has spread into the farmlands of the Midwest. It has recently attacked the ancient Indian homelands of the Southwest: On the Black Mesa it is destroying the oldest area of continuous human habitation on the North American Continent. Already, nearly 3,000 square miles of our land have succumbed to this cancer, along with hundreds of miles of streams and waterways. By the end of this century, unless its spread is curtailed, 10,000 square miles will be infected beyond recovery. Indeed, the U.S. Geological survey calculates that 71,000 square miles of our land may be torn away by this dis-

ease—the equivalent of a strip of dead tissue, 25 miles wide, stretching from coast to coast.

This cancer is strip mining for coal. It is a menacing disease—a pathology deriving from our lust for energy at the cheapest monetary cost regardless of the social cost. Strip mining only seems cheaper because the environmental costs are passed on to future generations. The agents which transmit the disease are the giant earthmoving machines developed by an onrushing technology—machines which can gouge as much as 200 cubic yards of earth and rock at a single bite. The result is to pulverize and destroy layers of earth and rock which were fashioned in geological eras longer than human history but are now being uprooted in a single generation. Water tables are destroyed, depriving the earth of its channels of nourishment. The delicate surface fabric of life-supporting earth is cast to the bottom. Deep strata of rock and shale are pulverized and exposed to the elements, where they will leech acids and toxic minerals into the surrounding streams for generations. Mountains, now unstable, crack, slip and slide. Rains wash mud, sand and toxic substances down into the streams and rivers, filling their channels and poisoning their waters. And so the disease spreads as the waters flow from the mountains toward the seas.

The ultimate victims are human beings, people who must live in relation to the land. It begins with personal tragedies such as the Kincaid family and others I have mentioned; the families who have been subjected to a hail of boulders raining down on their yards from strip mine blasting; the families I know who lost their well water when the stripping shifted the underground watercourses. From personal tragedies stripping escalates to community tragedies. Surrounded by naked strip mined mountains which hold no water, the silt choked Coal River floods, periodically sending turgid waters into the living rooms of 100 homes and into the basements of uncounted others; the municipal water supply of the city of St. Albans, W. Va., is threatened as silt fills the natural reservoir which the river once provided and as the same silt carries growing quantities of bacteria into the strained treatment facilities; and, the ultimate irony, the people of Toney's Branch in Raleigh County, W. Va., planning to drive to their State capitol to protest strip mining, are locked in their own hollow when an overnight rain sends mud and rocks down from the strip mine to block their road.

The final victims of this cancer are entire political systems. As the mechanical monsters snatch jobs away from former coal miners, they also destroy the regions in which the miners live and all possibilities of alternative employment. What industry will locate next to flood-prone, silted, and polluted streams? What housing can be built beneath an unstable spoil slope threatening to slide down the mountain? Who can lumber the once-rich hardwood forests where now hardly grasses and weeds can survive? What tourist will invest his vacation to inspect mountains defaced by endless highway scars and hideous rockslides? Who will hunt where there is no game, or fish in lifeless streams? And so we are seeing the growth of nothing but dismal ghost towns, whose death rattle you can hear when the strip miners scoop up their black diamonds of the soil.

As our mountains are destroyed to provide energy for your cities, our people are also forced to move to your cities to live on your wel-

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fare. The next time you figure the cost of your electricity, calculate in the cost of welfare paid to displaced mountaineers and farmers, the cost of abortive regional development programs, and the cost to future generations of the loss of great sections of our most beautiful and most productive land. Cheap power from strip mining is no bargain.

What is the cure for cancer? We passed a bill in the House yesterday, and the Senate has already acted. The cure, when it is discovered, is sure to require the removal of cancerous cells when they are found and the prevention of the rapid propagation of cancerous cells.

The administration bill on strip mining does not propose to remove this cancer. It merely sets up guidelines for the States. The States are required to administer the actual regulations—so the blame for the ensuing disaster can be kept a safe distance from Washington. Several Appalachian States are already administering regulations as rigorous as anything the administration proposes. The results are the natural and human disaster which is the reason for these hearings. Let us not pass laws which will require us continuously to chase our tail in this manner while land and people are destroyed at an ever-growing rate.

As this committee proceeds in its hearings it will be besieged with arguments concerning "reclamation"—a word of great promise and little substance. My colleagues on the House subcommittee gained wisdom by visiting one—and only one—reclamation site which is admittedly the most impressive in the Nation: the Hanna Coal Co. reclamation around Cadiz, Ohio. Here they exposed themselves only to the interpretation of the company. They returned impressed, in spite of the scars which clearly remain, in spite of the fact that only one species of grass has been induced to grow on this whole vast area of former farmland and woodland—an area uncharacteristically favorable for Ohio and Appalachia since the natural limestone neutralizes acid. They did not learn about the destruction of subterranean watercourses, changes in the surface temperature of the earth, the relative economic value and productivity of the land since strip mining, or the effect on the county tax base. They did not discover that the same company which reclaimed here failed to reclaim stripped lands a few miles away. Nor did they discover the documented fact that the waters running from this unusually nonacid land, even after treatment by the company, are still highly toxic, killing fish and discouraging plant growth. And Cadiz, Ohio, may be perhaps the best example the American stripping industry has to offer.

Gentlemen, you must visit strip mines to know the problem you are dealing with. But do not go out as sheep to be shorn. Do not rely on the wolves to be your guides. And do not rely too heavily on State reclamation officials who must justify their existence by sugar coating the effects of their work. Don't get locked into showcases. Pick sites which are truly characteristic of current strip mining and "reclamation" practices. Pick sites which have been thoroughly studied by independent experts—not beholden to Government or industry. Several such sites, I know, have been suggested to the committee. Take such independent experts along with you so that your eyes are opened instead of blinded. And by all means, when you visit a strip mine, arrange to talk with some of the people who live nearby—common people whose lives are rooted in the community. They will tell you the real story of strip mining.

When you visit strip mining for coal in any part of this country you will see a practice which must be stopped. Your eyes can tell you that, and the conclusions of your eyes can be reenforced by ample independent scientific data in many areas, and by the witness of local residents who live with the effects of strip mining.

What we can plainly see must be stopped. But our perception is blunted by an array of arguments concerning "reclamation." The truth is that virtually no meaningful reclamation—truly restoring the land to its original usefulness, productivity, and beauty—has been attempted in this country. Even limited-purpose reclamation, such as the $8,000 an acre spent by the State of Pennsylvania on Morraine State Park, is exorbitantly expensive. The argument about reclamation can seduce us into endless pilot projects, endless trials and endless errors, while all around the cancer is destroying the land at an ever increasing rate.

We cannot assume on the basis of vague and untested promises and theories, that a cumbersome and expensive regulatory bureaucracy, whether Federal or State, can wave magic wands and restore stripped lands to usefulness. We should not prescribe painkillers for cancer. We must stop the spread of the cancer.

The coal reserves of this country are abundant for the foreseeable future needs of our society. It is our one truly abundant mineral resource. Most of this coal can only be deep mined, and that which can be deep mined can supply all our expanding needs for centuries. In Boone County, W. Va., alone, just a small segment of one coalfield, there are 4.6 billion tons of coal recoverage by present technology—enough to supply our whole Nation for 7 years. Of this coal, only 310 million tons, less than 7 percent of these reserves, can be recovered by the strip mining which is spreading rapidly throughout the county. To strip mine all this coal, 80 percent of the land area of mountainous Boone County would be destroyed—80 percent of the land destroyed to obtain 7 percent of the coal. Who will be able to live there to mine the rest? It makes no sense.

Great sums of money have already been invested in strip mining for coal. Fortunately, most of this investment is currently in areas and in equipment which could survive the conversion back to deep mining. The base facilities for cleaning and loading coal, the largest part of the investment, can be used just as well for deep mining on the same sites in most parts of Appalachia and in some other areas. Most of the earth-moving equipment, except for the largest shovels, can be used for road construction. Most of the employees, likewise, are skilled in trades for which there is demand in other industries.

But this situation is rapidly changing for the worse. Already in the Southwest hundreds of millions of dollars of private and public capital have been invested in strip mines and companion power generating facilities around Four Corners. Much of this investment is directly dependent upon strip mining. The loss of this may seem great, but it is dwarfed by the possibilities of the decade ahead. As this committee is already becoming aware, vast multimillion-dollar complexes for power generation and for coal gassification are being planned on the economic presumption of unlimited quantities of strip mined coal at prices so cheap that they preclude even token reclamation. The whole American energy complex is lusting after the mountains and plains of the North-

west and their strippable resources. Once this investment is in place, and the subsequent environmental and social disaster creates a new Appalachia on a vaster scale, who then will have the courage to shut down the plants?

The time to act is now. The time to end strip mining for coal is now, when the temporary job losses in most areas can be offset even in the short term by economic and social gains for the surrounding communities. Imagine the upheaval a decade from now if the law passed by this Congress proves to be insufficient.

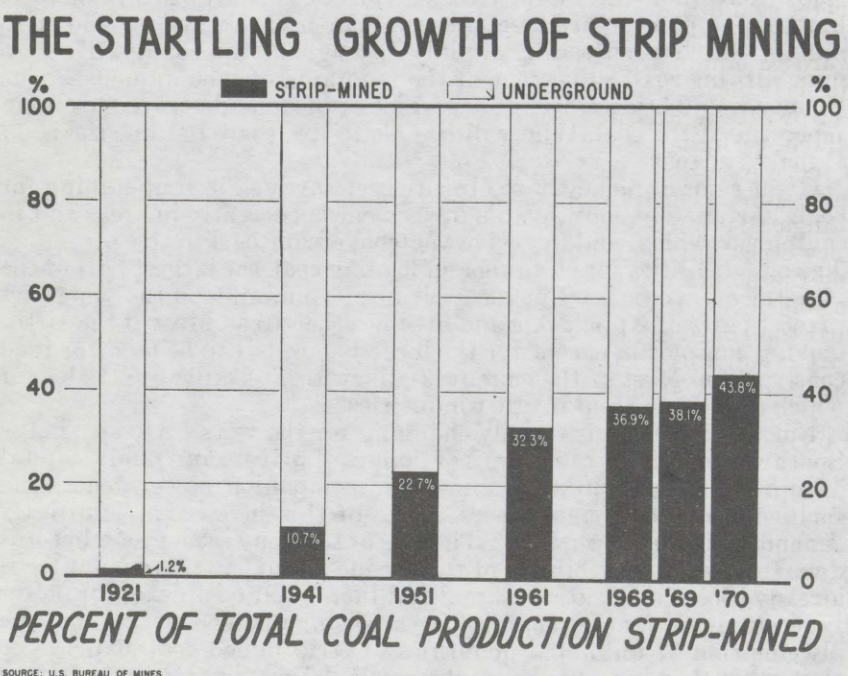
We must not temporize with the cancer of the land. We cannot afford to be duped by quacks who prescribe pills, palliatives, and painkillers. We must have the courage to recognize the severity of this disease, and proceed immediately to save our land and our people from this deadly scourge.

I have also brought along a chart for the information of the committee. I will try to get a copy that can be reproduced in the record.

Senator Moss. We would like it reproduced in the record if you could give us a smaller size of it.

Mr. HECHLER. This illustrates the tremendous escalation in the amount of strip mining that occurred in the last 20 years, starting in 1921 when only a little over 1 percent of our coal was strip mined, 1968, one-third, 1970, up to 43.8 percent and the latest figures from the Bureau of Mines indicates that 1971 will probably hit 48 percent and very soon will go over 50 percent at the present rate of escalation. The time to act is now. Thank you, Mr. Chairman.

(The chart referred to follows:)



Senator Moss. Thank you, Congressman Hechler, for your testimony and your point of view. Of course the obvious corrollary to your recommendation is that all coal be mined by underground mining methods. But doesn't that impose on us some difficult and maybe even unacceptable risks. Not only the risk of life in underground mining, which is certainly much greater than above ground, but mine drainage and land subsidence, things of that sort which pose problems which might be—well, they are at least severe. Maybe they are not equal in having the land disturbed but they are very severe, is that right?

Mr. HECHLER. This is correct. The rate of fatal accidents in West Virginia in the first 6 months of 1971, contrasting strip mining and underground mining would surprise many members of this committee. In the first 6 months, there was one fatal accident per 1.58 million man-hours worked in underground mines, and one fatality per 0.97 million man-hours worked in strip and auger mines.

This indicates, of course, that the rate of fatalities is slightly higher per million man-hours of exposure in strip mines and the large machinery which is now being used does cause some dangers in surface mining. Nationwide, the fatality rate in underground mines is higher but not many times higher. My own feeling is, having been associated with the passage of the Federal Coal Mine Health and Safety Act of 1969, but that if this act were adequately enforced by the Bureau of Mines, we wouldn't have to be quite as concerned about the human factor of the injuries in the mines. As the Senator from Utah knows, we passed a very strict health standard in the 3.0 milligrams per cubic meter coal dust standard in the 1969 act. Judging from the experience of Australia and Great Britain and other countries, we can look forward to elimination in the future of many new cases of pneumoconiosis if the dust level is kept down.

Now, there are many, many other aspects which you have raised which, with the permission of the committee, I would like to submit in a more extensive statement of what has happened with subsidence, mine fires, acid mine drainage and what can be done about these things. My bill does not simply eliminate strip mining. It contains very strict environmental standards for underground mining covering the points you have mentioned. It might seem underground mining has caused all of the damage because actually 80 percent of our coal that has been mined up to date has been mined underground.

It is only recently that the escalation of stripping has brought it up to nearly 50 percent of total production as of this year.

CONTRASTING DAMAGES OF STRIP AND UNDERGROUND COAL MINING

Approximately 80 percent of all coal mined in this country to date has been removed by underground mining methods—or four times the amount strip mined. This means that the adverse environmental effects of underground mining have been more prominent in the past because the sheer volume of total cumulative production is that much larger. Increasingly in recent years, the trend is reversing as strip mining rapidly escalates. From 32.3 percent of total coal production in 1961, strip mining rose to 43.8 percent in 1970 and in 1971 or 1972 will probably exceed 50 percent for the first time in history.

1. PNEUMOCONIOSIS

It is significant to note that a prominent member of the House of Appropriations Committee, Representative Robert H. Michel, Republican of Illinois, recently remarked on the House floor:

I have strip miners in my district. There are some who have worked at the tipple or crusher for years above ground inhaling this very same dust. Should they be discriminated against—for black lung benefits—simply because they work above ground instead of under ground?

I have been informed that the Department of Health, Education, and Welfare is initiating a study to ascertain the incidence of pneumoconiosis among strip miners. Prominent lung experts like Dr. Donald Rasmussen of Beckley, W. Va., aver that there is little likelihood such a study will turn up a large percentage of cases among miners who worked exclusively in or around strip mines. The important point is that the Federal Coal Mine Health and Safety Act of 1969, for the first time in history dealt with reducing future cases of black lung by setting a dust level of 3.0 milligrams per cubic meter of air. Furthermore, provision is made in the act to reduce this level to 2.0 milligrams per cubic meter by 1973, and where a miner shows evidence of development of pneumoconiosis he may elect to transfer to another position in any area of the mine where the dust level is 2.0 milligrams now and 1.0 milligrams after 1973.

In a statement on July 22, 1971, the Director of the Bureau of Mines, Dr. Elburt F. Osborn flatly predicted:

Young miners entering the industry will have little worry about contracting the insidious coal workers pneumoconiosis. Respirable dust levels are down over 50 percent as compared to levels prior to the act.

It is also significant to note that in Australia, where rigid dust control measures were undertaken in the late 1940's, the cost of workmen's compensation for pneumoconiosis threatened the economic condition of the coal industry. According to T. M. Clark of the Joint Coal Board, in a statement before the New York Academy of Sciences International Conference on Pneumoconiosis in September, 1971: Dust control measures in Australia "have been so successful that the medical branch of the Joint Coal Board now advises that for practical purposes no new cases of pneumoconiosis are being produced." On the basis of the Australian experience, and the institution of dust standards in the U.S. law in 1969, it can be concluded that the shift of coal production from strip mining to underground mining would not result in future cases of pneumoconiosis.

2. THE LAND SURFACE

Subsidence is a severe effect of underground mining when it occurs in areas unregulated by law or administration. The excellent unpublished study of the Bureau of Mines entitled "Environmental Effects of Underground Mining and of Mineral Processing" documents these effects in 54 pages. The study also states:

Subsidence is minimized when adequate mine pillars are used to provide overburden support or when voids are back filled with suitable material for the same purpose.

Of course, when the pillars are "robbed" by removing them (an irresponsible practice which has frequently occurred even under built-up areas), subsidence of a damaging nature will result. The Bureau of Mines study concludes: "When mining is uniform and pillar strength adequate, subsidence is negligible."

Subsidence in the past has been so serious that in some cases portions of urban areas had to be condemned. In making the motion picture of my book "The Bridge at Remagen", which was filmed in Czechoslovakia in 1968, it was discovered that coal subsidence under the city of Most necessitated destroying many streets and buildings in that city. Most is located 75 miles northwest of Prague, less than 10 miles from the East German border, in the area originally part of the German Sudetenland. Permission was obtained from the Czech Government to blow up the condemned area which the subsidence had threatened. The planned destruction of the collapsing buildings was used to simulate the tank-artillery-infantry attack on the town of Remagen, and resulted in some of the most realistic "combat" footage every filmed.

Pennsylvania, which ranks fourth in the number of abandoned mines, ranks first in the number of subsidence occurrences, many of them in the anthracite region. Both State and Federal legislation have been enacted to severely limit mining under built-up areas where subsidence is likely to cause damage, and Federal-State steps are authorized to seal abandoned coal mines and fill voids in such abandoned mines. The Appalachian Regional Development Act of 1965 provided additional programs for subsidence control.

The Bureau of Mines concludes that subsidence has affected about 2 million acres of surface area in the United States. Approximately 92 percent of the subsided surface is identified as forest, idle and agricultural land, and about 158,000 acres of the subsided area is classed as urban. The Bureau of Mines states that:

> Preventive action can be taken to stabilize abandoned mines where subsidence has not yet occurred. Prevention, of course, can be most effective in active mines if permanent support of the overburden is incorporated in the mining process.

The most serious effects of subsidence, therefore, occur in only 8 percent of the mined land area, and a stiffening of Federal and State zoning legislation and requirements for maintenance of pillars and back-filling will substantially reduce further damages by underground mining. Strip mining, on the other hand, adversely affects the entire land area above the extracted coal, plus all other areas where the spoils from strip mining are placed. In the majority of instances, strip-mined land has been almost totally destroyed with regard to natural productivity. Even where "reclamation" has been most elaborate, the quality of usefulness is reduced, for example, from crop land to grazing land.

3. THE WATER SYSTEM

The principal environmental characteristic which underground and strip mining clearly have in common is the production of acid and toxic water through the exposure of acid and mineral bearing shales to a combination of air and water. The strata of shale which are characteristically directly above and beneath the seam of coal are generally heavy producers of sulfuric acid when exposed to a combination of air and water.

In underground mines, water seeping through the roof and flowing out cracks and mine openings carries poisonous waters into streams—a major source of water pollution throughout the Appalachian region. This condition can be corrected in part by purposely caving in the mine roof following extraction of coal, by flooding the mine to the roof, which prevents access of air necessary for acid formation, by sealing all mine outlets, or by "backfilling" the mine with spoil material. All of these measures can reduce the problem, although frequently they do not cure it altogether.

In strip mines, the shale directly above the seam of coal is pulverized by the process of removal and cast on the spoil pile where it is exposed to air and rain water. Characteristically, since this strata is the last to be removed before the coal is reached, it reposes on top of the spoil pile. This strata of shale below the seam of coal is also exposed to air and water until it is recovered in the reclamation process.

The strip mine spoil banks have several characteristics which make them far more potent generators of acid than underground mines. (1) The spoils are more directly exposed to air and water, both of which percolate to depths of 10 feet or more in the loose spoil material to generate acid water, which then runs out into surface watercourses or down into underground watercourses. (2) Acid production is directly proportional to the surface area of the shales exposed to air and water; the pulverized shales in the spoil pile expose many more surfaces than do the solid shales underground. (3) Acid production is also proportional to temperature, doubling for every 10° C. rise in temperature. In summer months, shale exposed to air and water on spoil piles at 90° F. will produce four times as much acid as shale underground at a constant 50° F.

Finally, acid production by strip mines is a greater problem because the acid water flows in all natural directions down off and down through the entire strip mine spoils, rather than through a few discrete openings as in underground mining. It is therefore far harder to trap and control. The only effective method of prevention is likely to be:

1. Segregation of all acid-forming strata in the mining process.
2. Replacing these at the bottom of the reclaimed spoil pile and compacting them to prevent air and water seepage.
3. Compacting the layers of spoil above these layers to prevent air and water access.

To my knowledge this has not been required or achieved in any American strip mining operation.

Even though strip mining can be expected to produce more acid water than underground mining, this is not the major water pollution problem associated with strip mining. The major problem, particularly in mountainous areas, is sedimentation. Strip mined areas continuously erode, filling streams and rivers with sediment which impedes the flow of water, fills the stream channels and promotes flooding, coats stream bottoms and prevents the growth of aquatic plant and animal life, fills reservoirs and impoundments, clogs public water systems, and transmits pathogenic viruses. Erosion and sedimentation rates 500 times that of neighboring unstripped land are common, documented by the U.S. Geological Survey and many other studies.

Sedimentation problems are not significantly associated with underground mining.

Erosion from strip mined land also loads water with toxic quantities of other minerals such as manganese, aluminum, ammonium, magnesium, calcium, potassium, sodium. Not only does the erosion of these minerals from stripped soils prevent revegetation in the soil of these spoils, but the toxic concentrations of these minerals in the runoff water inhibit life in the areas to which these waters flow.

The heavy blasting characteristically associated with strip mining also has adverse effects on underground watercourses in many areas—diverting underground water, opening fissures to pollute underground water with acid and toxic surface waters, and so forth.

Therefore, although the water pollution consequences of underground mining have been and continue to be serious, the water pollution consequences of strip mining are far more serious relative to acid production, sedimentation, toxicity, and destruction of underground watercourses.

4. AIR POLLUTION

Air pollution is occasionally a problem with either mining method, though it is not of the magnitude of the other problems. "Noxious gases," testifies Hollis M. Dole, "are emitted from the 292 burning coal refuse banks and the 289 known coal outcrop and mine fires," resulting from underground mining. These are extremely difficult to control once under way, but adequate environmental regulation can largely prevent this problem with future underground mining. "Back-filling" of mine spoils into the mine or depositing them between layers of earth as in sanitary landfills can prevent future gob pile fires. Coal outcrop fires can also be prevented by back-filling spoils against coal seams left exposed.

Strip mining, like other earth-moving processes, can produce some air pollution problems through creation of dust during the mining process. This can be controlled in part by watering and is rarely serious unless the strip mine is very close to inhabited areas. More serious is the wind-erosion of strip mine spoils in arid regions. This is already contributing to dust storms in the Black Mesa and Four Corners areas of Arizona and New Mexico.

5. AESTHETICS

Aesthetics is important not only in itself, but also in its impact upon other human uses of the mined region. A "hideous" area will not attract residential development, recreation and tourism, or other human and commercial use.

The principal aesthetic problems associated with underground mining are: (1) the base facilities—no more or less objectionable than facilities associated with other heavy industrial processes; (2) spoil piles, which can be eliminated or radically modified in future mining practices; (3) and the depressing appearance of many older "coal camps" which relates to the paternalistic structures and wage rates of a previous era. There is no reason why future underground mining towns cannot be as attractive as other types of communities.

The aesthetic problems associated with strip mining are inherent in the massive disturbance and destruction of the earth above and around the coal which is mined. They affect the entire mined area and indeed the entire regions where strip mining is prevalent. As it compounds other problems, the hideousness of strip mining regions discourages tourism, recreation, and residential development. Since both eastern and western strip mining are frequently in mountainous areas and most generally in areas of great prior natural beauty, strip mining has a massive and growing impact in destroying the beauty about which Americans have always sung with pride.

Strip mining is an aesthetic menace on a scale vastly greater than underground mining.

6. ECONOMY AND HUMAN USE

Underground mining, a labor-intensive industry, has historically been associated with the development of rural and undeveloped regions. It attracts labor and population to old and new communities for long-term employment. These people have brought ancillary industries, trade, housing, services and recreation. The development of underground mining nearly always results in increased population, increased income, increased trade. These processes have been reversed only during periods of major recession in coal production.

Strip mining, on the other hand, has historically been associated with transient employment, with depopulation, and with economic blight. Population studies in West Virginia, Ohio, and Kentucky reveal that intensive strip mining is associated with higher-than-average out-migration and population decline. Studies in Ohio and Kentucky have also revealed that strip mining, by destroying the productivity and usefulness of the land, depresses appraised land values and erodes the tax base, damaging schools and other public services. Its effects on land, water quality, and flooding also discourages the location of other industries, commerce, housing, recreation and tourism in strip mined areas.

Underground mining is generally a stimulus to human use and the local economy. Strip mining is generally a depressant to human use and the local economy.

7. CASUALTIES

It has generally been assumed without question that the accident rate is many times higher in underground mines than for those working in and around strip mines. The cold statistics reveal that accidents occur in both types of mining, and the gap between safety and hazard is not as great as the public concludes when contrasting the two types of mining.

There were 33 men killed in strip and auger mines in 1970, as against 31 killed in 1969. Deaths in underground mines amounted to 163 in 1969 and 216 in 1970. The fairest measure of contrast between the safety records of underground and strip mines is surely the number of accidents per million man-hours of exposure during work. In 1969, fatalities in underground mines were 0.95 per million man-hours worked, and in 1970 this figure rose to 1.17. Strip mining proved somewhat safer, but it is difficult to pinpoint a coordinated total since

the Bureau of Mines keeps figures for strip and auger mining separate. For strip mining, the fatality rate in 1969 was 0.66 per million man-hours and 0.64 in 1970. For auger mining, the fatality rate was 0.80 in 1969 and 1.00 in 1970.

As I indicated in my testimony, it is impossible to obtain any statistics for the early months of 1971 on how much coal is being strip-mined, or how many accidents are occurring. As cited during my testimony, the Department of Mines of West Virginia reported a markedly higher rate of fatalities in the first 6 months of 1971 for those working in strip mines than for those working in underground mines. The rate of fatal accidents in West Virginia was one fatality per 1.58 million man-hours worked in underground mines, and one fatality per 0.97 million man-hours worked in strip and auger mines for January through June 1971.

The ending of strip mining in accordance with H.R. 4556 would necessitate the employment of many thousand additional underground miners. This additional demand for deep miners would have a positive impact upon mine safety by stimulating mines to practice greater safety in competition for the needed workers. In any case, despite the increased ratio of strip mining in recent years, a large majority of coal miners will be working underground for the foreseeable future. There is no substitute for stringent enforcement of the Federal Coal Mine Health and Safety Act of 1969.

The adverse effects of underground mining have not been minimized in the bill which I have proposed. Next to H.R. 4556, the most stringent regulation of strip mining is contained in the Hays bill, H.R. 6482, but it is interesting to note that the Hays bill does not deal in any way with the adverse effects of underground mining. H.R. 4556 declares in its "Findings and Purpose" that "Congress finds and declares that an unregulated surface or underground coal mining operation" causes 11 specific adverse effects which are listed in the bill—see section 2, pages 4–6 of H.R. 4556. Section 6 of H.R. 4556 requires national environmental control standards for underground coal mines—see pages 9–10—and section 7 of the bill sets forth the procedure for implementation plans for the control of adverse environmental effects of underground mining.

H.R. 4556 provides in section 8 that "underground coal mining operations on lands within the national forest system shall be conducted in a manner that will not damage or destroy any area within the system or the natural resources of such area." In addition, underground coal mining is prohibited in wilderness areas. Measures are also provided, including funding, for reclamation and conservation of abandoned and inactive surface and underground coal mined lands—section 9 of H.R. 4556.

Senator Moss. I would appreciate having that additional information in the record. It does give us concern on this committee and we would like to know the problems that are attendant on underground mining to compare them with the problem, which is severe, of course, of strip mining.

(H.R. 4556 is in the appendix.)

Mr. HECHLER. Does the committee have time for just about 1 more minute on that point?

Senator Moss. Yes.

Mr. HECHLER. There is an unpublished study in the Bureau of Mines entitled "The Environmental Effects of Underground Mines." This study indicates subsidence is minimized when adequate pillars are used to provide overburdened support or when voids are backfilled for the same purpose. Much of our subsidence has occurred when pillars have been pulled out and areas are mined such as underneath the city of Scranton in the anthracite region. Where bad underground practices are used, they have resulted in the kind of subsidence you have suggested. If we follow the prescription of providing adequate and uniform pillar strength, the Bureau of Mines indicates that when pillar strength is adequate, subsidence is negligible.

There are many such illustrations as that if we can use common sense we can minimize the results of the adverse environmental effects of underground mining.

Senator Moss. Thank you very much. The Senator from Wyoming.

Senator HANSEN. Thank you, Mr. Chairman.

Let me compliment you on speaking very persuasively for your concern for your State, the State that you represent, and for the mining situation down there. I think we certainly have a lot to learn from your experience. Coming from Wyoming as I do, I can say that strip mining is a much safer and much more healthy way to get this energy resource than is underground mining. Now, I haven't polled all of the miners in Wyoming but this is the feeling that I have. I did see some figures too. I think they may have been presented by Senator Allott when he was showing us some pictures that he had taken of an operation in Germany and if I recall correctly, I don't know whether it was he or not, but I think the figure nationally, was that the incidents of fatal accidents on a million tons of coal mined, whatever it was, for last year, 1970, was about 6 to 1, as I recall.

There were about six times as many fatal accidents for underground mining operations, nationally, as there were surface. Does that check with your figures?

Mr. HECHLER. Yes, except you have to bear in mind there are many more people engaged in underground mining and are exposed for a longer period. Therefore, a more accurate comparison would be the number of fatalities per million man-hours of exposure. In 1969, fatalities in underground mining were 0.95 percent per million man-hours worked. In 1970, this figure rose to 1.17. Now the Bureau of Mines unfortunately separates the fatality figures, strip mining and auger mining.

For strip mining, the fatality rate in 1969 was 0.66 per million man-hours and 0.64 in 1970, but in auger mining, where they use these big screws into the mountain, the fatality rose—was 0.80 in 1969 and 1.00 in 1970. So if you compare the two, you find they are more nearly equal in the amount of fatal accidents, with underground mining being higher but not many times higher.

Senator HANSEN. I was just going to suggest that it is my conviction, and I am sure that doesn't necessarily mean anything, but it is my conviction that where coal can be removed by strip mining operations as I know them in Wyoming, it is a much better way to remove

the coal and I'm delighted that it doesn't take as many men. I think if we can find a better way of doing it, that is what we ought to do. It occurs to me that strip mining provides that sort of answer.

I know we don't have the problems there that you have in West Virginia and I'm not trying to suggest how you should do it in West Virginia, but I have talked to a number of people who have black lung and they don't want to have their sons down in those mines, believe me. They don't object a bit to their operating the equipment that is used in strip mining on the surface. Those are well-paid jobs and good jobs. But that underground mining operation doesn't interest any of our people.

Mr. HECHLER. It interested me the other day when the House was debating the black lung benefits bill. One of your good Republican colleagues from Illinois, Congressman Robert Michel, introduced an amendment to extend black lung benefits to surface miners. He was concerned about the fact that you could also get black lung working in a strip mine. Out in the gentleman's home State where there are 14 billion tons of strippable coal reserves, the largest in the Nation, I would certainly hope that something could be done to guard against making that into an instant Appalachia.

Senator HANSEN. We are taking those steps. I am sure we will want to take more and I believe that the administration bill—not necessarily saying that has all of the good features but I would hope out of testimony such as you have been presenting and others that we will be hearing from, can come a background of understanding and experience that will be very useful in shaping the kind of law that I think we all want. I don't disagree one bit with your objectives and I commend you for your crusading spirit, for it takes courage and you have demonstrated it.

I just say we do have needs to bring coal, that coal is lower in sulfur than a lot of the residual oil that has been available heretofore for powerplant operation and I would have misgivings about the wisdom of shutting down all surface mining operations, all coal mining operations in this country overnight. I think if we did we would have some people in Chicago and other areas that we would hear from too, because it would mean they would have a blackout.

They wouldn't have the power that must be there every day to take care of the sewage, dispose of the garbage and provide the surface transportation, all of the things they need so desperately. So I would hope we wouldn't have to take that step.

Mr. HECHLER. I hope too that we won't have to black out the environment on this delicate spaceship earth on which we have to provide sustenance for the human beings who live and breathe on this spaceship.

Senator HANSEN. Thank you.

Senator Moss. Thank you very much, Mr. Hechler, and Mr. White. We do appreciate your coming here to testify and I too commend you, Mr. Hechler, on your great crusade on the problem we have.

Our next witness will be Hon. Hollis M. Dole, Assistant Secretary for Mineral Resources, for the Department of Interior.

STATEMENT OF HON. HOLLIS M. DOLE, ASSISTANT SECRETARY, MINERAL RESOURCES, DEPARTMENT OF INTERIOR, ACCOMPANIED BY ELBURT OSBORN, DIRECTOR OF THE BUREAU OF MINES

Mr. DOLE. Mr. Chairman, thank you very much. With your permission I would like to have Dr. Elburt Osborn, Director of the Bureau of Mines, accompany me.

Senator MOSS. Very glad to have you, Dr. Osborn.

Mr. DOLE. Mr. Chairman and members of the committee, it is a privilege to appear before you to discuss the environmental problems associated with mining operations and the specific remedy we propose under the pending legislation known as the Mined Area Protection Act of 1971 (S. 993).

I have a prepared statement with a number of attachments which I ask the committee to insert in the record since it contains a good bit of technical data.

Senator MOSS. Without objection, the full statement and those attachments will be put into the record in full following your testimony.

Mr. DOLE. Thank you. I would like to make a short oral statement at this time and respond to any questions the committee might have. I have brought with me, Dr. Elburt Osborn, Director of the Bureau of Mines, to assist me in responding to any questions you may have.

Much has been written and said recently about the environmental hazards of mining. Surface mining is the principal target since its effects are most visible; but underground mines make their own contributions to our environmental problems through subsidence, acid drainage, and uncontrollable fires.

I will not take up the committee's time with a detailed catalog of the environmental ills identified with mining operations, both surface and underground. It should be sufficient to note that these problems will demand an increasing share of our attention in the years ahead.

Our problems are framed by the need to supply the expanding requirements of a growing, affluent population with domestic mineral deposits of diminishing quality under more stringent environmental safeguards than the industry is used to observing. This introduces the issues of rising cost; greater expenditure of energy per unit of mineral produced; larger areas of land subject to disturbance; and larger volumes of waste to dispose of.

In the case of minerals which offer the possibility, surface mining is increasing its share of output at the expense of deep mining, as industry turns to the cheaper, less hazardous surface methods. In the coal producing States, this shift is dramatic: Surface-mined coal has risen from 35 percent of total production in 1965 to 44 percent in 1970. Last year we congratulated ourselves on producing more coal than we expected and consumed for the first time in 3 years. But the summary figures do not show that underground mines produced 8 million tons less coal in 1970 than they did in 1969. Had it not been for a 50-million ton increase in surface mined coal, production would have fallen short of demand again in 1970.

So we are going to be increasingly concerned with surface mining in the future not only because of the demand for more of everything that has traditionally come from surface excavations, but also because of

the increasing share of surface mined production of those minerals which may be obtained from both deep and surface mines.

In 1970, about 5½ times as much ore was produced from surface mines as from underground mines. Counting sand, gravel, and stone would raise the ratio to 15 to 1. Although surface mining is most commonly associated with coal, it also accounts for our entire production of phosphate, 94 percent of our iron ore production, and 90 percent of our copper production.

In recent years a number of State legislatures have reflected a growing concern for the environment by passing laws controlling various aspects of mining operations. Since the beginning of 1965 the number of States with some form of environmental regulations for mining operations has increased from 7 to 28 and a number of other States are contemplating the enactment of similar legislation. The interest taken by the separate States in protecting the environment from mining operations is all to the good, and we in Interior are highly encouraged by the enlightened attitudes being shown by States which have adopted such measures. But other States lag behind, and the result is that the States which have taken the lead in requiring these costly reforms are penalized in the competitive arena for their good citizenship. There is nothing fair about this. Moreover, the provisions of the laws that have been enacted vary considerably.

This can be seen from the table attached to my formal statement showing the major provisions of the State mining reclamation laws presently in force.

These conditions obviously have produced many inequities, some painful indeed, from State to State and company to company. It is understandable that in these circumstances there is a certain attractiveness to the idea of letting the Federal Government undertake to regulate mining operations to insure a uniform observance of the requirements for environmental protection.

Yet a single set of regulations developed and enforced by Federal authority would run the danger of being so inflexible as to create as many inequities as it sought to cure. To avoid the shortcomings of both approaches, the administration has proposed the Mined Area Protection Act of 1971, which has been introduced into the Senate as S. 993. The purpose of this act is to give the States the initiative in developing regulations to deal with the environmental effects of surface and underground mining and associated loading and processing facilities in an equitable manner consistent with their own unique topographic, geologic, demographic, and climatic conditions.

It might be useful at this point for me to outline the main features of the administration's proposal:

Basically it encourages each State to develop its own program to regulate mining activity within the State. It provides statutory criteria and Federal guidelines to give direction to the States and to obtain a greater degree of national uniformity.

If the State program is approved by the Secretary of the Interior as meeting the requirements of the act, Federal grants will be authorized to cover up to 80 percent of the State's program development costs and to meet a lower percentage of the administration costs.

If the States fail to submit an approved program within 2 years after enactment, the act directs the Secretary of the Interior to issue and administer mining regulations for that State. The cost to the Federal Government of administering a program within a State will be recovered from permit charges.

The act covers all minerals except those extracted through pipes such as oil and gas. It applies to all types of mining operations, including surface and underground, and to certain onsite processing activities.

It contains stiff penalties, including up to 1 year imprisonment. It provides for federally sponsored research and training programs. And finally it authorizes Federal agency heads to regulate mining on lands under their jurisdiction and directs that such regulations assure the same degree of protection as is required by an approved State program.

The proposed act provides a balanced and flexible approach to this critical problem. It places the primary responsibility on the States and provides flexibility in the criteria which each State must use in the development of its program.

These criteria require that the State regulations be designed to insure such things as control of erosion, and accidental cave-ins, and that air and water quality standards are not violated. The criteria will be further elaborated on by the Secretary of the Interior through guidelines which are expressly designed to, in the words of the bill, "provide the operator * * * sufficient flexibility to choose the most economically efficient means of meeting the requirements * * * ."

Getting an effective law on the books will make it possible for the Federal Government and the separate States to proceed in a logical way toward the solution of the environmental problems inherent in mining, both surface and subsurface. The act and the guidelines developed for its implementation will, we are convinced, result in equitable and responsive State programs that will assure the needed uniformity without the inflexibility that so often plagues federally administered efforts.

I urge your favorable consideration of S. 993. Mr. Chairman, this concludes my opening remarks. Dr. Osborn and I will be pleased to answer any questions which you or the other members of the committee may have at this time.

Senator Moss. Well, thank you, Mr. Secretary. You have furnished the committee with a book which contains photographs and other materials which will be made part of the record by reference and will be very helpful in considering the problem we are addressing ourselves to in the committee hearing.

Is it possible that not all of the previously mined lands require the same degree of reclamation to restore them to some level of productivity? I am thinking about what Chairman Train called the backlog of disturbed lands that now have been abandoned and left exposed.

Mr. Dole. Yes; this is absolutely right, Mr. Chairman. The demands of the past were aimed principally at getting the materials to the people at the lowest cost possible and I am afraid in doing so we have neglected a very serious cost of getting this material to them, that is, care of the environment.

The administration's bill would then make this term that has been used today "full cost accounting" apply and in that way the lands that will be mined in the future will be taken care of.

Senator Moss. Is there a variation in cost in trying to go back and deal with these old stripped areas and the amount of cost that will be to prospectively deal with the problem as we go forward?

Mr. DOLE. Yes, Mr. Chairman, this could be likened to the cost of cleaning up our rivers and streams and lakes. The damage that has been done and the material that has been handled in the past for these areas is very large and the cost of this is extremely high. So we believe that future mining should bear the full cost to the environment and we should, as much as possible, take care of past mining activities when we can afford a large payment.

Senator Moss. Should there be a regulation of different types of terrain we are talking about? What I am thinking about, Congressman Hechler is talking of the problem in West Virginia where they have wooded hillsides and the land is mostly hilly or mountainous there and a lot of drainage occurs into creeks and that raised by the Senator of Wyoming saying they have vast open areas that are relatively flat where mining can be carried on and where there is very little vegetation in any event, it being arid country.

Should there be some kind of braking line between where you can strip and where you cannot strip?

Mr. DOLE. What the chairman has said is very true and this is one of the reasons that the administration has chosen to take the position of letting the States have the primary responsibility here, because of this difference in geology, topography, and in the climate.

In the West Virginia area, which Mr. Hechler referred to, we are in a maturely dissected topography. That is one that has many streams and ridges. It is very hilly. In one of the States such as Wyoming, which Senator Hansen represents, it is not a maturely dissected topography but one that is fairly flat.

I think you have to approach the area in West Virginia with a greater degree of care and more expense than that in Wyoming. I have seen mines in Wyoming in which they are reclaiming the land. Furthermore, they are not only returning it to essentially the same topographic expression but they are reseeding it with a more highly productive type of grass.

Senator Moss. As a matter of fact, in the demonstration we had on the Germany reclamation, they did show the land was being considerably more productive after it had been restored and replaced with the coal stripout beneath the area and also because of removing the overburden and replacing it, they had additional volume there to put it back so they were able to contour it and make some lakes and things of that sort.

Mr. DOLE. I think that the results of the reclamation in Germany to which the Chairman is referring are what we are trying to achieve in this country. They actually are doing three things. One, finding the ore; two, mining it; and three, returning the land to a further use. In this brown coal area that the Chairman is referring to, they are actually moving whole towns out of the way, strip mining at consid-

erable depth, using the energy that is buried in the earth and then tailoring the topography of the land to the townspeople's use. If the people want hills, if they want a lake, whatever type of topography they want, the town is reestablished and the people are moved back in with the net result that everyone benefits.

Senator Moss. On page 3 of your statement you say under existing mineral development technology, this means expanded reliance on surface mining. I wonder if you could identify as the highest priority technological development needed to reduce the reliance on surface mining, such as coal. Is there a way to do that?

Mr. DOLE. I am not sure I have your question. Would you repeat it?

Senator Moss. You speak of requiring expanded reliance on surface mining and I wonder if there is some technological development needed to reduce the reliance on surface mining. Should we continue to permit this swing toward more and more surface mining or should we be finding ways to produce the minerals without it?

Mr. DOLE. Mr. Chairman, we are approaching very rapidly the same position in minerals that we are in in energy right now. That is a greater and greater reliance upon insecure sources of foreign supplies for our materials. I do not believe that it is a matter of either-or. I think that if our country is to remain strong and viable and independent and a first-rate country, then we must have both our underground mining and surface mining.

I don't believe it is a matter of saying we have either surface mining or underground mining. I think it is a matter of learning how to take care of, and actually taking care of the environmental problems created by both surface mining and underground mining because we certainly are going to need a rising quantity of materials in the years ahead.

If we were to do away with either the surface or the underground mining, we would either, (a) have to do without or, (b) turn to foreign areas for greater sources of our materials. I would point out to the chairman and his committee, that today our gross imports of foreign minerals (including fuels) is on the order of over $4 billion a year as a set proposition, we consume almost $2 billion more raw minerals in the United States than we produce.

So what I am trying to say is that if we are to maintain the rate of development of our economy, and I am sure that we do because it has been my observation that more people want to come into our society than want to get out, then we are going to have to rely on both the underground and surface mining.

Doctor Osborn would like to add to that, Mr. Chairman.

Senator Moss. Yes, I would like to hear from Doctor Osborn.

Doctor OSBORN. Mr. Chairman, I completely concur, speaking for those of us in the Bureau of Mines, with your remark or suggestion that we should be doing more to develop the technology of underground mining than we are. Both industry and the Bureau are working on this problem from several angles. As an example, instead of deep-mining copper and nickel, such mining can be done by solution techniques.

In other words, a well system instead of a mining system can be used as we go deeper. In the deep mines in Idaho, the Bureau is work-

ing with the mining companies in developing seismic techniques for predicting the rock burdens which are so dangerous in those mines and which prevent the mines from going much deeper because of this danger.

As another example, in coal we are experimenting with underground reclamation problems, which is principally surface subsidence, although we also have mine fires and other serious problems.

Now, in my opinion, and I am sure it will be supported by my colleagues, we are not doing a fraction of what we should be doing with respect to developing the underground mining technology. In the old coal mining district where this subsidence is so serious, we simply do not have the technology that is needed to prevent surface subsidence in old coal mines in the next 50 years.

In other words, about one-third of these mines in a 50-year period will undergo surface subsidence and in a 50-year period towns may be built on the surface and may experience this terrible problem. Underground mining as we do it now is certainly not preferable to surface mining for the reason that we know how to reclaim the surface reasonably well.

We have carried out some fine experiments and I just happen to have the report Congressman Hechler referred to, Surface Mine Reclamation, Moraine State Park, Pa., Bureau of Mines Report No. 8456. This was a fine experiment on surface reclamation, somewhat like the one in Germany referred to, but on a much smaller scale.

He stated it cost $8,000 an acre—the figure is $800 an acre. At any rate, as far as the surface mining is concerned, we know a lot about how to reclaim the earth. Underground mining we don't. We have a lot of experiments going in the Scranton area now where we are crushing the culm bank to quarter inch size and will flow this material in underground. We believe we can shore up a 30-acre area right in the heart of Scranton where the buildings are sinking so that they won't sink any more. But we are in our infancy on this. So I just can't emphasize enough the force of your remarks that if we are to, and we must, do more underground mining, we get busy on the technology. We are just way behind where we should be.

Senator Moss. Well, thank you for that comment. That would be my observation. There is so much we don't know yet about underground mining and we ought to be doing a lot of research.

On page 5 of the environmental statement prepared in connection with the administration's bill, it says:

> **Large quantities of low-grade coal exist in mine waste. If they can be removed through appropriate advances in technology, they would contribute greatly to the nation's resources.**

Perhaps you might comment on the advances that are needed in order to separate this resource from the waste.

Dr. OSBORN. Yes, sir; Mr. Moss. We have had demonstration projects and also the State of Pennsylvania has had experiments to find economical means of separating this out. We are a long way from having a practical method. At the rate we are going, it will be several years before we can work over those huge culm or waste banks.

Along this same line, if I may add something that is related to it, underground coal mines also can catch on fire after they are abandoned. You can't keep the oxygen out. There are various ways that fires can develop in them. For example, just vandalism can start a fire. We have in the coal seams in the United States now, 285 fires burning in the coal. The coal will be wasted if these fires are not put out and it represents something like $3 billion worth of coal.

This is far more than the coal in the waste piles and I think a far more important problem. Again, on a small and very inadequate scale, we are experimenting at putting out some of the worst fires. We are putting out one in Alaska now, incidentally, and working on one in Pennsylvania. But again the technology is not well developed.

Mr. DOLE. Mr. Chairman, might I state that one of our biggest problems is as you refer here, the waste of our resources. One of the largest wastes of our resources is in underground mining where with the pillars left in the mine we are getting on an average now of only around 40 or 50 percent of the coal out of the mines.

This means then that the remainder 50 or 60 percent is lost to the use of our Nation and our people forever. In surface mining our recovery is almost 100 percent. So we have going here two things: one, efficiency and the other, conservation of our resources. This is why I feel there has been increased emphasis on surface mining.

Senator Moss. How accurate a figure do we have on the extent of lands that have been previously mined that have been left open? Do you have an accurate measurement of that?

Dr. OSBORN. Mr. Moss, a study in 1965 by the Bureau of Mines estimated that approximately 3 million acres had been disturbed by surface mining and about 1 million of those reclaimed. In other words, about two-thirds or about 2 million acres were still disturbed and not reclaimed.

Now, we do have some other figures which I will be glad to put in the record, bringing some of this up to date. But we are disturbing an estimated 180,000 acres a year. About half of that is from coal mining; the balance is from sand and gravel and limestone and so on.

Senator Moss. Is there a continuing program for cataloging this disturbed area?

Dr. OSBORN. We are keeping track of this but we get our information from the States. This is a State responsibility entirely. The Federal Government has only to do with health and safety in the mines. As the States send us in the information we compile it.

Senator Moss. Senator Hansen, do you have questions of these gentlemen?

Senator HANSEN. Thank you, Mr. Chairman. Secretary Dole, I note that in your prepared statement you say by the year 2000 you estimate we will need 1 billion tons of coal, 12 billion barrels of petroleum, and 50 trillion cubic feet of gas.

Mr. DOLE. If we can find the gas. These are astronomical figures.

Senator HANSEN. Yes. My question is, and you are the one to be asked it because I know of your background and your incisive understanding of the total energy picture, in your judgment, if we were to shut down all of the strip mines presently operating, are there other sources of energy available that could be moved right in to fill the crunch that would result from that shutoff of supply of energy?

Mr. DOLE. The answer to that, Senator Hansen, is no. But even if we were to do away with 44 percent of our coal mines, and remember coal furnishes about 20 percent of our energy mix at the present time, it would be even more severe than that, inasmuch as there are certain strip coal mines that are dedicated totally to generating plants.

This would mean then that an area depending upon coal-generated power would be eliminated immediately. This would then have a downstream effect of putting industries out of business, cutting off power to hospitals, schools, homes, transportation facilities and the like. It would not take much imagination to see this would be catastrophic as far as the Nation's industry is concerned.

Senator HANSEN. I think you said, if I recall correctly, in response to a question by the chairman, that future mining, in your judgment, should bear the full cost of mining activities. I have the feeling and have had it for some time that we are wasteful of a great many things in this country. Certainly we are wasteful of energy. We use more than we need. We don't, in many homes I am told, use an old carving knife that carves the turkey or cuts the steak, we have to get an electric knife.

If the industry were to be called upon to bear the full cost of mining activities, as I understood you to suggest, would not the increased price of energy in itself be a very useful way of cutting back on the per capita consumption of electricity?

Mr. DOLE. Yes; Senator Hansen. I think it is very easy for us to look at ourselves today and decry the way we have done business in the past. However, I think a little reflection by the people of our country and by the committee would indicate that times change. We did not have the number of people here on earth in the United States 20 or 30 years ago that we have now. Furthermore, we are going to have more by the year 2000.

We have been used to dealing, Senator Hansen, in our energy requirements, from a position of abundance. Now, I guess due to lack of realization, and to lack of planning, we are dealing from a position of scarcity. Now, the electric toothbrush, the electric carving knife and the like, although they are great advances, do not exert the real drain on our energy resources that rebuilding our cities will and we are going to have to build several million new homes here in the future.

The tearing down of old buildings, putting in of a highway system, and development of a better transportation net are the essentials of an industrialized community that are going to be required. New houses for our new people who are already here. New jobs for our people who are already here. Those are going to be the big drains upon our energy resources.

Now, I was encouraged to note the recognition of the energy problem that we are facing today, which is becoming wider and wider. I attended a meeting a few weeks ago in New York, put on by two large industrial concerns, for the architects. The architects I think now are beginning to realize that in the design of their buildings they can make very large cuts in the energy needed to light and to cool and to heat the buildings.

There, I think, Senator Hansen, are going to be the areas where we are going to be able to conserve our energy rather than trying to de-

tract from the many things we now accept as needed in our everyday life.

Senator HANSEN. I am sure you have in mind and have indicated areas where we can make significant reductions in our unnecessary consumption of energy. I spoke about the electric carving knife only to try to illustrate the sort of thing I have in mind.

Mr. DOLE. May I add here, Senator Hansen, that there is no question in my mind that the greatness of our country, that we have right now, is directly related to the great quantity of energy that has been made available to us and we have been able to put to work. So to decry the use of energy in the past as we have is to decry the development of our country.

Senator HANSEN. Thank you very much.

Dr. Osborn, we have a bill that was introduced in the Senate, S. 635, which is oftentimes referred to as the Minerals Policy Act. I believe it is over on the House side now and awaiting action.

In your judgment, would this bill be helpful in trying to resolve some of the problems that we must meet head on and find solutions for as you contemplate the difficulty facing us?

Dr. OSBORN. I think there is a very important concept expressed in this bill. The importance lies especially in this fact, that for a national program in technology, there must be a strong university base. If we are building up a space program we can fall back as we have on strong physics departments or as the NIH has, on strong biology departments. So the type of work that a university does, which is different from the work that a Federal bureau does in many respects, we can supplement to get the job done. But in the case of mineral engineering, this is really the only field in universities that has been allowed to just deteriorate to a level where we do not have this strong base.

I mean the only important field dealing with mineral resources. So in the Bureau of Mines, and industry also, we feel if we are going to develop this technology, and I referred a few moments ago to the lag we have in underground mining and the things we need to do and are very slow about doing, if we are going to move on this, this university base is one aspect that I think is extremely important.

I was therefore very pleased that this was the first amendment to the National Mining and Mineral Policy Act. I think it is important and appropriate that it would be the first amendment, and that the Senate would think, in terms of a National Mining and Minerals Policy Act, of the need for this strength in universities.

Senator HANSEN. Mr. Chairman, I have no further questions. I do observe that Joseph Corgan is in the hearing room today and I would just like to take this occasion to express our appreciation for the Department of Interior's interest and his personal direction of an operation that we undertook in Rock Spring to deal with mine subsidence. I can say to our good and great friend from West Virginia that underground mining isn't the whole answer either and if you have any doubts about that, you ought to go to Rock Spring and see what happens when you dig holes under cities. Let me compliment you in calling these hearings and I am sure much useful information is going to be gathered by it.

Senator Moss. Thank you, Senator. I am tempted to asking more questions because we have the experts before us, but we do have a tight

time frame we must fit in today with the Senate in session, so I am going to forego further questioning. I might ask just one thing. Mr. Hechler referred to the draft report on environmental effects of underground mining. Will that be released soon?

Mr. DOLE. This draft of the effects of underground mining, Mr. Chairman, was put together by the Bureau of Mines a couple of years ago. After an evaluation of the information in it, we felt that the number of significant errors was such that it would take too much time and effort to try to correct. We felt it would be better to postpone this and really start anew with the consequence that I doubt that it will see the light of day as a public document.

Senator Moss. Will there be another one issued sometime in the future?

Mr. DOLE. The availability of funds and data will affect the compilation of such a report and hopefully we will contribute something like that.

Senator Moss. Well, thank you very much, we appreciate very much the rather extensive material you have gathered for us which is part of our record now.

(Secretary Dole's prepared statement and attachments follow:)

STATEMENT OF HON. HOLLIS M. DOLE, ASSISTANT SECRETARY—MINERAL RESOURCES, DEPARTMENT OF THE INTERIOR

The importance of minerals to this country and its industrial economy cannot be overstated. Without their use, present national levels of strength and prosperity could not have been attained. Without their continually increasing consumption, further economic growth will not be possible. By the year 2000, our demand for primary minerals is projected to be four times that of today. Enormous quantities of energy source minerals—one billion tons of coal, twelve billion barrels of petroleum, and fifty trillion cubic feet of gas—will also be needed annually.

The domestic mining industry has been the preeminent contributor in meeting our past mineral needs, and even now provides more than three-quarters of our requirements. As an identifiable economic sector, domestic mining in 1971 will produce materials valued at an estimated $31 billion, which together with about $4 billion worth of imported mineral raw materials, will generate $150 billion in mineral-based products vital to the economy, such as energy, including electricity and fuels, steel, aluminum, copper, cement, chemicals, fertilizers, and plastics. At present each U.S. citizen uses energy equivalent to 300 human beings engaged in physical work, derived from about 10 tons of energy minerals per person per year. Additionally, annually over 10 tons of new non-energy minerals are also used per citizen. Multiplied by our population of over 200 million, we annually use about four billion tons of minerals per year at present. Mining alone employs 622,000 persons in the United States.

The need for a strong domestic mining industry was reaffirmed recently by Congress when it passed the Mining and Minerals Policy Act of 1970 (PL 91–631) which declares: ". . . it is the continuing policy of the Federal Government in the national interest to foster and encourage private enterprise in (1) the development of economically sound and stable domestic mining, minerals, metal and mineral reclamation industries. . . ."

The impetus for this declaration of policy is evident when the trend of domestic demand and supply since World War II is examined in monetary terms. The share of primary mineral demand met from domestic sources has declined from 87 percent in 1950 to about 78 percent in 1969. Already, demand for petroleum exceeds domestic production by over 20 percent, and our output of many other minerals falls significantly short of total demand. Current projections indicate that the share of total primary mineral demand supplied domestically could drop as low as 42 percent expressed in monetary terms by the year 2000. This would mean the perpetuation and aggravation of an already existing balance of

payments problem within the mineral raw materials sector. By the year 2000 the gap between domestic demand and production, estimated at $8.4 billion in 1969, could exceed $80 billion.

It is the surface mining industry that will be called upon in the foreseeable future to provide a strong domestic mineral supply base, and prevent our dependence on foreign sources of mineral raw materials from becoming dangerously large, or prohibitively costly.

Surface mining in 1970 accounted for 94 percent of all domestic production of crude metallic and nonmetallic ores: 2.5 billion tons, compared to 167 million tons from underground mines. In the case of several of the major nonferrous metals, its contribution exceeded 95 percent. Some mineral substances, such as sand and gravel, were produced entirely by surface mining methods. Approximately 44 percent of all coal in 1970 came from surface mines. Only a sharp increase in surface mining enabled coal supply to meet demand last year. Underground mine output of this important fuel actually fell by some 9 million tons in 1970.

Current mining trends indicate an even greater emphasis on surface extraction in the future. To meet rising demand for minerals and mineral products, both increasingly greater quantities of ores of declining grade and, as with coal, increasingly large amounts of less accessible material, will have to be extracted. Under existing mineral development technology, this means expanded reliance upon surface mining.

Abolition of surface mining of coal, as has been suggested in proposed legislation, would result almost immediately in an intolerable disruption of our present economic structure and a real depression in our standard of living.

Today we are fully cognizant that the environmental disturbances engendered by former unrestrained mining practices were neither necessarily inherent in the mining process, nor economically necessary. We also now know that with proper controls adverse environmental effects can be minimized and held well within acceptable limits. With our legislative experience of very recent years we are convinced that practical and enforceable regulations can be formulated to handle the adverse environmental effects enumerated below.

(1) Dust is generated from mining operations. Noxious gases are emitted from the 292 burning coal refuse banks and the 289 known coal outcrop and mine fires. Noise is a feature of blasting and other mining operations.

(2) Pollution of our lakes and streams can occur when acid mine drainage, leaching liquors, processing plant chemicals, and mine waters with high metal ion content are released untreated to the local water systems. Runoff from denuded surface-mined land and mine waste accumulations, failure of tailings impoundments, and direct discharge of tailings to surface streams result in siltation of stream channels and possible flooding throughout the affected drainage basins. Stagnant water accumulating in strip pits is a breeding ground for insects as well as a hazard to public safety. As of 1967, strip and other forms of mining had adversely affected fish and wildlife habitat in 13,000 miles of streams, 281 natural lakes, and 168 reservoirs and impoundments.

(3) The stripping of overburden and the removal of ore by surface mining methods in 20,314 active surface mines disturbed an estimated 193,000 acres of land in 1969. About 38 percent, or 73,000 acres of this land, was disturbed as the result of coal mining activity. It is estimated that coal mining disturbed 90,000 acres in 1970. Coal produced by surface mining increased from 218 million tons in 1969 to 269 million tons in 1970. About 60 percent of this increase was produced by contour mining in the Appalachian region, an area already damaged by past strip and surface mining activity.

(4) Stripped areas, if not reclaimed, remove land from subsequent productive use, contribute to water pollution, result in economic dislocations, damage fish and wildlife habitat, and detract from the surrounding landscape. The adverse conditions prevailing in the 2,041,000 acres of unreclaimed strip- and surface-mined lands estimated to exist in 1965 were the result of former unregulated mining.

(5) Uncontrolled subsidence occurs when underground mine workings are not sufficiently supported, or when artificial or natural supports deteriorate in abandoned mines. Collapse of the mine workings causes deformation of the overlying rocks which propagates upward until the ground surface subsides. The time interval between subsurface extraction and surface subsidence may be a matter

of days or years. Damage occurs to buildings, roads, bridges, overpasses, pipelines, and railroads. Also, changes in the surface gradient brought about by subsidence may interfere with the functioning of drainage systems, canals, and pipelines. It is estimated that the rate of undermining by the approximately 4,800 currently active underground mines is about 81,000 acres of land each year. Our understanding of subsidence phenomena is still inadequate to predict exactly how much of the undermined land will subside—or when. Research is particularly needed to anticipate the probable occurrence and extent of subsidence under differing geological conditions. Experience suggests, however, that approximately one-third of all undermined areas will subside in 30 to 50 years.

(6) Solid wastes generated by mining occupy valuable land surfaces and often contribute air and water pollutants to the surrounding environment. As lower grades of ore are mined in the future, the quantity of solid and process wastes can be expected to increase proportionately.

(7) Accessible open pits, underground openings, and caved areas pose a hazard to children and adults. Highwalls remaining after the abandonment of strip mines are safety hazards, and can prevent access to upland areas, and restrict wildlife movement. Slope failures of waste banks or stripped areas can result in increased siltation, destruction of surface structures, and loss of life. Scenic values are often impaired as a result of careless surface and underground mining.

The deleterious aspects of mining are not limited to one area of the country, but are widespread across the land. A random look at mineral production activities shows that: 50 States have sand and gravel production; 49 States have stone production; 45 States have clay production; 23 States have coal production; 20 States have iron ore production; and 17 States have copper production. Land affected or disturbed by all mining, excluding mine waste accumulations, was 10 million acres in 1965. This is conservatively expected to increase to 20 million acres by the year 2000.

The Mined Area Protection Act of 1971 is designed to avoid or correct the adverse environmental effects resulting from mineral production. It would do this by regulating present and future exploration, mining, and related mineral activity in such a manner as to strongly encourage the maximum use of known techniques of environmental protection and reclamation. We know now that through the fullest application of our present environmental technology we can largely overcome these unfavorable effects.

Dust from mining operations can be controlled through the use of vegetation, road surfacing materials, sprinkler systems, depressurizing of buildings housing dust generating equipment, and chemical stabilization.

Prevention of mine, outcrop, and refuse bank fires requires sealing of exposed seams, backfilling of mine voids with waste materials, and proper construction of refuse piles. The Bureau of Mines has developed techniques for extinguishing fires but these methods are costly. Strong laws, regulations, or approved procedures aimed at prevention of additional fires, and continued extinguishment programs for existing fires, can reduce and eventually eliminate this source of pollution.

Noise from blasting can be lowered with time delay techniques. The transmission of blasting noise can be further reduced by taking atmospheric conditions into consideration. Crushing operations can be screened by banks of earth or enclosed by acoustical shields to minimize noise levels. Use of muffling systems can restrict truck and equipment noise.

Various techniques are currently being employed to minimize acid mine drainage. Sealing of acid-forming minerals from the atmosphere in the surface mining of coal can reduce the formation of acids. Once formed, mine acids can be neutralized through the use of chemical, aeration or filtering techniques. Replanting of regraded lands and the proper construction and vegetative stabilization of tailings ponds can considerably reduce the silt problem. Reclamation of mined areas and the inclusion of drainage facilities can eliminate the stagnant water problem. On the other hand, neutralization of processing plant chemicals and removal of metal ions from waste waters is costly, and more economical means need to be developed for disposing of these wastes. Elimination of the sources of water pollution would do much to rejuvenate our polluted streams and lakes.

Reclamation of mined areas not only reduces pollution, but returns land to subsequent productive use. Many excellent examples are available of higher order land usage which resulted from mined land reclamation programs. Recla-

mation plans established prior to commencement of mining operations can greatly reduce the overall cost of reclamation programs. By requiring preplanning and bonding, the reclamation of mined areas can be assured at no additional outlay of public funds. Well planned and executed reclamation integrated with the mining cycle can do much to reduce the general environmental impact of mining.

Backfilling of mine voids is used in some mines as a primary support mechanism to prevent subsidence. Backfilling allows complete extraction of the ore and serves to stabilize the surface. The Bureau of Mines has used this principle in its mine flushing program to demonstrate a technique for filling and stabilizing abandoned mine workings beneath populated areas. The procedure was recently performed on a small scale project at Rock Springs, Wyoming, and a much larger one will soon be underway at Scranton, Pennsylvania. Other means of supporting mine workings have been employed, although the danger of subsidence always remains. An alternative to supporting the overburden is the complete sysematic caving of the overlying rock, as is done in longwall mining. By inducing the rock to cave immediately after mining, the danger of a later sudden collapse is eliminated. Under induced caving, where applicable, the surface will stabilize over a relatively short period of time. But subsidence prevention is still often costly, and much further research is necessary to develop economical means of preventing or reducing subsidence damage.

Research is being conducted to develop means for utilizing and stabilizing a wide variety of mine and mill wastes. Utilization is preferable to stabilization because full use would both eliminate the waste and broaden our mineral resource base. However, the wastes typically comprise immense tonnages of materials discarded either by selective mining, or after recovery of significant mineral values by milling. Occasionally such material can be reprocessed to extract additional mineral contents at a profit. Some mineral wastes are suitable for disposal as mine fill, railroad and highway ballast, and land fill. Similarly, some mineral wastes can be utilized as raw materials for making brick, rock wool, concrete, and ceramic products. Nevertheless, the accumulated mineral wastes and the currently produced wastes are so large that only a small part is likely to be fully used.

Stabilization of waste banks and ponded tailings provides a means of reducing pollution derived from waste material, even though this method does not eliminate the banks. Stabilization and visual enhancement can be accomplished through the use of chemical soil sealants, vegetation, or mechanical (gravel blankets, etc.) methods. Numerous examples of successful stabilization programs are available. The Bureau of Mines has had particular success with combination chemical-vegetative methods.

Hazardous abandoned mine openings can be fenced off or eliminated by backfilling or permanently blocking surface entries. The construction of access roads at appropriate intervals through highwalls to otherwise isolated upland areas can be required of strip mine operators. Adequate preplanning, selection, and preparation of waste disposal sites can reduce the scale of the problem of slope failure, and stabilization techniques can be applied to the remaining banks and waste areas. Vegetation can partially screen the more unsightly remnants of former mining.

The growing conviction that environmental damage caused by mining operations can be controlled and minimized through adequate safeguards and proper surveillance has led in recent years to the formulation of new environmental protection measures by several Federal Agencies having land management responsibilities. Mineral operations on these lands now must be conducted in accordance with the best available practices, and the lands disturbed reclaimed to a condition compatible with current standards.

The Department of the Interior in 1969 took a major step in the environmental protection field when it issued Surface Exploration, Mining and Reclamation Regulations (43 CFR 23 and 25 CFR 177) covering mineral permits and leases issued on Federal and Indian lands. These regulations require the Bureau of Land Management, or the Bureau of Indian Affairs, as the case may be, and the Geological Survey to make a joint technical examination of the lands involved prior to issuance of leases. This examination determines the probable effects that proposed operations may have on the environment and jointly establishes general but adequate requirements for safeguarding the environment and reclaiming the disturbed lands. During the course of mining operations on these

lands, the lessee works under the close supervision of the Geological Survey, which, in cooperation with the Bureau of Land Management or the Bureau of Indian Affairs, assures that the mineral deposits are properly developed, the environment is protected, and the land is adequately reclaimed. In addition, these Agencies make certain that all aspects of the Government's and the Indian's interests are protected during all phases of mineral development. The extensive experience and technology of the Bureau of Mines already have been utilized by these Agencies in their operations, and the results of the Bureau of Mines' most recent research are continually being made available to them.

During fiscal years 1966 through 1970, about 1,751 acres under Federal lease were strip- or surface-mined, and about 1,338 acres were reclaimed. This is only a small fraction of the total acres mined in the United States, but it is expected to increase substantially as the demand increases for the low sulfur coal in the West.

These aforementioned Federal programs are in accordance with the Mining and Minerals Policy Act of 1970 which states: ". . . it is the continuing policy of the Federal Government in the national interest to foster and encourage private enterprise in . . . (4) the study and development of methods for the disposal, control, and reclamation of mined land, so as to lessen any adverse impact of mineral extraction and processing upon the physical environment that may result from mining or mineral activities . . ."

Certain segments of the mining industry are actively pursuing a course of voluntary mined land reclamation, pollution control, and enivronmental protection. Reclamation of phosphate, sand and gravel, coal, and other mined lands has provided a broad technologic background for others to draw upon. Reclamation activities have in many cases improved fish and wildlife habitat, have provided lakes and parks for recreational purposes, and have generally left the land in a more useful state after mining and reclamation is complete. This part of the mining industry is to be commended for the excellent results it has obtained. Unfortunately, the actions of a limited number of groups or individual companies are not sufficient to reverse the annual increase in environmental damage, nor do they compensate for those producers who do nothing to reduce the impact of their operations on the environment.

Coverage under the proposed Mined Area Protection Act extends to all surface and underground mines and adjacent loading, cleaning, concentrating, and other processing operations. The bill does not include the extraction of minerals via wells or pipes, unless involving *in situ* distillation or retorting, or the smelting of ores. The bill establishes basic environmental protection critera and provdes an advisory committee to develop these criteria into workable national guidelines (see attachment). Each State will have the opportunity to develop legislation, subject to approval by the Secretary of the Interior, which will conform to the national guidelines. The Federal Government will develop, administer, and enforce environmental regulations for mineral production activities within any State which does not have approved legislation within the time limits set by the bill. The emphasis of the bill is on State rather than Federal control. Furthermore, the bill provides financial and technical assistance to the States for the development and enforcement of appropriate State regulations.

Today we have a multiplicity of State laws and ordinances which attempt, each in its own way, to cope with some of the adverse environmental effects of mining.

Where adequate State mining laws exist, they exert a tangible influence over the actions of mineral producers, although only within their selective jurisdictions. At present, however, only 28 States have enacted some form of legislation relating to the conduct of surface mining operations and the reclamation of surface-mined lands. Among the State statutes, there is disparity between the commodities covered, the requirements for licenses, bonds and reclamation, and the penalties invoked. Three of the States regulate coal extraction only, and two the production of metallic minerals only.

State laws relating to underground mining activity vary considerably in scope and content. Much of the control is provided under health and safety regulations and air and water quality standards. Presently, only three States have mining statutes dealing with subsidence control.

In many States, local units of government have enacted zoning ordinances which include coverage of mineral extraction processes. These ordinances afford considerable environmental protection, particularly in those States which do

not have mining laws or in those States where coverage under the State mining law does not extend to all mineral commodities. Occasionally, however, their intent or result is virtually to preclude the production of needed minerals. This situation is particularly acute in some urban and suburban areas where, despite the need for construction materials such as stone, sand, and gravel, local ordinances forbid their extraction.

But the mining and marketing of mineral materials in this country is a highly competitive undertaking. Existng State and local environmental laws, however, laudable their objectives and marked their achievements, tend to foster competitive imbalances between States and communities. Producers in political units with more stringent and costly environmental regulations find themselves at an economic disadvantage with those operating under lesser controls elsewhere. Those States and communities which strive the hardest to minimize the adverse environmental effects of mining can, in turn, suffer economically if producers locate activities in other areas to take advantage of lower operating costs.

A major objective of the Mined Area Protection Act, therefore, is to make as uniform as possible environmental laws and regulations governing mining operations. The establishment of equitable national principles, applicable in all 50 States, would go far toward accomplishing this purpose.

Passage of the Mined Area Protection Act would confront operators everywhere with similar general requirements for their activities. Each would then have a strong incentive to emphasize more efficient mining practices and develop more effeceive reclamation technologies in order to reduce overall costs and remain competitive. One important benefit of these efforts undoubtedly would be the adoption and application of "full cost accounting" in the mining indutsry. The cost of environmental protection would become an accepted part of mining operations; like other costs it would be absorbed or passed on to consumers according to prevailing market conditions.

Changes in mining practices and the development of environmental protection technologies would not only reduce costs of corrective action, but point the way to more effective restoration of lands damaged by past mining activity.

The proposed Mined Area Protection Act does not include provisions for the repair of past damage resulting from mineral extraction and processing. The sheer magnitude of that problem precludes any low cost recovery programs. A high degree of Federal participation and funding will be required to remove the scars of the past and restore the affected lands and waters to a productive state. Some Federal programs under the Appalachian Regional Development Act, the Solid Waste Disposal Act, the Water Quality Act, and the Clean Air Act have been initiated, but can deal only indirectly with this problem. The question of national program and funding priorities must be faced in considering total rectification of past damage. Costs of corrective programs are high, and the gains made against the overall problem are often negated by the annual addition of new problems resulting from a lack of effective environmental protection legislation. We must prevent future damage before we can make inroads into the accumulated past damage.

To effectively prevent future damage, we must include all forms of mining and processing activitiy under the law. For this reason both surface and underground mining, as well as processing activities, are included. We cannot solve the problem by attacking only a portion of it. All mining activity contributes to environmental degradation and, therefore, all mining activities must fall under the bill.

It is important to realize that mining operations vary drastically in size, method of extraction, and life of mine. Technologies change with time. We must consider these facts when attempting to administer the proposed act. Sufficient latitude is provided in the bill and the guidelines to cover all local conditions which affect mineral production and environmental damage. Thus, each State, and even each local mining district, would have all local contingencies considered during the formulation of the State mining law. Interested parties would have a voice in the development of the State mining law. Provisions are also included for the modification of these State laws if experience, technologic changes, or other significant altering factors, should arise.

The Department of the Interior takes the position that environmental protection and mine reclamation are integral parts of the overall mining operation. To turn enforcement of environmental protection and reclamation on Federal and Indian lands over to a State agency or another Federal agency, however,

would lead to duplication of the Department of the Interior's present management practices, and to confusion and conflict for all concerned.

Administration of the bill should be vested with one Federal agency to provide complete coordination of all functions of the bill, and to avoid overlap and duplication of effort. The Department of the Interior, whose function is the formulation and administration of programs relating to management, conservation, and development of our natural resources, is the logical agency to administer the proposed act. Such administration would rely heavily on expertise available in the Department, as well as that expertise available from other Federal agencies. Within the Department, a large concentration of expertise in the mineral and natural resource area is found in the Bureau of Mines, the Geological Survey, and the Bureau of Land Management.

The Bureau of Mines has long been concerned with health and safety in mines, and with mineral conservation, development, and usage. It has fostered research and action programs in mined land reclamation and elimination of environmental hazards resulting from mineral extraction.

The Geological Survey has been involved in mineral land classification since 1878, and has supervised the operation of private industry on mining, oil, and gas leases on Federal and Indian lands since 1925.

The Bureau of Land Management has been managing 60 percent of the Nation's Federal lands, over 20 percent of the Nation's total land area. This management function includes issuance of mineral leases on much of the public lands held by other Federal agencies, leasing of mineral deposits on the Outer Continental Shelf, and sale of federally-owned mineral materials.

The Bureau of Reclamation, the Fish and Wildlife Service, and the Bureau of Outdoor Recreation have also been involved with certain aspects of mined land reclamation and utilization, and would contribute their specialized talents to the overall administration of the bill.

Where appropriate, the views of various agencies outside of the Department of the Interior would also be solicited in matters related to the administration of this bill. Specifically, the Soil Conservation Service and the Forest Service of the Department of Agriculture; the Tennessee Valley Authority; pertinent units from the Environmental Protection Agency; and the Appalachian Regional Commission, can provide additional expertise.

In summary, both the maintenance and promotion of a healthy and vigorous mining industry, and the preservation and enhancement of a viable national environment, have become urgent national priorities. These, appropriately, should be the responsibilties of the Federal Government. It alone possesses the requisite overview of national mineral supply and demand problems, and the broad understanding of the nationwide implications of local environmental effects and decisions in the mining sector, to effect a proper balance in the public interest. The Mined Area Protection Act of 1971 would give the Federal Government the means with which to exercise these responsibilities.

Guidelines for State Environmental Regulations of Mining Operations Consistent With "The Mined Area Protection Act of 1971"

PURPOSE

Pursuant to the Congressional Findings and Declarations stated in Section 102 of the Mined Area Protection Act of 1971 (hereafter referred to as the Act) and the directive given in Section 201(b), the following guidelines have been developed to assist and encourage the States to formulate equitable environmental protection regulations for present and future mining operations which will be consistent with sound resource conservation, related engineering, and economic practices, and acceptable to the Secretary of the Interior.

SCOPE

These guidelines are intended to apply to all activities as defined in title I of the Act (hereafter referred to as mining operations).

Guidelines herein have been formulated with the full awareness that no two mining operations are identical in their effect upon the local or regional environment. Reclamation objectives for each mining operation, therefore, must be tailored individually.

GUIDELINES

As a basis for establishing regulations, careful consideration should be given to the following acts:

1. those acts listed in Section 301(b) of the Act;
2. the National Environmental Policy Act of 1969 (83 Stat. 852); and
3. the Mining and Mineral Policy Act of 1970, (84 Stat. 1876).

ADMINISTRATION

Each State should designate an agency to administer and enforce the State mined area environmental protection and reclamation program established in accordance with Section 201(a) of the Act. Sufficient funds should be allocated to: (1) staff the agency with qualified personnel; (2) meet operating expenses; (3) provide specialized training for agency personnel; and (4) establish interstate channels of cooperative communications.

Where two or more States are located in a common natural region the Secretary may approve the administration of the several States' program(s) through an interstate agency provided an equitable funding arrangement is worked out between the States that will assure such an agency adequate operating funds and a competent staff.

The designated State or interstate agency (hereafter referred to as the agency) should be authorized to legally: (1) enforce environmental protection legislation; (2) enter periodically on all concerned properties to inspect mining operations and related reclamation activities; (3) review the merit of proposed reclamation plans; (4) issue operating permits; (5) set the amount of performance bonds and collect on such bonds in the event of default; (6) prohibit mining operations for those permit applications where the area concerned cannot be adequately reclaimed; (7) order cessation of operations; (8) issue warnings and enforce penalties and initiate civil or criminal actions, as may be established by State regulations; (9) provide technical assistance; (10) conduct or authorize investigations, research, experiments, and demonstrations, and collect and disseminate information resulting therefrom; (11) cooperate with other governmental agencies, educational institutions, and private industry; (12) compensate for services contracted; (13) receive Federal, State, or other funds and allocate them for reclamation, education, and research projects; and (14) modify reclamation plans or provisions of operating permits.

The agency should encourage full public participation in its rule-making procedures as well as participation of State, local, and private agencies and public groups during formulation, enactment, periodic review, and amendment of environmental regulations for mining operations. To facilitate participation the agency should make appropriate public notices and conduct public hearings.

The State may find it advantageous to establish an interdisciplinary advisory committee, board, or commission composed of representatives from companies conducting mining operations, manufacturers of mining equipment, and organizations involved in conservation activities. This committee, board, or commission should advise or assist in: (1) the formulation, review, and updating of State and agency regulations; and (2) the resolution of problems, disputes, and appeals that may arise between the agency and other concerned groups.

PERMITS

The operator of an active or proposed mining operation should obtain a permit from the agency before such operation can be continued beyond _____, 19____, or initiated thereafter. A separate permit should be required for each operation unless they are to be conducted by the same operator within the confines of the same property in which case the agency may grant a combined permit.

To obtain a permit an operator should receive agency approval of a reclamation plan. Upon receipt of a reclamation plan the agency should promptly: (1) review the plan; (2) inspect the property when appropriate; and (3) either approve or reject the plan. The agency may require the operator to provide additional data prior to reaching a decision on the merit of the plan, but in no case shall a decision be delayed more than 60 days.

If the agency denies a permit it should notify the operator, describing the reasons and listing whatever changes to the reclamation plan as are necessary for approval.

The operator may not depart from the provision of the applicable permit without first requesting and receiving written permission to do so from the agency. Should adverse environmental conditions arise that are judged to be uncontrollable or intolerable the agency may choose to order cessation of operation(s). It should be expressly stipulated in each permit that no reclamation work shall remain incomplete beyond the time when: exploration has been completed; and/or the mineral or fossil fuel deposit has been exhausted; and/or no further mining or use of other facilities is contemplated.

PERFORMANCE BOND

Each operator should post a performance bond (money, stocks, securities, savings bonds, liquid assets, self-insuring fund, etc.) with the agency as part of the conditions for issuance of a permit. The amount of the bond should be established by the agency based on the nature of the operation and the estimated cost of implementing the reclamation plan. The bond should be of an amount sufficient for the agency to complete reclamation if the operator defaults. Operator liability under the bond should be continued as long as reclamation is not completed in accordance with the reclamation plan. Prior to the renewal of a permit the bond should be reviewed by the agency and adjusted if necessary.

Upon satisfactory completion of all reclamation the operator should be released by the agency, in writing, from further obligation to the concerned property and the performance bond returned. After such an event the operator should not be responsible for any subsequent environmental damage arising from previous activities.

RECLAMATION PLAN

The reclamation plan should state the manner in which mining operations will be conducted, and whatever actions will be taken to: (1) prevent or minimize adverse environmental effects; (2) integrate reclamation practices into the overall operating procedure; and (3) complete reclamation to the extent feasible and consistent with future productive use of affected areas. Due consideration should be given to insuring that the plan is consistent with local environmental conditions and current mining and reclamation technologies.

The reclamation plan should be subject to modification by the agency to avoid conflicts with future State and Federal laws, and to amend provisions that prove impossible or impractical to implement or will not accomplish their intent.

If the development of a reclamation plan is dependent upon unknown factors which cannot be determined except during the progress of the operation, the agency should allow a partial plan, which would require close agency supervision and periodic updating.

An acceptable reclamation plan should contain where applicable:

Provisions to maintain the highest practicable quality of water in surface and groundwater systems by: (1) diverting surface drainages to prevent contamination of water from or inflow to unreclaimed mined areas or active mine workings; (2) properly treating drainage from mine workings, spoil or waste accumulations, and leaching operations where needed; and (3) casing or sealing boreholes, wells, and shafts that cross aquifers.

Provisions to insure against flooding offsite as the result of: (1) silting or damming up of stream channels; (2) slumping or debris slides on waste banks and highwalls; (3) inadequate drainage systems for strip pits, contour benches, and settling ponds; and (4) uncontrolled erosion.

Provisions to control airborne dust, smoke, and other emissions from mining equipment, blasting, loading, hauling, dumping, ventilating, etc.

Provisions to minimize noise and seismic disturbances from drilling, blasting, hauling, etc.

Provisions to: (1) minimize the potential for mine, outcrop, and waste bank fires; (2) prevent the spread of fires to surrounding areas; and (3) establish procedures to detect and extinguish fires.

Provisions to conduct underground mining in a manner that insures overlying ground stability. Surface mining or dredging should be conducted so as to insure against slope failures on highwalls and spoil banks.

Provisions to return all mined areas to a condition that will not be injurious to public health and safety, and that will be suitable for future productive use consistent with surrounding conditions.

Provisions to revegetate mined areas and waste accumulations to: (1) minimize erosion and attendant air and water pollution; and (2) screen the view of operations and waste materials from surrounding areas. Surface mine operators should use the best available soil material from the mining cycle to cover spoil material.

Provisions to insure that no part of the operation or waste accumulations will be located outside of the permit area. All environmental damage should be contained within the permit area or suitable restitution made for damage to offsite property.

The foregoing provisions should be considered by the operator in providing the following information to the agency:

1. Names and addresses of: (a) legal owner(s) of the property (surface and mineral); (b) any purchaser of the property under real estate contract; and (c) the operator. Should any of these be business entities, other than single proprietor, the names and addresses of their principal officers and resident agent(s) should be included.
2. Type(s) of operation(s) that exist or are proposed.
3. Anticipated or actual starting and termination dates.
4. Location and extent of area(s) to be affected, including annotated maps or aerial photographs showing: (a) boundaries of the property; (b) location of the property within the administration district or geographic region and its relationship to nearby developed areas; (c) land-use prior to the operation; and (d) location and names of existing drainages, roads, trails, railroads, buildings, utility rights-of-way, and other cultural features within and immediately adjacent to the concerned property.
5. Description of planned after-use of affected areas and the nature and extent of reclamation that will be necessary to achieve this end.
6. Description of steps that will be taken to insure that the operation(s) complies with all applicable air and water quality regulations and health and safety standards.
7. Estimate of the time needed to complete all planned reclamation.
8. Description of procedures that will be instituted to contain environmental effects of the operation within the confines of the concerned property and to protect surrounding public and private property and such wildlife and human inhabitants that may dwell thereon.

ANNUAL REPORTS

Operators should transmit annually to the agency a report containing: (1) extent of operating and reclamation progress accomplished during the previous 12 months; (2) steps taken or planned to correct all environmental problems; (3) areal extent (acres) of waste material produced; (4) estimated location and extent of area to be affected or other facilities to be added during the ensuing 12 months; (5) updated mine maps; (6) estimated termination date of mining operations; (7) quality of discharge waters and airborne emissions; and (8) other information as the agency may require.

The agency shall prepare and transmit to the Secretary of the Interior an annual report concerning progress made and problems encountered in carrying out the provisions of the Act as required in Section 201 (a)(6).

INSPECTION AND MONITORING

Operations for which a permit has been granted or properties for which a permit is requested should be accessible for inspection by authorized State, Federal, and agency personnel. It should be the purpose of inspection to: (1) assess the property for performance bond determination; (2) insure that the operator is complying with the terms of the reclamation plan; and (3) determine the effectiveness of environmental regulations.

PENALTIES

If a violation of the reclamation plan occurs the agency should: (1) issue a written warning to the operator stating the nature of the violation and stipulating the time period in which correction must be made; (2) aid the operator in formulating corrective measures; and (3) initiate penalty procedures if noncompliance persists.

If an operator is conducting mining operations without a permit or is not complying with the provisions of the reclamation plan, and if such operations or noncompliance continues, the operator should be subject to penalties and/or injunctions as are provided by law.

An operator or any principal thereof who defaults on a permit or otherwise fails to comply with agency warnings or other legally established punitive action(s) should be subject to revocation of the permit, forfeiture of the performance bond, and immediately banned from operating within the State until all previous obligations have been fulfilled.

APPEALS

An operator should have mechanisms available for appeal to the agency for changes of a reclamation plan, warning, penalty, or bond which are felt to be unjust, not applicable, or excessive. The agency may grant, deny, or seek a compromise with the operator's request.

An operator should also have the option to carry an appeal beyond the agency to a State advisory board or committee, or applicable State or Federal appeals court. All permit provisions, however, that exist prior to an appeal should remain in force during legal proceedings.

REVIEW OF REGULATIONS

At regular intervals the State mined area protection program and all regulations enacted thereto should be evaluated and updated as necessary to keep pace with advancements in mining, exploration, processing, and environmental technologies. Public hearings should be included as an integral part of the review procedure. Participation of interested Federal, State, and local agencies, and other concerned parties should be solicited.

TRAINING PROGRAM

This agency should establish a technical training program for persons engaged in mining operations and enforcement of environmental regulations. It should be the purpose of such a program to gather, evaluate, and disseminate information concerning mined area environmental protection and reclamation. Such a program should take advantage of nonfinancial assistance as the Secretary may authorize pursuant to Section 209(b) of the Act.

RESEARCH

Where it is determined that inadequate technologies exist to effectively deal with mined area environmental problems, the agency should formulate and fund research programs and make available resulting information.

The agency in cooperation with other State, Federal, and private organizations should prepare and maintain a continuing inventory of mining operations within the State or interstate region. The inventory should establish the location, size, environmental effects, and effectiveness of environmental regulations for mining operations. Emphasis should be directed toward: (1) mine, outcrop, and refuse bank fires; (2) surface waste areas of high radioactivity and concentrations of soluble toxic metal ions and chemical wastes; and (3) areas contributing to air and water pollution.

70-867 O—72—pt. 1——14

TABLE 1.—NUMBER OF MINES IN 1969 AND AVERAGE MEN WORKING DAILY IN 1969–70, BY METHOD OF MINING, IN THE UNITED STATES

Industry	Number of mines			Number of workers					
	Underground	Surface	Total	Underground		Surface		Total	
		1969		1969	1970 [1]	1969	1970 [1]	1969	1970 [1]
Coal mining:									
Bituminous coal and lignite	3,450	2,086	5,536	95,439	100,500	23,536	24,800	118,975	125,200
Anthracite	197	222	419	1,956	2,000	2,336	2,400	4,292	4,400
Total [2]	3,647	2,308	5,955	97,395	102,400	25,872	27,100	123,267	129,600
Peat		132	132			567	542	567	542
Native asphalt		23	23	232		62		294	
Metal mining:									
Copper	86	256	342	6,489	6,900	10,120	10,200	16,609	17,100
Gold-silver	253	448	701	2,860	2,900	757	700	3,617	3,700
Iron	14	86	100	4,571	4,000	6,906	6,900	11,477	10,900
Lead-zinc	210	38	248	7,420	7,300	113	100	7,533	7,500
Uranium	265	454	719	3,056	2,700	1,315	1,200	4,371	3,900
Miscellaneous metals	62	160	222	1,682	2,100	1,205	1,200	2,887	3,200
Total [2]	890	1,442	2,332	26,078	26,000	20,416	20,200	46,494	46,200
Nonmetal mining:									
Clay-shale	31	1,217	1,248	330	300	4,312	4,000	4,642	4,300
Gypsum	15	68	83	337	400	570	500	907	900
Phosphate rock	5	66	71	241	100	2,520	2,000	2,761	2,100
Potash	9	1	10	1,412	1,300	17	[3]	1,429	1,300
Salt	15	107	122	1,352	1,500	339	300	1,691	1,800
Sulfur		22	22			1,979	1,700	1,979	1,700
Miscellaneous nonmetals	70	584	654	1,033	1,300	2,145	1,900	3,178	3,200
Total [2]	145	2,065	2,210	4,705	5,000	11,882	10,500	16,587	15,400
Sand and gravel		9,440	9,440			50,161	49,400	50,161	49,400
Stone quarrying:									
Cement	6	202	208	205	200	2,803	2,800	3,008	3,000
Granite		386	386		[3]	3,420	3,600	3,420	3,600
Lime	19	87	106	707	600	1,251	1,200	1,958	1,800
Limestone	106	2,519	2,625	1,581	1,600	17,541	16,900	19,122	18,500
Marble	14	94	108	201	200	568	500	769	700
Sandstone	5	528	533	70	100	2,303	2,100	2,373	2,200
Slate	2	63	65	21	[3]	410	400	431	400
Traprock		603	603			2,963	2,800	2,963	2,800
Miscellaneous stone		422	422			1,165	1,200	1,165	1,200
Total [2]	152	4,904	5,056	2,785	2,700	32,424	31,400	35,209	34,200
Grand total [2]	4,834	20,314	25,148	131,195	136,100	141,384	139,300	272,579	275,400

[1] Preliminary figures except for peat.
[2] Data may not add to totals shown because of independent rounding.
[3] Less than 50.

Source: Office of Accident Analysis.

TABLE 2.—COAL PRODUCTION AND METHOD OF MINING IN THE UNITED STATES, IN 1969–70

	Quantity (thousand short tons)		Increase or decrease		Method of mining (percent)	
	1969	1970	Thousand short tons	Percent	1969	1970
All coal:						
Underground	349,238	340,530	−8,708	−2.5	61.2	55.6
Surface:						
Strip	210,620	248,658	+47,056	+23.3	35.3	40.6
Auger	16,350	20,027	+3,677	+22.5	2.9	3.3
Total surface	217,952	268,685	+50,723	+23.3	38.2	43.9
Other (culm bank and dredge)	3,788	3,445	−343	−9.1	.6	.5
Total, all coal	570,978	612,660	+41,682	+7.3	100.0	100.0
Bituminous:						
Underground	347,132	338,788	−8,344	−2.4	61.9	56.2
Surface:						
Strip	197,023	244,117	+47,094	+23.9	35.2	40.5
Auger	16,350	20,027	+3,677	+22.5	2.9	3.3
Total surface	213,373	264,144	+50,771	+23.8	38.1	43.8
Total bituminous	560,505	602,932	+42,427	+7.6	100.0	100.0
Anthracite:						
Underground	2,106	1,742	−364	−17.3	20.1	17.9
Strip	4,579	4,541	−38	−.8	43.7	46.7
Other (culm bank and dredge)	3,788	3,445	−343	−9.1	36.2	35.4
Total anthracite	10,473	9,728	−745	−7.1	100.0	100.0

TABLE 3.—PRODUCTION OF COAL IN THE UNITED STATES IN 1970 BY REGION, STATE, AND METHOD OF MINING

[Thousand short tons]

Region and State	Underground	Strip	Auger [1]	Total [1]	Percent surface mined
Appalachian:					
Alabama	9,078	11,339	143	20,560	55.8
East Kentucky	43,243	19,705	9,554	72,502	40.4
Maryland	238	1,266	111	1,615	85.3
Ohio	18,111	35,818	1,422	55,351	67.3
Pennsylvania	57,124	28,988	661	[2] 86,773	34.2
Tennessee	4,350	3,729	157	8,237	47.2
Virginia	28,018	5,103	1,895	35,016	19.9
West Virginia	116,414	21,885	5,772	144,072	19.2
Total	276,576	127,833	19,715	424,126	34.8
Midwestern:					
Illinois	32,093	33,026	----	65,119	50.7
Indiana	2,094	20,169	----	22,263	90.6
West Kentucky	19,367	33,131	305	52,803	63.3
Total	53,554	76,326	305	140,185	61.8
Missouri Valley and Southwestern:					
Arkansas	51	217	----	268	81.0
Iowa	423	565	----	987	57.2
Kansas	----	1,627	----	1,627	100.0
Missouri	----	4,447	----	4,447	100.0
Oklahoma	219	2,201	7	2,427	91.0
Total	693	9,057	7	9,756	92.9
Rocky Mountain, Great Plains, and Pacific:					
Alaska	----	549	----	549	100.0
Arizona	----	132	----	132	100.0
Colorado	3,858	2,167	----	6,025	36.0
Montana:					
Bituminous	28	3,096	----	3,124	99.1
Lignite	----	323	----	323	100.0
New Mexico	938	6,423	----	7,361	87.3
North Dakota: Lignite	----	5,639	----	5,639	100.0
Utah	4,737	----	----	4,733	----
Washington	32	5	----	37	13.5
Wyoming	118	7,105	----	7,222	98.4
Total	9,707	25,439	----	35,145	72.4
Grand total	340,530	248,655	20,027	609,212	44.1

[1] Data may not add to totals shown because of independent rounding.
[2] Excludes 3,445,000 short tons of coal produced by river dredging and reworking refuse banks.

TABLE 4.—SALIENT STATISTICS ON SURFACE MINING OF COAL IN THE UNITED STATES, IN 1969[1]

State	Production (thousand short tons)	Surface mined land	
		Acreage disturbed	Acreage reclaimed
Alabama	8,169	(2)	(2)
Alaska	667	15	
Arkansas	167	(2)	(2)
Colorado	1,915	(2)	(2)
Illinois	34,640	6,711	5,479
Indiana	17,976	3,335	3,118
Iowa	534	120	40
Kansas	1,313	1,176	250
Kentucky:			
Eastern	17,082	12,200	9,600
Western	27,632		
Maryland	1,045	261	459
Missouri	3,299	(2)	(2)
Montana	995	31	33
New Mexico	3,633	250	100
North Dakota	4,704	330	140
Ohio	32,616	10,629	7,902
Oklahoma	1,722	1,674	1,441
Pennsylvania:			
Bituminous	22,592	11,774	9,298
Anthracite	4,579	534	539
Tennessee	3,609	(2)	(2)
Virginia	5,182	2,258	2,331
Washington	5	(2)	(2)
West Virginia	19,388	15,711	17,117
Wyoming	4,481	154	51
Total[3]	217,952	[4] 67,163	[5] 57,898

[1] Data on acreage disturbed and acreage reclaimed compiled from Bureau of Mines form O.M.B. No. 42-S70014.
[2] Data not reported.
[3] Data may not add to totals shown because of rounding.
[4] Total estimated disturbed land, including estimated figures for 6 States not reporting data, was 73,000 acres.
[5] Total estimated reclaimed land, including estimated figures for 6 States not reporting data, was 63,000 acres.

TABLE 5.—NUMBER OF STRIP PITS IN THE UNITED STATES REPORTING PRODUCTION OF BITUMINOUS COAL AND LIGNITE IN 1970, BY TONNAGE CATEGORY AND STATE

[Production in thousand short tons]

State	500,000 tons and over		200,000 to 500,000 tons		100,000 to 200,000 tons		50,000 to 100,000 tons		10,000 to 50,000 tons		Less than 10,000 tons		Total [1]	
	Mines	Production	Mines	Production	Mines	Production	Mines	Production	Mines	Production	Mines	Production	Mines	Production
Alabama	4	3,096	8	2,185	28	4,050	17	1,255	27	702	7	51	91	11,339
Alaska	1	510							1	36	1	3	3	549
Arizona					1	132							1	132
Arkansas					1	104	1	55	2	48	2	11	6	217
Colorado	3	1,990					2	154	1	16	2	8	8	2,167
Illinois	22	32,205	1	438	1	185	1	84	3	95	3	18	31	33,026
Indiana	12	19,548					5	375	7	209	8	37	32	20,169
Iowa					1	105	4	292	5	168			10	565
Kansas	1	1,170	1	253	1	193					2	11	5	1,627
Kentucky	18	32,222	22	6,630	35	5,039	65	4,537	162	3,890	108	518	410	52,836
Maryland			1	216	4	575	1	61	14	376	8	37	28	1,266
Missouri	3	2,991	3	1,388					3	67			9	4,447
Montana	2	3,096	1	322							1	1	4	3,419
New Mexico	1	6,021	1	385					1	17			3	6,423
North Dakota	5	4,518	2	725	2	298	1	19	1	43	9	35	20	5,639
Ohio	16	21,579	21	6,194	21	2,984	42	3,033	68	1,808	49	221	217	35,818
Oklahoma	2	1,659	1	233	1	167	2	138			2	3	8	2,201
Pennsylvania	1	613	5	1,531	62	7,686	94	6,858	261	7,092	132	667	555	24,447
Tennessee					11	1,339	20	1,459	34	850	15	81	80	3,729
Virginia			1	305	6	898	9	683	103	2,891	35	327	154	5,103
Washington											1	5	1	5
West Virginia	3	2,473	15	4,420	36	4,700	71	4,754	199	5,007	94	531	418	2,885
Wyoming	5	6,700	1	274	1	107			1	22	1	2	9	7,105
Total [1]	99	140,391	84	25,499	212	28,562	335	23,757	893	23,337	480	2,567	2,103	244,117
Percent of total	4.7	57.5	4.0	10.4	10.1	11.7	15.9	9.7	42.5	9.6	22.8	1.1	100.0	100.0

[1] Data may not add to totals shown because of independent rounding.

TABLE 6.—MATERIALS (CRUDE AND WASTE) HANDLED AT SURFACE MINES IN THE UNITED STATES IN 1970, BY STATE [1]

[Metals and nonmetals except fuels]

State	Thousand short tons	State	Thousand short tons
Alabama	54,593	New Hampshire	6,966
Alaska	37,004	New Jersey	34,129
Arizona	507,823	New Mexico	163,431
Arkansas	38,456	New York	86,051
California	286,039	North Carolina	66,749
Colorado	26,951	North Dakota	8,280
Connecticut	15,516	Ohio	91,077
Florida	403,983	Oklahoma	31,210
Georgia	39,757	Oregon	33,927
Idaho	37,589	Pennsylvania	85,476
Illinois	99,534	Rhode Island	2,808
Indiana	50,464	South Carolina	18,270
Iowa	52,682	South Dakota	23,514
Kansas	27,887	Tennessee	52,196
Kentucky	33,915	Texas	104,206
Louisiana	32,595	Utah	163,406
Maine	15,271	Vermont	7,169
Maryland	29,980	Virginia	46,986
Massachusetts	26,345	Washington	40,929
Michigan	144,896	West Virginia	12,178
Minnesota	314,638	Wisconsin	64,790
Mississippi	13,051	Wyoming	90,379
Missouri	51,380	Other States [1]	8,814
Montana	89,744		
Nebraska	16,499	Total	3,786,315
Nevada	96,782		

[1] Includes Delaware and Hawaii.

TABLE 7.—SAND AND GRAVEL SOLD OR USED BY PRODUCERS IN THE UNITED STATES IN 1970, BY STATE

State	Thousand short tons	State	Thousand short tons
Alabama	6,725	Nebraska	12,232
Alaska	25,825	Nevada	8,574
Arizona	17,822	New Hampshire	6,529
Arkansas	13,301	New Jersey	16,732
California	140,259	New Mexico	10,666
Colorado	22,261	New York	35,537
Connecticut	6,765	North Carolina	12,772
Delaware	1,565	North Dakota	8,090
Florida	12,482	Ohio	42,069
Georgia	3,667	Oklahoma	5,675
Hawaii	514	Oregon	17,532
Idaho	12,953	Pennsylvania	18,504
Illinois	43,926	Rhode Island	2,387
Indiana	23,476	South Carolina	5,864
Iowa	21,058	South Dakota	16,556
Kansas	12,968	Tennessee	6,715
Kentucky	8,760	Texas	31,438
Louisiana	18,155	Utah	12,010
Maine	12,971	Vermont	4,046
Maryland	12,951	Virginia	11,126
Massachusetts	17,925	Washington	25,089
Michigan	53,092	West Virginia	4,396
Minnesota	46,851	Wisconsin	41,103
Mississippi	10,859	Wyoming	9,447
Missouri	12,446		
Montana	19,275	Total	943,941

TABLE 8.—STONE SOLD OR USED BY PRODUCERS IN THE UNITED STATES IN 1970, BY STATE

State	Thousand short tons	State	Thousand short tons
Alabama	[1] 19,882	Nevada	1,860
Alaska	6,470	New Hampshire	[2]
Arizona	3,511	New Jersey	[1] 15,160
Arkansas	15,284	New Mexico	[1] 3,100
California	46,399	New York	38,015
Colorado	3,552	North Carolina	30,363
Connecticut	8,338	North Dakota	103
Florida	[1] 43,089	Ohio	47,244
Georgia	26,635	Oklahoma	18,177
Hawaii	[1] 6,332	Oregon	13,439
Idaho	[1] 4,240	Pennsylvania	66,241
Illinois	55,776	Rhode Island	[2]
Indiana	25,818	South Carolina	9,710
Iowa	25,305	South Dakota	1,979
Kansas	15,161	Tennessee	35,374
Kentucky	29,311	Texas	45,557
Louisiana	9,183	Utah	1,650
Maine	[2]	Vermont	1,514
Maryland	16,015	Virginia	35,415
Massachusetts	8,136	Washington	13,701
Michigan	41,687	West Virginia	[1] 9,740
Minnesota	4,618	Wisconsin	17,577
Mississippi	639	Wyoming	1,266
Missouri	39,726	Undistributed	1,893
Montana	6,501		
Nebraska	4,265	Total	874,951

[1] To avoid disclosing individual company confidential data, certain State totals are incomplete, the portion not included being combined with "Undistributed."
[2] Withheld to avoid disclosing individual company confidential data; included with "Undistributed."

TABLE 9.—PRODUCTION OF CLAY IN THE UNITED STATES IN 1970, BY STATE [1]

State	Thousand short tons	State	Thousand short tons
Alabama	2,748	Nevada	[2]
Arizona	199	New Hampshire	40
Arkansas	1,014	New Jersey	262
California	2,844	New Mexico	67
Colorado	637	New York	1,707
Connecticut	171	North Carolina	3,318
Delaware	11	North Dakota	[2]
Florida	872	Ohio	3,920
Georgia	5,684	Oklahoma	769
Hawaii	2	Oregon	134
Idaho	13	Pennsylvania	2,665
Illinois	1,676	South Carolina	1,974
Indiana	1,335	South Dakota	165
Iowa	1,181	Tennessee	1,401
Kansas	713	Texas	4,148
Kentucky	1,020	Utah	189
Louisiana	1,080	Vermont	[2]
Maine	41	Virginia	1,633
Maryland	1,129	Washington	240
Massachusetts	284	West Virginia	191
Michigan	2,480	Wisconsin	8
Minnesota	227	Wyoming	1,950
Mississippi	1,553	Undistributed	921
Missouri	2,128		
Montana	41	Total	54,855
Nebraska	90		

[1] To avoid disclosing individual company confidential data, certain State totals are incomplete, the portion not included being combined with "Undistributed."
[2] Withheld to avoid disclosing individual company confidential data; included with "Undistributed."

TABLE 10.—MINE PRODUCTION OF RECOVERABLE COPPER IN THE UNITED STATES IN 1970, BY STATE [1]

State	Short tons	State	Short tons
Arizona	917,918	Montana	120,412
California	2,308	Nevada	106,688
Colorado	3,749	New Mexico	166,278
Idaho	3,612	Pennsylvania	2,539
Maine	2,703	Tennessee	15,535
Michigan	67,543	Utah	295,738
Missouri	12,134	Other States [1]	2,500
		Total	1,719,657

[1] Includes Alaska, Oklahoma, Oregon, Washington, and Wyoming.

TABLE 11.—USABLE IRON ORE PRODUCED IN THE UNITED STATES IN 1970, BY STATE

State	Thousand short tons	State	Thousand short tons
Alabama	(1)	Montana	16
Arizona	13	Nevada	(1)
California	(1)	New Mexico	(1)
Colorado	(1)	New York and Pennsylvania	3,910
Georgia	(1)	North Carolina	(1)
Idaho	(1)	Texas	(1)
Michigan	14,288	Utah	2,244
Minnesota	62,802	Wisconsin	903
Missouri	(1)	Wyoming	2,181
		Undistributed	13,239
		Total	99,596

[1] Withheld to avoid disclosing individual company data; included with "Undistributed."

TABLE 12.—MINE PRODUCTION OF PHOSPHATE-ROCK ORE IN THE UNITED STATES IN 1970, BY STATE

State	Thousand short tons
Florida [1]	114,923
Tennessee [2]	5,565
Other States [3]	5,026
Total	125,514

[1] Includes North Carolina.
[2] Includes Alabama.
[3] Includes California, Idaho, Montana, Utah, and Wyoming.

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., May 14, 1971.

Hon. SPIRO T. AGNEW,
President of the Senate,
Washington, D.C.

DEAR MR. PRESIDENT: Enclosed is the Environmental Impact Statement required by section 102(2)(C) of the National Environmental Policy Act of 1969 (P.L. 91–190) to accompany the Department's proposed bill "To provide for the cooperation between the Federal Government and the States with respect to environmental regulations for mining operations, and for other purposes."

Also enclosed in accordance with the guidelines published by the Council on Environmental Quality are copies of comments received from other Federal agencies on the draft environmental statement.

Sincerely yours,

FRANK A. BRACKEN, *Legislative Counsel.*

(Enclosures.)

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., May 14, 1971.

Hon. CARL ALBERT,
Speaker of the House of Representatives,
Washington, D.C.

DEAR MR. SPEAKER: Enclosed is the Environmental Impact Statement required by section 102(2)(C) of the National Environmental Policy Act of 1969 (P.L. 91–190) to accompany the Department's proposed bill "To provide for the cooperation between the Federal Government and the States with respect to environmental regulations for mining operations, and for other purposes."

Also enclosed in accordance with the guidelines published by the Council on Environmental Quality are copies of comments received from other Federal agencies on the draft environmental statement.

Sincerely yours,

FRANK A. BRACKEN, *Legislative Counsel.*

(Enclosures.)

ENVIRONMENTAL STATEMENT TO ACCOMPANY THE PROPOSED "MINED AREA PROTECTION ACT OF 1971"

This statement is submitted pursuant to the requirements of section 102(2)(C) of the National Environmental Policy Act (P.L. 91–190, 83 Stat. 853). Sections are numbered to correspond with the Act.

(*i*) *Environmental impact*

The mining, processing, and utilization of the mineral and fuel resources, so vital to our Country, has had and continues to have an adverse effect on the environment. With a rapidly expanding population our requirements for raw materials and energy will mount at an increasing pace. This increase in material needs will also be accompanied by an increase in environmental degradation if appropriate measures are not now taken to prevent future damage by mining activities.

Estimates indicate that approximately 13 million acres of land have been affected by underground and surface mining and by related mineral waste accumulations. By the year 2000 this figure may exceed 30 million acres. Although some remedial action has been taken, a substantial backlog of damage and potential damaging conditions remain. These include:

—292 burning coal waste piles contribute to fouling of the nearby atmosphere and pose safety and health hazard to the general public.

—289 uncontrolled outcrop and underground mine fires present hazards to health and safety of the public and destroy valuable coal reserves.

—1.7 million acres of subsided land with approximately 5.1 million additional acres in 28 States currently undermined some of which is in urban areas.

—145,000 acres of lakes and ponds and 18,000 miles of streams damaged by siltation and acid mine drainage.

—Approximately 24 billion tons of mineral processing and utilization waste require treatment and stabilization to prevent air and water pollution and health and safety hazards.

—Significantly socio-economic losses such as retarded employment-investment opportunities-depressing social environment; abnormal physical and mental hazards; and esthetically unattractive landscapes, resulting from mine-related environmental problems.

The proposed Mined Area Protection Act of 1971 is designed to minimize such environmental damage from occurring as a result of future mining operations. Mining operations to be carried out under this new regulation will be conducted

in such a manner that the surface of the affected land is to be reclaimed promptly to as productive a condition as practicable.

The proposed bill would require all States to undertake a program to regulate mining activity in the State, both surface and underground.

The Federal Government would pay on a sliding scale a portion of the cost of program development beginning at 80% during the year prior to approval by the Secretary of the Interior and terminating at 15% during the fourth year following approval. The degree of uniformity would be achieved by a provision for review and approval of State programs by the Secretary of the Interior. If a State fails to submit an acecptable program, the Secretary of the Interior is authorized to regulate mining in that State and to recover the entire cost of such regulation by imposing a fee upon mine owners.

The proposed bill contains certain general requirements which State programs must meet. The Secretary of the Interior will elaborate upon these requirements in regulations published and revised periodically. In elaborating on these requirements, it is intended that the Secretary of the Interior use the measures of economic efficiency and technical practicability only to prevent indiscriminate requirements of over-reclamation or the complete restoration of the mined lands in those instances where it is not clearly warranted. Such measures are not to be used to support a "right or need" to mine where adequate reclamation is either not possible to technically achieve or makes the operation uneconomical.

(*ii*) *Unavoidable adverse impact*

No major or permanent adverse environmental problems are expected to result from the proposed program.

(*iii*) *Program alternatives*

Inasmuch as the impact of the proposed legislation on the environment is beneficial and has no probable adverse environmental consequences, the analysis of alternatives becomes essentially a question of the degree of reclamation that should be required.

A cost-benefit analysis of this program is hampered by the fact that most of the benefits cannot readily be appraised. Cleaner water and air, more aesthetic countryside and better recreation facilities are real values even though difficult to measure in precise dollar values. The following figures are given by way of rough estimate:

We estimate that burning coal waste piles affect 413,000 people in 295 urban areas; that uncontrolled outcrop and underground mine fires affect 2,500,000 people and property valued at $2.2 billion and threaten to destroy 800 million tons of coal reserves valued at $3.2 billion; that undermined areas subject to uncontrolled subsidence affect many urban areas and property valued in the millions of dollars; and that surface mined land destroys outdoor recreation resources valued at $35 million annually, including $22.5 million worth of annual fish and wildlife values. The intangible benefits involved in public health and safety, water quality and other aesthetics could even be larger. In the small Anthracite Region of Pennsylvania alone, mine subsidence has affected some 50,000 acres of land valued at $1.7 billion and the homes of 650,000 people. If this is the pattern for similarly affected areas in the entire country, property values exceeding $3 billion may be affected.

It is estimated that mining and processing activities have cost the Nation more than $580 million in reduced land values and more than $35 million annually in lost water-oriented recreation. Each year another 200,000 to 300,000 acres are added to the inventory of lands affected by mining. The program proposed by this Act would prevent continuation of past practices that produced these losses.

The impact on land and water in terms of values lost is estimated at $100 per acre mined—or as much as $30 million per year. Large quantities of low grade resources exist in mine waste; if they could be removed through appropriate advances in technology they would contribute greatly to the Nation's resource base.

(*iv*) *Relationship between short-term use and long-term productivity*

The proposed legislation does not involve a use of the environment which will jeopardize its long-term productivity. On the contrary it involves restrictions on present use for the sake of maintaining and enhancing its long-term productivity.

The restrictions on present use will undoubtedly have some effect on short-term mineral production and costs. However, many of these costs are anticipated to be immediately offset by shifts in mining sites and technology (both scale and type) used. In the long run, it is anticipated that any remaining residual costs will be completely offset by improved technology and supplementation of commodities or fuels mined.

(v) Irreversible results and irretrievable commitments

No irreversible results or irretrievable commitments are anticipated to result from enactment of the proposed legislation.

Senator Moss. Our next witness will be John Quarles, General Counsel and Assistant Administrator of Standards and Enforcement Division of the Environmental Protection Agency. Mr. Quarles, we are glad to have you come foreward now.

STATEMENT OF JOHN QUARLES, GENERAL COUNSEL AND ASSISTANT ADMINISTRATOR OF STANDARDS AND ENFORCEMENT, ENVIRONMENTAL PROTECTION AGENCY

Mr. QUARLES. Yes.

Senator Moss. You may read your statement in full or put it in the record as you wish.

Mr. QUARLES. Thank you, Mr. Chairman. I think I would prefer to read it.

Senator Moss. All right, you may proceed.

Mr. QUARLES. Mr. Chairman, I am honored to have the opportunity to appear before this committee and to present the view of the Environmental Protection Agency on bills to protect the environment from the adverse effects of mining and related activities.

Prior to my appointment to the Environmental Protection Agency, I served as Assistant to the Secretary of Interior where I had the early opportunity to work with the Council on Environmental Quality and other Federal agencies in the development of the administration's proposed Mined Area Protection Act of 1971. In my present capacity at EPA, I am responsible for all enforcement actions, including those involving mining or mineral processing operations.

Other witnesses have testified in some detail on the background which supports the need for national legislation for controlling mining and on the bills before you today, and I shall not consume the committee's time by commenting in detail on the provisions of these bills. However, I would like to emphasize briefly the importance of legislation to minimize adverse environmental effects associated with mining and mineral processing activities.

Mining inevitably involves some gouging of the surface and subsurface of the earth. If improperly performed, mining causes damage intolerable by present environmental standards. At the same time, however, it supplies this Nation with the basic raw materials necessary to sustain the needs of our society. Some sincere conservationists support the prohibition of many forms of mining; others propose to control only surface mining. Some would ban all surface mining of coal. On the other hand, many mine operators oppose the regulation of mining on the grounds that environmental control measures may force them out of business or otherwise reduce the Nation's supply of

minerals. A system is clearly needed which will prevent undue environmental damage from mining activities and which will assure the restoration of areas which are unavoidably damaged. At the same time, such a system should not arbitrarily prohibit the mining of minerals needed to sustain a healthy economy. I believe that the cooperative State-Federal regulatory framework provided for in S. 993 will allow the necessary development of our mineral resources and will at the same time insure protection of environmental values.

Several months ago I testified before the Senate Interior and Insular Affairs Committee in support of S. 992, the administration's proposed bill to establish a national land-use policy. If we are to provide for a total program for environmental protection and enhancement, it seems to me that the key lies in an effective program of land-use planning. Mining is only one use alternative for an area of land. Planning in advance of land use is a necessity; that is, the impact of a given proposed use of land, in this case mining, must be considered in detail before the land has been modified, or before a surface pit is excavated or a mine shaft sunk or before the land resources in question have been otherwise irretrievably committed. Further, the use of land for mining must be considered with other alternative uses, such as recreation, grazing, forestry, esthetics and wildlife preservation.

Two important questions must be asked and answered before mining should be permitted.

One, is it feasible, at a given site, to carry out mining activities without violating water quality standards or unduly impairing other important environmental values? If not, mining should be prohibited.

Two, if mining is to be conducted, what precautionary measures must be taken to protect and restore the environment during and following mining?

The best available information indicates that both surface and underground mining have affected more than 13 million acres in this country. This acreage grows daily and is expected to reach 20 million acres by the year 2000.

The majority of mining operations have been undertaken without adequate preplanning. Of course, this relates back to years past when no thought was given to this subject, although we have a continuing problem. The results are deplorable: Millions of dollars in property damage and the threat of subsidence or cave-ins in more than 250 communities throughout 28 States.

Uncontrolled mine and refuse bank fires which have resulted in the death of 50 people and the destruction of property valued at more than $2 billion.

Thousands of miles of streams either intermittently or permanently damaged.

Several million acres of deteriorating mined land contributing to land, water and esthetic pollution.

I would like to emphasize that a major portion of the damages which I have just mentioned results from inadequately planned and unregulated underground mining and mineral processing activities. Too often the problem is identified only with surface or strip mining.

EPA is attempting, through several regulatory programs, to pre-

vent adverse effects on water quality from mining operations. Under the Federal Water Pollution Control Act, all the States have established water quality standards, including criteria governing toxicity and siltation which can result from mining activities. In establishing implementation plans to attain the prescribed criteria, States have established compliance schedules for significant dischargers, including many mining operation. Another means for enforcing the requirements of water quality standards, including implementation plans, is the permit program which EPA and the Corps of Engineers are now implementing pursuant to the Refuse Act of 1899. The Environmental Protection Agency has a network of 12 regional enforcement offices to insure compliance with air and water quality standards. But, I might say, Mr. Chairman, I am not satisfied that we are able to do the whole job or that the various requirements, implementation plans, specified requirement applicable to individual problems have the degree of detail and stringency required to protect the damage that concerns us.

The problem of acid mine drainage associated primarily with the mining of coal is one of the more serious problems. Several months ago the Environmental Protection Agency held an enforcement conference concerning the pollution of the interstate waters of the Monongahela River and its tributaries, which include several thousand miles of streams damaged by acid mine drainage. The purpose of this conference was to bring together representatives of the State and interstate agencies to review the existing situation and to provide a basis for future action by all parties. Among other recommendations, it was unanimously agreed that—

> By September 1, 1872, all waters discharged from all active mines in the Monongahela Basin shall meet the following criteria or the state water quality standards, whichever is more restrictive: pH between 6 and 9 standard units; no acidity as determined by standard methods and total iron concentration of 7 milligrams per liter or less.

Again I repeat, that applies to active mines.

This action should result in a substantial reduction of acid mine drainage from active mines. The Environmental Protection Agency will monitor progress by all parties in meeting this recommendation to determine what additional steps, if any, may be necessary.

We do not have adequate technology to deal with all of the environmental problems that are created by mining and mineral processing activities. The control of coal mine fires and land subsidence, for example, presents difficult problems. Additional research, called for by section 208 of the proposed "Mined Area Protection Act," is necessary.

The Environmental Protection Agency has led the way in supporting research and demonstration activities designed to reduce the impact of mining on water and air quality. At present we have an active grant program to support such research. Results of our studies and research are being used by States in the development of the mine reclamation and restoration requirements. We are also studying smelter emission control technology with the goal of substantially reducing this air pollution source.

For several years now the Environmental Protection Agency and its predecessor agencies have conducted a multimillion-dollar demon-

stration program in cooperation with several mining companies to assess the effectiveness of innovative mine water pollution abatement techniques. With regard to mineral processing activities, we are working with the mining companies and the States in development of guidelines and regulations for the stabilization of mineral mill tailings piles.

These regulatory and research programs will help to identify significant water pollution problems from mining operations and will enable us to move to abate such pollution. I must emphasize, however, that regulatory action under EPA's authority can deal only with a part of the problem.

Action under the Federal Water Pollution Control Act can only be taken where water quality standards are being violated. Under the Refuse Act we will in many cases be able to examine a proposed discharge from a mining operation and to insist on conditions to control such a discharge. Neither program, however, affords an appropriate vehicle for the detailed examination of mining operations and the establishment of appropriate plans and regulations to prevent the variety of damages to the land, to the soil and to esthetic and recreational values which can result from mining. Clearly, a more comprehensive legislative framework is required.

I, Mr. Chairman, constantly am faced with the discrepancy between the name of our agency, the Environmental Protection Agency, and the actual statutory mandates which we operate under. The program responsibilities that we have, of course, are focused on the pollution control problems, air pollution, water pollution, solid waste, pesticides, and radiation. But when one thinks of the environmental problems, one, of course, is thinking of the land use problems, wildlife, habitat, recreational prospects, esthetics, and so forth. I think our program involvement in the problems created by mining activities makes us conscious of the problems not only that fall within our statutory jurisdiction but also those that fall without. That is true in many cases but it is particularly true in the case of mining.

It has been argued that this framework already exists in the variety of State statutes which have been enacted to control surface mining activities, and that as much as 90 percent of the surface-mined coal in the United States is covered by such statutes. Nevertheless, although surface mining, particularly surface mining of coal, presents serious environmental problems, other types of mining also create significant hazards to the environment. Despite the efforts of some States in this regard, the problems are still very much with us. Many of the State statutes are inadequate and ambiguous; some do not admit of equitable enforcement. State enforcement has been hampered by lack of funds and personnel. In addition, most of the State laws, like many of the bills before you today, are too limited in coverage to provide a comprehensive remedy for the problem. Some cover only coal while only three States have passed laws governing underground, as opposed to surface, mining. Finally, no State statute governs mining on federally owned lands.

I would simply like to underscore the portions of enforcement. There is a tremendous answer disturbing background of experience in our country with regard to environmental regulations where the

difficulty of the problem leads to a vague necessity of requirements that in turn leads to great uncertainty as to what must be done and dates which have been set are passed by, requirements that are unclear are not honored and it is only through tough enforcement that the controls are really implemented in an effective way. So I would particularly focus or ask you to focus your concern on the provisions for enforcement in these bills before you.

To help rectify this situation, the Environmental Protection Agency contracted for a 15-month investigation to review certain State reclamation statutes and their enforcement and the proposed Mined Area Protection Act and its draft guidelines. The purpose of this investigation was to develop a model State statute that reflects the best of the State reclamation laws coupled with the requirements of S. 993. Although the report is still in draft form, I believe it will be useful to the committee and, with the chairman's permission, I would like to make this copy available for the committee's use. I would particularly like to bring to your attention the model State Mining and Environmental Quality Act beginning on page 161 of the report. I have a copy here which I will furnish to you, Mr. Chairman, it is too bulky I am sure to be printed in the record.

Senator Moss. It will be included in the record by reference.

Mr. QUARLES. Thank you. One of the most serious problems associated with mining on public land is the lack of environmental control over mining activities conducted under authority of the General Mining Law of 1872. The Public Land Law Review Commission report recommended that this law should be modified in accordance with modern standards. The Department of the Interior has recently proposed the "Mining Law of 1971," which would modify the existing location-patent system to provide the Secretary of the Interior adequate authority to regulate mining of hard-rock minerals, including authority to require measures to minimize adverse environmental effects. In addition, the Department has recently proposed revised mine operating regulations for most leasable minerals, and has forwarded to Congress the proposed "Mineral Leasing Act of 1971," which would provide a comprehensive, unified system for all leasable minerals on the public lands. In 1969 the Department of the Interior issued surface exploration, mining and reclamation regulations for public lands. The Environmental Protection Agency is working closely with Interior in the development of these requirements.

I point out these actions to emphasize the priority attention that is being given to the problem of mining on our public lands and to assure you that this administration is serious in its intent to provide effective management for our public land resources. These efforts are major steps forward in providing the needed protection to our public lands from the adverse effects of mining. These are still partial solutions, however; much more needs to be done to attain a comprehensive system of control of mining activities, including, of course, those not on public lands.

S. 993 is an essential part of the administration's effort to establish such a system. The bill would establish a framework of Federal guidance but regulation by the States. Federal financial assistance would be provided to strengthen State programs. In addition, title III of the

proposed Mined Area Protection Act of 1971 would authorize the Federal land managing agencies to issue regulations to assure at least the same degree of environmental protection and reclamation for public lands as will be required for private lands by laws and regulations established in accordance with this proposal if enacted. Thus, the bill would provide new impetus for the establishment of effective environmental controls for mining activities on both public and private lands.

In summary, Mr. Chairman, I would like to emphasize several points. The adverse environmental effects created by mining operations are significant. The problems are more widespread than just those associated with coal mining or with surface mining. Legislation to provide for effective environmental control must incude the mining of all commodities and minerals, all types of mining such as underground, surface and dredged type, and mineral processing activities. The administration's proposed Mined Area Protection Act is designed to do just this.

It is difficult to overemphasize the urgency of the need for this legislation, Mr. Chairman, and the Environmental Protection Agency urges that favorable action be taken on S. 993 as soon as possible.

Thank you.

Senator Moss. Thank you very much, Mr. Quarles, for that good statement.

On page 3 you talked about the need for land use policies and in that you pointed out the priority of use of the land needed to be established. Is that basically what we are talking about when we had the discussion about West Virginia surface mining as compared with Wyoming surface mining, there are some areas that probably just don't lend themselves to open pit mining, is that right?

Mr. QUARLES. I haven't been present for all of the testimony this morning. I think I heard that, however, and I agree that probably is the case.

Senator Moss. The point is, if we have comprehensive land use planning in advance, then we know areas that are unavailable as well as those areas that are available for different kind of mining, not only of coal but other minerals, including sand and gravel, is that right?

Mr. QUARLES. That is correct, and the important thing is to make sure we are tieing in the planning with systems of regulation so that the planning gets implemented. Too often the planning just sits on the shelf. These bills would make the planning be put to use.

Senator Moss. What passed through my mind as you were talking about lack of enforcement is the law that we have had on the books since the 1880's about getting permission from the engineers to dump any refuse in a navigable stream. Well, we just didn't think about that for 65 or 70 years, apparently, and now we are beginning to get a little enforcement of it and find it is an effective tool. But it had been on the statute books for all of these years and hasn't been utilized.

Senator Nelson, in his testimony earlier, said, short of an outright ban on coal stripping, minimum provisions for a strip mining bill should include reclamation of the so-called orphan lands. These are the ones that have been mined before and are now in the condition they were left.

I wonder if you would comment on the desirability and practicability of such a provision being in the bill?

Mr. QUARLES. I think that might require an individual case-by-case examination of the extensiveness of those lands involved in individual cases.

I think the first priority should be to make sure that all future mining activities that are undertaken have integrally tied in with them programs for reclamation so that the problem does not get any worse. Then we have an enormously large problem left over to us from the past, where there is need to be restoration. I am probably not acquainted myself sufficiently with the details of different parts of the problem to pass judgment as to how they best could be attacked.

Senator MOSS. There is a rather spotty record in the States of enforcing laws that they have. Do you feel it is desirable to extend this additional 2-year period to the States before we begin to move on Federal standards?

Mr. QUARLES. The biggest problem that the country has in enforcing sufficient environmental requirements is to establish what those requirements are. I know there is tremendous enthusiasm throughout the conservation circles and the whole country for suing polluters. I, myself, share that enthusiasm in certain cases. But, in many situations, nobody knows really what a discharger, or in this case it would be a mining company, should do. The public doesn't know, the Government doesn't know, and no one has ever told the company and the company doesn't know. It is not realistic, in my experience, to expect that you can start off on day 1 with a full-dressed regulatory system which addresses the details of individual cases and says what is required.

I do not think that a 2-year lag time is unnecessarily long to get the show on the road in the way that in the long run will be most efficient.

I know of the experience in the field of water, and I am sure that you are going to see this in air, is that you can attempt to lay out a system of regulation with a broad brush, but it is not meaningful until you can apply that in detail to individual cases. So that a certain startup period is going to occur and I think the program will operate more effectively if that startup period is provided for in the law that authorizes and directs the program.

Senator MOSS. Would you think that a surface mining permit should be withheld until there was a demonstrated capability of replacing and reseeding the land so that it would grow? I think of Arctic areas, tundra and so on, where we know very little about getting growth started back. Do you think we ought to withhold all of those permits until we have enough research to make sure that can be done?

Mr. QUARLES. I think in my testimony I stated on the bottom of page 3 that before any mining is undertaken, two questions should be asked. The first is, is it feasible to carry out these activities without unduly impairing other important environmental values. Now, if there is no assurance that environmental values can be protected through reclamation of land that will be disturbed, then I certainly can imagine that in some instances the mining should be deferred or perhaps permanently prohibited, but that would depend on the facts of individual cases.

Senator Moss. Well, thank you very much. We appreciate your testimony and the materials you have furnished us, Mr. Quarles.

Mr. QUARLES. I wonder if I might make one further comment?

I notice in reviewing your bill and this may be true also in the administrations' bill, that the enforcement provisions refer to a violation of the provisions of the law or standards of regulations. What I think should be very clearly in the mind of the committee as you review this problem is that the critical rules applying to individual operations will be set forth in the permits as they are issued, which incorporate the plans of reclamation that have been imposed by the company and perhaps after some negotiation, approved by the regulatory authority. It has got to be clear in the long legislative history that the sanctions apply to violations of permits and permit conditions. So that the full force of the law does come to bear on what will be its cutting edge, namely the permit conditions.

Senator Moss. Thank you for that suggestion and we will give attention to that in our drafting of the bill.

Thank you, gentlemen, we appreciate your appearing here.

We will move on now to Mr. Armen G. Avedisian. I don't know whether I have pronounced that correctly, of the National Limestone Institute, Inc.

STATEMENT OF ARMEN G. AVEDISIAN, CHAIRMAN OF THE BOARD OF NATIONAL LIMESTONE INSTITUTE, INC.

Mr. AVEDISIAN. Thank you, Mr. Chairman.

I am Armen Avedisian, I am chairman of the board of Avedisian Industries, Inc., also chairman of the board of the National Limestone Institute, a national trade association.

Distinguished chairman and gentlemen of the committee, it is indeed a privilege to have been allotted this time to appear before you. On behalf of the entire industry I represent here today, I thank you sincerely for this opportunity.

The entrepreneurs whom I represent here are the owners and operators of quarries from which comes, in huge quantities, one of the commodities basically essential to the industry and commerce of this Nation. Limestone in some form or another is a basic ingredient in thousands of products which are considered, in turn, as basic to our civilization. Virtually every item manufactured today, whatever its end use may be, requires the direct or indirect use of limestone or a derivative therefrom. In fact, of the six materials generally recognized as essential ingredients of commerce and industry, limestone is the greatest in physical volume.

Because of this essentiality, there cannot be any argument as to whether or not we have to continue to locate deposits of limestone and develop the means to extract and process this vital resource for its myriad uses. The question is—and we in this industry are acutely aware of this—how do we go about locating, extracting, and processing without destroying the value of the land which is left, without polluting our streams and rivers and destroying the wildlife dependent on them.

I assure you, gentlemen, no one is more concerned about this question than the men who are the limestone industry. We commend you for your deep interest and active work to find viable solutions to the problem. And I offer to you now the cooperation and help of the group for whom I speak in this endeavor. We believe it is in the national interest that there be effective regulations to promote activity during and following mining operations to avoid and correct adverse environmental effects and to permit prudent reuse of the land involved. But we believe just as firmly that it also is in the national interest that reasonable access to deposits must not be denied and economics of production must not be affected adversely by unnecessary, unduly restrictive, or impractical regulations.

In this regard, I wish to call to your attention some of the aspects of limestone production which set limestone quarries and mines apart as unique from other types of mining operations. Because they are unique, they must not be treated in legislation under consideration now as just another "strip mine."

Limestone quarries are relatively small, rarely covering more than 40 acres, and disturb very little land in comparison to the quantity of material removed. Of the volume removed, 85 to 90 percent is consumed by commerce and industry. For the most part, limestone quarrying operations are permanent installations having an average working life of about 50 years. Limestone is a purifier of water, enhances the growth of vegetation, improves mineral content of water, among other beneficial qualities. Finally, limestone operations have to be located near urban centers because of the high transportation costs involved in moving this heavy commodity.

This combination of permanency and proximity to urban centers has engendered a good neighbor philosophy among owners and operators of limestone quarries. For a considerable number of years, most quarries have been screened with trees, shrubs and other plants to forestall creation of unsightly landscapes. Significant expense and effort have been and are being devoted to easing dust, noise and other problems generated by the extraction and processing of limestone. These same characteristics have brought about, through the years, an already heavy load of local regulations.

Water from limestone quarries benefits rivers and streams and tributaries into which it flows. To cite a case in point in the way of an example, consider that some fish farmers increase their yields of fish of up to twentyfold by the addition to the water of 1,000 pounds of limestone per surface acre of water. In the quarrying of limestone, the pollution of streams and rivers and resultant destruction of fish and wildlife simply is not present.

As almost all of the material extracted from a limestone quarry is used up, it is not possible to refill the quarry to return it to original condition, as I am sure you realize. Even if it were, however, such a practice still might well be a waste of resources and not necessarily intelligent land use. My point is that today's needs require some alternatives as to how we use our resources.

Let me give you a few examples of how depleted quarries are being used today. One of my quarries in the heart of Chicago is now the site of a sanitary land fill, and 2,000 tons of refuse a day is being disposed

of there. Mined-out quarries are being used for municipal water storage for Philadelphia. Several of the members of my association utilize vast mined-out areas for underground storage of a variety of foodstuffs and other items. Other sites are being used as recreational facilities for boating and fishing, for parkland, for industrial and institutional construction, for housing, and dozens of other purposes for which this Nation has serious needs.

This, I submit, is intelligent land use policy, for it recognizes these serious needs and allows retention of various alternatives from which can be adopted the most feasible and prudent re-use measures. Rather than destroying or diminishing the availability of land for commercial, industrial, or recreational uses, quarrying adds to the list of potential uses.

In summary, Mr. Chairman and gentlemen of the committee, we share your concern about the adverse effects of mining operations, and endorse your work to correct the evils which have resulted from them. In your deliberations, I urge you to consider carefully the unique aspects of the production of limestone which I have described briefly, and to keep in sight the fact that this industry is not a contributor to the devastation and pollution of our land, air and water, or a hazard to the life and property of our citizens.

Thank you very much for extending to me this privilege of appearing before you.

Senator Moss. Well, thank you, Mr. Avedisian. It is very interesting to have you bring in this testimony. I hadn't thought particularly about limestone quarries, yet I know they are common and I recognize now we have them in many areas of the country. Obviously they pose a problem because they change the surface of the land.

But, as you point out, there are many things that are being done now and can be done to utilize the area and not have it destroyed or permanently disfigured in any way. I assure you we will give careful attention to any drafting that we do to not be unduly oppressive to your very important industry.

Mr. AVEDISIAN. Thank you very much, Mr. Chairman.

Senator Moss. Thank you.

Mr. James Branscome, director of Save Our Kentucky, Inc. Mr. Branscome.

STATEMENT OF JAMES BRANSCOME, DIRECTOR OF SAVE OUR KENTUCKY, INC.

Senator Moss. You may proceed, if you would like to put your statement in the record in full you may do that and summarize, in order to move us along, but you may proceed as you care to.

Mr. BRANSCOME. I would like to request that my remarks be made a part of the record.

Senator Moss. They will be placed in the record.

Mr. BRANSCOME. I am talking on behalf also of the Appalachian Coalition, which is an organization made up of the antistrip mine organizations throughout the region. I am coordinator of that group.

I have a button on my lapel which says "Save Our Heritage, Stop Strip Mining." That is the essence of our message here today. I don't

think there is any question but what this committee has heard and probably understands some of the problems of the people in the Appalachian region. But the important thing for this committee to understand is that the forces which have raped the region so successfully in the past, now act in concert. I believe by the time I finish my remarks the committee will understand what I am talking about.

Strip mining to mountain people is the last attempt of the forces of corporate America to drive them from their land. There are many facts and many figures, many emotional claims about brownout, et cetera, that can be advanced. But the important question is really how does it affect the people? I have come to ask these questions. How great does the cry of a people have to become before the Congress of this land can hear them above the clatter of profit seekers who spread false alarms about brownouts? How many people will have to drown in the next mammoth Appalachian flood for the Congress to hear their cries above those of the bureaucrats and TVA, who take coal and use it to build flood control projects in Tennessee. By attempting to regulate strip mining Congress will be overlooking the fact that the environmental damage is not nearly so great from strip mining as it is an affront to human welfare, property rights, and the apolitical process in the coalfields. It will also be ignoring the obvious failure of even the most stringent reclamation law. Secretary Dole and Mr. Train have testified in the House and here that Kentucky has one of the best reclamation laws. That simply is a misstatement of the fact. Congress would certainly be overlooking the experience of Kentucky where reclamation has been shown to be meaningless.

I think there is something I should point out, Mr. Chairman, that I couldn't help but notice. All of the members of this committee reside west of the Mississippi River and you will note that our Congressmen, except for Congressman Hechler, are not speaking for the people on this issue because it is so closely related to politics and we have had many instances of local politicians and in some instances State politicians, who the people say have been bought off or however you describe it. We have no spokesman.

I would urge this committee before it concludes its hearings, to come to Kentucky and hear the people who have been damaged. Don't take a tour like the House committee did and go with the vice president of Hanna Coal, go with Joe Beckley of Blacky and let him show you people's homes which have been destroyed. Go with Austin Miller and let him show you where the back of his house is going, and a silt mound blocks the entrance to his property. Go visit Ollie Holmes who spent Thanksgiving Day last year in front of a bulldozer. Go with an 88-year-old man who stood off 17 State policemen and a strip miner to keep them from destroying his property.

It is important for the committee to understand that the people derive no benefits from strip mining. We derive no benefits from the coal. I have a list here of the major strip miners and coal producers in Kentucky. I think this shows conclusively eastern Kentucky can only be described as a feudal state. I would like to read you a list of who owns the coal: Kennecott Copper Corp., 202,715 acres; National Steel Corp., 130,000 acres; Norfolk & Western Railway Co., 99,600 acres; Tennessee Valley Authority, 70,810 acres; Ford Motor Co.,

45,000 acres; Gulf Oil Corp., 20,368 acres; Duke Power Co., 13,000 acres; Georgia Pacific Corp., 11,000 acres; Aluminum Co. of America, 10,700 acres; Ziegler Coal Co., 8,000 acres; International Harvester Co., 6,500 acres; and the list goes on and on.

The important thing for this committee to recognize is that the real question about strip mining in Appalachia is not shall it be regulated and not how long. The question is who will be the ones to abolish it? I do not want to appear dramatic, but I think it is a fair statement of the people that I work with, the people that I visited in eastern Kentucky and people who are members of my organization, and I will say it in the words of Dan Gibson as he said it last week in front of the Kentucky Legislature, "I have come to the general assembly for help, if we don't get that help we will abolish strip mining ourselves." I cannot urge too strongly upon this committee the many statements of the people throughout the Appalachian Mountains who told me they are going to start using their guns if the political process fails them once more. It has happened in the past. There is an argument about which process is the safest. I can assure you if strip mining is not abolished in Appalachia that strip mining as a business will be the most dangerous occupation in America. That is the only important question.

Shall the process constituted by the State work or shall the people have to, through violence, take matters into their own hands?

I would like to read you some statements from these people that I am talking about, about this new spirit in the Appalachian Mountains. It is reflected in 50-year-old Warren Wright's conversion from Republican to an antiestablishment radical. Since 1960 he waged a legal battle. He lost the legal battle but got his revenge last May when, with rifle and pistol, he ran strip miners back across his property line. The coal company said they entered his property accidentally but in 10 years of legal battling Warren Wright doesn't believe in coal company accidents.

Listen to the words of Bessie Smith, a mother of nine, whose property has been stripped, who laid down in front of an overloaded coal truck violating the law in eastern Kentucky last spring. She said, "I don't think nonviolence works any more. It just gives you a chance to get run over."

The people are going to have to stop strip mining and we are going to do it soon.

Let me read you a statement from several other people, including Harry Cargie. Harry says:

> I lament the utter ruination of the hills of my homeland and the assault surface mining has made on my people and my blood and my name. I have well water filled to the top with yellow mud flecked with coal. I have seen the shattered roots of broken gravestones.

Broken gravestones are grim realities for Mrs. Biard Richie, a member of my organization. She stood on her front porch and watched bulldozers rip up her family graveyard to get the coal below. "I thought my heart would bust in my breast when I saw the coffins of my children come out of the ground and go over the hill," she later told the Governor of Kentucky.

Neither TVA nor the strip mining companies ever apologized because her story couldn't be proved. For mountain people her story doesn't have to be proved, they have done it before. The living as well as the dead may be summarily evicted by the strip miner.

Emmet Sexton, 68, was driven from his home last January when heavy rains loosened the soil back above his home. His house was surrounded by 4 feet of mud. To make matters worse, gentlemen, Mr. Sexton is a double amputee, having lost both of his hands in a mine explosion.

Appalachian history is capsulized in Mrs. Rich's and Emmet Sexton's experiences. The Appalachian floods I have been talking about, gentlemen, only need a Noah to reach Biblical proportions. In a report not released, the Corps of Engineers now says they cannot guarantee the safety of the city of Hazard, Ky., with 6,000 residents even when the reservoir upstream is completed. They state the water level in Hazard will be 6 to 15 feet higher than it was in 1957 when 10 feet of water came into that town.

It is almost impossible to believe that the Senate and the House of the United States and the President of the United States would pass the Appalachian Regional Development Act to bring industry and to develop economic bases for eastern Kentucky and Appalachia and sit idly by and allow this industry to destroy that potential.

Dr. Wayne Davis of the University of Kentucky has said there is not a single industry which depends in any way upon water which could locate along the Kentucky River or the Big Sandy in eastern Kentucky, yet this Congress has spent millions of dollars trying to improve eastern Kentucky. It has constructed a highway system, one part of which is Kentucky 15. That road is now destroyed by overloaded coal trucks. It is going to cost $4 million dollars to put that road back. The department of motor vehicles in Kentucky estimates conservatively that the overloaded coal trucks from strip mines destroy $3.5 million worth of highways in eastern Kentucky every year. Seventy-five percent of all trucks working on strip mines in eastern Kentucky are in violation of the law before they drive onto the highway and yet there is no reprimand from the public officials.

It is impossible to believe that the Congress would allow its money and the public taxpayer's money to be so blatantly wasted and to allow the poverty which generated the programs to begin with to continue because strip miners are destroying jobs in eastern Kentucky and because these companies which I read, are getting fantastically rich at the expense of the people. I want to read, hopefully into the record, Mr. Chairman, a 393—I won't read it all into the record, I want to submit to you a summary of it. This is part of a 399-page report done by the Appalachian Research and Defense Fund with the assistance of the members of my organization. It details violations—consistent violations—of the Kentucky law by the majority of the strip mining operators in eastern Kentucky. I think it blows sky-high the myth that we even have regulations or the law where regulations can work where great amounts of money confront very timid men.

This document points out that there are 30 companies which have consistently violated the law and under these stringent regulations. I

should point out EPA just appointed the man who allowed this to happen to a job in Cincinnati. Let me read you a few of the companies. This study was taken, incidentally, gentlemen, from the files of the Reclamation Department itself. These are not studies on the outside, they are taken from their own files.

Senator Moss. If you leave the copy we will make it part of the record by reference, so we have it before us.

Mr. BRANSCOME. I would like to read from that report just a small example of what is happening. These are companies that have violated the law between January 1, 1967 and June 24, 1971.

"A Seam" Coal Co., seven violations; Round Mountain Coal Co., three violations; Vols Coal Inc., 34 violations; Black Eagle & Diamond R. Coal Co., 21 violations; Breathitt County Coal Co., 33 violations; Capterton Coal, 11 violations; Kenmont Coal Inc., three violations; Jo-Anne Coal Co., three violations; Marietta Coal Co., 13 violations; Premium Coal Co., one violation; No. 7 Corp., 16 violations; McCulloch Consolidated Coal Co., two violations; Carolina Mining Co., six violations; Tarheel Coal Co., 22 violations; Kentucky River Mining Co., 15 violations; Kona Mining Co., two violations; Buckhorn Hazard Coal Co., 15 violations; River Coal Co., 22 violations; Archer & Clubb Coal Co., eight violations; Big H. Combs Coal Co., six violations; Bull Creek Mining Corp., seven violations; Conler Mullins Coal Co., seven violations; Horse Creek Coal Co., eight violations; Tackett & Manning Trucking Co., eight violations; Stansbury & Co., five violations; Terry Elkhorn Mining Co., 15 violations; Valley Coal Co., eight violations; Wilder Corp., 10 violations.

These organizations are subsidiaries of the Fortune Five Hundred, Mr. Chairman, and this is what the coal companies are doing to destroy the open legal and political system in eastern Kentucky.

There is one thing I would like to point out about the mine safety question.

Senator Moss. Would you summarize now as soon as you can, we are pressed for time.

Mr. BRANSCOME. OK. The companies which never cared about the men's lives before are suddenly concerned about miners' lives because most of them are also strip miners in Appalachia. They went around supporting Congressman Hechler and others informed people when they were getting the Mine Health and Safety Act passed. So long as we have strip mining producing cheap coal, they will be forced to run the mines at the continued frenzied production rate which is the cause of most accidents to begin with. There are strip miners in eastern Kentucky right now getting the contracts of the deep coal operators. There are men in Kentucky who have lost their jobs to strip miners, because one strip mine employee can produce as much coal as five underground miners. If we abolish strip mining right now we could create 5,000 jobs in eastern Kentucky; no poverty program did that. We can make the mine safe if we forced the industry to become concerned about its men. This industry doesn't care about its people. The only way we are going to be able to survive as a people in eastern Kentucky is if this Congress tells the American mining companies that if one man dies in mines that mine is immediately going to be nationalized and turned over to be run by the people. There has to be some incentive

other than productivity and profit and that is the only incentive that runs the mining industry right now.

The first step is to abolish strip mining so we can get at that very important issue. There is no use doing anything else in Appalachia. I quit a job after working 2 years trying to design youth programs to keep young people from dropping out of school. I gave up because strip mining is destroying the very basis of what I was attempting to do.

The problem is that this is unnecessary. It need not be happening in Appalachia. As this committee knows, 77 percent of the economically strippable coal is west of the Mississippi River. I would urge the Senate to introduce legislation that would immediately abolish strip mining in the Appalachian Mountains. If the Senators from out West want them out there, there is nothing I can do to stop it. I hope the Indians attack them when they get out there, but if you all want it take it. But we can't stand it any longer, they are annihilating the mountains.

Senator Moss. Thank you for your testimony and your sincere devotion to the issue here. Congressman Hechler, who testified earlier, does have a bill to abolish all surface mining which I assume you endorse because of your testimony here, and we have had other witnesses talking about areas that might not be suitable for open pit or strip mining and perhaps all of Appalachia fits into that.

Some of the things you have told us about would indicate highly improper and dangerous things have been going on and indicate that a lot of despoilation has gone on and obviously many people have been injured by it.

The problem we are trying to address ourselves to is how to regulate or control the miners so that there will not be that kind of damage. Now, maybe some places they just can't mine in that way and that is really the burden of your testimony, isn't it?

Mr. BRANSCOME. Yes.

Senator Moss. Well, we are pleased to have that point of view and the information you have given us and that report, if it is left, we will include it by reference in the record and consult it. We thank you very much, Mr. Branscome.

Mr. BRANSCOME. Thank you.

(The full statement of Mr. Branscome follows:)

STATEMENT OF JIM BRANSCOME, DIRECTOR, SAVE OUR KENTUCKY, INC., LEXINGTON, KY.

Gentlemen: My name is James Branscome. I am Director of Save Our Kentucky, Inc., a statewide coalition of Appalachian mountain groups and conservation organizations dedicated to the abolition of stripmining for coal in Appalachia and Kentucky. Prior to becoming director of this organization, I was director of youth programs for two years for the Apalachian Regional Commission. I am thus very familiar with stripmining in the Appalachian mountains. In April I introduced a resolution which passed at the White House Conference on Youth to abolish the stripmining of coal nationwide. I am pleased to be able to share my experience with stripmining before this committee.

Appalachia has suffered much at the hands of America. Its fathers have been killed by the thousands and maimed for life by the hundreds of thousands in America's coal mines. Its children have starved and been warped by diseases thought extinct while America prospered with coal, timber, and labor stolen from the Appalachian mountaineers. It is important to know, Gentlemen, that this

rape was carried out and is continued by the "best" in America—its best families, its most respected personalities and corporations. Appalachian made Henry Ford and John D. Rockefeller; she has kept Dow-Jones healthy; her sons have died in greater numbers on the battlefields of Southeast Asia than any other minority; her rape has always been America's gain; her plunder has meant timber for safe suburbs and electrical power for America's unquenchable thirst for industrial progress. Gentlemen, I do not recite the history of Appalachian exploitation to appeal to your sympathy. I do so to lead you to understand that all of these forces which have raped the region so successfully now act in concert. They have come together to render the final assault on the land and the people through the stripmining of coal. Stripmining is the final attempt of America to annihilate the Appalachian people.

I come with no great confidence that anything I say can move the Congress of the United States to abolish stripmining. There is not one ton of coal stripmined in Appalachia that does not cause human suffering; yet the Congress has shown little alarm about this. I could recite you instance after instance of cases where a man's property and home and his drinking water have been destroyed by stripmining. But I do not believe the Congress or the country is very interested in the human suffering. Certainly the country and the Congress have showed sympathy to the region. They heard of starvation and sent food stamps; they heard of black lung disease and they passed a law; they heard of poverty and they sent more welfare; they heard of suffering and they sent cameras to film "Christmas in Appalachia." No one doubts the capacity of this country and this Congress to react; for reaction does nothing and costs very little. The children still go hungry; the people are still driven from their land by the bulldozers and to city ghettos by their poverty; more men die now in the mines than they did before you passed your mine safety law because of your bureaucrats. The sympathy of the Congress is worth little. Only when this nation is repelled by the sickness of Christmas in the homes of the corporate executives who wallow in affluence made by Appalachia's poverty will we expect more than just reaction. What is necessary from Congress is not reaction, but repentance. This body is America's lobby for the continued annihilation of Appalachia by stripmining.

The Congress and the country is excited about the environmental destruction that stripmining causes to Appalachia. Once again the posture has been adopted for a reaction to the problem rather than an appropriate response. The Congress has heard of the destroyed fish and trees, the acid pollution of streams, and the general ecological imbalance caused by stripmining. It has acted with some alarm. Bill after bill has been introduced in this session to put Congress on record as being disturbed about pollution from stripmining. All of them except that introduced by Congressman Hechler to ban stripmining outright are examples of political jockeying for the posture of concern rather than commitment, of response, rather than repentance.

So long as Congress entertains arguments from those who say that abolishing stripmining will create an energy crisis, it reveals itself to be more concerned about cheap power than it is about the Appalachian people. So long as Congress entertains the argument that stripmined land can be reclaimed, it reveals itself to be duped by industry propagandists and unaware of the carnage, human and environmental, only a few hours drive from the Nation's Capital.

How great does the cry of a people have to become before the Congress of this land can hear them above the clatter of self-directed profit seekers who spread false alarm about brownouts? How many people will have to drown in the next mammouth Appalachian flood for the Congress to hear their cries above those of TVA bureaucrats who take the coal cheaply from the people of Eastern Kentucky and use the profit to build flood control projects for land developers in Tennessee?

If Congress can make no more of a response than to speak of federal regulation of stripmining, then it is better than it do nothing. Bills such as that introduced by Congressman Hays would ask three federal bureaucrats to do what Congress itself does not have the courage to do—to abolish stripmining. It is better that Congress make no response than to promise relief once again that it cannot deliver. No one who knows anything about federal regulatory agencies could possibly believe that a new one would do anything to halt stripmining. A President who would attempt to appoint an airline stewardess to a Mine Health and Safety Advisory Board would certainly appoint a stripminer to lead the Federal Reclamation Department. A President who would appoint a political hack to the job of enforcing the Mine Health and Safety Act would surely appoint three electric

power producers to the Federal Reclamation Advisory Board. If an unconcerned President (as this one obviously is because of the weak legislation he has proposed for stripmining) did not render a federal reclamation law useless, it is a certainty that the coal-oil-steel-bureaucrat lobbying complex in Washington would.

Sincerity on the part of Congress has never withstood very well the bureaucratic bunglers who are asked to deliver on the promise, especially in matters pertaining to Appalachia, and therefore, to the riches of America's richest.

By attempting to regulate stripmining Congress will be overlooking the fact that the environmental damage it does is not nearly so great as its affront to human welfare, property rights, and an open political process in the coalfields. It will also be ignoring the obvious failure of even the strongest reclamation laws. It would certainly be overlooking the experience in Kentucky with what is reputed to be one of the "strongest" state reclamation laws.

In 1966 the Kentucky General Assembly adopted a statute which states that stripmining constitutes "an imminent and inordinate peril to the welfare of the Commonwealth." In full the legislature said:

"The General Assembly finds that the unregulated stripmining of coal causes soil erosion, damage from rolling stones and overburden, landslides, stream pollution, the accumulation of stagnant water and the seepage of contaminated water, increases the likelihood of floods, destroys the value of land for agricultural purposes, destroys aesthetic values, counteracts efforts for the conservation of soil, water and other natural resources, destroys or impairs the property rights of citizens, creates fire hazards, and in general creates hazards dangerous to life and property, so as to constitute an imminent and inordinate peril to the welfare of the Commonwealth."

In 1966 the legislature created the Department of Reclamation to end the peril of stripmining to the Commonwealth. Hundreds of thousands of destroyed acres later, thousands of miles of polluted streams later, thousands of slides and floods later, it is obvious that the Department of Reclamation now represents itself a part of that imminent peril to the general welfare. It is not a regulatory agency; it is a public relations arm of the strippers. It has promoted the fallacy that the destruction can and is being reclaimed.

In 1968 the Department of Reclamation permitted 11,100 acres of land to be stripped in Kentucky; in 1969 it increased to 13,700 acres; in 1970 it was up to 23,600 acres. Over 120,000 acres of Kentucky land has been laid to waste by the strippers' giant land moving machines, D–9 dozers, and auger drills. There is no evidence to indicate a stabilization of the amount of stripping in Kentucky. According to the Department of Reclamation, they issued permits to 174 *new* stripmine operators in 1970. In order to retrieve the estimated coal reserves in Kentucky which can be stripped with present know-how and machines, nearly 600,000 acres of Kentucky land will be destroyed.

Twenty-six states have coal deposits which can be stripped. Twenty-three states currently have stripmining. 77 percent of the country's total of economically stripable coal reserves is west of the Mississippi River.

Nineteen states have some form of stripmine regulations, but only Kentucky, Pennsylvania, and West Virginia are reputed to have strong regulations. The results in all states, including these three, have been dismal. It is important to emphasize that the regulations are not designed to prevent damage from stripmining, but rather to "minimize" it. (A statement the State Reclamation Director Elmore Grim is fond of making.) Bill Hayes, District Supervisor for the Hazard District Office of State Reclamation, in an interview in *Coal Facts* (August 19, 1971), described the regulations which he enforces in Kentucky as "inadequate". Norm Williams, Deputy Director of the West Virginia Department of Natural Resources, which is charged with reclamation laws in that state, quit his job last fall, saying that regulation did not work. He supported a ban on stripping in West Virginia.

Many people have seen advertisements in newspapers showing reclaimed lands. What most do not realize is that these token reclamation projects cost thousands of dollars per acre and are done in very, very few places. Some examples of good reclamation costs:

(A) In Butler County, Pennsylvania, the state sought to reclaim stripmined areas in Moraine State Park to effective use. The cost was $10,000 per acre.

(B) In Elkins, West Virginia, the state studied the feasibility only of stabilizing the land on a stripmined area, and found the costs to be $2,000 per acre.

(C) In Norton, Virginia, the school system sought to build a school on an abandoned stripmine and found the costs to be $8,000 per acre for reclamation.

(D) *American Forests* journal estimated ten years ago that it would cost $1,800 to $3,000 per acre of coal for "complete restoration" of the surface at a proposed stripmining site in what is now Daniel Boone National Forest.

(E) A federal study estimated that the cost of restoring the Coal River Watershed in West Virginia would cost a whopping 26 million dollars, probably an amount equal to the private profit taken from the stripmining.

Reclamation is a fiction; a grand lie. The so-called reclamation which the strippers practice does not even merit the description of "repair work." They cannot put the top back on a mountain. It is obvious to anyone who does not see with the eyes of greed that a scraggly locust plant is not a grand oak, that a silt dam is not a protector of pure streams, that puny clover roots cannot hold tons of earth on a bench, and, finally, that there is no such thing as a prohibited slope to a stripper. Even if strippers were really people who cared about the land, reclamation would still be impossible in these mountains. Strippers are not caring people, but rather prospectors astride bulldozers drunk with the thought of profit.

It is time we made the public recognize this often obscured fact: the destruction is done before the so-called reclamation work ever begins. I repeat, reclamation is a grand lie. As Elmore Grim, the "enforcer" of the 1966 regulations, has admitted, "Hell fire, we've got some problems. This is a trial and error process, we're writing the book as we go along."

Under these so-called stringent regulations on stripping, Kentucky has now become the nation's number one stripmine coal producer. Almost one-fourth of the stripmined coal produced in America last year was produced in Kentucky—about 63 million tons. The nearest state to Kentucky was Ohio, with 37 million tons. Under this supposedly strong law, the devastation has escalated, not decreased. It is important to point out that the Hays Bill before this committee is almost a word-for-word version of the Kentucky law, with the exception in many instances that it is weaker. The Hays Bill, calling for a Federal Reclamation Commission, would cause Kentucky's bad experience with stripmine regulations to be repeated in other states and allow the devastation to continue in Kentucky. We cannot afford federal regulation. Only a total ban is of any importance to Appalachia. The Nixon Bill would have no effect whatsoever because all of the Appalachian states already have regulations. The Nixon Bill is an insult to the people of the mountains in view of the threat which stripmining poses to their lives, rights, and property. Appalachia deserves better from the White House.

As devastating as stripmining is to the mountains and rivers of region, it is a mistake to believe that stripmining's only threat is to the environment. Its greatest threat is economic and political. Stripmining threatens to destroy Appalachia's underground mining industry and the jobs of thousands of miners. The fight against stripmining is a battle between big construction companies, big machinery manufacturers, big electric utilities, big banks and big corporations outside of the region who want to destroy Appalachia's lucrative underground mining industry and those who want to preserve the jobs of the coal miners and, at the same time, protect the environment of this region. If stripmining continues to accelerate at its present rate, for instance, in less than two years it will produce more than three-fourths of all coal mined in Kentucky. It already produces one-half of the coal mined in the state. Because stripmining employs less than a third as many men as underground mines to produce the same amount of coal, the continuation of stripmining will mean massive unemployment in the Kentucky coalfields. The economic depression will be far greater than that of the fifties when automation brought starvation to Eastern Kentucky. Continuation of stripping will create a total welfare state in Eastern Kentucky and Appalachia. Abolishing stripmining is the only way to halt an economic and environmental holocaust of massive proportions.

The greatest fiction yet put forward by the strippers is that an end to stripmining will be harmful to the economy of the mountains. The truth is that stripping is a short term economic benefit to a very few that guarantees the future poverty of all. A SOK analysis of the figures reported by the most recent report of the Kentucky Department of Mines and Minerals reveals that a ban on stripmining in Eastern Kentucky would create 6,632 new jobs in underground mining in Eastern Kentucky. Figuring on an average basis, in underground mines in

Eastern Kentucky, each man produced 2,554 tons; using this figure and computing the number of men which would have been employed had the tonnage produced by stripping been done by underground mining, 11,214 men would have been employed as opposed to the 4,582 employed in stripping operations. This would represent a 30 percent increase in mining employment in Eastern Kentucky. No public works or poverty program has ever come close to creating this number of high paying jobs in such an unemployment ridden area of the United States, especially in Appalachia. This ban would not result in the loss of a single ton of coal. The industry propaganda about a coal shortage is irrelevant when we consider that the U.S. exports about 10 percent of all the coal it produces. This new employment in mining would result for the first time in a serious hope for economic recovery in Eastern Kentucky. As well, with a ban on stripping of coal, Eastern Kentucky's considerable tourist industry potential will not be destroyed.

The loss of jobs is not the only economic harm brought on by stripmining. Stripmining brings economic depression to areas surrounding it. The counties in Eastern Kentucky experiencing the greatest amount of stripmining are also those experiencing the greatest outmigration of people. People are driven from their homes by landslides, flooding, loss of wells and water, and by silt dams which block entry to property. The tax base has decreased as much as 33 percent in heavily stripmined counties, undercutting schools and social services which have to be supported by taxpayers in urban and non-stripmining counties. Alternative industries cannot locate on the unstable lands or near the polluted, flood-prone streams. The pall of visual ugliness discourages hunting, recreation, and tourism.

Stripmining is threatening Kentucky's tourist industry. Scientific studies have indicated that Cumberland Falls, Buckhorn Lake, Jenny Wiley, and Lake Cumberland are threatened by stripmining. Bethlehem Steel faces a potential indictment from the Federal Trade Commission for claiming that it was able (actually the work was done at taxpayer's expense) to reclaim Fishpond Lake in Letcher County, Kentucky, for recreational purposes. Over-loaded coal trucks in Eastern Kentucky cause an estimated 3.5 million dollars damage a year to roads for which the taxpayers must pay in repair damages.

Stripmining is a short term economic benefit to a very few that guarantees a future loss for all.

Underground mines in Letcher County announced recently that they were laying off several hundred men because the need for coal had fallen off. They did not close because of the Mine Health and Safety Act, but because they cannot compete with the cheaper coal produced by stripminers. Robert Holcomb, president of Coal Operators and Associates, and Fred Luigart, president of the Kentucky Coal Association, say that the industry cannot afford the increased cost of safety programs, yet they have put together more than $100,000 for television ads supporting stripmining. If these coal industry spokesmen were serious about mine safety, they would spend this money to improve safety programs instead of defending strippers.

It is to the political and legal process that, however, stripmining poses the greatest threat. With its always attendant lawlessness and misuse of political power, stripmining destroys the confidence of the people in the political and judicial process of the state.

It promotes double standard of justice. For example, a person who throws a piece of litter on the highway is arrested and fined. A stripmine operator can overload his trucks and destroy the same highway and he goes free without paying a cent. Stripmining violates environmental law certainly. But it, more importantly, violates law number one—the law of common decency. It pollutes streams, destroys crops, damages homes, violates property rights, endangers the public safety; above all, it cherishes nothing and honors only profit. No other enterprise in Appalachia so threatens democracy, the open political process, and the environmental and economic well-being of the citizens of this region.

There is no better example of this lawlessness and double standard of justice than the continued enforcement of the broad form deed. The broad form deed was the instrument used in many states at the turn of the century by coal companies to purchase the mineral rights under a landowner's surface. Many Eastern Kentuckians signed them with an "X" and accepted 50 cents an acre for coal that eventually would be worth millions. The broad form deed contained a little-notice clause which stated that the operator could do whatever was necessary and proper to get the coal out of the ground. At that time the clause meant deep mining, period; no disturbing the surface.

With the advent of large scale stripmining, the strippers began using the broad form deed as an excuse for not compensating the landowner for his coal and for authority to literally destroy a man's land. Every state except Kentucky has abolished it! That is why abolishing the deed should be a part of any federal legislation. The abolition of the deed will take nothing from the coal companies; they will still own the mineral rights. All that will happen is a mistake will be ended—no landowner ever gave his knowing consent in the broad form deed for the stripmining of his property. Abolishing the deed would set the record straight. The companies never had the right to strip where they said they would only deep mine. What's right is right. The broad form deed is America's "no-knock" provision for Appalachia. Under Washington's "no-knock" law they can only tear down your door; in Appalachia they can come in the night and bury your home and there is nothing you can do about it.

This year the Congress has an opportunity to ban stripmining.

If Congress passes anything less than a ban, it will continue the Congress' present policy of promotion of stripmining. Through its tolerance of the Tennessee Valley Authority's rape of Kentucky by the purchase of stripmine coal, the Congress is allowing a massive injustice to continue with federal support. TVA buys more than 71 percent of its stripmine coal from Kentucky. Kentucky's devastation, therefore, is testimony to the falsehood that TVA promotes reclamation. By allowing the Bureau of the Mines to continue its policy of bureaucratic bungling and non-enforcement of the Mine Health and Safety Act of 1969, the Congress is contributing to the confusion which allows coal corporations to say that they are forced to stripmine because the safety law is too strict. The Congress should also prohibit the Department of Defense from purchasing one million tons of stripmine coal each year. The only serious and helpful response that the Congress can make is to halt its present policy of stripmine promotion and ban stripmining altogether. Anything less, will mean Congressional sanction of the continued annihilation of the Appalachian people.

(Attachments submitted by Mr. Branscome were retained in the committee files.)

Senator Moss. Is Mr. Tom Andrews here? Black Mesa Defense?

Mr. ANDREWS. Yes.

Senator Moss. All right, we will be glad to hear from you, Mr. Andrews. Your statement as prepared here will be placed in the record, we will ask you to proceed as expeditiously as you can.

STATEMENT OF TOM ANDREWS, BLACK MESA DEFENSE FUND, SANTA FE, N. MEX.

Mr. ANDREWS. Mr. Chairman, I don't see too many members of the committee, but I am pleased to appear before you today to add what I consider to be important proposals for your scrutiny regarding present stripmining discussions. I will speak both in general and specific terms in hopes that objectives and goals of environmental protection will be realized.

Before stating specific provisions which are needed in this area which has received too little attention in the past, I would like to remind the subcommittee of the environmental debt which this Nation has allowed former stripmining operations to incur. In a statement before the committee on Interior and Insular Affairs on Surface Mining Reclamation, April 30, 1968, Senator Frank J. Lausche noted that in 1944, while traveling throughout the State of Ohio, he was shocked to see once fruitful and productive land in the southeastern hill counties virtually destroyed and turned into row after row of unreclaimed spoil banks. Despite the efforts of Senator Lausche and many others, we have not come very far in our legislative posture where steward-

ship of the land should be projected. Just recently a report has come to my attention which reflects, I believe, some of the reclamation problems we still face today. A report entitled "The Ecological Effects of Strip Mining: A Comparative Study of Natural and Reclaimed Watersheds," prepared at Case Western Reserve University under a National Science Foundation grant, focussed on Belmont County in Ohio. This report, prepared in August, 1971, found that 3 years after reclamation, the affected area cannot support plant and animal life, reclamation practices in formations having a high concentration of pyritic materials are not adequate, and that the heavy load of pollutants in the form of acid and heavy metals entering Piedmont Lake are destroying the aquatic life. We indeed have not come very far since Senator Lausche toured Ohio strip mines in 1944.

The comments I will make to you today are not very much different than those made by former Secretary of the Interior Stewart Udall, when he introduced his support of the Surface Mining Reclamation Act of 1968, during the second session of the 90th Congress. His modest requests before the Senate were well received and it is with the same spirit that I submit my suggestions today.

Since the purpose of the legislation before you is to protect natural resources which are both directly and indirectly affected by coal extraction by surface mining, the obvious authorizing agency is the Environmental Protection Administration. I say obvious because the purpose of resource utilization is inherently incompatible with resource protection. The States would have the initial responsibility to protect their unique section of the biosphere by drafting a State plan similar to that spelled out in S. 3132 of the 90th Congress. The plan should include in addition to those listed in S. 3132, the following laws and regulations:

One, permission to surface mine coal only in areas where it has been determined that long-term reclamation has a high probability of success. To make this determination, the authorizing State agency shall require a premining environmental impact statement to be submitted along with the mining application. The State agency can require detailed ecological surveys to be conducted if there is any question as to the probability of reclamation success.

Two, requirements for bonds will be set in order to assure reclamation to the extent which the State deems necessary for the protection of the land and water in and around the mining site. The State will provide for an adjustment of the bond to account for contingencies which develop during the course of the mining.

Three, provision shall be made for designating as unsuitable for strip mining, publicly owned or dedicated park land and other areas of unique and irreplaceable natural beauty or condition. Such a designation may include land adjacent to the perimeters of such areas as may be necessary to protect the integrity of such areas.

At the Federal level, the Environmental Protection Agency shall review and require environmental impact statements for all permit applications to surface mine coal on federally controlled lands and Indian lands. Primary responsibility will remain with the respective bureaus within the Department of the Interior, but the environmental impact statement guidelines and review process will be conducted by

the EPA. Both State and Federal impact statements will be subject to public scrutiny at least 30 days prior to the final decision whether or not to grant the permit. The EPA Administrator and the appropriate State administrator may call for public hearings on any permit applications when there is a need to collect more information. At the Federal level, certain lands should be protected from surface coal mining. Specifically, mining would be disallowed on lands protected by Public Law 88–577, the Wilderness Act, and on lands adjacent to watersheds protected by Public Law 90–542, the Wild and Scenic Rivers Act.

I would like to make two comments regarding the economics of surface mine reclamation since it relates directly to the provisions which I have just mentioned. First, I would like to illustrate reclamation costs for the Black Mesa located on Hopi and Navajo land in northeastern Arizona.

Black Mesa coal is subbituminous coal having a density of about 1,770 tons per acre-foot. If it is assumed that the average seam thickness is 20 feet, and that 80 percent of the coal seam is recovered, then an average yield at Black Mesa is about 28,320 tons per acre of land disturbed. This figure gives an idea of the yield involved. To show the low cost of reclamation, I have developed the following table which relates the amount of recovered coal to the reclamation cost per ton of coal for various total reclamation costs per acre ranging from $500 to $2,000. For example, if 28,000 tons per acre were recovered and the total reclamation cost was $1,000 per acre, the cost of reclamation per ton of coal would be only 35.6 mils or 3.56 cents. This figure is rather small in comparison with the depletion allowance for coal which averaged 38 cents per ton in 1965 or 10 percent of the total value of coal mined.

The second point I would like to make is that reclamation costs vary almost as much as the cost to clean up an oil spill. In 1965, the Bureau of Mines, in a report entitled, "Demonstration and Evaluation of Five Methods of Secondary Backfilling of Strip-Mine Areas," stated that for single-contour mines, the costs varied from $8.84 to $15.73 per linear foot of highwall. If one assumes that contouring disturbs an average of 78 feet of highwall per acre, then the cost per acre comes to between $690 and $1,225. I point this out to show that critical reclamation cost analyses must be performed before bonds are set and during the mining process at which time the States should provide for reevaluation of the bond. If this is not done, there is no assurance that the social costs will be merged with the private costs and subsequently be reflected in the price of coal. It may be in the coal operators better interest to forfeit the bond, not reclaim, and move on to the next mine site. The EPA should consider as part of their mandate to protect the environment from the ravages of coal surface mining, to collect and analyze economic data on reclamation and to make it avaialble to the States.

In conclusion, I would like to take this opportunity to convey to you the words of a Hopi Indian. and an elder and leader of his tribe. Then, after a closing prayer, I will gladly answer any questions which you might wish to ask.

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John Lansa is his white-man name and these are his words about Black Mesa, his home:

> Nature is everything important to the Hopi. It is the land, all living things, the water, the trees, the rocks—it is everything. It is the force or power that keeps the world together. . . . This is the spiritual center of this land. This is the most sacred place. Right here on the mesa . . . we live close to the Earth as laid out by the Great Spirit. When the white men came, everything started to get out of balance. The white brother has no spiritual knowledge, only technical. . . . Now there is a big strip mine where coal comes out of the Earth to send electricity to the big cities. They cut across our sacred shrines and destroy our prayers to the six directions . . . Peabody is tearing the land . . . It is very bad that Peabody takes away the water because it upsets the balance of things. You can't do things like that and have Nature in balance.

I will conclude with a prayer—

Let us know if this be real. O Ye who guide the winds, guide us to the greatness of Your gift, the Earth. May this Nation receive the fresh breezes of understanding, O Great Spirit, we are all your children. Let us know this life that we are living. Let us know if this be real.

Thank you, Mr. Chairman.

Senator Moss. Thank you, Mr. Andrews, for your statement. It was directed, I take it, at the Black Mesa strip mining operations. Or is your objection more broad than that? Would you abolish all strip mining?

Mr. ANDREWS. I think the political realities of what we have to deal with right now are very important—I think it is very important that we have strong strip mining legislation. I would not call for abandonment at this time, although, Mr. Chairman, I would like to have seen one 5 years ago.

Senator Moss. Well, on the Black Mesa, would you favor underground mining if that could be carried on there rather than stripping? Would underground mining as an alternative be acceptable in that area?

Mr. ANDREWS. I could answer that question directly, but I will have to say, Mr. Chairman, I don't live on Black Mesa.

Senator Moss. Well, you were speaking, I suppose, on behalf of the people who do live there, quoting from them, do you think that is acceptable to them?

Mr. ANDREWS. I would have to go back there and speak with them or have them come here.

Senator Moss. We would be glad to know what they think, if you could send us a letter, we would be glad to put it in the record.

Thank you, Mr. Andrews.

Obviously we can't finish all of these witnesses before we recess. If there is anyone under particular pressure to get through, we might hear one more before we take our noon break. Otherwise we will take a break and then hear the rest of the witnesses. We are just a little over half through.

Well, I think we will now take our recess and resume promptly at 2 o'clock in this room.

(Whereupon, at 12 o'clock noon, the hearing was recessed, to reconvene at 2 p.m. this same day.)

AFTERNOON SESSION

Senator METCALF. The subcommittee will be in order.

The continuation of the hearing on several bills on surface mining will now continue. The first witness this afternoon will be Mr. Joel M. Pickelner representing the National Wildlife Federation.

We are pleased to have you before the subcommittee, go right ahead.

STATEMENT OF JOEL M. PICKELNER, LEGISLATIVE INFORMATION SPECIALIST OF THE NATIONAL WILDLIFE FEDERATION

Mr. PICKELNER. Mr. Chairman, I am Joel M. Pickelner, legislative information specialist for the National Wildlife Federation, which has its national headquarters at 1412 16th Street NW., Washington, D.C.

Ours is a private organization which seeks to attain conservation goals through educational means. The National Wildlife Federation has affiliates in 50 States and the Virgin Islands. These affiliates, in turn, are made up of local groups and individuals who, when combined with associate members and other supporters of the National Wildlife Federation, number an estimated 3 million persons.

We welcome the invitation to comment on the surface mining legislation before this committee.

Mr. Chairman, for some time now, we have been warned of an impending energy crisis. This crisis is expected to last for some time into the future. Therefore, in view of the energy situation, this committee and the Senate Public Works Committee, as well as the Joint Atomic Committee, should be commended for the task they have undertaken, under the authority of Senate Resolution 45, to at least attempt to get at the basis of the crisis. Consequently, the national fuel and energy policy which may result from this study can have important impacts on the lives of all of us for the next half century.

In addition to an energy crisis, we are in the midst of an environmental crisis which will also have extremely important impacts upon the quality of our lives. In fact, the two crises are often not compatible. One reflects on the other. The more we build to resolve the energy crisis, the worse our environmental crisis becomes. A natural byproduct of all energy except that from solar sources causes pollution, so it naturally follows that when more energy is produced and consumed, more pollution results. The task that you have set for yourselves, to find an acceptable balance between these two needs, at times seems overwhelming indeed.

Strip mining and its often disastrous results are a byproduct of energy production and the National Wildlife Federation has long been concerned with the problems created as a result of these activities. Its disastrous effects on streams and lands, as well as fish and wildlife, are well documented.

Many of the problems we now face are a result of this country's overall philosophy concerning pollution; that being, trying to correct the damage after it is done rather than taking preventive measures before the activities are allowed, and restrictions are abhorrent to many persons. In the 20th century, strip mining has been allowed to run rampant in this country. It has gotten out of hand and we now

face an all but unconquerable monster. The National Wildlife Federation is concerned that any action now taken may be too little or too late to save the vast areas already ripped apart by the miner's shovel. We do, however, feel that strong action must be taken and taken quickly to prevent even more land from being devastated.

From the viewpoint of theory and environmental damage, strip mining probably should be banned altogether. But, until a new and cleaner form of energy can be found in abundant supplies and developed, it seems that strip mining will unfortunately be with us. Of course, we at the National Wildlife Federation would like to see strip mining severely curtailed or even stopped. However, in view of the current energy demands it seems unlikely that such a ban will become a reality, at least in the forseeable future.

If a ban on strip mining is not to be imposed, then the next best thing must be done. Strong regulations which provide primarily for the protection of the environment should be enacted into law as quickly as possible.

Ideally, such regulations should cover all minerals, rather than being limited solely to coal. Surface mining techniques are not limited to coal, although coal is the primary culprit in the devastation of our land through strip mining. In addition, any regulations providing for the reclamation of mine lands should include not only surface mining but subsurface mining also. Subsurface mining, although not as esthetically damaging as surface mining, nevertheless is extremely instrumental in the pollution of the air and water. One of the byproducts of an underground coal mine invariably seems to be huge—I have slag piles here, when I was a kid they referred to them as slag piles, I understand they now refer to them as comb banks. I just realized this this morning, that they changed the reference to what I thought was slag piles.

Northeastern Pennsylvania is a perfect example of this problem in waste disposal.

If legislation dealing with surface or subsurface mining is to be effective, the National Wildlife Federation feels that national standards for strip mining and underground mining are imperative. It is an unfortunate fact that in far too many States the coal mining interests are themselves powerful enough to prevent the enactment and enforcement of adequate standards. Half of the States have no compulsory laws for reclaiming the land after the strip miners have finished with it. Even in many of those which have enacted laws, enforcement is a farce in which industries often select the reclamation officers.

We feel that a sincere national commitment must be made to enact serious regulations to protect the environment. It is doubtful that one across-the-board plan will do the job. However, we feel that Federal minimum standards, established for the mining of coal and other surface and subsurface minerals, would be a step in the right direction. Federal standards should cover a broad spectrum, outlawing surface mining in a fragile ecosystems or where prompt and complete restoration of the land cannot be accomplished. Complete restoration of the land means much more than reclaiming the land. Strip mined land is often considered reclaimed when a bulldozer has filled in the

trenches and leveled off the tips of the spoil banks. This is not enough. The strip miner must be required to prove that he can restore the land to its original and natural purpose before being allowed to rip it apart.

An ideal law would require the strip miner to conduct his restoration efforts as soon as he begins tearing up the land. Using a ballpark figure of say 10 acres, the law could require that a miner's restoration efforts follow no more than 10 acres behind his mining operations. Ten acres is an arbitrary figure, it could be more or less, but a reasonable figure must be arrived at to prevent a strip miner from working out a vast area and then being faced with an overwhelming job of restoring the area. Restoration of the land close behind the mining operation would probably cost a lot less in the long run.

In order to insure that this restoration is accomplished, bonding requirements must be established which will make it too costly for the strip miner to avoid restoring the land to natural and original purpose. Whatever the cost of restoration of the area may be, the bond requirement should be put a little above that figure, for instance 10 percent, to assure restoration of the land.

Any mining regulations to be enacted should not only look to present and future mining, but must attempt to deal with the vast areas already devastated by strip mining. The cost of restoring the country's huge backlog of stripped land will be high indeed. It seems only fair that those who caused the damage and profited from it, should be the ones to pay for its restoration. The ideal way of generating the funds would be to levy a per ton severance tax on all future mining, with the revenue going into a trust fund to reclaim previously stripped lands.

Mr. Chairman, we feel that a strip mining regulatory procedure is vital and long overdue. Each day's delay condemns more acres to the strip miner's shovel. The law that you enact must be strong and have adequate enforcement provisions. One of the basic reasons for the failure of most State laws is lack of real enforcement of the laws. A strong Federal agency should be given the power to enforce its decisions and the law in the individual States.

The National Wildlife Federation's concern with the environmental damage that accompanies strip mining dates back many years. We have testified previously before Congress in favor of strong regulations to control strip mining and in 1969, at our annual convention, the members of the federation tabbed strip mining as one of our major conservation issues.

Over the past 20 years a number of pieces of important legislation concerning strip mining have been considered, but no final action was taken. During these same 20 years, strip mining has grown unregulated at a frightening pace. For this reason, Mr. Chairman, the National Wildlife Federation feels that strong laws regulating strip mining must be enacted without delay.

Thank you for the invitation and opportunity of making these remarks. I would be glad to answer any questions you may have.

Senator METCALF. Thank you very much for your fine statement. I don't believe I have any questions, I have been advocating control of strip mining since I was a member of the legislature in Montana in 1947 and nothing has been done.

In those days we had gold being mined and I wanted them to put the topsoil back. They have never done it and the valleys are just piles of rocks now.

Mr. PICKELNER. That is typical to most of the areas of the Northeast, I just hope this year is the year something can be done on it on a national scale.

Senator METCALF. I hope we can do something about it. Thank you. The next witness is Gail Kaufman, League of Women Voters.

STATEMENT OF GAIL KAUFMAN, LEAGUE OF WOMEN VOTERS OF SCRANTON; ACCOMPANIED BY MRS. JAMES K. PECK, JR., HELP ELIMINATE LIFE POLLUTANTS, INC.; AND MITCHELL FOWLER, NAVAJO INDIAN

Mrs. KAUFMAN. Mr. Chairman, Mrs. James K. Peck has worked with us on this from the HELP organization and she would like to testify with us.

I have on my left Mr. Mitchell Fowler, who is a Navajo Indian. Senator Moss this morning asked a question of the young man who is not an Indian and who could not answer the question. Mr. Fowler is here and will be able to answer any questions in that regard.

Senator METCALF. I wasn't here this morning. What was Senator Moss' question?

Mrs. KAUFMAN. Well, he will have a statement of his own which will answer Mr. Moss' question.

Senator METCALF. Go ahead in your own way.

Mrs. PECK. Mr. Chairman, I am Rosamond Peck of Scranton, Pa. As president of the HELP organization, we appreciate your invitation to appear here today. We have prepared a statement, Mr. Chairman, copies of which have already been filed with this committee. We would request that the printed record of these proceedings include not only our comments today, but also the statement heretofore filed.

HELP is a totally volunteer, northeastern Pennsylvania environmental organization. Since forming in the spring of 1970, members of our group have studied various aspects of strip mining as it affects the anthracite region. We have visited many active and inactive stripping operations, consulted with officials in the State mining department, and presented testimony to the departments showing noncompliance by certain operators on the Pennsylvania legislative level, we have worked on the recently passed all surface mining bill. Members of HELP consulted with Gov. Milton Shapp, Dr. Maurice Goddard, Secretary of the Department of Environmental Resources, and many legislators and counsel concerning particular proposals for the effective regulation of surface mining in our State. In addition, we presented testimony before the Committee on Mines and Mineral Industries in Harrisburg. In these efforts we solicited community support and our proposals were endorsed by 40 local organizations representing 46,000 members. We collected 12,000 signatures on petitions seeking stronger strip mining regulation for the anthracite region.

In northeastern Pennsylvania we are living with the damage of mining conducted over more than 150 years. In the Susquehanna River Basin, 1,000 anthracite operations have produced 5 billion tons of coal and 5,000 bituminous operations have produced 1 billion tons.

Most of these operations are producing acid mine drainage, with at least one mine on record forming this acid for the last 150 years. Mining acid has damaged 1,200 miles of streams in this basin, costing $4 million annually in damage to water uses. To correct these conditions, preventive constructive and treatment measures will cost a capital outlay of $226 million, with $35 million annual maintenance costs. These figures cover only the Susquehanna River Basin in the northeastern corner of the State.

Sedimentation and erosion from strip mining and processing areas waste soils, fill channels of streams and contribute to flood conditions. The Army Corps of Engineers built a flood control dam on Aylesworth Creek in a heavily mined watershed in Lackawanna County. The value of the impounded lake as a recreational facility is severely limited by the presence of silk and acid. Engineering estimates for corrective measures necessary to improve the quality of water in the pool range from $10,000 to $5 million.

In Lackawanna County alone, land laid waste and rendered searingly ugly stretches over 15 percent of our valley floor, among our homes, hospitals and towns. Twelve thousand five hundred acres are affected by spoil banks, stripping pits, refuse banks, some burning for decades, mine fires and subsidences. And to restore these lands to a condition of usefulness to the community has added $5,700 per acre to the cost of the land for our vocational technical school.

Mr. Chairman, I have brought rocks from our streams which are rusty and miles and miles of our streams are covered with these rocks, rendering them inhabitable for fish and unattractive and unfit for drinking.

Refuse banks and underground mine fires produce poisonous sulfur dioxides and particulates and are incredibly complex and difficult to extinguish. In this area, Pennsylvania Operation Scarlift has spent $8,912,000 and the Appalachia fund $13,241,839 just to put our fires in mined areas.

The Mitre Report estimates $1 million as the cost of repairing the physical environment in 18 counties of Northeastern Pennsylvania. This refers to the damage to our land, water, and air. Consider also that our county population of 234,000 has also been affected by mining operations. Inadequately regulated mining offers only temporary jobs. In the heyday of King Coal, one out of ten in the county were employed in the anthracite mines. Today only 370 men work in mining. The jobs have gone and left behind generations of depressed economy. This problem is further elaborated in the attached statement of Leonard Ziolkowski of the Economic Development Council of Northeastern Pennsylvania. We are here today in the hope that some of what we have learned through bitter experience in Pennsylvania may be used to the benefit of other parts of the Nation.

We have these considerations listed here, Mr. Chairman, and I won't go over them as I know your time is limited. However, following Mrs. Kaufman's introduction, she and I would like to speak to specific aspects of Senator Moss' legislation because in our studies we determined that the bill introduced by Senator Moss was most close to our thoughts on the requirements for good regulation and we would like to speak specifically to that bill in the line analysis later, if we might.

Senator METCALF. Thank you very much. Your full statement will appear in the record.

(Mrs. Peck's prepared statement follows:)

Statement of HELP (Help Eliminate Life's Pollutants, Inc.)

Mr. Chairman, members of the committee:

I am Rosamond Peck, of Scranton, Pennsylvania. As President of HELP, we appreciate your invitation to appear here today. We have prepared a statement, Mr. Chairman, copies of which have already been filed with this committee. We would request that the printed record of these proceedings include not only our comments today, but also the statement heretofore filed.

HELP is a totally volunteer, Northeastern Pennsylvania environmental organization. Since forming in the Spring of 1970, members of our group have studied various aspects of strip mining as it affects the anthracite region. We have visited many active and inactive stripping operations, consulted with officials in the state mining department, and presented testimony to the departments showing non-compliance by certain operators. On the Pennsylvania legislative level, we have worked on the recently-passed All Surface Mining Bill. Members of HELP consulted with Governor Milton Shapp, Dr. Maurice Goddard, Secretary of the Department of Environmental Resources, and many legislators and counsel concerning particular proposals for the effective regulation of surface mining in our state. In addition, we presented testimony before the Committee on Mines and Mineral Industries in Harrisburg. In these efforts we solicited community support and our proposals were endorsed by 40 local organizations representing 46,000 members. We collected 12,000 signatures on petitions seeking stronger strip mining regulation for the antrhacite region.

In Northeastern Pennsylvania we are living with the damage of mining conducted over more than 150 years. In the Susquehanna River Basin 1,000 anthracite operations have produced 5 billion tons of coal and 5,000 bituminous operations have produced one billion tons. Most of these operations are producing acid mine drainage, with at least one mine on record forming this acid for the last 150 years. Mining acid has damaged 1200 miles of streams in this basin, costing $4 million annually in damage to water uses. To correct these conditions, preventive construction and treatment measures will cost a capital outlay of $226 million, with $35 million annual maintenance costs. These figures cover only the Susquehanna River Basin in the northeastern corner of the state.

Sedimentation and erosion from strip mining and processing areas waste soils, fill channels of streams and contribute to flood conditions. The Army Corps of Engineers built a flood control dam on Aylesworth Creek in a heavily mined watershed in Lackawanna County. The value of the impounded lake as a recreational facility is severely limited by the presence of silk and acid. Engineering estimates for corrective measures necessary to imporve the quality of water in the pool range from $10,000 to $5 million.

In Lackawanna County alone, land laid waste and rendered searingly ugly stretches over 15% of our valley floor, among our homes, hospitals and towns. 12,500 acres are "affected" by spoil banks, stripping pits, refuse banks, some burning for decades, mine fires and subsidences. And to restore these lands to a condition of usefulness to the community has added $5,700 per acre to the cost of the land for our vocational technical school. #/

Refuse banks and underground mine fires produce poisonous sulfur dioxides and particulates and are incredibly complex and difficult to extinguish. In this area, Pennsylvania Operation Scarlift has spent $8,912,000 and the Appalachia fund $13,241,839 just to put out fires in mined areas.

The Mitre Report estimates $1 billion as the cost of repairing the physical environment in 18 counties of Northeastern Pennsylvania. This refers to the damage to our land, water and air. Consider also that our county population of 234,000 has also been "affected" by mining operations. Inadequately regulated mining offers only temporary jobs. In the heyday of King Coal, one out of 10 in the county were employed in the anthracite mines. Today only 370 men work in mining. The jobs have gone and left behind generations of depressed economy. (This problem is further elaborated in the attached statement of Leonard Ziolkowski of the Economic Development Council of Northeastern Pennsylvania.) We are here today in the hope that some of what we have learned through bitter experience in Pennsylvania may be used to the benefit of other parts of the nation.

Based upon our experience in Northeastern Pennsylvania, we would like to submit the following considerations:

I. REGULATION OF SURFACE MINING SHOULD COVER ALL METALLIC AND NON-METALLIC MINERALS.

II. SURFACE MINING SHALL BE CONDUCTED WITH MAXIMUM RESPECT FOR THE ENVIRONMENT AND THE RIGHTS OF PEOPLE AND PROPERTY AFFECTED BY THE OPERATION.

III. THE LAND SHALL BE PROMPTLY RESTORED TO A USEFUL CONDITION: BACKFILLED, COMPACTED, GRADED AND SUCCESSFULLY REVEGETATED TO CONTROL WATER AND PREVENT EROSION.

To accomplish these ends, we suggest that any legislation should contain the following provisions;

I. Preplanning before mining sotthat the land can be restored to a useful purpose at least as high as its use prior to any mining, for, as Dr. Osborne of the U. S. Bureau of Mines stated, "Mining should be a temporary use of the land."

a. To this end it would be very desirable to implement a National Land Use Planning policy so that restoration would fit into the broad concept of the planned development of the area. This would give high priority to the consideration of S. 632 and S. 992 already before the Interior committee.

b. Preplanning should include the entire area affected by the mining operation, including roads, buildings, storage areas.

c. Muse include adequate information of existing geological conditions, soil characteristics, ground water and watershed understanding so that the reclamation plan can be based upon fact and not conjecture. Specific information regarding slope, texture, acidity, permeability and erodability of the overburden, and hydrological facts of the mining area shall be used to determine whether reclamation of desirable soil and water conditions is indeed possible. This may be evidence that the stripping operation should not be permitted.

d. The implementing body must have the power to deny permits in cases where it has cause to believe that the operation will adversely affect water quality and land stability, cause damage to nearby property from blasting or dust, cause irreparable harm to aesthetic historic or recreational values, present inadequate safety standards, or if the operator or any principal owner has previously failed to comply with surface mining laws.

e. A timetable should be part of the permit and each phase of the operation, concurrent backfilling and reclamation, including any alternate use which may be considered in lieu of backfilling.

f. Bonding requirements for each operation should be high enough to carry out the entire reclamation plan should the operator default. The bond is released following inspection after enough time has elapsed to ensure the success of the reclamation and revegetation.

g. Preplanning should be subject to local review through a hearing procedure. Local planning boards could review a permit in order to maximize ultimate use of the land.

h. Prospecting operations should also be subject to grading and revegetation standards, as in S. 1240, before this committee.

i. Setback distances should be established to prevent strip mining within proximity to highways, streams, occupied buildings, church or public lands.

j. Permit procedures must also require adequate information about the operator, officers and principal owners to preclude the possibility of evasion of responsibility at one site and reorganizing a corporation to continue other mining operations.

k. Many of these specific recommendations will be established by regulation rather than legislation. Provision for citizen recommendation at the time of the promulgation of regulations by the implementing body should be a part of the late.

II. The Mining Operation

a. Should be covered by liability insurance to protect life and property affected by the operation.

b. We can learn from the Pennsylvania bituminous regulations and the regulations under the Opencast Coal Act of 1958 Rhyd-Y-Blew Authorisation 1970 issued by the Department of Trade and Industry, Office for Wales, Cardiff.

1. These give consideration to the importance of segregating materials in the overburden so that they can be returned in the proper order during backfilling. This will help to prevent the formation of acid and ensure best revegetation.

2. Pyritic material should be compacted in the bottom of the pit and covered by a layer of clay to form a water barrier.

3. Spoil piles must be regulated as to depth and slope to prevent slides during and after the operation.

4. At all times water must be controlled to prevent erosion into the watershed and acid formation.

5. Blasting must be carefully monitored and fugitive dust precented since these are persistent problems to nearby properties.

c. Frequent inspections must be conducted at the site. If the federal government is to be involved in enforcement, we would like to point out that the Soil Conservation Service of the Department of Agriculture already has, in almost every county in the country, a technical staff trained in soil and water conservation problems. The U. S. Forest Service is also organized on a regional basis. These existing trained personnel could readily be employed in the implmenetation of the regulations enacted. Inspections should be frequent and conducted from the prespective of appreciation of soil and water cycles involved as well as the engineering problems of mining. Since frequency of inspection will have a great deal to do with the success of enforcement, non-professional technicians could be employed for field tests.

d. Grading of the backfilled site should be done to fite the natural landscape, to prevent erosion, to ensure stability of the disturbed earth, to conform with the established

drainage pattern and to accommodate the ultimate use to which the land will be put when the operation is completed.

III. Non-compliance can result in civil and criminal penalties for the operator. The secretary and any person shall have the right to seek injunctive relief from the courts. The Secretary may, at any time withdraw approval of the state operations under the federal standards.

IV. Funds for research are desperately needed to discover better and/or less expensive techniques of prevention and reclamation.

V. Since so much damage has already been done and abandoned, the reclamation of orphan lands should come under the jurisdiction of the law being written by this committee. The implementing body should be given the power to declare any strip mine or related activity or condition a nuisance, with authority to require abatement by the owner. Failing correction by the owner, the implementing body should have the power to abate and remove such n uisance. Authority to request and delegate funds to such reclamation activities should also be provided.

VI. In all the above requirements, Indian reservations should be included under the protection of the law.

Mr. Chairman, we have studied the bills before this committee and have prepared an analysis of them inrrelation to our thoughts on these matters.

92nd Congress
1st Session

Line Analysis and Proposed Amendmentatory Language to

S. 2455, by Mr. Moss

Page 1

A bill To regulate the practice of strip or surface mining, to protect the environment, and for other purposes.

(Throughout the bill, wherever the phrase "strip mining" occurs, we recommend that it read "strip or surface mining.")

Page 1, line 9 and following

(3) "reclamation" or "reclaim" means the process of restoring or reconditioning an area of land and its surface or subsurface waters affected by strip or surface mining to a condition that it may be used for at least the same purposes for which it was used prior to the beginning of [the] any strip or surface mining. The process may require backfilling, compacting, grading, resoiling, revegetation, or any necessary activity to accomplish this purpose.

Page 2, line 4

transportation, or communication between any State, any Indian reservation, the

Page 2, line 14

deposits by strip, mountaintop, open pit, drift, area, contour, bench or any other form of surface mining,

Page 2, line 15

ways, railways, pipeways, and roads appurtenant to such area, and (C)

Page 2, lines 20 and 21

posits by strip or surface mining methods or the onsite processing or transportation of such minerals;

Page 3, line 1 - we recommend a new section (8) as follows:

, (8) "strip mining" and "surface mining" are interchangeable terms and mean the mining of minerals after site preparation, including but not limited to, clearing vegetation and other obstructions from the area to be mined, constructing access roads and supplementary installations including areas for disposal of spoil or waste, removal and disposal of all or a part of the overburden, excavation and loading of mineral deposit, transportation of mineral deposit to a processing plant, storage area, or directly to a market, and shall include but not be limited to those methods known as auger, area, bench, contour, drift, open pit or mountaintop mining.

Page 4, lines 11 through 14

sedimentation, flooding, and pollution of water, release or formation of toxic substances, accidental subsidence of mined areas, [or] land or rock slides, damage to fish or wildlife or their habitat, [or] damage to public or private or community property, waste of mineral resources, and hazards to

Page 6, line 8

(g) The Secretary, in consultation with the Administrator and Secretary of

Agriculture, may establish, pursuant to procedures set forth above in this section, special standards governing the method of mining subject to this Act on steep slopes.

Page 7, line 4 - We recommend a new section (5) and the renumbering of the present (5) to (6), (6) to (7), (7) to (8) and (8) to (9), as follows:

(5) the written consent of the owner of the surface of the land upon which the applicant proposes to engage in strip or surface mining activities, to engage in such strip or surface mining activities;

Page 7, line 25

of harmful surface or subsurface water drainage, prevention of water

Page 7, line 24

character and description of the overburden, including but not limited to, slope, texture, acidity, permeability and erodability, character and description of the underlying geologic strata, based on but not limited to drilling or United States Geologic Survey data, or information obtained from adjacent or contiguous mines or mined areas, the character and description of the equipment, prevention

Page 8, line 1

accumulation in the pit, backfilling, compacting, grading, resoiling

Page 8, line 5, We recommend the addition of a new subparagraph (9) as follows:

(9) a complete list of the officers, board of directors and executives acting on behalf of such officers and board of directors under authority granted by such officers and board of directors, of the applicant, any subsidiary affiliate, or persons controlled by or under common control with the applicant.

Page 8, line 4

per acre[.];

Page 9, line 3 -- We recommend the addition of new paragraphs (c) and (d) and the relettering of present paragraphs (c), (d) and (e) to (e), (f) and (g), as follows:

(c) Within five days after the filing of an application in accordance with section 103 of this Act, the Secretary shall have announced publicly throughout the local political jurisdiction of the proposed mining activity that the application has been filed and that any interested person or group may file with the Secretary within thirty days of such public announcement a written request for a hearing on the application. As soon as practicable after the period for filing such requests has expired, the Secretary shall fix, and shall announce publicly throughout the local political jurisdiction involved, a date and time and place within the local political jurisdiction for the hearing on the application.

(d) The Secretary, in consultation with the Administrator and the Secretary of Agriculture, shall, after the conclusion of any hearing as provided for in paragraph (c) of this section, determine whether the application shall be approved.

Page 9, line 3 and following:

[(c)](e) The secretary shall notify the applicant by registered mail within [thirty] sixty days after the receipt of the complete application or within thirty days after a hearing as set forth in paragraph (c) of this section, and shall notify any interested person or group who requested such hearing on the application, whether the application has been approved. If the Secretary fails to notify the applicant within the prescribed period, the applicant may request in writing a hearing before the Secretary. The hearing shall be held within thirty days after receipt of the request.

Page 9, line 12

shall furnish before a permit is issued, such amount to be at least equal to the estimated cost of the approved reclamation plan, including the cost of transporting any equipment necessary for the implementation of such plan. The amount of bond

Page 9, line 21. -- We recommend the addition of a new section (h) from the bill H.R. 10758, by Mr. Aspinall, modified to fit the language we propose here, as follows:

(h) Any order or decision by the Secretary under this section shall be subject to judicial review by the United States Court of Appeals for the circuit in which the proposed strip or surface mine is located, or the United States Court of Appeals for the District of Columbia circuit, upon the filing in such court, within thirty days from the date of such order or decision by the Secretary, of a petition by an applicant for a permit under section 103 or a petition by any interested person or group supporting or opposing such application for a permit, praying that such order or decision be modified, or set aside in whole or in part, except that the court shall not consider such petition until such applicant or interested person or group has exhausted all administrative remedies available to him or it under this Act.

Page 11, line 7

deposit in safekeeping in the name of the United States, or the Indian nation on whose land the strip or surface mining activity is to take place, in

Page 12, line 6

period shall apply to renew his permit within [sixty] ninety days prior

Page 12, line 10 - We recommend a new paragraph (b) as follows:

(b) Within five days after the filing of an application for renewal of the permit under paragraph (a) of this section, the Secretary shall have announced publicly throughout the local political jurisdiction of the mining activity that the application for renewal of the permit has been filed and that any interested person or group may file with the Secretary within thirty days of such public announcement a written request for a hearing on the application for renewal of the permit. As soon as practicable after the period for filing such requests has expired, the Secretary shall fix, and shall announce publicly throughout the local political jurisdiction involved, a date and time and place within the local political jurisdiction for the hearing on the application for renewal of the permit.

(c) [The Secretary shall renew the permit if the operation is in compliance with this Act and standards and rules and regulations issued pursuant thereto.] The Secretary, in consultation with the Administrator and the Secretary of Agriculture shall, after the conclusion of any hearing as set forth in paragraph (b) of this section, determine whether the operation is in compliance with this Act and standards and rules and regulations issued pursuant thereto and whether there has been good reason set forth during such hearing for approval or disapproval of such application for renewal of the permit. The Secretary shall notify the applicant of such determination within sixty days after the application for renewal has been filed or within thirty days after a hearing as set forth in paragraph (b) of this section, and shall notify any interested person or group who requested such a hearing on the application for renewal of the permit.

Page 13, line 7

and shall be used only if he so approves, in consultation with the Administrator and the Secretary of Agriculture, and after administrative procedures provided for in section 104 of this Act have been complied with by the Secretary.

Page 13, line 21 and following

SEC. 110. (a) When the [planting of an area of land affected is completed and the first growing season has or is almost terminated,] successful revegetation, as measured through two full growing seasons, of an area of land affected is completed, the permittee may file a request, on a

Page 11, line 22

permit to the applicant, provided the applicant has public liability insurance for each permit in an amount not less than $100,000.

Page 14, line 8 -- We urge that the inspection and evaluation be made by a qualified person representing the local community in which the mining operation is taking place and within which the reclamation is being done.

Page 15, line 15 - We recommend the insertion of a new section, from the bill H.R. 10758 by Mr. Aspinall, entitled Preemption of State Law, as follows:

PREEMPTION OF STATE LAW

SEC. 112, (a) No State law (or standard or regulation established or issued pursuant thereto) in effect on the effective dates of section 308 of this Act, or which may become effective thereafter, shall be superseded by any provision of this Act, except

insofar as such State law, standard, or regulation is inconsistent with the provisions of this Act.

(b) The provisions of any State law (or standard or regulation established or issued pursuant thereto) in effect upon the effective dates of section 308 of this Act, or which may become effective thereafter, which provides for more stringent control and regulation of strip or surface mining than do the provisions of this Act (including standards and regulations established or issued pursuant thereto) shall not thereby be construed to be inconsistent with this Act. The provisions of any State law (including standards or regulations established or issued pursuant thereto) in effect on the effective dates of section 308 of this Act, or which may become effective thereafter, which provide for the control and regulation of strip or surface mining for which no provision is contained in this Act, shall not be construed to be inconsistent with this Act.

Page 15, line 23

by strip or surface mining methods on all lands, other than Indian reservations, within such State. A

Page 22, line 6 and 7

SEC. 300. (a) Any person, group or class may commence a civil action on his or its own behalf--

Page 23, line 18

Attorney General, at the request of the Secretary, or any person, group or class, may insti-

Page 24, line 7

under title I, shall be deposited in the fund, except for those fees or fines, bonds or deposits, which relate to Indian trust lands, the title to which is private in nature, held in trust by the United States for the use and benefit of Indians or Indian nations, in which cases such fees, fines, bonds or deposits will be held in trust for the Indian nation which owns the land involved.

Page 24, line 12

affected by strip mining and has not been reclaimed, except for Indian trust lands, the title to which is private in nature, held in trust by the United States for the use and benefit of Indians or Indian nations.

While regulating surface mining, we must also consider alternate sources of energy production, and to this end we commend S. 2510 and the corporation to develop new energy sources. We would also urge further research and development of magneto hydrodynamics for the more efficient utilization of the coal we do mine.

Since surface mining problems are inextricably entwined with the current "energy crisis" it is appropriate that the Interior committee is considering energy in other hearings. We hope you will seriously consider the necessity for curbing the nation's appetite for electrical power and energy. "It is a legitimate social question," according to AEC chairman, James Schlesinger. Professional engineers in New York City have presented several proposals for reducing power consumption in the city because of their increasing concern about the environmental costs of energy. We urge the committee to study the difference between "energy needs" and "energy demands." There are many demands a selfish child or a shortsighted society can make which aren't "needed" and which may, in fact, be very harmful. These considerations must be resolved in the 1970's.

Why should we have an electric toothbrush at the expense of water full of sulfuric acid and mercury? Or a street lamp that shines on a burning refuse bank across from your home? Or increased leisure and mibility and miles of strip mined wastelands to visit on vacation? Or a father who made good money in the mines and a son who has to leave a depressed area to find a job? Or an air conditioner because the air is so full of poisons and particulates from generating stations that it is hazardous to open the window?

Our environemnt supports us 365 days a year. It is time we honored the laws of nature more in the observance than in the breach.

Thank you very much for the opportunity of sharing with you today our concerns about surface mining, and its regulation.

Letter from Leonard Ziolkowski, Planning Director
Economic Development Council of Northeastern Pennsylvania
Box 777, Avoca, Pa. 18641

September 13, 1971

Mr. Ernest D. Preate, Jr.
c/o HELP
232 Wyoming Avenue
Scranton, Pennsylvania 18501

Dear Mr. Preate:

This letter is to inform you that I am wholeheartedly in favor of the prompt enactment of stringent laws at both the State and Federal levels which will mandate the reclamation of strip mines to as close to the land's original topography, soil composition and configuration as possible.

As you know, there are several methods by which this may be accomplished; but I believe it is vital that any law which is ultimately passed should incorporate the requirement that the spoil banks and the associated wastes of stripping coal be replaced and compacted to achieve a load bearing capacity of at least 3,000 pounds per square foot. I also believe the original top soil should be placed on this overburden and that conservation and reforestration practices be utilized so as to prevent any future soil erosion and/or contamination of surrounding streams or lakes in the watershed from which the coal (or any other mineral) is being removed. In essence, I believe in the development and incorporation of performance standards in the reclamation of these strip pits so as to give all parties concerned a standard for which they can strive.

I fell confident in making these statements and those which are noted on the following page because I worked in the strip mines of Southwestern Pennsylvania for approximately five years. Furthermore, I believe my present profession (regional planning) and the six years I have spent in Northeastern Pennsylvania give me the insights and experience to make these comments.

I am in favor of the ancatment of strong reclamation laws because I believe it is good economics to reclaim the strippings as efficiently, effectively and expeditiously as possible. In my opinion, to do less only results in the following:

... The loss of amny developmental opportunities to a Region which, in turn, also entails the loss of the economic "spin-offs" and the "multiplier effects" associated with them.

... The loss of revenues to a community due to repressed land values which not only effect the stripped area, but also the adjacent parcels of land. In fact, communities several miles away, but within the same general area, also may have their developmental potential thwarted by these scars.

... The deterioration of a community's or region's "image" in the eyes of others as a place to live, work or engage in commerce.

... The increase in soil erosion and air, water and visual pollution which often negates the efforts of various public service organizations. The pollution also usually adversely affects the general health of the community's citizens and invariable the degradation of an area's natural beatuy.

... The inevitable increase in more oppressive legislation due to the pent-up frustrations of the general public which usually comes about because of the aggrevation which they have been exposed to in their attempts to get the strip mining industry to internally police and regulate itself.

... The degradation of a community's life style and quality of life which takes an enormous amount of time, effort, imagination and money to revive.

Northeastern Pennsylvania and many other areas of Appalachia are prime examples of the agonizing short-sighted economic strategy of advancing a region's economic future and growth on one or two basic extractive industries, such as coal.

I do not believe this is the appropriate time to detail how difficult and time consuming it has been for Northeastern Pennsylvania to finally begin regaining some of its true potential. However, I do believe it appropriate to note that Northeastern Pennsylvania is unique and very fortunate. It has been blessed with enough private and public leaders and citizens with the fortitude, vision, vitality, tenacity and wisdom to recognize and evaluate the mine problems in the Region. Many of these leaders have mobilized their talents and energies to correct these liabilities, or at least attempt to change them so that they will not stymie the "embryonic renaissance" which is not taking place in Northeastern Pennsylvania. However, the area has only started to recover from its past apathy, and it has taken a tremendous amount of dedication, expertise, money and time. It has taken 25 years for the Anthracite coal region of Pennsylvania to start to rediscover its potential, and it will probably take another 25 years for it to arrive at its appropriate position of economic influence in Pennsylvania and the Atlantic Seaboard. I do not believe one can expect every region or community in the United States to be as dedicated or fortunate as we have been.

It is for these reasons that I believe the government (the people, in the final analysis) should never again permit anyone to perpetuate this type of misguided growth in the country again.

I offer my assistance and strongly urge you and HELP to do everything possible to encourage the enactment of stringent strip mine reclamation laws in the Commonwealth and the nation.

Sincerely,

/s/ Leonard W. Ziolkowski

Leonard W. Ziolkowski

Senator METCALF. Mrs. Kaufman.

Mrs. KAUFMAN. Thank you, Mr. Chairman. I am Gail Kaufman, president of the League of Women Voters of Scranton, and am testifying here today with the support of the board of directors of the league and the approval of the League of Women Voters of the United States.

When Mrs. Peck, on the basis of my having served as a legislative assistant to Senator Jennings Randolph several years ago, requested that I assist her with evaluating and comparing the bills pending before this subcommittee, I saw the possibility of a joint effort by LWV of Scranton and HELP in suggesting changes in the legislation which would help to prevent in other areas some of the devastation and deprivation, both physical and spiritual, which has occurred in Lackawanna County, Pa. It is for that reason that I am here, and I am grateful to your subcommittee, Mr. Chairman, for giving me an opportunity to testify with reference to the bills being considered today.

The League of Women Voters of Pennsylvania has had for many years a vital interest in water pollution, water quality, and acid mine drainage. It has supported successive bills in the General Assembly of Pennsylvania for better control of mine drainage, studied coal mining operations, and participated in symposia and governmental conferences on problems connected with this kind of pollution.

In a statement filed by the League of Women Voters of Pennsylvania at the public meeting of the President's Water Pollution Control Advisory Board on Acid Mine Drainage and Water Quality in Lake Erie, in 1968, Mrs. James Walsh, speaking on behalf of the membership of 65 local leagues in the Commonwealth of Pennsylvania, stated:

> . . . it is distressing to realize that some of the same arguments used to justify the futility of attempting to control drainage are still being used today. One of these is the so-called beneficial action of acid mine water on sewage in streams.

I am certain that before these hearings have ended, Mr. Chairman, your subcommittee will be given the same argument, and when you hear it, I hope you will consider the fact that the acid mine drainage destroys not only pathogenic organisms, but it destroys fish and other organisms which promote the natural renewal of streams and bodies of water. As an individual who obtained a degree in zoology and did her graduate work in that field, I might also point out that natural laws can take care of natural events and have been doing so for millions of years. It is usually only when man creates a problem that he is unwilling to solve in natural terms that the natural laws become semi-inoperable. And to argue that we should not try to solve one problem, such as acid mine drainage, because we might end up with another one, is both unfortunate and preposterous.

My recommendations for suggested language changes in the legislation being considered today, and I shall speak solely to your bill, Mr. Chairman, S. 2455, will deal with water and with Indian nations and Indian reservations. I have furnished you, with the copy of my statement filed yesterday, a pamphlet "Indian—And Proud of It" published by the League of Women Voters of the United States, setting forth our position on the original owners of this land. Because many of the portions of this bill either relate now, or will, if the present drive

to mine on Indian reservations continues, relate in the future to the preservation of the lands, the lives and the cultures of human beings our forefathers came quite close to destroying completely, we feel that we have a particular responsibility in this regard.

The threat of the Peabody Coal Co. mining operation and the related powerplants to the land, the air and the people on Black Mesa and at the Four Corners, is viewed with alarm by the League of Women Voters of the United States and the leagues of Arizona, New Mexico, Nevada, Utah, Colorado, and the Flagstaff, Ariz., LWV. In the September 1971 issue of the National Voter, published by LWV of the United States, appears the dire warning:

> Leagues predicted that if the power plants are completed as planned, mountains, canyons and deserts will be seen through a haze of pollution. Sulfur oxides, nitrogen oxides, and particulates will foul the air—more than are now emitted daily in New York City, Chicago or Los Angeles. The plants would drink in thousands of acre feet of water from the Colorado River and return heated, saline, acidic effluent. Indian lands would be torn by the strip mines needed to fuel the coal-burning plants.

And the strip mining done on Black Mesa is already having an effect on the Indians' water, more direct, more deadly, than the acidic pollution which is building up from the mines.

I invited to my home for a weekend several weeks ago a representative of the Navajo Nation, David Barney. He surveyed, along with Russell Means of the Cleveland American Indian Movement, the damage done in Lackawanna County by surface mining. When we spoke of water, he reported that in spite of the Peabody Coal Co.'s assurances that this would not happen, the Navajo wells are already drying up, leaving the reservation Indians without any ready water supply.

In the LWV of the U.S. pamphlet, Mr. Chairman, one section is devoted to the Winters Doctrine, which holds that Indians by treaty retained the rights to waters needed to use the land which was reserved to them by treaty. This Nation must protect those rights. This position underlies the suggested language relating to "subsurface water" which we are asking that you insert in your bill.

We are also asking that "Indian tribes" be changed to "Indian nations" because, quite simply, that is what they are. We have made treaties with Indians as we have with other nations, but we have not yet granted them, in our language or our thinking the status or dignity we grant to much younger nations and nations of more dubious "national" origin.

A statement was made by Senator Hansen this morning, I wish he was here, I don't agree with his statement and Mitchell is going to speak to this later on. He said that Wyoming, because it is so dry, does not have the problem of acid mine drainage that the eastern part of the United States have.

From my own conversations with David Barney when he was up, he looked at one of these rocks and said already on Black Mesa we have this.

Mrs. PECK. While we are correcting the record, I would like to speak to two conflicting statements which were made this morning. One by Congressman Hechler quoting a figure relating to the reclamation of the land in Moraine State Park in Pennsylvania, and his statement was $8,000 an acre was the cost of reclamation. Later Dr. Osborn quoted

a Bureau of Mines document about Moraine State Park and the reclamation taking place there and quoted the cost as being $800 an acre.

I believe the conflict in those figures arises from the fact that the $800 an acre figure relates to the entire acreage of the park and the $8,000 an acre figure relates to the strip mined areas which were reclaimed. I believe that point should be cleared up at this time.

Also, speaking to the reclamation of orphan lands, some comment was made that funds would be difficult to come by for this problem and I would like to at least put some thought in that it might be viewed in better perspective if we consider that the money is forthcoming for a soil bank program in which farmers are paid not to farm their lands and that costs $3.2 billion a year. I think that a lot of orphan lands could be reclaimed for that kind of money, if that perspective could be applied.

Mrs. KAUFMAN. There is one more point on the record. Dr. Osborn—we are really picking on him—said they are putting out a mine fire in Scranton. I would like to point out they have been putting out this mine fire for 20 years. It is just one comb bank. It is spoiled, it is piled up and it very often ignites spontaneously down inside of this huge mound which would be three or four of these rooms or maybe seven or eight and to get the fire out you have to start taking the stuff off of the top, letting it burn itself out and keep on soaking it with water and you use millions and millions of tons of water and you have all of this burned ore, just burned stone and rock scarring the landscape, totally unsuitable for anything at all and not even very good for compacting and putting back in the hole.

Mrs. PECK. In consideration of Senator Moss' bill, on page 1 we would like to refer, wherever the phrase "strip mining" occurs, we would suggest that it read, "strip or surface mining," because in many instances strip mining is a more specific term than surface mining and it should be included, including all mining that disturbs the surface of the land.

Mrs. KAUFMAN. Under the reclamation clause we would like to say restoring or reconditioning because you cannot always restore in terms of putting it back but you can recondition an area of land and we would like to put in its surface and subsurface waters.

The subsurface waters are just as dangerous as the surface waters in terms of pollution because they flow out eventually underground and come up in springs or rivers, often many miles away.

We feel geologically you should pay attention to what subsurface waters there are under the area and protect them any way you can.

In that same section, Mr. Moss' bill reads, "restore this to a condition that it may be used for at least the same purposes for which it was used prior to the beginning of the strip mining." We would like to say, "any strip mine" because when they come in and they strip, they go away and somebody else buys the land and he comes back in and restrips and some of your surface mining today, particularly in the east, is on land that has already been stripped but not thoroughly enough. So we would like to substitute the word "any" for the word "the" and we have added some language——

Mrs. PECK. The process may require backfilling, compacting, grading, resoiling or any necessary activity to accomplish this purpose. We

would like to include the concept of compacting in reference to the pyretic material which is to be put back into the hole first so that there will be less surface to come in contact with water and air to form acid mine drainage and also to insure greater stability of the surface.

Compacting can be done according to a readily available engineering table that is recommended by engineers who are working in the area of reclamation of soil banks.

Mrs. KAUFMAN. On the second page when they define "commerce" we would like to insert, after the word "state", any Indian reservations because they are going to mine on Indian reservations, commerce should include travel land. Otherwise the Indian nations could be left out. But they are political entities in and of themselves.

Mrs. PECK. Also, on page 2 in the definition of surface mining we would like to include that an area of land should be included from which minerals are extracted from their natural deposit by strip, mountain tap, open pit, drilled area, contour, bench, or any other form of surface mining.

Senator METCALF. I wonder if you would put these specific suggestions in the record?

Mrs. KAUFMAN. We would be glad to.

Senator METCALF. And if you will excuse me so that I can go over and vote, because there is a roll call underway right now.

Mrs. KAUFMAN. Could Mr. Fowler speak when you return, sir?

Senator METCALF. He can address himself to the committee just as soon as I get back.

Mrs. KAUFMAN. Thank you.

Senator METCALF. We will be recessed for a few minutes until I can get my vote registered and come back.

(Recess.)

Senator METCALF. The subcommittee will be in order.

Now, as I understand it we will hear from Mr. Fowler.

Mr. FOWLER. My name is Mitchell Fowler, I am a Navajo Indian from a Navajo reservation.

I will explain, earlier this morning some people asked about strip mining on our Black Mesa. At this time I would like to say that from the beginning of time our people have lived on the Mesa. Their lives have been here, their children have grown, up, and our grandparents have been buried there.

Black Mesa is considered a sacred mountain to our people. It is that which gives us harmony and gives balance to our lives. It also gives us strength to face the lives that we have.

When Peabody came up to the Mesa, the people on Black Mesa were never asked. They were never given a chance to say whether or not they wanted that stripping company up there. So today the people are very confused. Many of them have been moved from their homes where they have always lived. There is no place for them to go. Because of the way our reservation is, there is no place for them to go.

Other lands are used by other families. So the people are very upset and they don't know which way to turn.

The feeling for most of the people right now is that they do not want Peabody Co. up on the Mesa. If they were here themselves they would say that same thing. They do not want Peabody Co. up there. They

do not want any strip mining because they are not willing to compromise their lives nor their religion. That is the way the people feel.

Thank you.

Senator METCALF. Thank you very much.

One of the most useful things that happened was when the League of Women Voters had a study project on water resource management a few years ago and in every community where there is a league or branch, we have women who are knowledgeable about water and pollution and I congratulate the league for all of its activities in conservation and resource management. This is a national problem.

Of course, we can get people from Montana to testify about some activities not in the coal area but in the copper area and we could get people to tell about gold dredges in the gold days. So your testimony has been very useful and I particularly appreciate the specific recommendations for amendment and strengthening of the legislation which will be taken up item by item by our staff when we mark up the bill.

Mrs. KAUFMAN. Thank you, Mr. Chairman.

I would like to point out on the Navajo reservation, Peabody makes the claim that it has only taken 1 percent of the water out of the Navajo aquifer; is only one of the aquifers and they are not taking 1 percent out of the aquifer. The aquifer is a 500- or 600-foot-deep body of water at the other end it ends up 30 feet deep. By the time Peabody ends up they will have taken 70 feet off of the aquifer which will dry up the well down at the other end of the Mesa and the Indians really will not have water.

We really feel this is a crime and we hope you can move in and make this bill retroactive to somehow stop this.

Senator METCALF. Thank you very much.

(Mrs. Kaufman's full statement follows.)

Statement of League of Women Voters of Scranton

Mr. Chairman, gentlemen of the committee:

I am Gail Kaufman, president of the League of Women Voters of Scranton, and am testifying here today with the support of the board of directors of the League and the approval of the League of Women Voters of the United States.

When Mrs. Peck, on the basis of my having served as a legislative assistant to Senator Jennings Randolph several years ago, requested that I assist her with evaluating and comparing the bills pending before this subcommittee, I saw the possibility of a joint effort by LWV of Scranton and HELP in suggesting changes in the legislation which would help to prevent in other areas some of the devastation and deprivation, both physical and spiritual, which has occurred in Lackawanna County in Pennsylvania. It is for that reason that I am here, and I am grateful to your subcommittee, Mr. Chairman, for giving me an opportunity to testify with reference to the bills being considered today.

The League of Women Voters of Pennsylvania has had for many years a vital interest in water pollution, water quality and acid mine drainage. It has supported successive bills in the General Assembly of Pennsylvania for better control of mine

drainage, studied coal mining operations and participated in symposia and governmental conferences on problems connected with this kind of pollution.

In a statement filed by the League of Women Voters of Pennsylvania at the public meeting of the President's Water Pollution Control Advisory Board on Acid Mine Drainage and Water Quality in Lake Erie, in 1968, Mrs. James Walsh, speaking on behalf of the membership of 65 local Leagues in the Commonwealth of Pennsylvania, stated:

> "... it is distressing to realize that some of the same arguments used to justify the futility of attempting to control drainage are still being used today. One of these is the so-called beneficial action of acid mine water on sewage in streams."

I am certain that before these hearings have ended, Mr. Chairman, your subcommittee will be given the same argument, and when you hear it, I hope you will consider the fact that the acid mine drainage destroys not only pathogenic organisms, but it destroys fish and other organisms which promote the natural renewal of streams and bodies of water. As an individual who obtained a degree in zoology and did her graduate work in that field, I might also point out that natural laws can take care of natural events and have been doing so for millions of years. It is ususally only when man creates a problem that he is unwilling to solve in natural terms that the natural laws become semi-inoperable. And to argue that we should not try to solve one problem, such as acid mine drainage, because we might end up with another one, is both unfortunate and preposterous.

My recommendations for suggested language changes in the legislation being considered today, and I shall speak solely to your bill, Mrs. Chairman, S. 2455, will

deal with water and with Indian nations and Indian reservations. I have furnished you, with the copy of my statement filed yesterday, a pamphlet "Indian -- And Proud Of It" published by the League of Women Voters of the United States, setting forth our position on the original owners of this land. Because many of the portions of this bill either relate now, or will, if the present drive to mine on Indian reservations continues, relate in the future to the preservation of the lands, the lives and the cultures of human beings our forefathers came quite close to destroying completely, we feel that we have a particular responsibility in this regard.

The threat of the Peabody Coal Co. mining operation and the related power plants to the land, the air and the people on Black Mesa and at the Four Corners, is viewed with alarm by the League of Women Voters of the United States and the Leagues of Arizona, New Mexico, Nevada, Utah, Colorado and the Flagstaff, Arizona, LWV. In the September, 1971, issue of The National Voter, published by LWV of US, appears the dire warning:

"Leagues predicted that if the power plants are completed as planned, mountains, canyons and deserts will be seen through a haze of pollution. Sulfur oxides, nitrogen oxides, and particulates will foul the air -- more than are now emitted daily in New York City, Chicago or Los Angeles. The plants would drink in thousands of acre feet of water from the Colorado River and return heated, saline, acidic effluent. Indian lands would be torn by the strip mines needed to fuel the coal-burning plants."

And the strip mining done on Black Mesa is already having an effect on the Indians' water, more direct, more deadly, than the acidic pollution which is building up from the mines.

I invited to my home for a weekend several weeks ago a representative of the Navajo nation, David Barney. He surveyed, along with Russell Means of the Cleveland American Indian Movement, the damage done in Lackawanna County by surface mining. When we spoke of water, he reported that in spite of the Peabody Coal Co. 's assurances that this would not happen, the Navajo wells are alreadyddrying up, leaving the reservation Indians without any ready water supply.

In the LWV of US pamphlet, Mr. Chairman, one section is devoted to the Winters Doctrine, which holds that Indians by treaty retained the rights to waters needed to use the land which was reserved to them by treaty. This nation must protect those rights. This position underlies the suggested language relating to "subsurface water" which we are asking that you insert in your bill.

We are also asking that "Indian tribes" be changed to "Indian nations" because, quite simply, that is what they are. We have made treaties with Indians as we have with other nations, but we have not yet granted them, in our language or our thinking, the status or dignity we grant to much younger nations and nations of more dubious "national" origin. END

Mrs. Peck and I will each speak to certain aspects of S. 2455, and although we are delighted to support each other generally, I shall speak mainly to passages relative to water pollution, on which the League has a position, as does HELP, and on the interests of Indians, their rights, their culture, which is not a direct concern of HELP, with Mrs. Peck carrying the burden, quite competently, of the other portions of the bill.

With your permission, Mr. Chairman, we would like quickly to run through some of the more pertinent recommendations we suggest. Thank you.

("Conclusion" follows pages 1-8 of "Line Analysis and Proposed Amendatory Language")

92nd Congress
1st Session

Line Analysis and Proposed Amendmentatory Language to

S. 2455, by Mr. Moss

Page 1

A bill To regulate the practice of strip or surface mining, to protect the environment, and for other purposes.

(Throughout the bill, wherever the phrase "strip mining" occurs, we recommend that it read "strip or surface mining.")

Page 1, line 9 and following

(3) "reclamation" or "reclaim" means the process of restoring or reconditioning an area of land and its surface or subsurface waters affected by strip or surface mining to a condition that it may be used for at least the same purposes for which it was used prior to the beginning of [the] any strip or surface mining. The process may require backfilling, compacting, grading, resoiling, revegetation, or any necessary activity to accomplish this purpose.

Page 2, line 4

transportation, or communication between any State, any Indian reservation, the

Page 2, line 14

deposits by strip, mountaintop, open pit, drift, area, contour, bench or any other form of surface mining,

Page 2, line 15

ways, railways, pipeways, and roads appurtenant to such area, and (C)

Page 2, lines 20 and 21

posits by strip or surface mining methods or the onsite processing or transportation of such minerals;

Page 3, line 1 - we recommend a new section (8) as follows:

, (8) "strip mining" and "surface mining" are interchangeable terms and mean the mining of minerals after site preparation, including but not limited to, clearing vegetation and other obstructions from the area to be mined, constructing access roads and supplementary installations including areas for disposal of spoil or waste, removal and disposal of all or a part of the overburden, excavation and loading of mineral deposit, transportation of mineral deposit to a processing plant, storage area, or directly to a market, and shall include but not be limited to those methods known as auger, area, bench, contour, drift, open pit or mountaintop mining.

Page 4, lines 11 through 14

sedimentation, flooding, and pollution of water, release or formation of toxic substances, accidental subsidence of mined areas, [or] land or rock slides, damage to fish or wildlife or their habitat, [or] damage to public or private or community property, waste of mineral resources, and hazards to

Page 6, line 8

(g) The Secretary, in consultation with the Administrator and Secretary of

Agriculture, may establish, pursuant to procedures set forth above in this section, special standards governing the method of mining subject to this Act on steep slopes.

Page 7, line 4 - We recommend a new section (5) and the renumbering of the present (5) to (6), (6) to (7), (7) to (8) and (8) to (9), as follows:

(5) the written consent of the owner of the surface of the land upon which the applicant proposes to engage in strip or surface mining activities, to engage in such strip or surface mining activities;

Page 7, line 25

of harmful surface or subsurface water drainage, prevention of water

Page 7, line 24

character and description of the overburden, including but not limited to, slope, texture, acidity, permeability and erodability, character and description of the underlying geologic strata, based on but not limited to drilling or United States Geologic Survey data, or information obtained from adjacent or contiguous mines or mined areas, the character and description of the equipment, prevention

Page 8, line 1

accumulation in the pit, backfilling, compacting, grading, resoiling

Page 8, line 5, We recommend the addition of a new subparagraph (9) as follows:

(9) a complete list of the officers, board of directors and executives acting on behalf of such officers and board of directors under authority granted by such officers and board of directors, of the applicant, any subsidiary affiliate, or persons controlled by or under common control with the applicant.

Page 8, line 4

per acre[.];

Page 9, line 3 -- We recommend the addition of new paragraphs (c) and (d) and the relettering of present paragraphs (c), (d) and (e) to (e), (f) and (g), as follows:

(c) Within five days after the filing of an application in accordance with section 103 of this Act, the Secretary shall have announced publicly throughout the local political jurisdiction of the proposed mining activity that the application has been filed and that any interested person or group may file with the Secretary within thirty days of such public announcement a written request for a hearing on the application. As soon as practicable after the period for filing such requests has expired, the Secretary shall fix, and shall announce publicly throughout the local political jurisdiction involved, a date and time and place within the local political jurisdiction for the hearing on the application.

(d) The Secretary, in consultation with the Administrator and the Secretary of Agriculture, shall, after the conclusion of any hearing as provided for in paragraph (c) of this section, determine whether the application shall be approved.

Page 9, line 3 and following:

[(c)] (e) The secretary shall notify the applicant by registered mail within [thirty] sixty days after the receipt of the complete application or within thirty days after a hearing as set forth in paragraph (c) of this section, and shall notify any interested person or group who requested such hearing on the application, whether the application has been approved. If the Secretary fails to notify the applicant within the prescribed period, the applicant may request in writing a hearing before the Secretary. The hearing shall be held within thirty days after receipt of the request.

Page 9, line 12

shall furnish before a permit is issued, such amount to be at least equal to the estimated cost of the approved reclamation plan, including the cost of transporting any equipment necessary for the implementation of such plan. The amount of bond

Page 9, line 21. -- We recommend the addition of a new section (h) from the bill H.R. 10758, by Mr. Aspinall, modified to fit the language we propose here, as follows:

(h) Any order or decision by the Secretary under this section shall be subject to judicial review by the United States Court of Appeals for the circuit in which the proposed strip or surface mine is located, or the United States Court of Appeals for the District of Columbia circuit, upon the filing in such court, within thirty days from the date of such order or decision by the Secretary, of a petition by an applicant for a permit under section 103 or a petition by any interested person or group supporting or opposing such application for a permit, praying that such order or decision be modified, or set aside in whole or in part, except that the court shall not consider such petition until such applicant or interested person or group has exhausted all administrative remedies available to him or it under this Act.

Page 11, line 7

deposit in safekeeping in the name of the United States, or the Indian nation on whose land the strip or surface mining activity is to take place, in

Page 12, line 6

period shall apply to renew his permit within [sixty] ninety days prior

Page 12, line 10 - We recommend a new paragraph (b) as follows:

(b) Within five days after the filing of an application for renewal of the permit under paragraph (a) of this section, the Secretary shall have announced publicly throughout the local political jurisdiction of the mining activity that the application for renewal of the permit has been filed and that any interested person or group may file with the Secretary within thirty days of such public announcement a written request for a hearing on the application for renewal of the permit. As soon as practicable after the period for filing such requests has expired, the Secretary shall fix, and shall announce publicly throughout the local political jurisdiction involved, a date and time and place within the local political jurisdiction for the hearing on the application for renewal of the permit.

(c) [The Secretary shall renew the permit if the operation is in compliance with this Act and standards and rules and regulations issued pursuant thereto.] The Secretary, in consultation with the Administrator and the Secretary of Agriculture shall, after the conclusion of any hearing as set forth in paragraph (b) of this section, determine whether the operation is in compliance with this Act and standards and rules and regulations issued pursuant thereto and whether there has been good reason set forth during such hearing for approval or disapproval of such application for renewal of the permit. The Secretary shall notify the applicant of such determination within sixty days after the application for renewal has been filed or within thirty days after a hearing as set forth in paragraph (b) of this section, and shall notify any interested person or group who requested such a hearing on the application for renewal of the permit.

Page 13, line 7

and shall be used only if he so approves, in consultation with the Administrator and the Secretary of Agriculture, and after administrative procedures provided for in section 104 of this Act have been complied with by the Secretary.

Page 13, line 21 and following

SEC. 710. (a) When the [planting of an area of land affected is completed and the first growing season has or is almost terminated,] successful revegetation, as measured through two full growing seasons, of an area of land affected is completed, the permittee may file a request, on a

Page 11, line 22

permit to the applicant, provided the applicant has public liability insurance for each permit in an amount not less than $100,000.

Page 14, line 8 -- We urge that the inspection and evaluation be made by a qualified person representing the local community in which the mining operation is taking place and within which the reclamation is being done.

Page 15, line 15 - We recommend the insertion of a new section, from the bill H. R. 10758 by Mr. Aspinall, entitled Preemption of State Law, as follows:

PREEMPTION OF STATE LAW

SEC. 112. (a) No State law (or standard or regulation established or issued pursuant thereto) in effect on the effective dates of section 308 of this Act, or which may become effective thereafter, shall be superseded by any provision of this Act, except

insofar as such State law, standard, or regulation is inconsistent with the provisions of this Act.

(b) The provisions of any State law (or standard or regulation established or issued pursuant thereto) in effect upon the effective dates of section 308 of this Act, or which may become effective thereafter, which provides for more stringent control and regulation of strip or surface mining than do the provisions of this Act (including standards and regulations established or issued pursuant thereto) shall not thereby be construed to be inconsistent with this Act. The provisions of any State law (including standards or regulations established or issued pursuant thereto) in effect on the effective dates of section 308 of this Act, or which may become effective thereafter, which provide for the control and regulation of strip or surface mining for which no provision is contained in this Act, shall not be construed to be inconsistent with this Act.

Page 15, line 23

by strip or surface mining methods on all lands, other than Indian reservations, within such State. A

Page 22, line 6 and 7

SEC. 300. (a) Any person, group or class may commence a civil action on his or its own behalf--

Page 23, line 18

Attorney General, at the request of the Secretary, or any person, group or class, may insti-

Page 24, line 7

under title I, shall be deposited in the fund, except for those fees or fines, bonds or deposits, which relate to Indian trust lands, the title to which is private in nature, held in trust by the United States for the use and benefit of Indians or Indian nations, in which cases such fees, fines, bonds or deposits will be held in trust for the Indian nation which owns the land involved.

Page 24, line 12

affected by strip mining and has not been reclaimed, except for Indian trust lands, the title to which is private in nature, held in trust by the United States for the use and benefit of Indians or Indian nations.

CONCLUSION

Mr. Chairman, gentlemen of the subcommittee, in conclusion I can only say that our mythic view of life, our mythic view of our universe, our mythic view of ourselves is reflected in our body of man-made law, and where that law departs from the laws of the forces which created, and which create today, the living beings, the living planet, the living stars in our skies, it is wrong.

Each civilization of which we have any knowledge in our collected libraries, from the earliest nomadic Semitic and Hametic through to modern European and European-American, has been confronted with an internal crisis such as the crisis we are dealing with today: The conflict between those who see man created as a steward to serve the earth and those who see him created as a lord to rule it; the conflict between those who would love, care for and protect our living earth and those who would use, abuse and relegate to themselves the power to destroy it; the conflict between those who know that they are a part of the flow of life and subject to its laws and edicts and those who assume they are above that flow, above those laws; the conflict between those who would nurture life and those who would kill.

I pray, Mr. Chairman, that in considering our laws, you will use your power to serve, to protect, to nurture our earth and her children. We can't kill the stars. We can't kill our planet. All of nature tells us this, and tells us, too, that if we don't obey her laws, we will perish.

Thank you.

Senator METCALF. The next witness is Mr. J. S. Abdnor who is going to testify for the American Mining Congress.

STATEMENT OF J. S. ABDNOR, CHAIRMAN, SPECIAL COMMITTEE ON SURFACE MINING

Mr. ABDNOR. Thank you very much, Mr. Chairman.

I am Joseph S. Abdnor, vice president of Pickands Mather & Co. of Cleveland, Ohio, and cochairman of the American Mining Congress Select Committee on Surface Mining Legislation. I appear before you today on behalf of the American Mining Congress, a national trade association composed of U.S. companies that produce most of the Nation's metals, coal, and industrial and agricultural minerals. Its membership also includes more than 200 companies that manufacture mining and mineral processing equipment and supplies, as well as financial institutions interested in the relationship between the mining industry and the financial community. I was privileged to testify at Senate hearings on this subject in the spring of 1968, and I appreciate the opportunity to do so again today before this committee.

Let me say at the outset that the American Mining Congress endorses the concept embodied in a number of the legislative proposals pending before this committee—namely, that it is appropriate for the Federal Government to have and exercise the authority to establish guidelines for the regulation of surface mining. While urging that the States have a responsible role, we recognize that when Federal guidelines are thus set, it is incumbent on a State to satisfy those Federal guidelines; and if it does not, then the Federal Government will come into a State and do the job itself.

I shall have more to say momentarily about the manner in which such authority might best be exercised in the national interest. But I wanted first to make clear the basic position of the American Mining Congress, so that the following comments on the matter will reach you in the context of our basic position. In that connection, I should like to quote for the record the current statement of policy on surface mining adopted in July 1971 by the board of directors of the American Mining Congress:

> Attainment of the goals of the National Mining and Minerals Policy Act of 1970 requires fostering by all levels of government of the economic development of domestic minerals by both underground and surface mining methods. The American Mining Congress, working with and through its members, will urge the adoption of realistic surface mining regulation at the state level and will support federal surface mining legislation which is realistically designed to assist the states and the surface mining industry in conducting surface mining operations so as to have the least practicable adverse effect on other resource values and in reclaiming mined land to the degree reasonably attainable, provided: (a) such legislation recognizes that, because of the diversity of terrain, climate, biologic, chemical, and other physical conditions in mining areas and because of the many variations in mining methods required to produce widely differing ores and minerals, the establishment on a nationwide basis of uniform standards for surface mining operations and for the reclamation of surface mined areas is not feasible, and (b) such legislation is compatible with the National Mining and Minerals Policy Act of 1970.

This statement speaks for itself. It needs no explanatory comment. Yet, I do want to make this one observation. It is not by accident that

this statement begins and ends with specific references to the National Mining and Minerals Policy Act of 1970. That act, which became law with the great help of this committee's intiative, is landmark legislation. It proclaims that the national interest is served by fostering and encouraging the private development of an economically sound and stable domestic mining industry. As we view it, the policy enunciated in the act encourages the orderly and economic development of domestic mineral resources. It encourages mining, mineral, and metallurgical research. It encourages the study and development of methods for the disposal, control and reclamation of mineral waste products—and it encourages the reclamation of mined land.

We hold strongly to the view that any Federal legislation on surface mining should comport with the directives of this recently enacted statement of national policy. Such legislation should be consistent with operating realities and the almost endless diversity of the American mining industry. It should take cognizance of the extent to which the many segments of our industry now operate under State and local laws and regulations. Obviously, it should neither go so far as to prohibit mining nor to place such an economic burden on the winning of ore reserves that they become unminable. Such extremes of regulation would do violence to the National Mining and Minerals Policy Act and would be inimical to the national interest.

The kind of legislation that would be appropriate here, Mr. Chairman, is legislation that authorizes the Federal Government to establish broad, reasonable guidelines for mined-land reclamation. By saying that such Federal guidelines should be broad and reasonable, I mean that they should be so written that they will not impinge on the powers of the States also to regulate. So many States are doing constructive work in mined-land reclamation that they should be encouraged, not impeded, in these efforts.

Twenty-six States have enacted laws regulating surface mining. Other States will consider legislation in forthcoming sessions of their legislatures.

To establish such guidelines will require a large measure of wisdom and restraint at the Federal level, in the presence of a law that authorizes even the kind of general Federal guidelines we speak about here. Experience also tells us that it may require as well a continuing oversight function by the Congress. We all know that the regulator's urge to regulate is strong.

I have made several references to the variation and diversity in mining. The American Mining Congress' statement of policy on surface mining regulations cites "* * * the diversity of terrain, climate, biologic, chemical, and other physical conditions in mining areas * * *" It also speaks of "* * * the many variations in mining methods required to produce widely differing ores and minerals * * *" A number of the proposals now pending before Congress likewise recognize this diversity. Existing State and local regulations are cognizant too of these conditions. For example, the guidelines for implementing the surface lands stabilization provisions of the Colorado Mining Law, as amended in 1969, include the following:

> Diversity of environmental conditions and widely varying approaches to mining make it nearly impossible, and certainly unwise, to try to establish rigid rules and standards governing the stabilization of lands disturbed by

mining. A better approach is to secure proper stabilization by carefully fitting mining operations to the particular environmental conditions of the area in which such operations are to be conducted. Each operation is different and each requires a different approach to stabilization planning.

Recognizing that each mining operation is different, enforcement of the stabilization provisions of the Colorado mining laws will emphasize the individual characteristics of each operation.

From State to State, from place to place, it can well be said of mining that its only constant is its diversity. Strip mining of coal in Appalachia differs markedly from strip mining of coal in the Midwest, and in some other areas in the East. All of these in turn differ materially from operations on 100-foot-lignite seams in the Montana-Dakotas region. Vastly different still are conditions in the immense iron ore open pit operations in northern Minnesota. Likewise different is open pit mining in the West and Southwest. Florida phosphate mining bears no resemblance to the hardrock mining of the Western States. Phosphate is a good illustration of the variations that occur within one segment of the industry. Both the mining and reclamation requirements of phosphate producers in Florida are entirely different than those in Idaho, although both are 100 percent surface mining operations. The highly urbanized activities of many sand and gravel operations are also individually unique. The distinctions of the mining industry are virtually endless.

All such diverse realities of mining argue eloquently against any effort to devise other than broad, reasonable Federal guidelines—guidelines that will not impinge on the States' capabilities to treat with these widely varying local conditions.

Mr. Chairman, this statement on behalf of the American Mining Congress is couched in general terms. Separate industry segments are scheduled to testify—coal, sand and gravel, crushed stone. Several State mining associations, we understand will also appear. Their presentations will undoubtedly address themselves more directly than we did to their specialized concerns and conditions. In so doing, we believe they will reinforce the points made in this testimony of the American Mining Congress.

And while the spokesmen for these specialized mining industry segments may concern themselves with particular bills and amendments, we believe it will be more helpful to the committee if we limit ourselves at this time to general comments and a statement of basic American Mining Congress position. You are considering a wide variety of proposals, and undoubtedly you will narrow those down as your deliberations progress. With your permission, we may wish to make a further submission—particularly in the area of technical suggestions—as you sort out from the array before you those provisions chosen for probable inclusion in a bill the committee might approve. As you know, the American Mining Congress follows your program very carefully, and hopefully any such followup comments from us would thus be timely made.

In this context—and these are general recommendations rather than precise language amendments—I must first emphasize our concern that any bill the committee approves should include an appeals procedure, including the right to judicial review by the courts. It would be our hope that such procedure would apply to rulemaking and administrative decisions at all levels. Mining operations should be per-

mitted to continue under proper assurances that the rights of those concerned are protected during the appeal procedure.

Second, we believe most emphatically that criminal sanctions in a Federal surface mining statute would be most inappropriate. It will not be possible to meet the due process requirement of the law. Moreover, in matters affecting mined land where every operation is necessarily unique, it is most unfair to suggest that operators should be subject to criminal sanctions when the regulations issued pursuant to the act will be couched in generalized langauge. The proper enforcement mechanism in such situations is by way of injunction, the terms of which will explicitly define the impact of the regulation in a specific mining operation.

Also, we deem it imperative that all advisory committees be required to have industry representation. We contend, and we think we are correct, that our members know more about mining than anybody else. We stand ready to share that competence, and we want to participate fully in any advisory functions that may be established.

These are observations which single out just a few provisions in pending proposals. We will, as I said, make plans to follow up on specific language proposals as the committee develops a bill further.

In summary then, Mr. Chairman, let me repeat: The American Mining Congress supports legislation establishing Federal guidelines for the regulation of surface mining. These guidelines must be sufficiently broad that they do not impinge on the power of the various States also to regulate—for only in this way can our laws respond rationally to the almost endless diversity of mining methods and conditions. And any Federal surface mining law should be consistent with the National Mining and Minerals Policy Act of 1970.

Thank you.

Senator METCALF. Thank you very much, Mr. Abdnor, for this presentation on behalf of the American Mining Congress. It is encouraging that the American Mining Congress has taken this forward looking position on surface mining. This is a change of policy that I believe is in the interest of the mining industry as well as in the public interest and, of course, we will couch our legislation so that we can continue to operate this great and necessary industry.

At the same time we have to reevaluate our position as far as the environment is concerned. We appreciate your statement and we will appreciate the specific statement of the various industries effected.

I am very much pleased with your suggestion of the appeal proceedings, it ought to be a part of every piece of legislation.

Thank you very much.

Mr. ABDNOR. Thank you, sir.

Senator METCALF. We are now going to have two witnesses together, as I understand it, Mr. Ted Pankowski and Norman R. Williams of the Izaak Walton League.

STATEMENT OF TED PANKOWSKI OF THE IZAAK WALTON LEAGUE, ACCOMPANIED BY NORMAN R. WILLIAMS

Mr. PANKOWSKI. Thank you, Mr. Chairman. I am Ted Pankowski of the national staff of the Izaak Walton League. With me is Mr. Norman Williams, former deputy director of the West Virginia De-

partment of Natural Resources and now executive director of the Mid-Appalachian Environmental Service Center based at Charleston, W. Va.

Mr. Williams is a league member and will be speaking for our West Virginia division. He is also part of an ad hoc committee on strip mining in Appalachia. Other members include our southeastern regional representative, Mr. Grover C. Little, of Kenova, W. Va., and Mr. David Schneider, former assistant attorney general for Kentucky and "father" of Kentucky's strong strip mining legislation adopted in 1966.

We had hoped to appear as a panel but because of the difficulties of time and travel were unable to arrange it. Testimonies by Mr. Little and Mr. Schneider are now being collated with the full statement for the national league and we ask permission to include them all in the record of this hearing.

Senator METCALF. Those statements will be incorporated in the record.

Mr. PANKOWSKI. Thank you.

Briefly, they postulate that surface or strip mining, whether for coal or other minerals is a land use problem of major interstate proportion warranting greater Federal control and that Federal legislation should be directed toward more effective regulation of the entire mining industry—both for public and private lands.

Speaking for the national league, prompt passage of meaningful land use policy legislation seems to be an essential precondition of any serious effort to come to grips with surface mining across the board because of the planning requirements to be created by that act.

The league also agrees with the findings in section 2(10) of S. 1498, the abolition bill, and the assessment made by the National Coal Association in 1966 that:

> Because of the diversity of terrain, climate, biological, chemical and other physical conditions in mining areas, the establishment of a nationwide basis of uniform regulations for surface mining operations and for the reclamation of surface mined areas is not feasible.

As the committee knows, most of the legislation being considered appears to attempt such uniformity.

Our full statements recommend that while strip mining in most of Appalachia and in many other areas of the country should be abolished, abolition of all surface mining anywhere may not be responsive either to the energy and mineral needs of the Nation nor to the environment. As the industry likes to put it, to serve their purposes, "Let's look at each application on its merits."

The difficulty seems to be that there is no effective mechanism within Government to make such determinations and under rules and procedures which will make them stick.

Following passage of the land use policy legislation, we believe Congress should seriously consider creation of a Federal Mining Commission, compatible with the land use legislation and comparable to the Federal Power Commission for the purposes of—

(1) Licensing all mining applications whether by public or private agencies under strict environmental controls;

(2) Adjudicating claims arising out of our confusing and antiquated mining laws;

(3) Exercising authorities now vested in the Bureau of Mines, Department of the Interior, and such other existing authorities as are necessary for the protection of health and safety in conjunction with mining;

(4) The consideration of alternatives to specific mining applications as required by the National Environmental Policy Act; and

(5) The provision of mining and mine related imputs into the broader planning functions to be exercised by Government through the Land Use Policy Act.

I appreciate this opportunity to present this summary of our lengthier statement and with your permission will turn the balance of our time over to Mr. Williams.

Senator METCALF. Thank you very much, Mr. Pankowski, for a very constructive statement and it will of course be studied.

Mr. WILLIAMS. Mr. Chairman, my name is Norman R. Williams. I was formerly acting deputy director of the West Virginia Department of Natural Resources. Presently, I am employed by the Conservation Foundation of Washington, D.C., as executive director of the Mid-Appalachian Environmental Service at 1318 Quarrier Street, Charleston, W. Va. I appreciate the invitation extended by this committee to discuss the question of surface mining of coal. I speak on behalf of the West Virginia Division of the Izaak Walton League, both as a member of its Mountain State chapter and as a citizen of West Virginia.

The legislation now under consideration by your committee has inspired much eloquent and well-documented testimony relating to the bitter social and environmental problems arising from the expansion of surface mining, especially as it affects the mountains of Appalachia. My purpose today is not to dwell on these aspects; rather, I wish to explore the issue of whether or not surface mining of coal can be adequately regulated.

As I understand the bills now before you, with one exception all are predicated upon the assumption that stricter regulation is feasible. I wish to challenge this easy assumption, for my own experience indicates that the surface mining industry in Appalachia is not amenable to social control. This reluctant conclusion is based upon 5 years' observation within a State agency charged with enforcing a reclamation law until recently regarded as the strictest in the Nation. In my opinion, the surface mining of coal in Appalachia cannot be regulated so as to eliminate those environmental and social costs being foisted upon a region already handicapped by a legacy of industrial exploitation.

Shortly after I joined the staff of the Department of Natural Resources, the Surface Mine Reclamation Act of 1967 was enacted. I was assigned to help prepare rules and regulations needed for its enforcement. In September 1970, I was asked to revise those regulations due to mounting criticism of the Department's handling of the new law. In the interim I had ample opportunity to observe the side-effects of strip mining, side-effects which reclamation officials often dismissed as "acts of God."

I am referring to landslides to rivers of mud and rocks, to gashes in mountainsides from slipping spoil banks, to miles of streams ruined by acid drainage and sedimentation, to homes, roads, water supplies, and scenery damaged, often beyond redemption. These side effects are more often than not the trademarks of the industry. Far from diminishing under strict regulations, the evils associated with strip mining increased as operators rushed to take advantage of the unprecedented demand for coal. People living in narrow flood plains downstream were frequently obliged to put up with a degraded living environment, all in the name of stricter regulation.

One may ask how this sad state of affairs came about. Allow me to explain.

In 1967 two courses of action were open to the West Virginia Legislature in reacting to the public outcry over strip mining excesses. On the one hand, the industry could have been abolished; or on the other hand, the social and environmental costs of the industry could have been abolished. In choosing the latter course, the legislature acted believing strict regulation was feasible if carried out by an environmental agency. So surveillance of strip mining was shifted from the Department of Mines to the Reclamation Division of the Department of Natural Resources.

Is it any wonder that a renewed public outcry was heard in 1970 and 1971? Is it any wonder many of us began to ask what had gone wrong? Is it any wonder many West Virginians felt they had been duped by the "strict regulation" law and began organizing behind legislation to abolish strip mining once and for all?

In February 1971, I testified before the House Judiciary Committee of the Legislature, analyzing the situation from the perspective of my experience in the regulatory agency. I suggested several possible reasons for the State's failure to enforce the law, reasons which led me to favor abolishing strip mining in West Virginia.

A recent paper entitled "Environmental Management and Regional Economic Development" by William H. Miernyk, professor of economics and director of the Regional Research Institute, West Virginia University, maintains that the "environmental damage from strip mining may undermine * * * the entire regional economic development effort"; that "the continued expansion of strip mining in West Virginia could easily offset the developmental impact of the Appalachian Highway System"; and that if strip mining were to be abolished in West Virginia, contrary to widely publicized estimates of the resulting large scale economic losses, the inevitable expansion of underground coal mining would bring about a net increase in jobs amounting to 558 and a total increase of in-State industrial capitalization amounting to $146 million.

Primarily, there is the reluctance of the State to require the operator to internalize his environmental costs, which is what the 1967 law intended. I contended this reluctance stems from the enormous expense involved. Rigid enforcement of the 1967 law, particularly in the more mountainous areas, would simply put the operator out of business.

If, for example, the operator were required to fully protect the environment by restoring all highwalls to original contour, mulching

all spoil banks soon after disturbance, stockpiling all top soil, separating all acid bearing overburden, installing complete drainage systems with properly designed settling ponds, sealing all breakthroughs permanently, treating all acid water discharges in perpetuity, and so on, the economic incentive would be effectively removed from surface mining in Appalachia.

What makes surface mining so attractive is the fact that the State does not require the carrying out of these measures. Actually, the profit of the surface mine operator is in direct proportion to the environmental costs he is allowed by the State to pass along to the community.

In my testimony I went on to observe how the agency in effect had rewritten the 1967 law to serve the profitmaking needs of the operator, to the lasting detriment of the small landowner living downstream and at incalcuable expense to the ecology of West Virginia. In illustrating how the agency had bent laws and regulations to suit the operator's convenience, I mentioned the memorandum, quietly circulated, which liberalized restrictions on multiple-seam mining and which was responsible for a serious increase in erosion and sedimentation flowing from these perpendicular deserts. The only explanation for the existence of that memorandum was pressure from the industry, on the Governor and on down to the inspector.

Mr. Chairman, I have recapitulated on my February testimony in such detail because I have had little reason since then to alter my judgment, despite some highly ambiguous amendments to the law enacted by the 1971 legislature. Now better manned and equipped, the agency continues to employ questionable if not illegal tactics in its zeal to issue permits at a rate commensulate with the desire of the industry.

The assertions contained in my February testimony stand unchallenged; indeed, I have received corroborative remarks privately from people in the industry. In a word, State regulation is no match for the surface mine industry, at least in West Virginia, and I suspect from superficial observations the same can be said elsewhere.

Now, I have a question for those who are eager to turn to Federal regulation as to the viable alternative. I feel bound to ask: What about the Federal mine safety laws? Are they being enforced? According to a recent report by Lawrence E. Taylor of the St. Louis Post-Dispatch Washington Bureau, the death toll in U.S. mines shows no significant variation from the level prior to enactment of tougher mine safety laws. Moreover, some $4 million in fines levied under the 1970 Mine Safety Act remain uncollected out of a total of $5 million. One can only surmise the pressures being exerted on this agency, and I would venture to say the track record of other Federal agencies when it comes to environmental responsiveness, is not much better.

If Federal control, per se, can hardly be viewed as a panacea, at least it offers escape from the depressing game of economic blackmail which has so frequently reduced State legislatures and State regulatory bodies to virtual impotence. I would also hope that the Congress, in this matter will explicitly recognize the right of each State to adopt its own restrictions on the expansion of surface mining. Where proper environmental protection can be accomplished only by eliminating surface mining as

a method of removing coal, the option should remain for State legislatures to exercise, whether by outright abolition, or county by county, or by moratorium, or whatever.

A profound skepticism about the effectiveness of Federal controls as applied to the coal mining industry and its booming surface mining segment, suggests to me the urgency of reducing opportunities for closed door negotiations. Is it safe any longer to assume that any regulatory agency can or will keep the public interest firmly in mind in its dealing with the industry? I sincerely doubt it.

Bureaucratic secrecy, special interest lobbying, and administrative discretion have long since conspired to open our representative form of government to special influence while holding at arm's length citizens who are worried about environmental protection. West Virginia's experience with the Surface Mine Reclamation Act of 1967 provides a classic example, as I have tried to indicate.

It occurs to me that there may be some legal provisions which would help bring about greater participation on the part of concerned individuals in the decisionmaking process. So in closing, Mr. Chairman, I should like to recommend a few adjuncts to the routine regulatory statute, in the perhaps naive hope that people can somehow sensitize our Government apparatus to the ecological imperative, if given a chance. Some of my suggestions are already incorporated in the bills under consideration: some appear in amendments to the West Virginia law; and some are relatively new. I trust all will merit careful thought.

First, reclamation should be defined as "restoration of the disturbed area to a level of environmental quality at or near that of its original undisturbed condition." In other words, if we're talking about Appalachian hardwood forests, the law should require restoration to a condition wherein existing species can be reestablished in full vigor.

Second, the surface mine operator should be required to advertise all information relating to his application for a permit, in a general circulation newspaper nearest to the prospective strip mine site. This is to alert interested residents of the area, allowing them sufficient time to undertake investigation and protest if they so desire.

Third, the operator should be required to prepare a preplan showing how he will mine and reclaim the area under permit and the agency should be required to circulate his preplan among various other agencies dealing with water, air, noise, forestry, recreation, scenic and land use values. The contribution of these disciplines should be joined in a comprehensive environmental impact statement.

Fourth, the environmental impact statement should be made available to the public. A specified number of residents of the affected county should then have the right, after studying the statement, to demand a public hearing to be held in the affected county prior to issuance of the permit. The agency must appear and show cause why the permit should be issued, if that is its decision.

Fifth, any citizen should have the right to bring suit against the Administrator of the regulatory agency for failure to perform a mandatory duty, and data drawn from the hearing should be considered valid evidence if introduced in a court of law.

Sixth, all water quality reports required by the agency should be published periodically by the operator in a newspaper of general circulation nearest the permit area.

Seventh, citizens should be encouraged to monitor implementation of the law through receiving one-half of the fine imposed upon a violator, in return for information leading to the conviction.

Eighth, any employee of an operator or any employee of the agency should be fully protected against discrimination or reprisal as a result of providing information leading to the prosecution of a violator or to a citizen suit against the Administrator.

Ninth, a reclamation trust fund should be established, based on a per-ton tax of all coal mined, the money to be devoted exclusively to purchasing and restoring lands inadequately reclaimed from surface mining or deep mining of coal, and also for funding workshops and other organized efforts to train citizens in monitoring techniques.

Tenth, any person thrown out of work by abolition or by a moratorium on surface mining of coal should have ready access to federally funded retraining programs and should receive a limited hardship allowance. Such persons should get first consideration for reemployment in reclamation programs established under the reclamation trust fund.

In summary, Mr. Chairman, it seems to me Congress faces somewhat the same choice confronting the West Virginia Legislature in 1967. Either the surface mining of coal must be done away with, or conversely, the environmental and social costs associated with surface mining must be done away with. I have tried, very briefly, to suggest why regulation of the industry has not proved effective in West Virginia. As soon as the operator's margin of profit is at stake, no amount of agencies is likely to help lands and waterways being damaged by surface mining in Appalachia. Oblige the operator to restore the disturbed area and you put him out of business. It's as simple as that.

If regulation appears to be the only politically feasible route at this point in time, then I respectfully suggest safeguards be built into the law whereby a third party is introduced into the decisionmaking process. I mean people whose home, community, or hunting, fishing and camping grounds are on the block. Most of us have had precious little to say about what has gone on behind the cover of law. I believe it is time we were brought into the partnership.

Thank you again for the privlege of appearing at this meeting.

Senator METCALF. Well, thank you for giving us the benefit of your considerable experience in dealing with a similar law on the State level. But many of us feel a Federal law doesn't have the disadvantages that a State law has.

You come to the State legislature or State commission and say, well, this extra cost will put us out of business. But if we imposed the cost on a Federal level, then it equalizes and all the companies and so the cost of reclamation becomes the cost in West Virginia or Pennsylvania or North or South Dakota or anyplace else.

I think you have pointed out the necessity to have at least some Federal standards and some Federal regulations.

Mr. WILLIAMS. Yes, Mr. Chairman, I think what I was trying to point out was, if the individual operator is required to carry out the measures necessary, that this would be prohibitive.

Whether this could be done equalizing it across the board, I am not in a position to say.

Mr. PANKOWSKI. What Mr. Williams has in mind, because of the terrain in Appalachia, there is no way to conduct strip mining there

without damaging the environment. While we may permit it in other parts of the country, there is no way to do it in Appalachia.

Senator METCALF. Well, I think you have made your point very well, that in some places it is just not possible to reclaim or restore the environment.

On the other hand, of course, with huge open pits and things of that sort, there isn't any possibility of restoration or reclamation, but there is a possibility, after the abandonment of the mine, creating something that is at least ascetically satisfactory, a swimming pool or lake or something of that sort.

Mr. WILLIAMS. Yes, I believe that may be possible in certain areas. In Appalachia I think it is difficult or impossible in most areas.

Senator METCALF. Well, thank you very much for coming and telling us about your experience in administering a law such as this.

Mr. WILLIAMS. Thank you.

Senator METCALF. Next witness is Mr. Hugo Johnson, president of the American Iron Ore Association.

STATEMENT OF HUGO E. JOHNSON, PRESIDENT OF AMERICAN IRON ORE ASSOCIATION, ACCOMPANIED BY RALPH MAGNUSON, JR., DIRECTOR OF ENVIRONMENTAL ACTIVITIES, CLEVELAND-CLIFFS IRON CO., AND E. T. BINGER, CHAIRMAN OF THE BOARD, PITTSBURGH PACIFIC CO.

Mr. JOHNSON. Mr. Chairman, I have with me two gentlemen, as we did in 1968 when you chaired a session at that time and I had the pleasure of appearing in front of you and I welcome this opportunity today.

We have been identified in the record; we are going to brief our presentation this afternoon in the interest of saving your time, Mr. Chairman.

We welcome this opportunity to appear here today on these important matters of legislation that this committee is considering at this time. We believe these deliberations will result in legislation that could have a major effect on this entire country and particularly the iron ore mining industry of this Nation because of the nature of our operations.

We appear here today to express our views on certain points in some of the bills that are being considered by you at these hearings. We have decided not to speak directly on any one bill of the many that you have under consideration but to direct our remarks toward pointing out how some of these bills may effect our effort to furnish iron ore to our domestic steel industry.

In our desire to conserve the committee's time and in our hope that we can convey to you a firsthand report on how some of the proposed legislation may effect iron ore mining operations, we have asked two representatives of member firms to appear here with me today. Both of these gentlemen are eminently qualified to give to this committee the views of two firms in our membership whose operations are substantially different and how both would be seriously affected by this legislation. They represent typical iron ore operators in the United States.

On my left is Mr. Tom Binger, of Hibbing, Minn., who is chairman of the Pittsburgh Pacific Co. operating iron ore mines in Minnesota,

and on my right is Mr. Ralph Magnuson, Jr., of the Cleveland-Cliffs Iron Co., where he serves as director of environmental affairs.

With your permission, I will ask these gentlemen to present their statements and I will close our appearance with a few brief remarks. We, of course, would endeavor to respond to any question that you or the committee would care to direct to us.

Gentlemen, Mr. Tom Binger of the Pittsburgh Pacific Co. of Minnesota.

Senator METCALF. Mr. Binger, glad to have your testimony.

Mr. BINGER. Thank you, Mr. Chairman.

I am Tom Binger, chairman of Pittsburgh Pacific Co., a small, owner-managed iron ore mining company with its home office in Hibbing, Minn. This company operates iron ore mines and iron ore concentrating plants on the Mesabi and Cuyuna Ranges of Minnesota. I have been active in this company in various capacities since its founding in 1953. The iron ore produced by Pittsburgh Pacific is principally sold in the open market to blast furnace operators in the areas tributary to the Great Lakes in competition with other United States and foreign ores.

In the past 10 years, Pittsburgh Pacific Co. has produced and delivered approximately 5¾ million tons of iron ore, accounting for slightly in excess of 1 percent of all the iron ore produced in Minnesota during that period. In the past 5 years our total payroll costs have exceeded $9,900,000 and we have paid in excess of $2,500,000 in State and local taxes. In addition, during this period we have paid over $250,000 in royalties to the State of Minnesota.

Pittsburgh Pacific owns none of its own mines under lease from others, including the State of Minnesota. In all cases, the mines we have operated have been mined by other mining companies prior to our operations. In a very real sense the economic activity we have been able to generate is a direct result of the sound conservation practices that have always been a part of the iron mining industry. To illustrate this point, I will quote from the University of Minnesota Bulletin, Mining Directory Issue of 1968 describing the operating history of but one mine, the Mesabi Mountain Mine owned in fee by the State of Minnesota.

> Operated by Oliver Mining Company 1893–98 by Oliver Iron Mining Co., 1898–1941; by Charleson Iron Mining C., 1949–1948, with stockpile shipments, 1948–60; stockpile shipments by Pacific Isle Mining Co., 1950–1960; N ½-NE ¼ operated by Inter State Iron Co.; (Jones & Laughlin Steel Corp.) 1950–1951, and by Jones & Laughlin Steel Corp., Minnesota Ore Division 1952–1960. S. ½-NE ¼ operated by Pittsburgh Pacific, 1961–64.

So far the mine has been operated by five different interests and has produced over 75 million tons of iron ore. There remain in the pit and in numerous stockpiles of lean ore produced from the mine many unites of iron that will quite probably produce additional iron ore in the future, when changes in technology and iron ore values combine to make some new venture in this mine economic.

The history of Minnesota's iron mining industry is replete with mines that have thoroughly been exhausted of economic ore at perhaps several different points in their history only to be reopened when new mining or beneficiating techniques have been discovered. A pit operated underground originally may later have become an open pit

operated with horse drawn vehicles. It may then have found new life when rail power was utilized, perhaps another new life with the introduction of truck mining. The same pit might well have been exhausted of its high grade direct shipping ores but found a new life at every advance made in beneficiating techniques. Almost all presently inactive mines contain substantial quantities of iron bearing taconites which no doubt will contribute to the mineral wealth of future generations.

It is the numerous inactive mines and lean ore stockpiles that can be relied upon to provide the demands of the increased steel production in times of national emergency. If all the pits in Minnesota had been reclaimed and the lean ore piles dumped back in the open pits, I do not believe the production requirements of World War II or the Korean war could have been so easily fulfilled. Today an increasing amount of our iron ore comes from foreign sources, some as far away as Africa, Brazil, and Australia. To my mind, it is questionable whether the delivery over such vast distances ought to be relied upon during times of conflict.

My company's operations have always involved the adoption of new techniques to gain mineral values from mines that have thought to have been exhausted of economic ore by a previous operator. Had the previous operator contaminated the mine by the reintroduction of surface materials or had he not carefully segregated the lean ore materials brought to the surface in his operations, it seems certain to me that most of the iron ore we have been able to produce would not have been possible.

The scram type operation that my company specializes in could probably not adapt to the kind of operation where approval would have to be obtained for mining and reclamation plans. Our operations most frequently involve beginning to mine a small exposed face of iron bearing material which may or may not expose additional suitable material. Our beneficial plants are usually situated so as to be able to receive ores from a large number of mines since the amount of material likely to be found in any one exhausted mine would not alone support the capital investment necessary to build the plant. Any proposal that would require the posting of a performance bond to insure reclamation of the land would certainly prohibit us from going into a mine such as the Mesabi Mountain from which many millions of tons of material had been removed. Certainly too, any such requirements would make it impossible for future generations to utilize the great quantities of iron bearing material which now lay exposed in these pits.

Nor is it unusual for some of the inactive mines to provide some very excellent fishing during their idle periods. I am told that one of the idle mines on the Cuyuna Range provides some of the best bass fishing in the State of Minnesota although not to incur the wrath of my fishing friends in that area. I decline to name the specific pit.

Perhaps I should also point out that the surface dumps produced in the long history of iron mining in Minnesota are not all scars on the landscape. Speaking only of Hibbing with which I am most familiar, one of the newer and most attractive residential areas of the village is located on top of a surface dump laid down many years ago. It was from this dump that Pittsburgh Pacific extracted small quantities of

lean ores prior to its being developed for real estate. I understand another surface dump dubbed Boy Scout Hill because of the planting of pine trees by the Boy Scouts some years ago, has just recently been rezoned residential in that same community. This is not only unique with Minnesota. For example, the tailings dam area at the original Cornwall Mines, concentrator and pelletizing facilities in Lebanon, Pa. is typical. Incidentally the Cornwall Mines operated during our Revolutionary War to again illustrate the long life of an iron ore operation.

Some of these inactive pits also serve as significant tourist attractions. I am told by the Hibbing Chamber of Commerce that the Hull Rust Pit north of Hibbing attracts upward of 65,000 visitors a year. This pit was begun in 1896 and has seen numerous operators who combined have produced over 200 million tons of ore from this property.

In summary, some of the reclamation objectives that seem to be inherent in presently contemplated legislation seem to conflict with sound conservation practices in the iron ore industry. Prior approval of mining plans and posting a bond for the eventual reclamation of mined lands would quite likely make our type of operation impossible. Such requirement for prior approval would prohibit the flexibility and quick response to changing circumstances of encountered ore materials and market demands that are essential in scram mining operations.

Thank you for this opportunity to present the viewpoints of a small operator in the iron ore mining industry.

Senator METCALF. Thank you for your testimony. A few years ago, as a member of the Committee on Mine Safety Legislation, I had the opportunity to visit some of the operations in the Mesabi Range and of course some copper operations across in Michigan. So I did gain some familiarity and I have been up as a guest of John Voke.

Don't you have an annual meeting where you serve a lot of Cornish pastries; is that in Virginia?

Mr. BINGER. Yes, more than annually.

Senator METCALF. Well, I have visited there several times and I certainly respect some of the propositions that you set forward because you now literally manufacture iron in that taconite process.

Your testimony has been very helpful and demonstrates what the American Mining Congress was telling us in broad and general terms, that the only constant part about mining is that it differs everywhere in the country.

Mr. JOHNSON. Mr. Chairman, the gentleman on my right is Mr. Ralph Magnuson of the Cleveland-Cliffs Iron Co.

Mr. MAGNUSON. Mr. Chairman, I am Ralph E. Magnuson, Jr., director of environmental affairs for the Cleveland-Cliffs Iron Co. I am a mining engineer and have been associated with iron ore mining for the past 25 years—beginning as a mine engineer, then to chief mining engineer, assistant to senior vice president—operations, until I assumed my present position. Although I appear today as a representative of the American Iron Ore Association, my comments will be based upon my company's experience from its operations in Michigan's Upper Peninsula and the Mesabi Iron Range in Minnesota.

The Cleveland-Cliffs Iron Co. has a corporate history of 121 years and through predecessor companies can trace that history back to the beginning of iron ore mining in 1850 in the Lake Superior district. At the present time, Cleveland-Cliffs owns or operates four pellet plants, three open pit mines, and one underground mine on the Marquette Range in Michigan; one open pit mine on the Mesabi Range in Minnesota; and two pellet plants and open pit mines in Ontario, Canada. In 1970, the shipments from our operations in the United States were 11,055,000 long tons or 12 percent of the total shipments of iron ore in the United States.

During its 121 years, Cleveland-Cliffs has had a wide range of operating experience from underground and open pit mining of natural ores to modern concentrating and pelletizing operations. That experience is representative of the larger iron mining companies in the United States. Cleveland-Cliffs occupies a position of a leader in the development of iron ore beneficiating and pelletizing operations.

I find it difficult to acknowledge that the iron ore mining industry creates problems of the magnitude which the legislation before your purports to correct. This is an honest and sincere conviction and I respectfully submit this statement in support of that conviction.

In the States of Michigan and Minnesota, iron mining operations to date have affected a very small part of their total acreage. In relation to the 37,300,000 acres in Michigan, there has only been 0.006 percent of the total area of the State involved in iron ore surface mining, and of Minnesota's 53,800,000 acres, only 0.12 percent has been affected. In both of these States iron mining has been and is presently being carried on in sparsely populated areas. In the four counties of Michigan where iron ore mining operations are located, there is an average of 25 persons per square mile.

These figures contrast with total population densities, for example, of 137 people per square mile for Michigan; 237 in Ohio; and 806 in New Jersey. The light population densities in these mining areas support the fact that there is no great demand for land for other purposes, and therefore the iron mining industry is not withholding land from other uses.

The iron mining industry is the largest industry and the prime employer in each of these mining areas in Michigan and Minnesota. Many of the other businesses in these areas support and serve the mining industry and its employees there.

The areas in which the iron mining operations are located are of such a nature that they are considered to be of marginal quality for many recreational purposes. At the same time, the mining operations have not impeded to any material extent those recreational activities. These facts, coupled with the vast acreages held by the State and Federal Government which are available for recreational purposes in these areas, argue that there is no significant diminution of recreational land.

For forestry purposes, the areas which have been involved in iron ore surface mining in Michigan are very insignificant. It is my observation that the second growth on the Mesabi Range has been scrub timber of low value. Moreover, in both Michigan and Minnesota, it is apparent that mining is the highest value use that can be made of the land.

There has never been a problem of any measurable proportions involving either erosion or landslides related to iron ore mining operations in Michigan and Minnesota.

Floods are unknown in the iron ore mining areas of Michigan and Minnesota and therefore there have never been any problems of this nature related to iron ore mining.

Water pollution control is regulated by Federal and State laws and that these regulations are effective is borne out by the annual report of the Michigan Water Resources Commission entitled, "Industrial Pollution Status," which lists open pit iron mining operations with the best rating. We in the iron mining industry maintain that water pollution is adequately controlled and that there is no need for additional legislation.

Air pollution is not a sizable problem associated with iron ore open pit mining. There can be at times airborne dust that occurs during heavy winds but this condition occurs over all kinds of land areas from virgin territories on the central plains to major city streets. The stack emissions from modern pelletizing operations are controlled by State and Federal regulations, and, again, no further legislative control is required.

State water pollution control agencies are keenly aware of the interest of sportsmen and conservation groups in protecting the habitat for fish and wildlife and have included in State regulations controls which protect them. The relatively small areas which are actually involved in iron mining operations do not have a significant impact on wildlife habitat, considering the great acreage of open land available in these areas.

Loss of soil does not occur in the iron mining areas through erosion and flooding. The withdrawal of land and soil from other uses by mining is not a problem in Michigan and Minnesota because the mining areas are so marginal for recreation or agriculture.

In modern beneficiating and pelletizing operations, water plays a very important role. We need it. Therefore, the conservation of water is of primary value to the iron ore mining industry.

Any impairment of the property of others adjacent to the iron ore mining operations of Michigan and Minnesota is limited to such incidental effects as dust or noise from the blasting of crude ore in the open pits and does not in our judgment constitute a hazard requiring further legislative controls.

It is common knowledge that iron ore mining operations in the Lake Superior iron district have created little or no hazards to the public welfare in the areas in which the surface mining operations are located.

The impairment of natural beauty is perhaps one of the most controversial allegations. The apparent changes to the landscape which are caused by iron ore surface mining operations are the creations of open pits, rock or lean ore piles, and tailings basins. The local chambers of commerce consider the pits as a unique tourist attraction as measured by the 80,000-or-so tourists who visit the Mesabi Range each summer. It is our viewpoint that the residents of the iron mining areas in Michigan and Minnesota do not consider the views of the pits and piles unsightly and it is obvious that visitors are drawn to those areas by the presence of these outstanding features.

In Michigan the iron ore surface mining operations are scattered in remote areas and therefore are not readily seen by residents or passersby.

During the active years of iron ore operations, we are attempting to revegetate lean ore piles and tailings basins. Cleveland-Cliffs is at the present time engaged in research efforts to ascertain the types of and rate of revegetation. It is of interest to point out that even in the active tailings basins, wild ducks nest and raise families each summer.

Probably the most difficult requirements of the proposed legislation are the need to acquire a permit to mine and to file a mine reclamation plan. It appears that what is contemplated is not the control of the effects of mining but the control of mining itself. In other words, the question is one of whether or not mining will be permitted; not of how mining will be conducted.

As an iron ore miner, I know it is fundamental that no miner has much more than a beginning knowledge of the ore body he is going to mine before actual mining commences. That knowledge is increased as the mining progresses and exposes the iron ore body. The lack of total knowledge of the ore body and the influence of continuing technological change make it difficult, even impossible, to foresee the conditions which will be encountered during mining and the conditions which will exist at the completion of mining. Therefore, it is impossible to develop an adequate mining plan to be filed and approved before surface mining operations are commenced that will fit actual conditions at the end of the operation. The requirement of a mining plan in advance of mining and of posting a performance bond during possible 50 to 100 years of a mine's life is in our judgment entirely unsuited to the characteristics of this type of mining.

The extremely long lives of iron mining operations pose added difficulty in preproduction planning of reclamation. Let me cite you an example of this in Michigan. The Empire Mine was originally opened in 1907 and was operated until 1926 as a direct-shipping siliceous ore mine. In 1963, it was reopened as a part of an open pit concentrating and pelletizing operation. This was made possible by advances in mining and beneficiating technology gained over a half a century. Back in 1907 and even in 1926, there was no way any one could have predicted what problems would have to be faced today. The ore reserves available with today's technology are sufficient to maintain operations at present operating rates for another 75 years. Right now, it is extremely difficult to develop definite overall reclamation plans. There is no way of predicting what conditions will exist that far out in the future and what, if any, needs for the use of the land will be.

The major effects of surface mining is upon the land and have specific boundaries. They are very definitely local in character. Therefore, final control should be local control. The determination of what reclamation is required and how that reclamation should be accomplished is best left to the States. There is a growing awareness of the need to control the effects of surface mining in the various States and this is where the control should rest. I would not be completely accomplishing my mission here today if I failed to tell the committee that the iron mining industry came forward in Michigan and Minnesota with suggestions for legislation covering mined land reclama-

tion and worked with interested State agencies and with the legislators in having such legislation enacted.

The iron ore industry is increasingly cognizant of its public responsibilities and has been adapting to it. Therefore, there does not appear to be a demonstrated need for the kinds of proposed national standards of restrictions on iron mining surface operations which the committee has under consideration. Those standards appear to us to have been drafted with other kinds of mining in mind, such as short term mining or mining which in one pass completely removed the ore. The inappropriateness of those standards if applied to iron mining will create extremely difficult conditions under which it would virtually be impossible to meet the consuming needs of the world for iron ore.

It is our considered opinion that the extent of the Federal Government's involvement in surface mining reclamation should be to encourage the States to establish the means of controlling the effects of surface mining, to establish general guidelines for the States to follow, to establish research and training programs to supplement those now being carried out by the industry, to assist in the exchange and dissemination of information between the States and to provide aid to the States in carrying out their program.

Thank you, Mr. Chairman, and members of this committee for this opportunity to present this statement here today.

Senator METCALF. Thank you very much for a very helpful statement.

I understand that your company is also engaged in experimental mining, at least in the oil shale. Would you comment on the environmental impact of mining the oil shale?

Mr. MAGNUSON. I am not in a position to comment on that, sir, because we are only a member of that group and another member company is the company which is doing that planning.

Senator METCALF. The staff tells me that we don't have any testimony coming from the people who are working in the oil shale field; perhaps you could persuade someone to submit a statement?

Mr. MAGNUSON. Yes, sir; I will.

Senator METCALF. Thank you very much.

Mr. JOHNSON. Mr. Chairman, I believe we have presented to you some of the ways that the bills which you have before you at these hearings could have a serious impact on iron ore operations.

In closing, we merely want to emphasize that we feel that the types of mining carried out by the iron ore mining industry are extremely long life operations totally unlike the cast, mine, and reclaim operations that characterize modern day mining generally observed in most of the eastern part of the United States.

We recommend that any legislation that this committee recommends to the Senate will be broad enough to permit guidelines that will not seriously impair the power of the various States to regulate as they are now doing the iron ore mining industry of this country and permit us to continue our work of operating to conserve valuable iron units.

Thank you for this opportunity to appear here today.

Senator METCALF. Thank you very much for coming here and for giving us this special testimony on a very special point in time in the

mining operations. This will have to be given every consideration in any legislation, because the vast resources of the Mesabi Range have helped us to win two or three wars and we want to keep them going.

Mr. JOHNSON. Thank you very much.

Senator METCALF. Thank you very much.

This concludes the hearing this afternoon; this hearing will be continued tomorrow in this same room at 10 o'clock. The subcommittee will be in recess.

(Whereupon, at 3:40 p.m., the subcommittee adjourned to Wednesday, November 17, 1971, at 10 a.m.)

SURFACE MINING

WEDNESDAY, NOVEMBER 17, 1971

U.S. SENATE,
SUBCOMMITTEE ON MINERALS, MATERIALS, AND FUELS OF THE
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to notice, in room 3110, New Senate Office Building, Senator Frank E. Moss (chairman of the subcommittee) presiding.

Present: Senators Moss, Hansen, Jordan, and Metcalf.

Also present: Mary Jane Due, staff counsel, and Charles Cook, minority counsel.

Senator Moss. The hearing will come to order.

This is a continuation of our hearings before the Minerals, Materials, and Fuels Subcommittee dealing with the regulation of surface mining in the United States. There are a series of bills that have been introduced; in fact, I guess there are eight bills all on the same general area. The committee is considering testimony on all of these bills.

We held hearings all day yesterday, and, in addition to today's hearings, we have scheduled additional hearings for December 2, 1971, in this room.

We have a number of very important witnesses to hear today but are under the same strictures of time that we had yesterday. The Senate is in session and there is a possibility that we will have to recess now and then, to go and make a vote and then come back.

Because of that pressure of time I am asking the witnesses to be as brief as they can and still effectively present their testimony. The statements that have been prepared and are in writing will all be included in the record in full so witnesses may be assured that none of their material will be ignored. It will all be considered very carefully by the committee, but we would like to have the testimony summarized or highlighted to save on time.

I am pleased Senator Jordan of Idaho, the ranking Republican member of the subcommittee, is with us this morning and we hope to be joined by other members of the subcommittee, although it is not certain. There is so much going on now it is difficult to spread the Senators all around to the meetings they are supposed to attend.

Our first witness today is our colleague, Senator Schweiker, from Pennsylvania, who has great interest in the matter before us. He knows a great deal about the subject and he speaks for the great State of Pennsylvania. We look forward to hearing his testimony this morning. I see he is set up with some slides and I am sure they will help to illustrate the points he wants to make before the subcommittee.

We welcome you, Senator Schweiker; you may proceed.

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STATEMENT OF HON. RICHARD S. SCHWEIKER, A U.S. SENATOR FROM THE STATE OF PENNSYLVANIA

Senator SCHWEIKER. Mr. Chairman and distinguished members of the subcommittee, I appreciate the opportunity to appear before you today, to comment on the serious problem of the reclamation of mined areas.

As the members of the committee are well aware, Pennsylvania is a great coal-mining State, with much of its economy and jobs dependent on this industry. In my State, we have had legislation since January 1964, requiring restoration of strip-mined areas to approximately the original contour or a terracing restoration on steep terrain. This legislation has virtually brought an end to the scarring of the landscape with open cuts and highwalls.

Based on the experience we have had under the Pennsylvania law, I oppose an outright ban on strip mining. I favor a very strong national strip-mining law, much like the Pennsylvania law. The cost per ton of coal in terms of restoring a strip-mining area is only a fraction of the present operating cost. For a nominal amount, this can be done by the operators with very little cost to the consumer. Generally, I believe that the ongoing operation can be handled without substantial Federal assistance.

It seems to me that what is needed is something like the bill submitted by the administration, S. 993. This legislation would allow each State to have 2 years to submit regulations for approval by the Secretary of the Interior. The legislation sets up criteria for approval, including regulations concerning the issuance of permits by State agencies, assurances that environmental quality standards will be met, reclamation of mined areas, performance bonds, engineering maps, and monitoring by the State agency. The bill would give the Federal Government authority to issue regulations if States failed to do so.

Mr. Chairman, I have with me today Mr. William Guckert, director of the Mine Reclamation Division, Bureau of Land Protection and Reclamation, Pennsylvania Department of Environmental Resources. Mr. Guckert has been personally responsible for much of the progress which has been made in the bituminous strip-mining areas in Pennsylvania. I would like to submit for the record a copy of a Life magazine article which describes the job which Mr. Guckert and his department are doing in my State.

(The article referred to was retained in the committee file.)

Senator SCHWEIKER. I will take this opportunity to introduce Mr. Guckert and I know from my experience with Mr. Guckert he is going to show you some slides, and I know one picture here is worth 5,000 words, and I think we can save time by looking at the proof of the pudding.

I will now turn the testimony over to Mr. Guckert.

Senator Moss. Thank you.

Mr. Guckert, we are pleased to have you before us and look forward to your testimony. The magazine article submitted will be part of the record.

STATEMENT OF WILLIAM E. GUCKERT, DIRECTOR, MINE RECLAMATION, BUREAU OF LAND PROTECTION AND RECLAMATION, DEPARTMENT OF ENVIRONMENTAL RESOURCES, COMMONWEALTH OF PENNSYLVANIA

Mr. GUCKERT. Senator Schweiker is aware of what we are doing in Pennsylvania.

I am William E. Guckert, director of the Mine Reclamation Division of the Pennsylvania Department of Environmental Resources.

My interest in the reclamation of strip mines began many years prior to my assuming this position. As a landowner in both Butler and Allegheny Counties, two coal-producing counties in our State, I realized the necessity of strong reclamation laws for this industry. As executive secretary of the Allegheny County Sportsmen's League, I took an active part in the fight for, and the exactment of, strong strip-mine reclamation laws.

With the enactment of such legislation in 1963, one provision of which created a land reclamation board, I was appointed by Governor William Scranton as the conservation member of this board. I served in this capacity until Governor Shafer asked me to accept the position in which I am now serving.

Pennsylvania can be proud of the accomplishments achieved in the enforcement of this act. Each year in excess of 10,000 acres are affected and restored to approximate original contour or to terracing. This reclamation has been noted by many—not only from Pennsylvania but also by industry, Government and conservation leaders from other areas including Ohio, Kentucky, West Virginia, Alabama, Illinois, Tennessee, Alberta and Ontario, Canada, as well as Life magazine and the Scripps-Howard newspaper.

Recognized by many as one of the strongest in the Nation, Pennsylvania's law requires:

One, a license.

Two, a mining permit and a mine drainage permit.

Three, restoration of the affected area to approximate original contour, to terracing or to an approved alternate use.

Four, the planting of trees, shrubs or grasses; and

Five, the posting of a bond—at least $500 an acre with a minimum of $5,000—to insure compliance with all provisions of the act.

This act has now been broadened to include the strip mining of all minerals, metallic and nonmetallic, and anthracite and bituminous coal, within the Commonwealth. It is now on the Governor's desk for his signature.

I am not going to confuse you with a lot of figures and statistics at this time. Instead I am going to show you photographically that strip mining can and is being done in Pennsylvania without devastation of the landscape and water. If it can be done there, it can be done elsewhere.

Now I show you my slides, gentlemen. I want to show you this, in Pennsylvania we did have a lot of devastated land. (Slide.)

This is what we used to have in Pennsylvania, gentlemen, they used to walk away and leave it in Pennsylvania. (Slide.)

Here is another area, just walked away and left it like this. (Slide.)

Here is more of it. I am going to go rapidly through this to show you what they left in Pennsylvania. (Series of slides.)

Whole areas of the county are laid waste. (Series of slides.)

It is no longer allowed to be left that way. Now I will show you as we go through. (Slide.)

Here is an area where the plot in front of you has been restripped and used as farmland. Across the hill on the next vale there is a strip mine and they are going to put the topsoil back on there. You will see this as we go along. (Slide.)

This is a big operation. This is from right to left now showing the operations as it goes down the hill. (Slide.)

There it is. (Slide.)

In Pennsylvania we make them backfill as they go. We do not let them have big, long cuts. When we have big, long cuts all we get is this. (Slide.)

We don't get the acid burning materials exposed and laminated and broken down. The result is we have beaten our acid problem by 95 percent by making them backfill as they go.

Senator Moss. You mean right behind it?

Mr. GUCKERT. That's right, they only operate 1,500 feet and they must go and backfill that and then go again. (Slide.)

We have done a beautiful job in Pennsylvania. I am no friend of the strip miner, but when they are doing a good job you have to admire them. (Slide.)

Here is where they are pushing the topsoil back. (Slide.)

This is farmland they are putting back. You notice in the place in front of you where I showed the part that was strip mined and I told you it was backfilled. (Slide.)

That is still the same area, sir.

Senator Moss. That was once a strip mine?

Mr. GUCKERT. Yes. (Slide.)

There is the corn patch. Now they are coming back and putting the topsoil over this operation. (Slide.)

First of all, the reason we do this, first of all you have fertile soil impregnated with weed seeds and grass seeds. The minute they spread it out you get vegetation and the result is vegetation immediately and not erosion.

Now, this is the far end here. (Slide.)

Here is another area in Pennsylvania where we saved the topsoil. (Slide.)

This had been strip mined and backfilled. Now, when they cover that material with good topsoil, we don't have any acids, discharge comes off. (Slide.)

This shows the same operation way up through the vale. (Slide.)

This area here, this was taken in around April, they had corn growing on this already this year, sir. This is fantastic. (Slide.)

Here is another operation in Corsica, Pa. This is where they are putting the topsoil back on it now. (Slide.)

Well, here they are putting the topsoil back. You see them right in front of the picture here; you will see the combination material, black, waste material. They are going to spread the topsoil on this and we will have grass growing on it in no time. (Slide.)

We make them bury the carbonation material in Pennsylvania. (Slide.)

Here is a mountain area. They say you can't backfill a mountain. Here is a mountain area, that is a job in the mountain.

Senator SCHWEIKER. I think that is a very important point.

Mr. GUCKERT. Here is another region where we have mountainous area. This had been a 95-foot-high wall here.

Senator SCHWEIKER. Some arguments are made that you can't do this same kind of thing in a mountain area and I asked Bill to show the mountain slides.

Mr. GUCKERT. What the operators have to do, gentlemen, is change their method of operation. As had been in the past, all they are doing is forming the contour of the mountain around. They ought to change their method of operation and go into the mountain as far as they can and throw the spoil behind them. Each day all they would have would be the spoil from the day before.

(Slide.)

This shows us the mountain, looking ahead. Way out as far as you can see there is strip mining in the back field. Contour of the mountainside. Way out in the background there.

(Slide.)

Here is an area where they said you can't make lakes. Here they are making a lake right here in Pennsylvania. We make them grade the lake area before they put the water in.

(Slide.)

This is a formation of a lake. Here is an area here where they have gone back and recovered. This is an old effected area where they had the old high wall previously; the operator is going back in there and, when they reeffect the area, they must level off. In Pennsylvania, 78 percent of our land, or orphan lands you call them, are going to be reclaimed by industry.

(Slide.)

It is leveled off here.

(Slide.)

Here is another area down below, the old effected way. Making them go in there and cutting it out we eliminate the acid discharge from this area.

(Slide.)

There it is leveled out.

(Slide.)

This is along 79 Interstate Highway.

(Slide.)

Here is another area in the mountains, looking back through the wood area.

(Slide.)

Here is another one.

(Slide.)

Now, here, gentlemen, is way in the mountains. This is Clearfield County where we had one of our worst problems. The strip miners have gone back in there now.

(Slide.)

This area to the left has been strip mined and they are replacing the topsoil.

(Slide.)

He is pushing the topsoil back, up on this other area. You see he puts it in in blocks. He keeps putting it back and brings the land back so it is of some use.

(Slide.)

This is in the middle of the worse devastated areas that we had in Pennsylvania. Here is an area where the strip miner is working on five seams of coal on the mountainside. There are three or four shown there and one down the other side of the ring.

(Slide.)

Right behind them here is where they are backfilling. Here it is with topsoil on it. What do you think of that? That is right in the mountain area. They could do it in Pennsylvania; gentlemen, they have done a beautiful job.

(Slide.)

Here are some representatives looking over some of the areas. This is right in the vacation area. They strip mine between the two roads.

(Slide.)

This area in the back where you see green has already been strip mined and on the right they are going to build a lake. This is where grass has been planted already.

(Slide.)

Here is the formation of the lake. They are going to form a lake here.

(Slide.)

There they are planting around it.

(Slide.)

More planting.

(Slide.)

Here it is with the lake in it. Gentlemen, that makes land valuable. That piece of property there is worth five times what it was before.

(Slide.)

This shows you the back end, where we make them keep a diversion ditch around to keep the water away from these areas.

(Slide.)

Here it is when the diversion ditch is leveled off. Now, this end has to be planted yet.

(Slide.)

This is a group from Virginia in there looking over these areas. They said they couldn't operate in the mountains. After they saw Pennsylvania they said they could.

(Slide.)

This is an area here in front of you that has been all strip mined. This whole vale on both sides has been pretty finished. On both sides of this valley it had been strip mined. This was taken in the first part around April.

(Slide.)

There it is in August. You notice there is a corn patch growing right here where they have been strip mining before. I will back it up again.

(Slide.)

There it is. Look at the trees way out in the end.

(Slide.)

There is the corn patch growing on it. I am not kidding you fellows, I am telling you. I am not showing you one showcase area, we have thousands of them.

(Slide.)

Here is another area where you start to form a lake. People say you can't have a lake without letting the highway stand in. You see way in the back they are starting to grade the areas. They grade these things in.

(Slide.)

Here is more grading. This shows you a lake being built up. You don't have to have the highwalls. It is a joke just to get away from a backfilling.

(Slide.)

Here is an area that they were complaining about. This is in California, Pa., and they said they couldn't put a backfill in there.

(Slide.)

Look how steep it is—they put the land back and planted it right away. That is an old highway and these people went in and reeffected it and did the job.

(Slide.)

Here is an area where we have a problem with acid. We don't let them operate in the area unless they come up with an answer to it. This company saved the topsoil and are putting it back over this area. Those big mountains you see in the background are topsoiled. Seventy percent of your water will be cut off by using the vegetation on the surface and we eliminate the acid problems up there. This company has better than 100 acres in this particular operation and they are putting 13 or 14 inches of topsoil on it. There they are spreading it out.

(Slide.)

This just shows you how they are sloping it down the back side. You can already see the vegetation growing in there even though it is all planted. That your fertile soil plus your weed seeds and grass seeds in it.

(Slide.)

Here is another pile on the left.

(Slide.)

Here is where they are sweeping it off ahead of the operation.

(Slide.)

There is your operation where it is being leveled out, sir. They are doing it.

(Slide.)

Here is the operation on the right-hand side where we saved the topsoil. On the left we did not. On the left-hand side they did not—the same kind of backfill. But look what we get when we save the topsoil.

Senator Moss. Well, you make your case pretty well, I think.

Mr. GUCKERT. I can give you one more that will give you a good illustration of jobs—as I say, I can talk to you all day, sir.

Senator Moss. I don't think so. (Laughter.)

Mr. GUCKERT. Slide.

Here is an operation, just shows you how they tore it up.

(Slide.)

Here it is backfilled.

(Slide.)

Here is an operation along the highway, industry has done this now.

(Slide.)

Here is the road.

(Slide.)

Here it is a year later. I will back it up again; you guys don't believe me, I don't think.

(Slide.)

There it is, there is the road.

(Slide.)

And there it is again.

(Slide.)

Here is another area and here it is 6 years later. Look at the big trees. If you don't believe me look at the telephone pole in the background.

(Slide.)

There it is.

(Slide.)

This shows some backfill.

(Slide.)

Here is an area here with a 35-foot highway, sir. This is on a mountain. I had to back up to get a picture of it.

(Slide.)

There is the finished product. They can do it.

(Slide.)

This area here is in Pennsylvania, where we make them put up a sign stating the company and the mining permit. So anybody who wants to complain about it—they know who it is. Today they have to put up a sign so if anybody has a complaint they can find out right away. In this case here a fellow blasted a rock through the roof of the house there. What happened was the operator had to put a new roof on that house. Look at the house. The house is still that way 5 years later; it is still the same way. The area behind had been strip mined and put into a rye field. There it is.

Here is an area that had been strip mined and the following year put in to winter wheat. This is the top of the mountain of Clearfield County. That man had 1,500 acres in there. This is the type of terraced backfill we used to allow but we ruled it out. We don't allow it any longer. We got acid discharge from the highwalls and got problems. From now on it is away from the highwall. This is the type of terrace we like. This shows you the trees growing in some of the stripped area. Some people say it looks like just a farmer's garden. That is a catch in the strip mined areas. Today you can't go in this, that is how thick the trees are. This area here we saved the topsoil and you can see the pour shovel in the background that is going to finish all the rest of the pit. This has already been strip mined.

Here is another portion put into a wheatfield. Here is an area in Butler County. There it is as backfilled. Here it is 5 years later. The only thing that has changed is the barn, the patch on the roof. But it is the same picture. In other words, they are putting it back.

Now here are other areas. Here is an area where we caught a guy operating illegally and we make him terrace this area.

Here is an operation, this whole area, gentlemen, up along the trees, on the hillside, behind the farmer's house has already been strip mined and planted and this is the end of his operation down in the vale. We asked him to put a lake in there. There is the lake. Here it is when he planted it. Here it is 2 years later. That whole area has been strip mined.

This is what we are doing in Pennsylvania and, gentlemen, I know they are doing a beautiful job.

Senator SCHWEIKER. Do you have any figures on cost? Could you mention cost at all?

Mr. GUCKERT. The only cost we can go by, in Pennsylvania the strip miners themselves put the cost on their own operations. They run anywhere from $250 an acre up to $500 an acre and some of them up to $750 an acre with real high terrain, but the strip miners are doing an excellent job and it can be done but the only way you are going to do it is if you make them do it.

In Pennsylvania before we passed the law, they said it was going to put them all out of business. Gentlemen, it hasn't. We have more operators than we had before.

Senator Moss. Thank you, Mr. Guckert. Those pictures are indeed worth ten thousand words because they show the restored land. I share some of your enthusiasm for what has been done in Pennsylvania.

What about the orphan lands, are you going ahead on those?

Mr. GUCKERT. In reeffecting those areas they are also taking care of the orphan lands. When they come in and make another cut, it immediately comes under the new law.

Senator Moss. Do you have some orphan lands where there are no coal seams left and there is nobody to do the contouring?

Mr. GUCKERT. We have a bond issue up there but it can only be used on public lands, to restore public lands. We don't on private lands. Now, on private lands it has an acid discharge. We can tell them to clean it up or else, or we can put a lien on their property.

Senator Moss. I see. So that is one way you are dealing with some of these areas.

Mr. GUCKERT. If I could just take a moment longer, here is an operation on a farm that already has been completely strip mined. Clean to the top of the hill. Here it is, the farmer even got a new house out of this. Here it is the next summer.

Senator Moss. Yes, those are dramatic pictures.

Mr. GUCKERT. Here are some lands we left in Pennsylvania there.

Senator Moss. I will come out and go fishing with you.

Mr. GUCKERT. There is one here I want to show you. Here it is, I passed it. Here is one on the hillside where we used an oblique method operating into the hillside. On this operation, when the man backfills along this particular area, within 2 weeks after he takes the last coal out, it is completely backfilled. Look how he went between those trees. This is a difficult operation. The operators from other States tell you they can't do it, right, like that. OK, I quit. (Laughter.)

Senator Moss. We certainly appreciate that presentation, Senator Schweiker.

Mr. GUCKERT. My recommendations are on the bottom of that, but you can read that.

Senator Moss. I see that and that is in the record in full. I am pleased to have your testimony pointing out what has been done and is being done in Pennsylvania.

Your presentation indicates that with the proper regulations we can restorate the land and in some instances the land may even be improved over what it was before the coal was taken out.

I think the view of the majority is that strip mining is an economical and perhaps safer way to get the energy that we need.

Senator SCHWEIKER. I think the point Mr. Guckert made was some of this land is worth three or four times as much as it was strip mined. So I think that totally refutes this ban on strip mining because here we increased the value of the land and actually made a prettier landscape. So I think that is a very good rebuttal, that is why I asked Bill to come today with the pictures.

Mr. GUCKERT. Another thing, gentlemen, I point out to you is that a lot of people, if you go into a lot of statistics they just show you a showcase area. If any of you men want to come up in the Pennsylvania area, I will take you to the bituminous area and any place you want to go. They are doing a beautiful job. You can't tell where they strip mined.

Senator Moss. Well, I suppose there may be some areas which will not lend themselves to strip mining. Your answer to that would be not to issue the permit in the first place?

Mr. GUCKERT. Yes. If they can't put it back they can't take it out.

Senator Moss. And the State would control that by refusing to issue a permit?

Mr. GUCKERT. That is right. We had one operator come in that wanted to go on a big steep hillside; we let him go in and he threw the dirt down and we said now get it back up. He never did it again. He didn't go any place like that any more.

Senator Moss. It is a hard lesson, but I suppose he learned.

Mr. GUCKERT. It was a costly lesson.

Senator Moss. Yes, a costly one. It would be to the advantage of the operator if the State refused to issue the permit.

Mr. GUCKERT. That is right. If it is on a watershed, the water supply, we don't let them go in those areas. I am not a friend of the strip miners but as I said I am interested in the public. I am interested in the strip miner restoring the land at the strip miner's cost and not the taxpayer's cost.

Senator Moss. Thank you very much.

Senator Jordan.

Senator JORDAN. So far you have been talking about what you do prospectively. Now, you have been mining there for 100 years. What do you do with those abandoned lands that have been mined and walked away from?

Mr. GUCKERT. Under the new law we don't have any of that any more. You are talking about the old law. In the old law there were just one or two cuts around the hill and the result is they had small equipment. Today they have big equipment and made additional cuts and they take care of this.

Senator JORDAN. I am talking about the old lands that were mined 100 years ago.

Mr. GUCKERT. Not strip-mined lands 100 years old; I don't think so. But what I am getting at is this. I will tell you this: In Pennsylvania, there at Pittsburgh, where we have strip miners today going in and taking 150-foot cuts, taking all of the old deep mines out and using them for sanitary fills, a lot of these areas.

That is going to save the taxpayers in Pennsylvania billions of dollars.

Senator SCHWEIKER. Well, we have some reclamation projects going on the old lands that were strip mined before 1963. He is talking about land strip mined before 1963.

Mr. GUCKERT. We don't backfill that any longer. We used to. On a bond issue the money has to be used on publicly owned lands, or if it is hazardous to the public, the State will go in and tell the owner to clean it up or the State will do it. If the State comes in to do it they will place a lien on the property for the improvement of the property.

Senator JORDAN. Thank you.

Senator Moss. Thank you very much.

Gentlemen, we exceeded our time limit but it was certainly interesting and informative. The slides illustrated the point well. Thank you.

(The prepared statement of Mr. Guckert follows:)

STATEMENT OF WILLIAM E. GUCKERT, DIRECTOR, MINE RECLAMATION DIVISION, BUREAU OF LAND PROTECTION AND RECLAMATION, DEPARTMENT OF ENVIRONMENTAL RESOURCES, COMMONWEALTH OF PENNSYLVANIA

I am William E. Guckert, director of the mine reclamation division of the Pennsylvania Department of Environmental Resources.

My interest in the reclamation of strip mines began many years prior to my assuming this position. As a landowner in both Butler and Allegheny counties, two coal producing counties in our State. I realize the necessity of strong reclamation laws for this industry. As executive secretary of the Allegheny County Sportsmen's League, I took an active part in the fight for, and the enactment of, strong strip mine recalmation laws.

With the enactment of such legislation in 1963, one provision of which created a land reclamation board, I was appointed by Governor William Scranton as the conservation member of this board. I served in this capacity until Governor Shafer asked me to accept the position in which I am now serving.

Pennsylvania can be proud of the accomplishments achieved in the enforcement of this act. Each year in excess of 10,000 acres are affected and restored to approximate original contour or to terracing. This reclamation has been noted by many—not only from Pennsylvania but also by industry, government and conservation leaders from other areas including Ohio, Kentucky, West Virginia, Virginia, Alabama, Illinois, Tennessee, Alberta and Ontario, Canada, as well as Life magazine and the Scripps-Howard newspaper.

Recognized by many as one of the strongest in the Nation, Pennsylvania's law requires:

1. A license
2. A mining permit and a mine drainage permit
3. Restoration of the affected area to approximate original contour, to terracing or to an approved alternate use
4. The planting of trees, shrubs or grasses; and
5. The posting of a bond—at least $500 an acre with a minimum of $5,000—to insure compliance with all provisions of the act.

This act has now been broadened to include the strip mining of all minerals, metallic and non-metallic and anthracite and bituminous coal, within the Commonwealth. It is now on the Governor's desk for his signature.

I am not going to confuse you with a lot of figures and statistics at this time. Instead I am going to show you photographically that strip mining can and is being done in Pennsylvania without devastation of the landscape and water. If it can be done there, it can be done elsewhere.

SLIDE PRESENTATION

Recommendations

My recommendation to you is that the U.S. Congress pass a strong, uniform surface mining law similar to that recently passed in Pennsylvania. However, it should differ in one respect. The act should set the standards, requirements and penalties, but the responsibility for enforcement should be with the individual States. If the State does not enforce the provisions of the act, then the enforcement would revert to the Federal Government. This would prevent duplication of efforts in controlling surface mining.

Senator Moss. We will now hear from Mr. William B. Davey, Deputy Administrator for Field Services, Soil Conservation, Department of Agriculture.

STATEMENT OF WILLIAM B. DAVEY, DEPUTY ADMINISTRATOR FOR FIELD SERVICES, SOIL CONSERVATION, DEPARTMENT OF AGRICULTURE

Mr. DAVEY. Mr. Chairman, that is going to be a hard act to follow. I have a short statement, Mr. Chairman, I would like to make.

It is a privilege to appear before you on behalf of the U.S. Department of Agriculture on the matter of surface mining.

The Department of Agriculture has had a long and continuing interest in the impacts of mining on the surface of our land. Under Federal mining laws and related acts, mining is an authorized activity in the national forests and national grasslands. Mining also takes place on privately owned land, frequently intermingled with public lands, on which department agencies provide assistance in the conservation and development of soil, water, and related resources. So, the department has been involved with surface mining on both public and private lands for a number of years.

Scientists of our soil conservation service and forest service also were involved in the national study of surface mining required by Public Law 80–4. Much of the basic data for developing the report submitted to the Congress in 1967—Surface Mining and our Environment—was contributed by the field forces of these agencies.

While we concur with many of the provisions and objectives of the various bills introduced on this subject, S. 77, S. 630, S. 1160, S. 1240, S. 1498, S. 2455, and others, we recommend the enactment of S. 993, a measure proposed by the administration. The program envisioned in S. 993 would be directed toward future mining operations only. It would be a Federal-State cooperative program administered by the Secretary of the Interior.

We endorse the concept of maximum involvement of the States as the way to deal with the local diversity of mining problems. The Department of Agriculture's long and successful experience in cooperative Federal-State-local resource development and management programs provides ample testimony to the wisdom of this approach.

The Public Law 566 small watershed program, the cooperative farm forestry management program, resource conservation and development projects, and the Great Plains conservation program are specific examples of successful cooperative programs of private landowners and local and State governments assisted by the Federal Government.

We are pleased to note that S. 993 recognizes the desirability of using the experience and competence available in the Department of Agriculture. The bill provides that USDA serve on the advisory committee for developing guidelines for the States. It also provides for utilizing the services of the Secretary of Agriculture in matters relating to the reclamation of areas affected by surface mining. These are, in our opinion, desirable features of the bill.

Unfortunately, it is not always practical to avoid or eliminate all adverse impacts of mining on the environment. But the Nation's rising demand for energy and for certain other resources make a continuation of mining operations unavoidable. We are convinced, however, that surface mining can be conducted in ways that will minimize the major damages that adversely affect the environment and that affected lands can be promptly restored.

If action is taken now, an increase in the large backlog of unreclaimed land can be avoided. Further offsite damage, including contamination of water resources, also can be avoided and further devastation of our countryside can be substantially reduced.

Mr. Chairman, this concludes my statement. I will be glad to answer any questions, if you have any.

Senator Moss. Thank you, Mr. Davey. I appreciate that statement and we are glad to have you testify.

I have, perhaps, just one question. You indicated that you favor and endorse S. 993 over the other bills before us. I wonder, in view of the expertise of the Department working in cooperative programs and the desperate need there is for some regulation and control of surface mining immediately, why do you endorse the 2-year delay involved in S. 993 before any Federal action would be authorized?

Mr. DAVEY. It is the position of the Department that the States would have this opportunity to develop adequate regulations and guidelines for their operation. I believe the idea was it would require this much time on a national standpoint to get this done. Some States we view, and I think this presentation today, are somewhat further advanced in their work on this particular matter, where others have a ways to go yet.

So, it was envisioned that it would probably take 2 years to effect this.

Senator Moss. With reclamation experience such as we have seen in slides from Pennsylvania and some other States, too, why couldn't we develop guidelines right away so that the States could put it into effect? This lapse of 2 years is what I am concerned about.

Mr. DAVEY. It was a matter of judgment. Some States would have to develop competence within the State in terms of getting people knowledgeable of this type of situation and working toward the promulgation of regulations. Some of it may require legislation on their part, some legislatures meet only every 2 years. There are a number of factors involved that indicated perhaps a 2-year period would be best from a national overall standpoint.

Senator Moss. Well, I just wanted to get your viewpoint on that.

The bill that I sponsored has a 6-month period and I wondered if that wasn't adequate to get the guidelines out and begin the compliance of the States.

I am glad to have your point of view. I don't know if my colleagues have any questions?

Senator JORDAN. No questions.

Senator Moss. Senator Hansen?

Senator HANSEN. Just one question, Mr. Chairman.

It occurs to me that perhaps part of the response that is implicit in your answers to Senator Moss is contained in the first sentence on the top of page 2. You say: "We endorse the concept of maximum involvement of the States as the way to deal with the local diversity of mining problems."

I interpret your answer to imply that if we are to get the involvement of the States that it will require the 2 years time that you speak of, and if we were to try to shorten that or to take steps immediately, we could not hope to get the State involvement that you feel is crucial and which is further fortified by your appraisal of the success of Public Law 566 small watershed program, and the cooperative farm forestry management program.

Each of these programs, I gather, are cooperative programs between the Federal Government on one hand, and the State or individuals on the other, am I right about that?

Mr. DAVEY. Yes, sir; exactly.

Senator HANSEN. Thank you, Mr. Chairman.

Senator Moss. Thank you, Mr. Davey, we appreciate it.

Senator Moss. Our next witness will be Carl Bagge, president of the National Coal Association, former commissioner, and a gentleman with a great deal of background in the field we are discussing.

I notice you have a very lengthy statement prepared and that will be placed in the record in full.

If you will identify your associates who come to the table with you, I will be very glad to hear from you.

STATEMENT OF CARL E. BAGGE, PRESIDENT, NATIONAL COAL ASSOCIATION; ACCOMPANIED BY EDWIN R. PHELPS, PRESIDENT, PEABODY COAL CO.; RALPH W. HATCH, PRESIDENT, HANNA COAL CO.; AND PAUL MORTON, PRESIDENT, CANNELTON COAL CO.

Mr. BAGGE. Thank you very much, Mr. Chairman and members of the subcommittee.

My name is Carl Bagge, president of the National Coal Association, a nationwide organization whose producer members mine coal in 22 of the 24 coal-producing States, including both underground and surface mining operators.

I am accompanied by three outstanding executives of the coal industry who represent different mining areas of the country. They are industry leaders who are not only dedicated coal producers, but are also equally committed to sound, effective reclamation that returns surface-mined lands to productive use. They are most familiar with the tremendous strides which have been made in the past few years in reclamation technology.

Gentlemen, it is my pleasure to introduce Mr. Edwin R. Phelps, president of the Peabody Coal Co., the largest coal company and the largest surface mining operator in the country; Mr. Ralph W.

Hatch, president of the Hanna Coal Co., which has been involved in reclamation work in Ohio since 1941, prior to the enactment of any State reclamation law; and Mr. Paul Morton, president of Cannelton Coal Co., which is presently involved in reclamation efforts to provide large areas of level ground in the West Virginia mountains suitable for community development, crops, grazing, or reforestation in a State where such land not only is at a premium, but where community development is presently constrained by natural topography.

Mr. Chairman, we appreciate the opportunity to appear before this committee to present the position of the coal industry with respect to the bills introduced to insure the reclamation of mined lands. We propose to have each of these gentlemen present a statement covering the different aspects of surface mining and reclamation that exist throughout the country. I will then summarize the industry's position on the proposed legislation.

Of course, it should be clearly understood that our remarks are addressed only to the mining of coal and the reclamation of the lands disturbed by such operations.

May I call first Mr. Phelps, president of Peabody.

Senator Moss. We welcome all of you gentlemen to the committee and look forward to your presentation.

Mr. PHELPS. My name is Edwin R. Phelps. I am president of Peabody Coal Co. in St. Louis, Mo., which is the largest producer of coal in the United States. Peabody is also the largest coal surface mining company in the country and the largest reclaimer of mined land.

Gentlemen, good reclamation of surface-mined land is possible. I know, because we are doing it. Peabody Coal Co. is doing it today on behalf of the coal industry. So are many others for whom we have been asked to serve as spokesmen.

The problems of reclamation are divided into several parts. Let us narrow our subject.

One of the problems is that of the so-called orphan banks, which were mined years ago when there were no legal requirements or public demand for reclamation and often not enough knowledge of how to accomplish it. In many cases, the companies which mined these lands are no longer in business. Ownership may be difficult to trace and responsibility impossible to fix. These lands are in many cases the unsightly and eroded acres which draw public criticism today.

However, I understand most of the pending bills deal principally with the regulation of active strip-mining operations and reclamation in the future.

The signs of old surface mining which are still visible today, however, may not be just symbols of neglect. We in the coal industry have made some mistakes, for land reclamation has not been a science we could extract ready made from textbooks. We have had to evolve it the hard way, on the land—and, to paraphrase an old saying, "Doctors bury their mistakes, architects grow ivy on theirs, but some of ours are highly visible." We have made mistakes—but we have tried not to repeat them. We have learned, and applied our lessons elsewhere, and shared our experiences freely.

It is ironic that our failures are obvious and subject us to much criticism, while our successes quite literally blend into the landscape. For we have succeeded in reclamation often and dramatically, and our performance is constantly improving.

In Illinois, for example, there are thousands of acres of grain and cattle farms on land mined by Peabody Coal Co. or other coal companies. These are not parks or showplaces or Disneyland farms, but real dirt farm operations, supporting a full-time rural population.

However, let me make it clear that the results we can produce in the favorable soil and climate of Illinois cannot be duplicated in every area we mine.

We are proud of the Peabody reclamation program, but it is by no means unusual in the industry, except for its size. The other coal operators here to testify today have successful records of reclamation also, and they are typical of the responsible companies of the industry.

In candor, I cannot claim that the whole industry's record in reclamation has always been as good as its performance is today. The history of the coal industry has been one of intensive price competition—not only coal versus oil and gas, but one producer's coal competing against many others, and principally on the basis of price. Profit margins have been thin, and the producer who diverted some of his profits to reclamation was at the mercy of any competitor who did not.

It is greatly to the credit of responsible coal companies, therefore, that they undertook as much reclamation as they did. I can show you trees on mined land that are 40 years old—trees planted by man, not volunteer growth. Leading coal companies recognized their responsibility, and met it, to the extent they could afford, before there were State laws requiring them to do so.

State laws have helped, however, for they compel the reckless and haphazard operator to meet the standards or lose his license and forfeit his bond. Unfortunately, there are such persons in the coal industry, in about the same proportion as in any other business—or in the human race.

Good State laws, fairly enforced, have proved to be protection for the responsible operator against the corner cutter. Therefore, we support Federal legislation to reinforce State control of surface mining by providing Federal criteria and guidelines, with the States enforcing their laws.

When I say we are doing good reclamation in the coal industry, the statement somehow fails to convey the scope on which we are doing it. In 1970, according to a National Coal Association survey of State agencies and other authorities, reclamation was completed on more than 58,000 acres. This means the land was graded, planted, and the prescribed percentage of the resulting vegetation survived one or two growing seasons, as State law requires, and that State inspectors approved the work and returned the operator's bond.

By the same criteria—approval of reclamation work and refund of the bond—reclamation was completed on 64,000 acres in 1969. And in 1968, the total was more than 72,000 acres.

This naturally leads to the question of whether the industry mined more land that it reclaimed. For 1970, the answer is probably yes—but the land mined in 1970 will show up in the statistics of approved reclamation in 1971, 1972, or whenever the work is done to the satisfaction of State inspectors.

We are pretty sure that the 64,000 acres reclaimed in 1969 exceeded the amount mined—and we are positive that the 1968 figure of 72,000

acres reclaimed was far more than the amount of land disturbed in the surface mining of coal in that year, because the industry caught up with back work in some areas.

Let me talk a few moments about my own company. Peabody operates 43 mines in 11 States. Most of these are surface mines, though we also operate 11 underground mines, including one of the largest in the United States. They range from Alabama to Arizona, and from Montana to Ohio. Obviously, we encounter a tremendous variation in the types of soil we must cope with, the vegetation indigenous or adaptable to the land, the amount of rainfall, the climate and the length of the growing season.

But we are serious about reclamation, and for each mine we evolve a detailed reclamation plan leading ultimately to beneficial, productive use of the land after mining. Because we are serious about it, we call on trained professionals. We have on our staff 14 men who work full time supervising our reclamation program. These men are agronomists, engineers, and foresters with wide experience, and we vest them with authority to make sure that the job is done right.

In addition, we make reclamation part of the responsibility of every mine superintendent and every divisional vice president. Thus the job of reclaiming land is a management responsibility on every man who is also responsible for producing coal by surface mining.

Peabody planted 4,000 acres to trees and wildlife shrubs last year, and 8,000 acres were seeded to grasses and legumes.

Because of the wide range of topographic and climatic conditions we encounter, no single set of regulations can possibly do an adequate job of regulating reclamation. The productive farms we have created on mined land in Illinois obviously cannot be duplicated in the high, dry climate of our mines in western Colorado; in Colorado we restore mined land to good rangeland which is the same use made of unmined land in the adjacent areas.

It is for this reason—the diversity of conditions—that the coal industry has traditionally opposed Federal legislation concerning surface mining and reclamation. However, the industry now operates under State laws in nearly every State in which coal is surfaced mined, and in general these are laws tailored to local conditions.

Therefore, the responsible companies of the coal industry now support reasonable Federal legislation which will enable the States to do a more effective job of regulating surface mining and reclamation. We believe fair and reasonable regulation, uniformly enforced, can and will allow the continued production of coal for the national interest and will assure that all operators—including some who might otherwise shirk their duty, to the detriment of the whole industry and the Nation—follow good reclamation practices.

And that brings up a question, what is good reclamation? If the law is to require it, we must agree on a definition.

To my mind, good reclamation is an integral part of the mining process. It involves planning the final use of the land before the first ton of coal is mined and scheduling the mining process to help bring about the use of that land. It means following that plan during mining. It means following up the mining process as soon as practicable to shape the land, stabilize it against slides and erosion, and to revegetate the surface.

The goal is to restore the land to productive, beneficial use—a use consistent with the nature of the soil, the topography and the climate, and with the uses of nearby lands. And this should be achieved as soon as reasonably practicable, consistent with the need for the ongoing mining operation, and with the growing seasons.

All too often it is forgotten that mining coal is a productive use of the land for man's benefit. It takes the land out of other uses—growing timber, or crops, or pasture, or simply providing esthetic satisfaction as scenery—for a few seasons. But the land should be returned to another productive use, and this is being done. There is a timelag, but it need not be long; time to get the mining machinery out of the way, to reshape the earth and plant it, and time for the vegetation to grow.

This timelag, as much as we try to keep it brief, is the cause of much of the criticism of surface mining. Anyone who has seen an active mining operation knows it is ugly. Torn-up earth is not pretty, whether it occurs in a surface mine in the coal fields, or on a downtown Washington street where a subway is under construction.

The first questions should be whether the disturbance is necessary. In the case of coal, it is vital. The second question is whether the disturbed areas will remain after mining. In the case of coal, these lands will be reclaimed for useful purposes.

In this age of renewed concern for the environment, surface mining has become a highly controversial issue. Some critics say surface mining of coal should be prohibited entirely, and there are bills before this committee which would do just that. Without arguing at this time the rights of the coal industry in the matter—though we have substantial rights at stake—I simply point out that prohibiting surface mining would bring on a national emergency in a matter of weeks.

The United States is facing a long-term energy crisis. Coal production has been steadily increasing to meet our energy requirements and nearly 44 percent of the coal produced last year came from surface mining.

Coal is the principal fuel for electric generating plants; nearly half their electric output is derived from coal. Surface-mined coal constitutes almost 60 percent of the coal burned by the electric utility industry and accounts for 28.2 percent of all the electric power produced in this country.

To foreclose this fuel supply to the crucially important electric utility industry is unthinkable. More to the point, it is unnecessary. Supporters of the legislation argue that land cannot be reclaimed after mining, but the fact is that it can be reclaimed and is being reclaimed.

Then, if we must have coal, must it be from the surface mines? The answer is yes. The United States has enormous resources of coal—the greatest reserves in the world—but a great portion of these reserves can only be produced by surface-mining methods. They lie under earth strata too shallow, or too unstable, to support a roof safely, so they cannot be recovered by underground methods.

It is true that there remain vast coal reserves which can be mined by underground methods, but there are serious limits on the expansion on underground mining. To open an underground mine requires at least 3 years. Production from deep mines is, in general more costly, less efficient, and more hazardous than surface mining. About half of the

coal must be left in place in a typical deep mine to support the roof, whereas recovery of coal in a surface mine approaches 100 percent, and thus conserves our natural resources.

The coal industry believes the legislation should not include the environmental regulation of underground mining. The Congress has enacted the world's most stringent Coal Mine Health and Safety Act. the effect of which has borne most heavily on underground mines.

I am not here to argue the merits of the act, but it has substantially increased the cost of underground mining and lowered the output per man-day. The problems of underground mining are bound to increase further, for still more stringent limits on coal dust in the air of underground mines are due to go into effect next year, and other features of the act have not yet been fully implemented.

Furthermore, the coal industry is suffering a manpower shortage in underground mines; although the rate of pay of miners ranks among the highest industrial wages in the world, many companies are short of men with the skills and training necessary to operate and maintain modern mining machinery, or with the background which would allow them to adapt to such training.

Under these difficulties, the production of coal from underground mines actually decreased in 1970 by 2.4 percent, while the output from surface mining increased by 24 percent.

I do not wish to belabor this point, but to illustrate the fact that the simplistic solution of switching production from surface to deep mines would not be possible.

The United States not only must continue to have coal, in increasing amounts, but a major portion of that coal must come from surface mines. Surface-mined coal is a public benefit. The needs of our society demand it. Reclamation technology exists. The question then becomes how to achieve that benefit at the least cost to society—a cost measured both in dollars and in the effects of mining on the environment.

We believe that the principles of some of the pending bills show the way to effective regulation of surface mining and reclamation, with the affected States applying regulation drawn for their areas with the help of Federal criteria and guidelines. This practice seems to be working well in the control of air and water pollution.

There are some points we wish to make for your consideration. Other witnesses will discuss them in more detail, but I would like to mention some of them briefly.

The question of subsidence from underground mining is extremely complex and completely unrelated to surface mining and reclamation and, as mentioned above, should not be included in this legislation.

In addition, such matters as water or air pollution, which might result from coal mining operations, should continue to be handled as part of the appropriate water or air pollution statutes and not in this legislation. Enacting a new structure or regulation on top of these laws would be redundant, confusing, and unnecessary.

The creation of overlapping jurisdiction invariably gives rise to conflicting approaches that add little to the solution but a great deal to cost.

Some of the bills contained undefined references to the "environment" and "natural beauty." I recognize the good intentions behind

these terms, but they can be mischievous in effect. Beauty is indeed in the eye of the beholder and impossible to define. Nature created the Bad Lands of South Dakota and they were made a national monument, but if any surface miner duplicated them even on a small scale, it would be called a national disgrace. Requiring that lands be returned to productive use can be enforced; requiring that they be restored to a natural beauty makes enforcement a matter of taste.

So long as the land is returned to productive use, the choice of that use should be left to the mine operator, or in the case of leased land to the agreement between the operator and the landowner.

Peabody Coal Co. has attracted much attention, not all of it well-informed, by its surface mine on the Black Mesa in Arizona, where we have leased the mining rights from the Navajo and Hopi Indian Tribes in order to supply coal for the growing power needs of the Southwest.

The Black Mesa contains about 2 million acres; we will mine 400 acres a year for 35 years, or a total of 14,000 acres. Grading and reclamation follow close behind the active mining operation. We will restore vegetation to the land. We are seeding not only native grasses, but are experimenting with other species which have succeeded in our arid Colorado mines. These may furnish better forage for the sheep which are the Indian's main source of income. We are also seeding legumes to add nitrogen to the soil. We want—and we expect—to make the land more useful than it was originally.

Rainfall is sparse on the Black Mesa, and much of it falls in cloudbursts. There is evidence that reclaimed land will capture and retain this water better than the undisturbed soil which is often overgrazed and packed hard by sheep. We also plan to divert surface runoff into final mining cuts to create water reservoirs and to build check dams to protect roads against flash floods.

We pay the Navajo and Hopi tribal councils a royalty on each ton of coal mined on the Black Mesa. When the two powerplants supplied by this mine are in full operation, the tribal councils will receive more than $3 million a year, or more than $100 million over the life of our contracts. In addition, the coal operations will supply jobs for some 300 Indians at about $10,000 a year each, making a $3 million annual payroll.

The rights of the Indians—and the environment—are closely and comprehensively protected by the terms of the leases, by the law, and by the supervision of Federal agencies. When we dedicated the mine last year, we made a public pledge: "Peabody Coal Co. intends not only to meet these requirements, but to do all the things which goodwill and common sense indicate are best for everybody living and working on Black Mesa."

Senator Moss. Thank you very much, Mr. Phelps. I just have one question, perhaps, before the next one goes on.

Mr. Andrews of the Black Mesa Defense Fund testified yesterday and he said the reclamation cost of Black Mesa mined land was dependent upon the amount of coal recovered, and the reclamation costs per acre ranged from less than 2 cents to 8 cents a ton.

Do you agree with those estimates of costs and what is your estimate of costs for reclamation of the Black Mesa?

Mr. Phelps. The costs of reclamation will vary according to the amount of coal, the thickness of the coal bed. We talk about recovery

in tons per acre. Of course, the thicker the coal seam the more tons of coal you get out of an acre of disturbed land.

You could very easily take the statement that Mr. Hertz made and divide it and come up with a cost per acre. It is not that simple. You also disturb areas that are not covered with coal because you put the dirt on them, you build roads and so on.

As far as knowing the costs of reclamation at Black Mesa, the mine started in July and we ourselves do not have the costs, so how the Black Mesa Defense Fund knows what it costs, I have no idea.

Senator Moss. Thank you. I was a little puzzled by it, that is the reason I asked the question.

All right, you may proceed.

Mr. HATCH. Mr. Chairman, members of the committee, my name is Ralph Hatch and I am president of the Hanna Coal Co., a division of the Consolidation Coal Co. of Pittsburgh. The Hanna division's operations are headquartered in Cadiz, Ohio, and our mining operations are located mainly in the southeastern part of the State.

In 1970, Hanna mined 12,620,000 tons of coal; 9,234,000 were produced by surface mining. More and more coal is being mined by surface methods in Ohio. In recent years, equipment manufacturers have developed larger and more efficient machinery which has made it possible for operators to keep up with the increased demand for coal. In 1970, the State of Ohio produced more than 55 million tons of coal with almost 70 percent of it coming from surface operations.

The growth of surface mining is not unique to Ohio. Much of our Nation's coal reserves lie close to the surface of the earth and are mineable only through surface methods. The last 2 years have seen a dramatic increase in strip mining in traditional coal States and the opening of new mines in several previously unmined Western States. The results have been twofold; we are producing more coal and we are disturbing more and more land which will have to be reclaimed.

The Midwestern coal-producing States—such as Indiana, Illinois, and Ohio—present reclaimers with an easier task than do the more mountainous areas of Kentucky and West Virginia. In steep hills, operators contour mine until the height of the highwall prevents them from going any further. In more rolling relatively flat areas we can extract coal from a much wider expanse of land through a process known as an area mining.

The terrain in southeastern Ohio, where my company operates, requires a type of mining with characteristics of both contour and area mining. Usually the coal lies 10 to 115 feet under the surface of the ground. Operators remove the overburden—the layer of rock and dirt covering the coal—with the help of power shovels or draglines. These earthmoving machines stack the dirt in a ridge next to the exposed coal seam, then smaller power shovels load the coal into waiting trucks. The next layer of overburden is stacked where the coal has just been removed and the procedure is repeated. As the operation proceeds, the dragline, or shovel, leaves behind it a series of ridges of overburden.

We recognize that it is not the easiest task to reclaim the land disturbed by surface mining. Nor is it impossible. Like any construction site, the land is subject to erosion, devoid of any vegetation and may contain materials which impede new growth.

Theoretically, reclamation of area mined land should be a simple process. The land is graded to a usable land form, the soil is planted and then nature takes its course. In reality the job is seldom that easy.

To begin with, advance planning is the key to successful reclamation. In many States, such as Ohio, the law allows a choice in selecting the end use for mined land—and we think any Federal criteria should do this also.

Operators must consider, before their shovels take those first cuts, the uses or combination of uses for the reclaimed land—water impoundments, grazing land, housing developments, landing strips, what have you. In making a final decision, they must consider several things: What was the previous use of the land? What vegetation is best suited to the reclaimed soil? Can the terrain be mined so it will lend itself to a particular use? What are the long-range needs of the community?

If the land is to be revegetated, the most important consideration of the reclaimer is to create a good growing medium for vegetation. Reclaimers have discovered that often the topsoil—where it exists—has become worn with time and usage and that a previously unexposed layer will contain better nutrients for maintaining healthy growth. More often than not, a mixture of several layers of earth uncovered in mining will provide the best growing medium.

We have found in some cases that the upper strata are the best and should become the future growing surface. Each case is different, however, and for this reason I would suggest that any legislation drafted by this committee reject the idea that replacing topsoil after mining necessarily insures good reclamation.

A skilled bulldozer operator is a must for effective reclamation because he is able to recognize and use the best earth layers while burying the less desirable ones. Most State laws call for a certain amount of grading and, while operators acknowledge this as a necessary step, they have also learned that it must be done with considerable expertise: the lay of the land, the control of rainfall, and accessibility to the land are all determined by the grading process.

However, grading the land excessively can pack the earth so firmly that seeds and water won't penetrate its surface. Even when grading is performed correctly, there is a certain amount of compaction, so many operators follow the dozer with a giant disc-harrow which breaks up the soil and prepares the seed bed.

We at the Hanna coal division are particularly interested in developing long-range plans for our reclaimed areas that will allow us to integrate them into the undisturbed land surrounding the areas we mine. We have learned that creating cattle operations is one of our most effective ways to make land useful over a sustained period of time.

In our search for plant species that will help us develop good pastureland for cattle, we have experimented with a number of grasses and legumes. We use alfalfa and Kentucky 31 fescue and other crops commonly grown in neighboring areas. And we have pioneered with a legume called crownvetch which we have found to be particularly beneficial both to the animals which feed on it and the ground it is planted in. Crownvetch has a deep root system that often goes down

10 to 12 feet into the ground and assures the plant of ample moisture even during the dry summer months.

This far-reaching root system also helps prevent soil erosion. Additionally, as a legume, crownvetch contains nitrogen—an element lacking in almost all mined land—and fixes it into the soil. We have also found that on our land planted to crownvetch, the leaves and stems accumulate and build up a layer of useful humus.

At Hanna we are quite proud of our accomplishments and think they serve as an example of how mined land can be creatively and successfully returned to productive use. We began reclaiming mined land back in 1941 when we planted trees on land mined the year before. Later, we began grading and planting grasses. And we have been doing it ever since.

During the last 30 years, Hanna has graded approximately 27,000 acres of surface-mined land. Of this total 12,000 acres have been seeded with native grasses and legumes and another 15,000 have gone to crownvetch. On this land we have also planted 15 million trees.

I mentioned that cattle grazing is one of our means of putting land back into long-term, productive use. We have pastured cattle on our land since 1958. Five thousand of our crownvetch acres have recently become home for an outstanding herd of 400 registered polled Herefords. We also have 400 head of commercial grade cattle.

Within 5 years we hope to have 1,000 registered brood cows and 1,500 commercial cows which we will use for producing feeder calves for market. We want to make the calves from our registered herd available to 4–H and other groups to help upgrade the cattle production in our part of Ohio.

Some of our reclaimed land—such as in the area we are using for the Herefords—we manage ourselves. Other sections of our pastureland are leased to local people to supplement their own grazing lands.

But not all our land goes into agricultural uses. Reclamation can take many forms and one of our most successful is the 408-acre Sallie Buffalo Park we created on mined land just south of Cadiz, Ohio. This land—now a much used recreation area—was strip mined for coal back in 1963, reclaimed in 1955 and opened to the public in 1965.

Today it has four fresh water lakes, totaling more than 27 acres, that are stocked with bass, bluegills, bullhead, trout, and crappies. We also have 250 picnic tables and charcoal grills, eight shelter houses for 40 persons each, and a campground which includes areas for trailer parking. These facilities are free of charge and used extensively both by local residents and vacationers passing through the area. About 30,000 persons have used the park so far in 1971.

Another park on reclaimed Hanna land is now in the planning stages—the 1,150-acre Friendship Park 12 miles southwest of Steubenville. This land was mined by Hanna and, after it was graded, given to Jefferson County to be developed for recreational purposes. This illustrates an earlier point—we planned this use before mining. We mined and graded it in a fashion to shape the land for its intended use.

Again, the park will be open to the public. It will take several years to develop but will ultimately include fishing lakes, swimming areas, golf courses, a ski slope, a farmyard zoo, and the fairgrounds and ex-

hibition hall for the Jefferson County Fair. The Jefferson County Airport is already under construction and it is this far advanced because we shaped the land for that use in grading.

We have put substantial amounts of time and money into our efforts to do more than pay lipservice to the Ohio reclamation law. Nearly 100 Hanna employees work exclusively year around on reclamation projects. Fifty-four of them operate 18 bulldozers, including some of the largest on the market, on three around-the-clock shifts. The other employees help with planting, fencing, and other reclamation tasks. Some are cowboys transplanted from Oklahoma.

Because we have been successful in our reclamation efforts we do not regard a Federal reclamation law with apprehension. The goals of reclamation must be specific but the means for achieving them should be varied and flexible. Any Federal legislation should allow for the same kind of alternatives.

The aim of good reclamation is to return the land to productive use—to yield some other crop or some other benefit, after it has yielded its crop of coal. We support that aim and believe it should be set out in the Federal criteria. We do not, however, believe that either the Federal or the State governments should go beyond the goal to specify what the use of the land should be. Beyond the fact that the use of the land should be beneficial or productive, the owner of reclaimed mined land should have the same rights as the owner of unmined land.

If the owner wishes to grow timber, he should not be compelled instead to grow alfalfa and get into the cattle business. Government's function should be to insure that the chosen use of the land is done right—for example, to require that the seeding or planting be successful.

Another matter which bears consideration is the pressure placed upon the operator to perform his reclamation. We are all eager to return mined land to useful, attractive functions as quickly as possible. However, specific recommendations regarding time and distance must be drafted within realistic boundaries. There is, for instance, a bill before this committee which requires that reclamation must follow 300 yards behind the act of mining.

From the standpoint of efficient mining procedures this would present a major setback. For example, to assure continuous production in the face of possible machine failure or bad weather, we often lay bare the coal seam far ahead of the loading shovels. There may be more than 300 yards of coal ready for loading—but we can't reclaim the land until the coal is removed.

Also, from a safety standpoint, following this closely on mining operations would jam the pit and increase the potential for accidents. What is truly important is the length of time it takes to accomplish reclamation and Federal legislation should direct its regulations toward this goal.

The highwall—the side of the surface mine pit which has not been disturbed—remains standing after we are through mining. Treatment of the highwall in the reclamation process should depend on two considerations. The first is whether the operator plans to return in the future and mine more coal from that seam or one on the hill above it. In that case, the land will be reaffected, and the existing highwall

will be removed or buried, so there is no point in treating it now. The second consideration is the use planned for the land.

In any event, any remaining coal in the pit, and any toxic material there, should be buried in the grading process so there will be no problem of plant growth or acid water. This eliminates part of the pit and reduces the height of the highwall, yet leaves it available for the impounding of water if that is desired. By damming the ends of the pit, a lake is easily created for agricultural and wildlife water or recreational purposes.

Where the land is to be left in a rugged state for wildlife and timber, sloping the highwall to a natural angle of repose should be an acceptable treatment. A similar solution may be to stairstep or terrace the highwall, as a highway cut is often treated, and revegetate the terraces. This promotes stability and permits the highwall to blend in more readily with the surrounding area.

These are three of the possible approaches where treatment of the highwall is called for. The statute should specify that they are permissible, but should also leave room for other methods which can also do the job effectively.

Restoring mined land to the original contour, as sometimes advocated, can require an enormous amount of dirt-moving, at enormous expense, for little benefit. The so-called original contour is, geologically speaking, only the contour of the moment, the product of ages of erosion and other natural processes. It may or may not be conducive to the best use of the land. Grading in the reclamation process can often make land traversable by farming or logging machinery, where it had been inaccessible before mining. So, we suggest that the standards steer away from any doctrinaire solutions and accept productive use of the land on a case-by-case basis.

As Mr. Bagge said, my company operates underground as well as surface mines. Some of the bills before you also propose to regulate the environmental effects of underground mining, particularly subsidence. From the standpoint of regulation, no practical technology has yet been developed to control subsidence in underground coal mining, so there is no way that that part of the statute could be enforced.

For the present, the idea of regulating an uncontrollable occurrence should be excluded from the pending legislation.

I have mentioned several items that we object to in various proposals before this committee, but I do not want to give the impression that the coal industry is opposed to Federal regulation or reclamation of mined land. We are not. I would even go so far as to say that we welcome realistic regulation in that it is a step forward in establishing a consistent and much needed natural resources policy for our country. But let a realistic law be drafted which will help, rather than hinder, the performance of the complicated and all-important task of returning our mined land to productive and attractive use.

Mr. BAGGE. Mr. Chairman, I would like to call upon Mr. Paul Morton, the president of the Cannelton Coal Co.

Senator JORDAN (presiding). Mr. Morton.

Mr. MORTON. My name is Paul Morton and I am president of the Cannelton Coal Co., a subsidiary of the Algoma Steel Corp., Ltd., of Canada. My company mines coal in West Virginia, the largest coal-producing State in the country.

In 1970, West Virginia produced a total of 144,070,000 tons of bituminous coal; 27,657,000—or approximately 18 percent of the State's total—was produced by strip mining.

Obviously, the majority of our State's coal production comes from underground mines, but our strip mining is of special interest to the Nation because our State, like eastern Kentucky, is hilly, and mountain stripping presents unique reclamation conditions.

Mountain stripping has been the target of considerable criticism in the past. Some of it is justified. I am not here to defend the past neglects or errors of the coal industry. What I do want to do is explain the innovations which have taken place in mountain strip mining in the last few years.

It is these new techniques of mining and reclamation which now make it possible to restore almost all mountain lands to productive use. And for the fraction that can only be reclaimed at prohibitive cost, I suggest that future research will develop methods applicable to these critical areas.

Before describing the various methods employed in surface mining, I want to call the committee's attention to a fact which I believe deserves more serious consideration than has been accorded in the public discussion of this issue.

I sincerely believe that the surface mining methods of extracting our Nation's coal resources is more nearly in accord with rational consideration of natural resource policy than is the deep mining for coal. By surface mining we are presently able to make a total recovery of the resource while this is not possible through deep mining.

For example, in my own operations, Cannelton Coal can and will recover all 14 million tons of coal reserves presently held in fee and covered by our present 2,000-acre permit. Through the best in underground methods, we are able to extract less than 4 million tons from that same reserve. Hence, more than two-thirds of our coal would be nonrecoverable if not surface mined.

The implications of this elemental fact should be obvious to the framers of our natural resource policy. Deep mining simply does not provide the Nation with a viable alternative to surface mining. Sound conservation and rational natural resource policy must permit the continuation of a mining methodology which enhances the maximum recovery of this vital resource.

Most mountain coal available through strip mining lies in a series of seams interspersed with layers of earth and rock. The standard method of recovering this coal has been contour mining. In this process, a bulldozer operator cuts a bench on the hillside at the level of the coal seam. The bulldozer winds around the mountain following the coal, and the overburden, resulting from the first cut into the hill, is moved to the outer edge of the bench and the outslope. The men then remove the coal and make more cuts, sometimes three or four, into the mountainside, placing the succeeding ridges of overburden on the bench.

Contouring is often used in conjunction with auger mining—a process which draws the coal from an exposed mountain seam by inserting giant, power-driven bits into the side of the hill.

Contour mining is a traditional way of extracting coal from mountainous regions, but it does present problems. The most obvious is

that contouring can create potential slides by depositing spoil materials on steep inclines. If the outslope is covered with logs or stumps, these materials can rot and decay and send the overburden sliding down the hillside. Water seeping between the overburden and the outslope also causes instability.

Research in controlling slides has led coal operators and State agencies to develop new mining methods for hilly regions. One method, developed by Warner Ford, an engineer with the Kentucky Division of Reclamation, is the so-called slope-reduction method. The goal is to reduce the degree of steepness of a slope so that the overburden will be less susceptible to gravity's pull.

Operators accomplish this goal by first removing all the underbrush from the outslope. Then the overburden from the first cut is spread thin over a predetermined area, rather than stacked in a pile at the top of the outslope. In spreading the overburden, the degree of incline in a slope can be reduced by as much as 5 to 7 degrees.

When the operator takes further cuts, he stacks the overburden on the bench. The slope reduction method has been highly effective in preventing slides; additionally, reclaimers can begin revegetating the outslope while mining operations are still in progress.

Still in the experimental stages is another new mining technique called the box-cut method. This, like the slope-reduction method, is a variation on contour mining designed to remedy the problem of troublesome slides.

In the box cut method, the operator makes his first cut well above the coal outcropping. He temporarily stacks the overburden on a prepared bench above the outcrop while he removes the coal from the cut. Then when the first step is completed, he fills the cut with the original overburden, then makes another cut to the same slope further down the slope. The overburden from this second section is stacked on top of the first cut.

When all the coal exposed by this cut has been removed, the overburden is returned to the trench. The finished effect is a hillside with no overburden on the outslope—hence, no slide potential.

Not only does the box-cut method reduce the likelihood of slides, it minimizes the controversial highwall. There is a feeling among many strip-mining critics that the vertical bank left after contouring defies successful reclamation. While most highwalls in areas of dense vegetation stand out against the background and do present special problems, I would like to point out that time and vegetation will improve their appearance. And, in some instances, they do serve a useful purpose.

To begin with, many highwalls can be treated with vegetation. In Boone County, W. Va., for instance, there are mountains that were mined 20 years ago where it is virtually impossible to identify the three former highwalls now covered with a dense, young stand of timber.

Where several cuts create particularly tall highwalls, operators can, if necessary, carve steps into the bank and plant on the terraced surfaces. Additionally, the overburden from above a highwall in certain instances can be graded over the highwall to produce a slope suitable for growing trees or grasses.

I mentioned that highwalls sometimes can be used for special purposes. To take an example from my own operations, we are now grazing a small herd of Angus and Charolais cattle on the benches created by one of our contour operations. The bench is almost 300 feet wide, giving the cattle ample room to roam. The highwall provides a protective windbreak and serves as a natural fence for one side of the operation.

But I am not here to sell anyone on the idea that highwalls are desirable. Blending mined land into unmined land is, unquestionably, easier to accomplish without them. With the new methods and larger equipment many of the highwalls which would have been made 5 years ago are no longer left.

The approach which my own company is currently using is a combination of the so-called valley-fill method and area mining of mountaintops. Let me first describe the valley fill procedure. Most mountaintops are indented with narrow valleys. Where the coal seams lie near the top of the mountain, we build an earthen dam at the mouth of the valley, then remove the overburden from the coal and store it in the horseshoe-shaped hollow. The result is a wide expanse of level ground—the sort that is at a premium in mountain areas.

In area mining of mountaintops the first cut is spread down the outslope in the same fashion used for the slope reduction method. The remainder of the mountaintop is area-mined in the same way that the flat lands of Indiana or Illinois are mined. Once the coal has been removed, the land is graded to a gently rolling topography. Land mined in this manner can be planted to forests, grow agricultural crops, or be used to graze livestock.

I should like to illustrate the importance of the value of such wide expanse of level ground produced by surface mining by sharing the experience of the people of the Upper Kanawha Valley.

Flatland is so extremely limited in this area that an acute shortage of land for housing, schools, and institutions has existed for many years. The existing areas along the narrow Kanawha Valley are completely occupied with residential and industrial developments.

This has created a crisis in providing residential housing, for example, for hospital personnel and the faculty at West Virginia Institute of Technology and a site for a new high school complex. In this respect, the Kanawha Valley is not unlike many other areas in mountainous terrain which have experienced population growth which is confined to a narrow strip—like corridor development along the rivers.

Thus, the concept of creating level land to establish a base for further residential, commercial, and institutional development in the Upper Kanawha Valley is not a new one—or one conceived by Cannelton Coal. This was a proposal advanced by the late Dr. DeWitt Peck, a community leader in this area of West Virginia, more than 5 years ago. This was not achieved, however, because the large capital sums were not available to bring about this urgently needed goal.

In 1967, however, when my company began surface mining operations in this area, it offered the region a unique opportunity to have this vision of Dr. Peck's become a reality as a byproduct of surface mining for coal. Hence, the surface mining of coal provided the economic base which was lacking heretofore.

What is presently contemplated by our company, working together with the West Virginia Institute of Technology, is a level area of 2,500 acres on land presently held in fee by Cannelton. Additional land contiguous to this property could be integrated into this project in the future.

Under our present mining permit, 700 acres would be available for development within 3 to 5 years. Access would be provided by 1973. Ultimately, we could make 2,500 acres available to a population of 23,000.

In order to illustrate this concept further, consider a similar instance of the creation of level land in this area by the construction of the Kanawha County Airport at Charleston. The public had to pay, in this instance, for leveling the land in a manner similar to what we are doing in mining.

If our plan comes to fruition, we will have accomplished a landmark, in reclamation. If it does not, we will be disappointed, of course, but the land will still lend itself well to expanding our livestock herd and increasing our acreage planted to crops, or reforestation.

Both the valley-fill method and the area mining of mountaintops minimize the visual effects of mining from the outset and provide more flexibility in selecting the end use for the land.

Additionally, both methods can accomplish complete recovery of a coal seam. While this may be difficult for some people to recognize as conservation, it is just that. By taking all the coal in one mining operation, we not only contribute to the Nation's energy reserves, we also assure that the land will not be needlessly disturbed a second or third time.

This has, unfortunately, been the practice among some operators who take what coal they can easily extract from a hillside, make their profit and leave. Coal that could have been mined at the time is left behind. Later, either the same company or another one may come back to mine the remainder of the seam. As a consequence, what reclamation has been performed on the land will be disturbed and will have to be performed again—from the beginning.

In most instances, through proper advance planning and by using our newer mining methods, total, or near total, recovery and total reclamation can be achieved in one operation.

I am optimistic about the advances that research has made in reclamation. The four new mining methods which I have described to you—slope reduction, box cutting, valley filling, and area mining of mountaintops—are more than theories conceived in a laboratory. Our laboratory is the land and what we try on it must either work or be discarded.

I do not mean to imply that we do not experiment—we do. But we are in the business of mining coal as well as reclaiming the land and as businessmen we put a premium on efficiency. The techniques I have talked about are exciting because they strike the necessary balance between allowing efficient coal recovery and making successful reclamation possible.

I do not mean to imply that our new methods are the only means of mining which allow successful reclamation. There are hundreds of instances where hills which have been contour mined are now so well

revegetated that most people do not know that they were once active strip operations. But our search for new and better ways to extract coal has made reclamation a less difficult and time-consuming task.

Research has also enabled us to solve some of the other problems of mountain mining. Seeding, for example, is not easily accomplished on the steep slopes of West Virginia. The use of the hydroseeder, a machine which sprays a mixture of water and seeds into a hillside, has allowed us to revegetate hillsides more quickly and effectively than before. Aerial seeding by helicopter is also helpful in our up-and-down terrain.

We have also spent considerable time in cooperation with State, Federal, and university research teams in tracking down various plant species which will adapt themselves to mined land and thrive in sometimes difficult soil and weather conditions. But just as important as appropriate species is the ground they will be planted in. Fertilizers will provide a necessary shot in the arm to help establish plants initially, but its effects are only temporary; the effects of good soil, on the other hand, will last much longer. If the earth left after mining is acid, we grade it and cover it with a layer of soil more receptive to vegetation.

Grading must be done with caution and skill, however. While some earthmoving is always necessary before reclaimers can begin planting, excessive grading, especially in the muddy spring months, compacts the soil and makes it difficult for water to penetrate the surface.

Water—too much or too little of it—is always a concern in reclamation of mined land. Especially on steep slopes, heavy rainfall can erode a hillside and carry silt from an old mining operation into the streams below. Again, our research has helped us correct this situation.

In West Virginia we are required by law to construct silt dams or basins which will slow the flow of water to the bottom of a slope and catch sediment and allow it to settle out. These ponds must be built before mining begins and, consequently, they are an integral and carefully planned part of the entire mining operation. Our experiments have also show that land that is furrowed and planted checks water runoff more efficiently than land that is graded normally.

In view of the substantial progress we have recently made in reclaiming mountain land, total prohibition of strip mining is unrealistic and unnecessary. Those who say that mountain mined land cannot be returned to productive use are not taking into consideration the great strides we have made in the last 5 years.

Not only are we now able to reclaim previously marginal land, we are able to do it faster. There is a necessary lag between the time mining takes place and the day when the land once again blends into the landscape. This lag, however, has in many cases been shortened to a period of 1 to 2 years—a period no longer than what we endure when new highways or subdivisions are relandscaped.

If the legislation now being considered by this committee does prohibit mining in certain areas, these areas should be identified on a case-by-case basis rather than under a blanket policy. I say this because, as I have pointed out, our improved technology is continually allowing us to successfully reclaim lands that were once extraordinarily difficult.

To cite an example: In Kentucky the law prohibits conventional strip mining on slopes steeper than 27 degrees. With the development of the slope reduction method, these hills can now be mined and, more importantly, can be successfully reclaimed.

A review of the individual areas proposed for prohibition could lead inspectors and operators to conceive solutions to particular problems presented by specific areas. Without such review, many areas actually capable of being reclaimed through new technology will be unfairly classified as unminable.

Some of the proposals now being studied would require that topsoil be replaced, but this suggestion should be viewed in the light of what we have learned in recent years. Much mountain topsoil is worn out to begin with and in some cases strata of earth uncovered in mining provide better growing media than the original top layer.

Reclaimers have discovered that knowledge of the soil strata permits the identification of which layer, or combination of layers, of the overburden will best support vegetation. Having determined this, they then instruct the operator to mine the land so that this soil will become the upper layer when grading takes place. Buried strata do not, of course, always provide better growing conditions. Sometimes the topsoil should be replaced. Again, each situation should be studied individually.

The coal industry favors Federal legislation regulating strip mining. We realize that the myriad problems presented by reclamation can be effectively approached through a national policy realistically written and justly administered. What we do ask is that the architects of this law realize that not all mined land is alike, and that a certain degree of flexibility is necessary to return this land to productive use.

Mr. BAGGE. Mr. Chairman, I would like, if I may, to conclude the presentation by the National Coal Association.

Senator MOSS. Very well.

Mr. BAGGE. Each of the witnesses, Mr. Chairman and members of the subcommittee, represent different regional areas of the Nation, and I think they have documented before this committee. They have demonstrated reclamation does work. They are performing it, and indeed, the industry is committed to do it.

The National Coal Association and its member companies support Federal legislation realistically designed to assist the States and the surface mining industry to achieve sound, effective reclamation of surface mined lands.

We believe that the approach, such as contained in S. 630 and S. 993, which encourages the States to develop their own programs based on broad Federal criteria, provide the most effective way of insuring this objective. Climate, soil, vegetation and topography differ greatly throughout the country and State authorities are most familiar with the conditions in their particular areas and how to most effectively cope with them.

I think our witnesses have documented that for the committee this morning. Many States have also acquired considerable expertise in reclamation and already have a functioning regulatory structure, which can be modified to comply with the Federal statute. Many of the pending legislative proposals recognized as S. 630 does in section

3(e) and as S. 993 does in section 102(c) that the States should have the initial and primary responsibility in developing the specific regulations and requirements for achieving the Federal standards for reclamation.

If a State does not submit a plan which meets the requirements of the act, as determined by the Secretary of Interior, or a State fails to adequately enforce its regulations, then the Secretary of Interior could require the State to take the necessary corrective action; failing in this the Federal Government would issue and administer mining regulations for the State.

In our judgment direct Federal regulation, as proposed in S. 2777 or H.R. 6482, or any Federal legislation which would attempt to set out the specific reclamation requirements would not be desirable. Such proposals could end up by imposing uniform regulations on all the States regardless of existing conditions and fail to give any consideration to legitimate local concerns.

The States are best qualified to deal with the local conditions, for example, the establishment of general land use objectives. It is more practical and realistic for Congress to require the States to establish the reclamation programs and permit the Secretary of Interior to monitor their effectiveness. The Federal Government should not preempt the field and create a Federal administrative structure which would merely duplicate the expertise and the existing regulatory machinery of the States.

There is no advantage to the costly approach required by S. 2455 and H.R. 444. These bills would require the Secretary of Interior to develop and enforce Federal regulations for all the States. The States would be permitted subsequently to submit their own plans for approval and, if accepted, they could be substituted for the Federal program.

Most of the States where coal is surface mined already have some form of reclamation and surface mining regulations and would presumably be willing to modify it to comply with any Federal criteria established. As a result, mine operators would, in quick succession, be responsible first to the States, then to Washington, then back to the States. This would be confusing, costly, and impractical.

The State-Federal cooperative approach we endorse considers the interests of both the State and Federal Governments in the regulation of surface mining and reclamation and gives each an active role in the areas of their primary concern. This type of legislation will insure that all the State regulatory programs will be based on the established Federal criteria for reclamation, while at the same time permitting the States the flexibility necessary to develop the specific requirements most suitable for the conditions which exist in each State.

By reviewing the proposed State plans and monitoring their effectiveness, the Federal Government can insure consistently fair and equitable treatment and eliminate the inequities which exist among the various States. There is no need to create a complex Federal administrative structure to deal with the day-to-day operations.

Reliance can be placed on the State machinery which, with Federal support, should be capable of functioning effectively. Federal funding assistance will, of course, be extremely beneficial in this regard. Many

State programs suffer from a lack of adequate funding and we believe that the continuation of Federal grants, even after the developmental period, would help immeasurably in improving both State administration and enforcement.

Both S. 993 and S. 630 would vest the administrative authority in the hands of the Secretary of Interior. Just as we believe that the State administrators are best qualified to establish the specific requirements for reclamation within their State, at the Federal level the Department of Interior is better qualified than any other Federal Department to administer the Federal aspects of the regulation of surface mining and reclamation.

This is particularly so in view of the fact that the Mining and Minerals Policy Act of 1970 charges the Secretary of Interior with the responsibility of carrying out the policy of that act that it is in the national interest to foster and encourage private enterprise in the development of economically sound and stable mining, minerals, metal and mineral reclamation industries. Federal legislation on surface mining should be consistent with the directives of this recently enacted statement of national mining and minerals policy.

Let me address myself to the concept of prohibition, which was effectively documented by the previous witnesses here this morning.

The proposal in S. 1498, which calls for the outright prohibition of surface mining of coal, is both unrealistic and irresponsible, not only because a vital 44 percent of U.S. coal production is mined by surface methods, but because it ignores the fact that the technology exists for the effective reclamation of mined lands.

As we have sought to demonstrate before this committee this morning, as we have shown, reclamation can be made to work and the disturbed lands can be returned to beneficial and productive uses.

Eliminating 44 percent of the Nation's coal production would have enormously damaging consequences. Let me expand a bit on what this proposal really entails: Most of the surface-mined coal goes to the electric utility industry—more than 75 percent of the output of surface mines went to utilities in 1970 and it was burned to produce about 34 percent of all the steam-generated electricity produced in the United States.

In 1970 the electric utilities generated a total of 1.5-trillion-kilowatt hours, including the amount produced by the great hydroelectric dams, and more than 28 percent of this electricity was produced from surface mined coal.

If this source of coal were to be eliminated by complete prohibition, the utilities would be hard pressed to come up with a substitute source of fuel. I can say this on the basis of some years of experience, Mr. Chairman.

Atomic power has not developed as anticipated and there is a shortage of domestic oil and gas reserves. Thus, if they were forced to turn to fuel oil, it would be necessary to import it.

Assuming the volume were available and the existing facilities could be converted to handle fuel oil, it would result in an additional loss of $2.5 billion annually in our balance of payments.

Furthermore, it is not realistic to expect that surface mined coal could be replaced by production from underground mines. While there

are ample underground reserves, to produce the 264-million tons of surface coal mined last year would require 132 additional underground coal mines of 2 million tons annual capacity, a capital investment of $3.2 to $3.7 billion, 3 to 5 years before full production could be anticipated, and an additional 78,000 trained underground miners.

The effect on the cost of coal would be tremendous—the coal industry would be required to virtually duplicate its present underground mine capacity, calling for an enormous capital investment, and at the same time be required to write off as a loss its existing investment in surface mining equipment and reserves.

Gentlemen, I could go on, but I hope I have demonstrated that to prohibit surface mining would have disastrous results for the Nation and its constantly increasing need for energy. I believe also that my colleagues have demonstrated that so drastic a measure is not only unwise, but unnecessary, because reclamation of mined land does work and is steadily being improved.

If a national prohibition of surface mining is unwise, any attempt to impose prohibition on a State or area basis should also be approached with the greatest caution. The consequences to the Nation might be less widespread, but they could still be serious. If there are any mine sites, existing or proposed, where reclamation technology cannot cope with the topography or soil conditions at present, this should be decided on a case-by-case basis.

To prohibit mining in a certain area, for example, above a certain degree of slope, would be a grave mistake. Mining and reclamation which is impractical in some areas now may be quite feasible next year because of new developments in technology, such as those discussed by Mr. Morton.

If the State agency will specify the reclamation requirements that must be met in the area, the operator will be the best judge of whether he should undertake a particular operation. And with fair enforcement of those requirements, sound reclamation will be achieved. However, if the State agency is to be given the power to prohibit mining where it believes the area cannot be adequately reclaimed at the present time—as provided, for example, in S. 993—this authority should be restricted to a determination upon each individual application for a permit based on the particular facts of each case.

It is imperative that the operator have the right to request a hearing before the State agency on the denial of any permit or the issuance of any order which prohibits his mining operations. Also, since the mining of minerals has a substantial effect upon interstate commerce, Federal legislation should give the operator the right to appeal to a Federal review board or to the Secretary of Interior the final order of any State which, in effect, prohibits his existing or proposed mining operations.

Such a review board could be an independent agency or the existing Office of Hearings and Appeals within the Department of Interior. S. 993 does not permit a direct appeal by the operator to the Federal Government nor does it require the State to grant an operator a hearing if his operations are prohibited. Both of these rights are essential to protect the interest of the operator and the interests of the Nation, which has an important stake in the development of our natural resources.

Let me address myself briefly to what this industry is pleading for in the form of an advisory committee.

Neither S. 993 nor S. 630 provides for public notice and the right to comment by all interested parties with respect to the issuance of Federal guidelines or any regulations that might be issued to assist the States in development of their particular programs.

Admittedly, such guidelines or regulations would apply essentially to the States, but they could be extremely important in shaping the precise nature of the State programs and thereby have a direct effect upon surface mining operators. Consequently, public notice and the right to comment should be required. In addition, we believe that an advisory committee should be established with representatives from industry, Government and the private sector included, which would be required to submit its recommendations on any Federal guidelines or regulations prior to issuance. The legislation should also require that State plans include an advisory committee similar in makeup and function to the one on the Federal level.

The legislation should define surface mining reclamation in order to further the objective of productive or beneficial use of the land. Reclamation should include planning for such use before mining and directing the mining, grading, and vegetation efforts toward that objective along with the recovery of the mineral resource.

Laws and regulations, however, should stop short of specifying what the productive or beneficial use of the land should be. The owner cannot be denied the same rights as the owner of unmined land to decide whether his property shall be used for farm or forest, park or pasture, within, of course, the same zoning constraints applicable to other landowners.

Retaining and replacing the topsoil, as H.R. 6482 proposes, is not essential. As other witnesses have pointed out, there are often subsoils more suitable for plant growth than the original topsoil. If the criteria require successful revegetation, the operator logically will place good soil material as the growing medium.

Federal legislation should provide for alternative methods of treating the highwall in coal surface mining. There are three, probably more, acceptable methods: (1) water impoundment, (2) stairstepping or terracing, and (3) sloping to a natural angle of repose. Criteria should allow flexibility including, but not limited to, these methods.

Let me address myself to the regulation of underground mining, which is embraced in the administration proposal.

The problems involved in subsurface mining are extremely complicated, both technically and legally. They are in most instances unrelated to surface mining and reclamation, which are the primary concern of the pending legislation. The only problems they have in common are air and water pollution, which are regulated now by Federal and State law. Including the regulation of underground mining in surface-mining legislation is therefore unwarranted.

This would confuse and disrupt the effective administration of both underground and surface mining by possibly conflicting regulations. To include underground mining in Federal legislation, which intends to rely on the State's surface mining regulatory structure, is inconsistent with the predicate underlying the Federal-State approach to

this problem. It would require the State surface-mine land reclamation inspectors to acquire a complicated new expertise in a completely unrelated field.

Furthermore, the Bureau of Mines undertook an in-depth study of the effects of underground mining and of mineral processing and a 239-page initial draft was made public in August of 1969. Although from all indications the study was intended to be an exhaustive treatment of the subject, the Department of the Interior found, upon review, that it did not adequately support the recommendations that it presents.

As a result, it was not to be construed to represent the official opinion of the Bureau of Mines, the Department of the Interior, or the Federal Government. In our judgment, before effective legislation can be enacted to regulate underground mining, it is essential to understand the dimensions of what are involved and what can realistically be accomplished.

Let me just refer, if I may, and sketch the balance of our statements.

From pages 12 to 15 we deal with the significance of surface-mined coal. We attempt to document in that form what the economic significance of surface-mined coal means to the Nation.

On pages 19 through 60 we provided the committee with a comprehensive summary and evaluation of the NCA position to all of the principal features of the bills pending before this committee, and I shan't take the time except to refer you gentlemen to that.

On the appendix, in pages 1 to 14, we provide data supporting our conclusions regarding the significance of surface-mined coal to the Nation. We try to make a contribution here to the community.

If I may, in summary, take off on some of the basic positions of the National Coal Association, let me state these points, if I may.

One, we support Federal surface-mining legislation which sets forth broad mandatory criteria for the States to follow in developing the specific regulations.

Two, underground mining is completely unrelated to surface mining and reclamation and should not be included in such legislation.

Three, prohibition is unrealistic because the technology exists to successfully reclaim lands mined and such action would wipe out 44 percent of our coal production at a time when our other domestic fuel sources are rapidly being depleted.

Four, any authority to prohibit surface mining should be restricted to each individual permit application based on a finding that the particular area cannot be adequately reclaimed.

Five, permit Federal review of any State prohibition order.

Six, provide for public notice, comment by interested parties, and the recommendation of an advisory committee on any proposed guidelines or regulations.

Seven, permit the future planned use of mined lands be determined by the opreators.

Thank you very much for your indulgence, Mr. Chairman and members of the committee.

Senator Moss. Thank you, Mr. Bagge, Mr. Hatch, Mr. Morton, and Mr. Phelps for a very comprehensive and well-documented presentation. I think the entire document with its appendixes does con-

tribute vastly to the information that the committee is trying to assemble so that we will know how to proceed.

Is it true that there are some areas of coal that cannot be recovered if you didn't use surface mining? I say that because of some recommendations that we bar all surface mining and just go underground.

Mr. BAGGE. In the face of the realities of the energy crisis which our Nation is already experiencing, with the urgent need in this decade of a new technology to convert our tremendous coal resources to help alleviate the critical natural gas shortages, with the location of most of the vast coal reserves in the public domain areas of the West which cannot effectively be mined through underground methodology of extraction because of their proximity to the surface, we feel it is totally irresponsible to even suggest a national policy that will bar the surface mining of coal.

Surface mining is the only method by which we are going to be able to extract this resource for the gasification of coal which will emerge at the end of this decade. We hate to brand any proposed legislation as irresponsible and it is only in the light of these conditions that we do so.

Mr. PHELPS. There are, of course, as you know, certain areas of coal that cannot be mined underground because they are too close to the surface and in some cases because they are too thin.

From the standpoint of conservation, in underground mining we must leave about 50 percent of the coal in the ground to support the roof. Therefore, we are using only half of our mineral reserve. In strip mining we get 100-percent recovery of the mineral and replace the land for future use.

Senator Moss. Thank you, sir.

Mr. Bagge, you placed great stress on permitting the States to regulate but some of the witnesses testifying yesterday pointed out that the States have been rather derelict in enforcement. Most States or at least 22 of the States already have some laws on surface mining and many of them haven't been doing much about it.

How are we going to insure that the States will enforce the regulation?

Mr. BAGGE. The proposals we support, Mr. Chairman, provide that the Secretary of the Interior not only would require the States' implementation of the broad Federal criteria but also adequate enforcement of the State statutes with adequate policing, funding, and personnel.

One of the features, I might say, of the administration and several other bills does provide for Federal funding for adequate enforcement and policing by the States.

The position of our industry, Mr. Chairman, is that we support regulations and enforcement by the States and we think this can be and will be achieved under several of the bills here. However, when State enforcement doesn't exist, then authority of the State shouldn't exist as well since the State is not in compliance with the Federal law.

Senator Moss. I was glad to have you restate your conviction that we will be producing gas from coal within a relatively short time, we hope, because this committee is very deeply involved in hearings now on that.

Is it the position of your organization that we should have this combination of Federal and private industry doing the R. & D. to move this along as fast as possible?

Mr. BAGGE. Obviously we are committed to the proposition that increased research and development is essential to convert our Nation's vast coal reserves which have been virtually ignored in the past to solve this energy crisis.

We support the research and development efforts by the Federal Government. We respectfully suggest, however, that in the development of nuclear power there was no requirement that private industry contribute to the R. & D. at the pilot plant level.

Since the public is going to benefit eventually from the technology, we think it only equitable that the Federal Government fund this technology entirely as was done with nuclear development.

Senator Moss. So, you would favor full Federal research and development?

Mr. BAGGE. This is the position of our industry and we can look you in the eye and say we are not ashamed of this position.

Now, I might add, our R. & D. efforts have to be directed to meeting the health and safety challenge that the Congress has imposed upon us. Our research efforts also have to be directed to the critical need to produce coal and we believe, therefore, that we are justified in putting our research dollars into production. We are looking to the American Gas Association under its contract with OCR to pick up one-third of the cost of our gasification research project under the contract we signed last week with the Secretary of the Interior.

Senator Moss. There is a little difference in the nuclear, there was no nuclear industry when we finally made the discovery of atomic power and we had to start from scratch. There is a large and viable coal producing industry that has been with us for 100 years or more and for that reason there is a difference. But I understand your point and I am glad to have you state it. There is some justification for it, because it will be treated a little differently if your industry is asked to make the contribution.

One final thing I did want to ask was about these orphan soil banks which exist in many places.

Whose responsibility is it and how are we going to deal with them rather than just deal with the prospective return to surface mines?

Mr. PHELPS. I could at least state an opinion on this. I would suggest a comparison with the urban development program in the cities. When the buildings become decrepit, the Government acquires and removes them. In the early days of mining, the mines were kept in operation by selling coal as cheap as possible.

Following the urban development comparison, it would be for the public's benefit to reclaim orphan land and it would not be out of line to expect some type of public participation in returning it.

Senator Moss. Well, I thank you for that response and your appearance.

My colleague, Senator Jordan, may have some questions.

Senator JORDAN. Yes, I do have, and Senator Hansen has gone to vote and he has some questions.

I want to pursue what the chairman was discussing with you. I think it was the first statement that said the producer diverted some of

his profits for reclamation and was at the mercy of any competitor who did not. Then leading coal companies recognized their responsibility and met it to the extent they could afford.

This operation left a lot of unreclaimed land behind it and I want to pursue with you a little more in detail what first is the extent of the area involved, if you have any figures on that, Mr. Bagge, and, second, how much you think it would take to restore this land to the same condition that would be required by the legislation that we are considering prospectively and, third, who should do it?

Mr. BAGGE. I was privileged, Senator Jordan, to be invited to the White House about 3 weeks ago to attend a conference sponsored by the Office of Science and Technology at which the Department of the Interior presented a series of so-called technological initiatives to the Domestic Council and the deans of various mining schools throughout the country.

Therefore, I know that the administration is concerned with this problem. They have acknowledged the fact that the public benefits which accrued from the mining of these so-called prelaw lands make them a responsibility of the body politic. The American public benefited from cheap power. Electric rates were cheaper because such social obligations as land reclamation were not required as a part of the mining methods in that period.

I think the Interior initiative reflects a recognition that, since the American public benefited in a period of time when we were not environmentally sensitive, the adverse environmental results are a public responsibility.

With respect to the amount of acres involved, there has been no inventory made of the so-called prelaw lands. The publication of the Department of Interior, entitled "Surface Mining and Our Environment." issued some 3 years ago, mentioned approximately 1 million acres of unproductive land. We believe that the publication did not reflect the fact that the hand of nature has reclaimed many, many acres of this prelaw land already.

There is no real intelligent inventory of the lands that yet need to be reclaimed. There needs to be a national inventory—but only of those lands having a priority for reclamation. Those already reclaimed by nature should not be included. The priority lands could then be reclaimed through some sort of federally funded pilot project.

I think it would be helpful to you in coming to grips with the problem to have Paul Morton tell you about how the State of West Virginia sought to cope with prelaw lands.

Mr. MORTON. In West Virginia we pay approximately $60 an acre of coal mined for taking care of the prelaw orphan lands. Our reclamation department visited various areas to do this reclamation. When they got there, they found the growth in some of these areas was to a point that if they went in to reclaim them, they would do more damage than they would if they just let Mother Nature continue her course, because Mother Nature had already done such a good job.

Much of our land was desecrated from 1940 to 1946 when the need for coal was so vital for the war effort. There were no reclamation laws then and the only thought was to produce as much coal as possible to keep the utility plants and the steel mills operating for the war effort.

Now we are saddled with many miles of unreclaimed contour-mined

land that has made a pretty bad name for us. In flying over some of these areas, you can look at some of these lands now and the growth on them has pretty well taken care of the spoils.

But there are other areas where problems remain and some reclamation is required, but there are dollars set aside by the State of West Virginia for doing this work.

Mr. BAGGE. I think it would be an interesting point for you to tell the committee the amount of money earmarked in the treasury of West Virginia for this purpose that hasn't been used because they can't identify the areas that need the expenditure.

Mr. MORTON. Approximately a year ago there was over $1½ million in this fund.

Mr. BAGGE. Which leads us to conclude that we don't think the problem of prelaw lands is as large as the press would lead us to believe it is.

Mr. HATCH. One of the things that was commented on is the fact that the coal operators in the earlier days of surface mining couldn't afford reclamation. For 20 years we have been able to raise the price of our coal in a competitive market by only 6 cents a ton—in 20 years. During that period of time the mineworkers' wages went from about $17 a day to an average of about $41. The welfare fund went from 20 cents a ton to 40 cents a ton. But we reclaimed our land in Ohio and I am proud of what we have done over there. But, we did have a very terrifically competitive market in which to deal.

We have heard all kinds of figures as the cost of reclamation but we have kept very accurate costs on our reclamation in Ohio——

Senator JORDAN. Go right on with your statement. I have to answer the rollcall and Mr. Hansen will take over.

Mr. HATCH. All right.

We had the opportunity to have very detailed records through our IBM system as to what is has cost us to reclaim land. I want to say, first of all, the cost of reclamation is not the prime issue before us this morning, but I do think the record should show that we have been spending an average of about $40 an acre to reclaim our land in southeastern Ohio. That is the grading of the land and the planning.

I could show you pictures of our areas in Ohio as good as, if not better than, those shown this morning by Mr. Guckert. We have some land on which we have spent $200 an acre and some as high as $1,800 an acre.

Some of the land you saw this morning I visited myself in Pennsylvania. One of the operators there has told me it was costing $1.26 a ton to reclaim his land. There was no highwall, he daylighted through the hill, put the topsoil back, and he is mining about 5,000 tons per acre. So, you multiply that and find $6,000 an acre for the reclamation, with no highwall treatment at all.

Our company also has a small operation around Pittsburgh. Up through July or August of this year they were spending about 93 cents a ton to reclaim land which they had to backfill completely. Ninety-three cents a ton on 11,000 tons per acre is better than $10,000 an acre that is being spent to reclaim the land in Pennsylvania where they completely backfilled.

Now, you get all over the lot. There is a wide extreme, from $200 an acre in some places up to $10,000 or better in others.

Mr. BAGGE. What I think this suggests, Senator Hansen, is the variety of the requirements and the variety of the costs.

Mr. HATCH. That is right. Another thing is that the operations in Pennsylvania are conducted on a much smaller scale than in other parts of the country.

I have visited some of the operations in Pennsylvania and made inquiry as to their procedures. One large operator told me the answer was pretty simple—before the law was written in Pennsylvania in 1964 or 1965 they were getting $3.80 for coal; now they are getting better than $9.00 a ton. Furthermore, he was a nonunion operator who didn't pay the scale and the welfare. Our miners are members of the United Mine Workers of America and we pay the scale and the welfare.

Senator HANSEN (presiding). Thank you very much.

May I ask you, do you realize, in recognizing those differences in climate, soil, vegetation, and topography, you can also see the obvious difference in coal mining and hard minerals? Consistent with your call for regional flexibility, how do you view regulations for coal and hard minerals?

Mr. BAGGE. We have attempted to address ourselves only to the regulation of the surface mining of coal. We do not presume and, of course, would not speak for the hard mineral industries. The American Mining Congress can address themselves to that. But in response to the question, I would have to say that the coal industry acknowledges that the hard mineral industry utilizes an entirely different mining methodology and an obvious distinction should be made in the regulatory approach taken by the Secretary of the Interior or the Congress to the problem of the highwall in the coal industry and the open pits which will exist for 30 or 50 years in the extraction of hard minerals.

It occurs to me that perhaps one of the ways to treat that distinction would be for the legislation to provide that the Secreary of the Interior should set up separate regulations with respect to the treatment of the high wall and other elements of the surface mining aspects of the hard minerals as distinguished from coal mining.

That is just a thought that occurs to me, Senator, which might be the way of treating that difference which has to be acknowledged.

Senator HANSEN. I suppose it would follow then from your response that, in the drafting of appropriate legislation, a wise legislator should take into account the differences in the mining operation, its length of time and all of the other related questions that might impinge upon the question of overall law and from which, I assume, would result laws that would be appropriate for each particular type of mining that may be undertaken.

Mr. BAGGE. That is precisely it. You said it far more eloquently than I did in struggling for an answer, Senator Hensen.

Senator HANSEN. Well, you are very generous.

Mr. PHELPS. I think our overall statement goes into regional and other differences even in coal mining. It is almost impossible to write one rule in Federal legislation that will cover the various conditions and mining methods and other conditions.

Senator HANSEN. It may be that you responded to this question, Mr. Phelps, and we have been in and out and perhaps I didn't hear it. Your company is engaged in the strip mine operation in the Black

Mesa area. Have you responded to questions with specific reference to that operation?

Mr. PHELPS. Peabody Coal has taken a lot of adverse publicity over the so-called desecrating of an Indian reservation.

The Black Mesa area of the Navajo reservation is 2 million acres. We are going to mine only 14,000 acres of it in a period of 30 years, which means we will only be using approximately 400 acres per year. This total is less than 1 percent of the Black Mesa, not the Indian reservation.

We are just going to take it out of use for grazing for maybe a couple of years while we mine it and reclaim it. But we aren't tearing up the Indian reservation.

In addition to this, we are going to pay the Indians over $3 million a year for 30 years in royalties for this coal. At the present time over 80 percent of our work force are Indians. We are paying them up to $10,000 a year. We expect to have 350 Indians working before we get through with the operation.

Life magazine and some of the other press notwithstanding, we are doing a good job out there. We are going to furnish power for an area that needs power. We are going to be good citizens and do reclamation work out there so that the lands will be in as good shape when we get through with it as it was to begin with. We are proud of our Black Mesa operation and are glad to have the opportunity to say so.

Senator HANSEN. Thank you.

Mr. Moss. Well, thank you, gentlemen, for your presentation. It was very good and we appreciate your coming.

Mr. BAGGE. Thank you very much, Mr. Chairman.

(The full statements follow:)

Statement of Carl E. Bagge,
President of National Coal Association

Mr. Chairman and Members of the Committee:

My name is Carl E. Bagge. I am president of the National Coal Association, a nationwide organization representing the producers and sales agencies of most of the nation's commercially mined bituminous coal. Our producer members mine coal in 22 of the 24 coal-producing states and include both underground and surface mining operators.

I am accompanied by three outstanding executives of the coal industry who represent different mining areas of the country. They are industry leaders who are not only dedicated coal producers but are also equally committed to sound, effective reclamation that returns surface mined lands to productive use. They are most familiar with the tremendous strides which have been made in the past few years in reclamation technology.

Gentlemen, it is my pleasure to introduce Mr. Edwin R. Phelps, president of the Peabody Coal Company, the largest coal company and the largest surface mining operator in the country; Mr. Ralph W. Hatch,

president of Hanna Coal Company, which has been involved in reclamation work in Ohio since 1941, prior to the enactment of any state reclamation law; and Mr. Paul Morton, president of Cannelton Coal Company, which is presently involved in reclamation efforts to provide large areas of level ground in the West Virginia mountains suitable for community development, crops, grazing or reforestation in a state where such land not only is at a premium but where community development is presently constrained by natural topography.

Mr. Chairman, we appreciate the opportunity to appear before this committee to present the position of the coal industry with respect to the bills introduced to insure the reclamation of mined lands. We propose to have each of these gentlemen present a statement covering the different aspects of surface mining and reclamation that exist throughout the country. I will then summarize the industry's position on the proposed legislation. Of course, it should be clearly understood that our remarks are addressed only to the mining of <u>coal</u> and the reclamation of the lands disturbed by such operations.

Statement of Edwin R. Phelps
President, Peabody Coal Company
St. Louis, Mo.

My name is Edwin R. Phelps. I am president of Peabody Coal Company of St. Louis, Mo., which is the largest producer of coal in the United States. Peabody is also the largest coal surface-mining company in the country and the largest reclaimer of mined land.

Gentlemen, good reclamation of surface-mined land is possible. I know, because we are doing it. Peabody Coal Company is doing it--today on behalf of the coal industry. So are many others for whom we have been asked to serve as spokesmen.

The problems of reclamation are divided into several parts. Let us narrow our subject. One of the problems is that of the so-called orphan banks, which were mined years ago when there were no legal requirements or public demand for reclamation and often not enough knowledge of how to accomplish it. In many cases, the companies which mined these lands are no longer in business. Ownership may be difficult to trace and responsibility impossible to fix. These lands are in many cases the unsightly and eroded acres which draw public criticism today. However, I understand most of the pending bills deal principally with the regulation of active strip mining operations and reclamation in the future.

The signs of old surface mining which are still visible today, however, may not be just symbols of neglect. We in the coal industry have made some mistakes, for land reclamation has not been a science we could extract ready-made from textbooks. We have had to evolve it the hard way, on the land--and to paraphrase an old saying, doctors bury their mistakes, architects grow ivy on theirs, but some of ours are highly visible. We have made mistakes--but we have tried not to repeat them. We have learned, and applied our lessons elsewhere, and shared our experiences freely.

It is ironic that our failures are obvious and subject us to much criticism, while our successes quite literally blend into the landscape. For we have succeeded in reclamation often and dramatically, and our performance is constantly improving.

In Illinois, for example, there are thousands of acres of grain and cattle farms on land mined by Peabody Coal Company or other coal companies. These are not parks or showplaces or Disneyland farms, but real dirt-farm operations, supporting a full-time rural population.

However, let me make it clear that the results we can produce in the favorable soil and climate of Illinois cannot be duplicated in every area we mine.

We are proud of the Peabody reclamation program, but it is

by no means unusual in the industry, except for its size. The other coal operators here to testify today have successful records of reclamation also, and they are typical of the responsible companies in the industry.

In candor, I cannot claim that the whole industry's record in reclamation has always been as good as its performance is today. The history of the coal industry has been one of intensive price competition--not only coal versus oil and gas, but one producer's coal competing against many others, and principally on the basis of price. Profit margins have been thin, and the producer who diverted some of his profits to reclamation was at the mercy of any competitor who did not.

It is greatly to the credit of responsible coal companies, therefore, that they undertook as much reclamation as they did. I can show you trees on mined land that are 40 years old--trees planted by man, not volunteer growth. Leading coal companies recognized their responsibility, and met it, to the extent they could afford, before there were state laws requiring them to do so. State laws have helped, however, for they compel the reckless and haphazard operator to meet the standards or lose his license and forfeit his bond. Unfortunately, there are such persons in the coal industry, in about the same proportion as in any other business--or in the human race. Good state laws, fairly enforced, have proved to be protection for the responsible operator against the

cornercutter. Therefore we support federal legislation to reinforce state control of surface mining by providing federal criteria and guidelines, with the states enforcing their laws.

When I say we are doing good reclamation in the coal industry, the statement somehow fails to convey the scope on which we are doing it. In 1970, according to a National Coal Association survey of state agencies and other authorities, reclamation was completed on more than 58,000 acres. This means the land was graded, planted and the prescribed percentage of the resulting vegetation survived one or two growing seasons, as state law requires, and that state inspectors approved the work and returned the operator's bond.

By the same criteria--approval of reclamation work and refund of the bond--reclamation was completed on 64,000 acres in 1969. And in 1968, the total was more than 72,000 acres.

This naturally leads to the question of whether the industry mined more land than it reclaimed. For 1970, the answer is probably yes--but the land mined in 1970 will show up in the statistics of approved reclamation in 1971, 1972 or whenever the work is done to the satisfaction of state inspectors.

We are pretty sure that the 64,000 acres reclaimed in 1969 exceeded the amount mined--and we are positive that the 1968 figure of 72,000 acres reclaimed was far more than the amount of land disturbed in the surface mining of coal in that year, because the industry caught up with back work in some areas.

Let me talk a few moments about my own company. Peabody operates 43 mines in 11 states. Most of these are surface mines, though we also operate 11 underground mines, including one of the largest in the United States. They range from Alabama to Arizona, and from Montana to Ohio. Obviously, we encounter a tremendous variation in the types of soil we must cope with, the vegetation indigenous or adaptable to the land, the amount of rainfall, the climate and the length of the growing season.

But we are serious about reclamation, and for each mine we evolve a detailed reclamation plan leading ultimately to beneficial, productive use of the land after mining. Because we are serious about it, we call on trained professionals. We have on our staff 14 men who work full time supervising our reclamation program. These men are agronomists, engineers and foresters with wide experience, and we vest them with authority to make sure that the job is done right.

In addition, we make reclamation part of the responsibility of every mine superintendent and every divisional vice president. Thus the job of reclaiming the land is a management responsibility on every man who is also responsible for producing coal by surface mining.

Peabody planted 4,000 acres to trees and wildlife shrubs last year, and 8,000 acres were seeded to grasses and legumes.

Because of the wide range of topographic and climatic

conditions we encounter, no single set of regulations can possibly do an adequate job of regulating reclamation. The productive farms we have created on mined land in Illinois obviously cannot be duplicated in the high, dry climate of our mines in western Colorado; in Colorado we restore mined land to good range land which is the same use made of unmined land in the adjacent area. It is for this reason--the diversity of conditions--that the coal industry has traditionally opposed federal legislation concerning surface mining and reclamation. However, the industry now operates under state laws in nearly every state in which coal is surfaced mined, and in general these are laws tailored to local conditions.

Therefore, the responsible companies of the coal industry now support reasonable federal legislation which will enable the states to do a more effective job of regulating surface mining and reclamation. We believe fair and reasonable regulation, uniformly enforced, can and will allow the continued production of coal for the national interest and will assure that all operators--including some who might otherwise shirk their duty, to the detriment of the whole industry and the nation--follow good reclamation practices.

And that brings up a question--what is good reclamation? If the law is to require it, we must agree on a definition.

To my mind, good reclamation is an integral part of the

mining process. It involves planning the final use of the land before the first ton of coal is mined and scheduling the mining process to help bring about that use of the land. It means following that plan during mining. It means following up the mining process as soon as practicable to shape the land, stabilize it against slides and erosion and to revegetate the surface.

The goal is to restore the land to productive, beneficial use--a use consistent with the nature of the soil, the topography and the climate, and with the uses of nearby lands. And this should be achieved as soon as reasonably practicable, consistent with the need for the ongoing mining operation, and with the growing seasons.

All too often it is forgotten that mining coal is a productive use of the land for man's benefit. It takes the land out of other uses--growing timber, or crops, or pasture, or simply providing aesthetic satisfaction as scenery--for a few seasons. But the land should be returned to another productive use, and this is being done. There is a time lag, but it need not be long: time to get the mining machinery out of the way, to reshape the earth and plant it, and time for the vegetation to grow.

This time lag, as much as we try to keep it brief, is the cause of much of the criticism of surface mining. Anyone who has seen an active mining operation knows it is ugly. Torn-up earth is not pretty, whether it occurs in a surface mine in the

coal fields, or on a downtown Washington street where a subway is under construction. The first question should be whether the disturbance is necessary. In the case of coal, it is vital. The second question is whether the disturbed areas will remain after mining. In the case of coal, these lands will be reclaimed for useful purposes.

In this age of renewed concern for the environment, surface mining has become a highly controversial issue. Some critics say surface mining of coal should be prohibited entirely, and there are bills before this committee which would do just that. Without arguing at this time the rights of the coal industry in the matter--though we have substantial rights at stake--I simply point out that prohibiting surface mining would bring on a national emergency in a matter of weeks.

The United States is facing a long-term energy crisis. Coal production has been steadily increasing to meet our energy requirements and nearly 44 percent of the coal produced last year came from surface mining.

Coal is the principal fuel for electric generating plants; nearly half their electric output is derived from coal. Surface mined coal constitutes almost 60 percent of the coal burned by the electric utility industry and accounts for 28.2 percent of all the electric power produced in this country.

To foreclose this fuel supply to the crucially important electric utility industry is unthinkable. More to the point, it is unnecessary; supporters of the legislation argue that land cannot be reclaimed after mining, but the fact is that it can be reclaimed and is being reclaimed.

Then if we must have coal, must it be from surface mines? The answer is yes. The United States has enormous resources of coal--the greatest reserves in the world--but a great portion of these reserves can only be produced by surface mining methods. They lie under earth strata too shallow, or too unstable, to support a roof safely, so they cannot be recovered by underground methods.

It is true that there remain vast coal reserves which can be mined by underground methods, but there are serious limits on the expansion on underground mining. To open an underground mine requires at least three years. Production from deep mines is, in general, more costly, less efficient, and more hazardous than surface mining. About half of the coal must be left in place in a typical deep mine to support the roof, whereas recovery of coal in a surface mine approaches 100 percent, and thus conserves our natural resources.

The coal industry believes the legislation should not include the environmental regulation of underground mining. The Congress has enacted the world's most stringent Coal Mine Health and Safety Act, the effect of which has borne most heavily on underground

mines. I am not here to argue the merits of the Act, but it has substantially increased the cost of underground mining and lowered the output per man-day. The problems of underground mining are bound to increase further, for still more stringent limits on coal dust in the air of underground mines are due to go into effect next year, and other features of the Act have not yet been fully implemented.

Furthermore, the coal industry is suffering a manpower shortage in underground mines. Although the rate of pay of miners ranks among the highest industrial wages in the world, many companies are short of men with the skills and training necessary to operate and maintain modern mining machinery, or with the background which would allow them to adapt to such training.

Under these difficulties, the production of coal from underground mines actually decreased in 1970 by 2.4 percent, while the output from surface mining increased by 24 percent.

I do not wish to belabor this point but to illustrate the fact that the simplistic solution of switching production from surface to deep mines would not be possible.

The United States not only must continue to have coal, in increasing amounts, but a major portion of that coal must come from surface mines. Surface-mined coal is a public benefit. The needs of our society demand it. Reclamation technology exists. The question then becomes how to achieve that benefit at the least cost to society--a cost measured both in dollars and in the effects of mining on the environment.

We believe that the principles of some of the pending bills show the way to effective regulation of surface mining and reclamation, with the affected states applying regulation drawn for their areas with the help of federal criteria and guidelines. This practice seems to be working well in the control of air and water pollution.

There are some points we wish to make for your consideration. Other witnesses will discuss them in more detail, but I would like to mention some of them briefly.

The question of subsidence from underground mining is extremely complex and completely unrelated to surface mining and reclamation and, as mentioned above, should not be included in this legislation. In addition, such matters as water or air pollution, which might result from coal mining operations, should continue to be handled as part of the appropriate water or air pollution statutes and not in this legislation. Enacting a new structure of regulation on top of these laws would be redundant, confusing, and unncesssary. The creation of overlapping jurisdiction invariably gives rise to conflicting approaches that add little to the solution but a great deal to cost.

Some of the bills contain undefined references to the "environment" and "natural beauty." I recognize the good intentions behind these terms, but they can be mischievous in effect. Beauty is indeed in the eye of the beholder and impossible to define. Nature

created the Bad Lands of South Dakota and they were made a national monument, but if any surface miner duplicated them even on a small scale, it would be called a national disgrace. Requiring that lands be returned to productive use can be enforced; requiring that they be restored to a natural beauty makes enforcement a matter of taste.

So long as the land is returned to productive use, the choice of that use should be left to the mine operator, or in the case of leased land, to the agreement between the operator and the landowner.

Peabody Coal Company has attracted much attention, not all of it well-informed, by its surface mine on the Black Mesa in Arizona, where we have leased the mining rights from the Navajo and Hopi Inidian tribes in order to supply coal for the growing power needs of the Southwest.

The Black Mesa contains about two million acres; we will mine 400 acres a year for 35 years or a total of 14,000 acres. Grading and reclamation follow close behind the active mining operations. We will restore vegetation to the land. We are seeding not only native grasses but are experimenting with other species which have succeeded in our arid Colorado mines. These may furnish better forage for the sheep which are the Indian's main source of income. We are also seeding legumes to add nitrogen to the soil. We want--and we expect--to make the land more useful than it was originally.

Rainfall is sparse on the Black Mesa, and much of it falls in cloud-bursts. There is evidence that reclaimed land will capture and retain this water better than the undisturbed soil,

which is often overgrazed and packed hard by sheep. We also plan to divert surface run-off into final mining cuts to create water reservoirs and to build check dams to protect roads against flash floods.

We pay the Navajo and Hopi tribal councils a royalty on each ton of coal mined on the Black Mesa. When the two power plants supplied by this mine are in full operation, the tribal councils will receive more than $3 million a year, or more than $100 million over the life of our contracts. In addition, the coal opeartions will supply jobs for some 300 Indians at about $10,000 a year each, making a $3 million annual payroll.

The rights of the Indians--and the environment--are closely and comprehensively protected by the terms of the leases, by the law, and by the supervision of federal agencies. When we dedicated the mine last year, we made a public pledge: "Peabody Coal Company intends not only to meet these requirements, but to do all the things which goodwill and common sense indicate are best for everybody living and working on Black Mesa."

Statement of Ralph Hatch
President of Hanna Coal Company

My name is Ralph Hatch and I am president of the Hanna Coal Company, a division of the Consolidation Coal Company of Pittsburgh. The Hanna Division's operations are headquartered in Cadiz, Ohio, and our mining operations are located mainly in the southeastern part of the state.

In 1970 Hanna mined 12,620,000 tons of coal: 9,234,000 were produced by surface mining. More and more coal is being mined by surface methods in Ohio. In recent years equipment manufacturers have developed larger and more efficient machinery which has made it possible for operators to keep up with the increased demand for coal. In 1970 the state of Ohio produced more than 55,000,000 tons of coal with almost 70 per cent of it coming from surface operations.

The growth of surface mining is not unique to Ohio. Much of our nation's coal reserves lie close to the surface of the earth and are mineable only through surface methods. The last two years have seen a dramatic increase in strip mining in traditional coal states and the opening of new mines in several previously unmined western states. The results have been twofold: we are producing more coal and we are disturbing more and more land which will have to be reclaimed.

The midwestern coal-producing states--such as Indiana, Illinois and Ohio--present reclaimers with an easier task than do the more mountainous areas of Kentucky and West Virginia. In steep hills operators contour mine until the height of the highwall prevents them from going any further. In more rolling, relatively flat areas we can extract coal from a much wider expanse of land through a process known as area mining. The terrain in southeastern Ohio, where my company operates, requires a type of mining with characteristics of both contour and area mining. Usually the coal lies 10 to 115 feet under the surface of the ground. Operators remove the overburden--the layer of rock and dirt covering the coal--with the help of power shovels or draglines. These earth-moving machines stack the dirt in a ridge next to the exposed coal seam, then smaller power shovels load the coal into waiting trucks. The next layer of overburden is stacked where the coal has just been removed and the procedure is repeated. As the operation proceeds, the dragline, or shovel, leaves behind it a series of ridges of overburden.

We recognize that it is not the easiest task to reclaim the land disturbed by surface mining. Nor is it impossible. Like any construction site, the land is subject to erosion, devoid of any vegetation and may contain materials which impede new growth.

Theoretically, reclamation of area mined land should be a simple process. The land is graded to a usable land form, the soil is planted and then nature takes its course. In reality the job is seldom that easy.

To begin with, advance planning is the key to successful reclamation. In many states, such as Ohio, the law allows a choice in selecting the end use for mined land--and we think any federal criteria should do this also.

Operators must consider, before their shovels take those first cuts, the uses or combination of uses for the reclaimed land--water impoundments, grazing land, housing developments, landing strips, what have you. In making a final decision, they must consider several things: What was the previous use of the land? What vegetation is best suited to the reclaimed soil? Can the terrain be mined so it will lend itself to a particular use? What are the long range needs of the community?

If the land is to be revegetated, the most important consideration of the reclaimer is to create a good growing medium for vegetation. Reclaimers have discovered that often the topsoil--where it exists--has become worn with time and usage and that a previously unexposed layer will contain better nutrients for maintaining healthy growth. More often than not a mixture of several layers of earth uncovered in mining will provide the best growing medium. We have found in some cases that the upper strata are the best and should become the future growing surface. Each case is different, however, and for this reason I would suggest that any legislation drafted by this committee reject the idea that replacing topsoil after mining necessarily insures good reclamation.

A skilled bulldozer operator is a must for effective reclamation because he is able to recognize and use the best earth layers while burying the less desirable ones. Most state laws call for a certain amount of grading and while operators acknowledge this as a necessary step, they have also learned that it must be done with considerable expertise: the lay of the land, the control of rainfall and accessibility to the land are all determined by the grading process. However, grading the land excessively can pack the earth so firmly that seeds and water won't penetrate its surface. Even when grading is performed correctly,

there is a certain amount of compaction, so many operators follow the dozer with a giant disc-harrow which breaks up the soil and prepares the seed bed.

We at the Hanna Coal Division are particularly interested in developing long range plans for our reclaimed acres that will allow us to integrate them into the undisturbed land surrounding the areas we mine. We have learned that creating cattle operations is one of our most effective ways to make land useful over a sustained period of time.

In our search for plant species that will help us develop good pasture-land for cattle, we have experimented with a number of grasses and legumes. We use alfalfa and Kentucky 31 fescue and other crops commonly grown in neighboring areas. And we have pioneered with a legume called crownvetch which we've found to be particularly beneficial both to the animals which feed on it and the ground it is planted in. Crownvetch has a deep root system that often goes down 10 to 12 feet into the ground and assures the plant of ample moisture even during the dry summer months. This far-reaching root system also helps prevent soil erosion. Additionally, as a legume, crownvetch contains nitrogen--an element lacking in almost all mined land--and fixes it into the soil. We've also found that on our land planted to crownvetch, the leaves and stems accumulate and build up a layer of useful humus.

At Hanna we're quite proud of our accomplishments and think they serve as an example of how mined land can be creatively and successfully returned to productive use. We began reclaiming mined land back in 1941 when we planted trees on land mined the year before. Later we began grading and planting grasses. And we've been doing it ever since.

During the last 30 years, Hanna has graded approximately 27,000 acres of surface-mined land. Of this total 12,000 acres have been seeded with native grasses and legumes and another 15,000 have gone to crownvetch. On this land we have also planted 15 million trees.

I mentioned that cattle grazing is one of our means of putting land back into long-term, productive use. We have pastured cattle on our land since 1958. Five thousand of our crownvetch acres have recently become home for an outstanding herd of 400 registered polled Herefords. We also have 400 head of commercial grade cattle.

Within five years we hope to have 1,000 registered brood cows and 1,500 commercial cows which we'll use for producing feeder calves for market. We want to make the calves from our registered herd available to 4-H and other groups to help upgrade the cattle production in our part of Ohio.

Some of our reclaimed land--such as the area we are using for the Herefords--we manage ourselves. Other sections of our pastureland are leased to local people to supplement their own grazing lands.

But not all our land goes into agricultural uses. Reclamation can take many forms and one of our most successful is the 408-acre Sallie Buffalo Park we created on mined land just south of Cadiz, Ohio. This land--now a much-used recreation area--was strip mined for coal back in 1953, reclaimed in 1955 and opened to the public in 1965.

Today it has four fresh water lakes, totaling more than 27 acres, that are stocked with bass, bluegills, bullhead, trout and crappies. We also have 250 picnic tables and charcoal grills, eight shelter houses for 40 persons each and a campground which includes areas for trailer parking. These facilities are free of charge and used extensively both

by local residents and vacationers passing through the area. About 30,000 persons have used the park so far in 1971.

Another park on reclaimed Hanna land is now in the planning stages--the 1,150-acre Friendship Park twelve miles southwest of Steubenville. This land was mined by Hanna and after it was graded, given to Jefferson County to be developed for recreational purposes. This illustrates an earlier point--we planned this use before mining. We mined and graded it in a fashion to shape the land for its intended use.

Again, the park will be open to the public. It will take several years to develop but will ultimately include fishing lakes, swimming areas, golf courses, a ski slope, a farmyard zoo, and the fairgrounds and exhibition halls for the Jefferson County fair. The Jefferson County Airport is already under construction and it is this far advanced because we shaped the land for that use in grading.

We have put substantial amounts of time and money into our efforts to do more than pay lip service to the Ohio reclamation law. Nearly 100 Hanna employees work exclusively year around on reclamation projects. Fifty four of them operate 18 bulldozers, including some of the largest on the market, on three around-the-clock shifts. The other employees help with planting, fencing and other reclamation tasks. Some are cowboys transplanted from Oklahoma.

Because we have been successful in our reclamation efforts, we do not regard a federal reclamation law with apprehension. The goals of reclamation must be specific but the means for achieving them should be varied and flexible. Any federal legislation should allow for the same kind of alternatives.

The aim of good reclamation is to return the land to productive use--to yield some other crop or some other benefit, after it has yielded its crop of coal. We support that aim and believe it should be set out in the federal criteria. We do not, however, believe that either the federal or the state governments should go beyond that goal to specify what the use of the land should be. Beyond the fact that the use of the land should be beneficial or productive, the owner of reclaimed mined land should have the same rights as the owner of unmined land. If the owner wishes to grow timber, he should not be compelled instead to grow alfalfa and get into the cattle business. Government's function should be to insure that the chosen use of the land is done right--for example, to require that the seeding or planting be successful.

Another matter which bears consideration is the pressure placed upon the operator to perform his reclamation. We are all eager to return mined land to useful, attractive functions as quickly as possible. However, specific recommendations regarding time and distance must be drafted within realistic boundaries. There is, for instance, a bill before this committee which requires that reclamation must follow 300 yards behind the act of mining. From the standpoint of efficient mining procedures this would present a major setback. For example, to assure continuous production in the face of possible machine failure or bad weather, we often lay bare the coal seam far ahead of the loading shovels. There may be more than 300 yards of coal ready for loading--but we can't reclaim the land until the coal is removed.

Also, from a safety standpoint, following this closely on mining operations would jam the pit and increase the potential for accidents. What is truly important is the length of time it takes to accomplish

reclamation and federal legislation should direct its regulations toward this goal.

The highwall--the side of the surface mine pit which has not been disturbed--remains standing after we are through mining. Treatment of the highwall in the reclamation process should depend on two considerations. The first is whether the operator plans to return in the future and mine more coal from that seam or one on the hill above it. In that case, the land will be reaffected, and the existing highwall will be removed or buried, so there is no point in treating it now. The second consideration is the use planned for the land.

In any event, any remaining coal in the pit, and any toxic material there, should be buried in the grading process so there will be no problem of plant growth or acid water. This eliminates part of the pit and reduces the height of the highwall, yet leaves it available for the impounding of water if that is desired. By damming the ends of the pit, a lake is easily created for agricultural and wildlife water or recreational purposes.

Where the land is to be left in a rugged state for wildlife and timber, sloping the highwall to a natural angle of repose should be an acceptable treatment. A similar solution may be to stairstep or terrace the highwall, as a highway cut is often treated, and revegetate the terraces. This promotes stability and permits the highwall to blend in more readily with the surrounding area.

These are three of the possible approaches where treatment of the highwall is called for. The statute should specify that they are permissible, but should also leave room for other methods which can also do the job effectively.

Restoring mined land to the original contour, as sometimes advocated, can require an enormous amount of dirt-moving, at enormous

70-867 O - 72 - pt. 1 - 24

expense, for little benefit. The so-called original contour is, geologically speaking, only the contour of the moment, the product of ages of erosion and other natural processes. It may or may not be conducive to the best use of the land. Grading in the reclamation process can often make land traversable by farming or logging machinery, where it had been inaccessible before mining. So we suggest that the standards steer away from any doctrinaire solutions and accept productive use of the land on a case-by-case basis.

As Mr. Bagge said, my company operates underground as well as surface mines. Some of the bills before you also propose to regulate the environmental effects of underground mining, particularly subsidence. From the standpoint of regulation, no practical technology has yet been developed to control subsidence in underground coal mining, so there is no way that that part of the statute could be enforced.

For the present, the idea of regulating an uncontrollable occurrence should be excluded from the pending legislation. I have mentioned several items that we object to in various proposals before this committee, but I do not want to give the impression that the coal industry is opposed to federal regulation of reclamation of mined land. We are not. I would even go so far as to say that we welcome realistic regulation in that it is a step forward in establishing a consistent and much-needed natural resources policy for our country. But let a realistic law be drafted which will help, rather than hinder, the performance of the complicated and all-important task of returning our mined land to productive and attractive use.

Statement of Paul Morton
President of Cannelton Coal Company

My name is Paul Morton and I am president of the Cannelton Coal Company, a subsidiary of the Algoma Steel Corporation, Ltd., of Canada. My company mines coal in West Virginia, the largest coal-producing state in the country. In 1970 West Virginia produced a total of 144,072,000 tons of bituminous coal: 27,657,000--or approximately 18 per cent of the state's total--was produced by strip mining.

Obviously the majority of our state's coal production comes from underground mines, but our strip mining is of special interest to the nation because our state, like Eastern Kentucky, is hilly, and mountain stripping presents unique reclamation conditions.

Mountain stripping has been the target of considerable criticism in the past. Some of it is justified. I am not here to defend the past neglects or errors of the coal industry. What I do want to do is explain the innovations which have taken place in mountain strip mining in the last few years. It is these new techniques of mining and reclamation which now make it possible to restore almost all mountain lands to productive use. And for the fraction that can only be reclaimed at prohibitive cost, I suggest that future research will develop methods applicable to these critical areas.

Before describing the various methods employed in surface mining, I want to call the Committee's attention to a fact which I believe deserves

more serious consideration than has been accorded in the public discussion of this issue. I sincerely believe that the surface mining method of extracting our Nation's coal resources is more nearly in accord with rational conservation of natural resource policy than is the deep mining for coal. By surface mining we are presently able to make a total recovery of the resource while this is not possible through deep mining. For example, in my own operations, Cannelton Coal can and will recover all 14 million tons of coal reserves presently held in fee and covered by our present 2,000-acre permit. Through the best in underground methods, we are able to extract less then 4 million tons from that same reserve. Hence, more than two thirds of our coal would be non-recoverable if not surface mined.

The implications of this elemental fact should be obvious to the framers of our natural resource policy. Deep mining simply does not provide the Nation with a viable alternative to surface mining. Sound conservation and rational natural resource policy must permit the continuation of a mining methodology which enhances the maximum recovery of this vital resource.

Most mountain coal available through strip mining lies in a series of seams interspersed with layers of earth and rock. The standard method of recovering this coal has been contour mining. In this process, a bulldozer operator cuts a bench on the hillside at the level of the coal seam. The bulldozer winds around the mountain following the coal and the overburden, resulting from the first cut into the hill, is moved to the outer edge of the bench and the outslope. The men then remove the coal and make more cuts--sometimes three or four--into the mountainside,

placing the succeeding ridges of overburden on the bench.

Contouring is often used in conjunction with auger mining--a process which draws the coal from an exposed mountain seam by inserting giant, power-driven bits into the side of the hill.

Contour mining is a traditional way of extracting coal from mountainous regions, but it does present problems. The most obvious is that contouring can create potential slides by depositing spoil materials on steep inclines. If the outslope is covered with logs or stumps, these materials can rot and decay and send the overburden sliding down the hillside. Water seeping between the overburden and the outslope also causes instability.

Research in controlling slides has led coal operators and state agencies to develop new mining methods for hilly regions. One method, developed by Warner Ford, an engineer with the Kentucky Division of Reclamation, is the so-called slope reduction method. The goal is to reduce the degree of steepness of a slope so that the overburden will be less susceptible to gravity's pull. Operators accomplish this goal by first removing all the underbrush from the outslope. Then the overburden from the first cut is spread thin over a pre-determined area, rather than stacked in a pile at the top of the outslope. In spreading the overburden, the degree of incline of a slope can be reduced by as much as 5 to 7 degrees. When the operator takes further cuts, he stacks the overburden on the bench. The slope reduction method has been highly effective in preventing slides: additionally, reclaimers can begin revegetating the outslope while mining operations are still in progress.

Still in the experimental stages is another new mining technique called the box cut method. This, like the slope reduction method, is a variation on contour mining designed to remedy the problem of troublesome slides. In the box cut method, the operator makes his first cut well above the coal outcropping. He temporarily stacks the overburden on a prepared bench above the outcrop while he removes the coal from the cut. When this first step is completed, he fills the cut with the original overburden, then makes another cut to the same slope further down the slope. The overburden from this second section is stacked on top of the first cut. When all the coal exposed by this cut has been removed, the overburden is returned to the trench. The finished effect is a hillside with no overburden on the outslope--hence, no slide potential.

Not only does the box cut method reduce the likelihood of slides, it minimizes the controversial highwall. There is a feeling among many strip mining critics that the vertical bank left after contouring defies successful reclamation. While most highwalls in areas of dense vegetation stand out against that background and do present special problems, I would like to point out that time and vegetation will improve their appearance. And, in some instances, they do serve a useful purpose.

To begin with, many highwalls can be treated with vegetation. In Boone County, West Virginia, for instance, there are mountains that were mined 20 years ago where it is virtually impossible to identify the three former highwalls now covered with a dense, young stand of timber. Where several cuts create particularly tall highwalls, operators can, if necessary, carve steps into the bank and plant on the terraced surfaces. Additionally, the overburden from above a highwall in certain instances can be graded over the highwall to produce a slope suitable for growing trees or grasses.

I mentioned that highwalls sometimes can be used for special purposes. To take an example from my own operations, we are now grazing a small herd of Angus and Charolais cattle on the benches created by one of our contour operations. The bench is almost 300 feet wide, giving the cattle ample room to roam. The highwall provides a protective windbreak and serves as a natural fence for one side of the operation.

But I am not here to sell anyone on the idea that highwalls are desirable. Blending mined land into unmined land is, unquestionably, easier to accomplish without them. With the new methods and larger equipment many of the highwalls which would have been made five years ago are no longer left.

The approach which my own company is currently using is a combination of the so-called valley fill method and area mining of mountain tops. Let me first describe the valley fill procedure. Most mountain tops are indented with narrow valleys. Where the coal seams lie near the top of the mountain, we build an earthen dam at the mouth of the valley, then remove the overburden from the coal and store it in the horseshoe-shaped hollow. The result is a wide expanse of level ground--the sort that is at a premium in mountain areas.

In area mining of mountain tops the first cut is spread down the outslope in the same fashion used for the slope reduction method. The remainder of the mountain top is area-mined in the same way the flat lands of Indiana or Illinois are mined. Once the coal has been removed, the land is graded to a gently rolling topography. Land mined in this manner can be planted to forests, grow agricultural crops or be used to graze livestock.

I should like to illustrate the importance of the value of such wide expanse of level ground produced by surface mining by sharing the experience of the people of the Upper Kanawha Valley. Flat land is so extremely limited in this area that an acute shortage of land for housing, schools, and institutions has existed for many years. The existing areas along the narrow Kanawha Valley are completely occupied with residential and industrial developments. This has created a crisis in providing residential housing, for example, for hospital personnel and the faculty at West Virginia Institute of Technology and a site for a new high school complex. In this respect the Kanawha Valley is not unlike many other areas in mountainous terrain which have experienced population growth which is confined to a narrow strip--like corridor development along the rivers. Thus the concept of creating level land to establish a base for further residential, commercial and institutional development in the Upper Kanawha Valley is not a new one--or one conceived by Cannelton Coal. This was a proposal advanced by the late Dr. DeWitt Peck, a community leader in this area of West Virginia, more than five years ago. This was not achieved, however, because the large capital sums were not available to bring about this urgently needed goal.

In 1967, however, when my company began surface mining operations in this area, it offered the region a unique opportunity to have this vision of Dr. Peck's become a reality as a byproduct of surface mining for coal. Hence, the surface mining of coal provided the economic base which was lacking heretofore.

What is presently contemplated by our company, working together with the West Virginia Institute of Technology, is a level area of 2,500

acres on land presently held in fee by Cannelton. Additional land contiguous to this property could be integrated into this project in the future.

Under our present mining permit 700 acres would be available for development within 3 to 5 years. Access would be provided by 1973. Ultimately we could make 2,500 acres available for a population of 23,000.

In order to illustrate this concept further, consider a similar instance of the creation of level land in this area by the construction of the Kanawha County Airport at Charleston. The public had to pay, in this instance, for leveling the land in a manner similar to what we are doing in mining.

If our plan comes to fruition, we will have accomplished a landmark in reclamation. If it does not, we will be disappointed, of course, but the land will still lend itself well to expanding our livestock herd and increasing our acreage planted to crops or reforestation.

Both the valley fill method and the area mining of mountain tops minimize the visual effects of mining from the outset and provide more flexibility in selecting the end use for the land. Additionally both methods can accomplish complete recovery of a coal seam. While this may be difficult for some people to recognize as conservation, it is just that. By taking all the coal in one mining operation, we not only contribute to the Nation's energy reserves, we also assure that the land will not be needlessly disturbed a second or third time. This has, unfortunately, been the practice among some operators who take what coal they can easily extract from a hillside, make their profit and leave. Coal that could have been mined at the time is left behind. Later, either the same company or another one may come back to mine the remainder of the seam. As a

consequence, what reclamation has been performed on the land will be disturbed and will have to be performed again--from the beginning. In most instances, through proper advance planning and by using our newer mining methods, total--or near total--recovery and total reclamation can be achieved in one operation.

I am optimistic about the advances that research has made in reclamation. The four new mining methods which I have described to you--slope reduction, box cutting, valley filling and area mining of mountain tops--are more than theories conceived in a laboratory. Our laboratory is the land and what we try on it must either work or be discarded. I do not mean to imply that we do not experiment--we do. But we are in the business of mining coal as well as reclaiming the land and as businessmen we put a premium on efficiency. The techniques I have talked about are exciting because they strike the necessary balance between allowing efficient coal recovery and making successful reclamation possible.

I do not mean to imply that our new methods are the only means of mining which allow successful reclamation. There are hundreds of instances where hills which have been contour mined are now so well revegetated that most people do not know that they were once active strip operations. But our search for new and better ways to extract coal has made reclamation a less difficult and time consuming task.

Research has also enabled us to solve some of the other problems of mountain mining. Seeding, for example, is not easily accomplished on the steep slopes of West Virginia. The use of the hydroseeder--a machine which sprays a mixture of water and seeds onto a hillside--has allowed us to revegetate hillsides more quickly and effectively than before. Aerial seeding by helicopter is also helpful in our up-and-down terrain.

We've also spent considerable time in cooperation with state, federal and university research teams in tracking down various plant species which will adapt themselves to mined land and thrive in sometimes difficult soil and weather conditions. But just as important as appropriate species is the ground they will be planted in. Fertilizers will provide a necessary shot in the arm to help establish plants initially, but its effects are only temporary: the effects of good soil, on the other hand, will last much longer. If the earth left after mining is acid, we grade it and cover it with a layer of soil more receptive to vegetation.

Grading must be done with caution and skill, however: while some earth moving is always necessary before reclaimers can begin planting, excessive grading--especially in the muddy spring months--compacts the soil and makes it difficult for water to penetrate the surface.

Water--too much or too little of it--is always a concern in reclamation of mined land. Especially on steep slopes, heavy rainfall can erode a hillside and carry silt from old mining operations into the streams below. Again, our research has helped us correct this situation.

In West Virginia we are required by law to construct silt dams or basins which will slow the flow of water to the bottom of a slope and catch sediment and allow it to settle out. These ponds must be built before mining begins and, consequently, they are an integral and carefully planned part of the entire mining operation. Our experiments have also shown that land that is furrowed and planted checks water runoff more efficiently than land that is graded normally.

In view of the substantial progress we have recently made in reclaiming mountain land, total prohibition of strip mining is unrealistic

and unnecessary. Those who say that mountain mined land cannot be returned to productive use are not taking into consideration the great strides we have made in the last five years. Not only are we now able to reclaim previously marginal land, we are able to do it faster. There is a necessary lag between the time mining takes place and the day when the land once again blends into the landscape. This lag, however, has in many cases been shortened to a period of one to two years--a period no longer than what we endure when new highways or subdivisions are relandscaped.

If the legislation now being considered by this committee does prohibit mining in certain areas, these areas should be identified on a case-by-case basis rather than under a blanket policy. I say this because, as I have pointed out, our improved technology is continually allowing us to successfully reclaim lands that were once extraordinarily difficult. To cite an example, in Kentucky the law prohibits conventional strip mining on slopes steeper than 27 degrees. With the development of the slope reduction method, these hills can now be mined and, more importantly, can be successfully reclaimed.

A review of the individual areas proposed for prohibition could lead inspectors and operators to conceive solutions to particular problems presented by specific areas. Without such review, many areas actually capable of being reclaimed through new technology will be unfairly classified as unmineable.

Some of the proposals now being studied would require that topsoil be replaced, but this suggestion should be viewed in the light

of what we have learned in recent years. Much mountain topsoil is worn out to begin with and in some cases strata of earth uncovered in mining provide better growing media than the original top layer. Reclaimers have discovered that knowledge of the soil strata permits the identification of which layer, or combination of layers, of the overburden will best support vegetation. Having determined this, they then instruct the operator to mine the land so that this soil will become the upper layer when grading takes place. Buried strata do not, of course, always provide better growing conditions. Sometimes the topsoil should be replaced. Again, each situation should be studied individually.

The coal industry favors federal legislation regulating strip mining. We realize that the myriad problems presented by reclamation can be effectively approached through a national policy realistically written and justly administered. What we do ask is that the architects of this law realize that not all mined land is alike, and that a certain degree of flexibility is necessary to return this land to productive use.

Concluding Statement by Carl E. Bagge
President of National Coal Association

The National Coal Association and its member companies support federal legislation realistically designed to assist the states and the surface mining industry to achieve sound, effective reclamation of surface mined lands.

FEDERAL AND STATE RESPONSIBILITIES

We believe that the approach, such as contained in S. 630 and S. 993, which encourages the states to develop their own programs based on broad federal criteria, provide the most effective way of insuring this objective. Climate, soil, vegetation and topography differ greatly throughout the country and state authorities are most familiar with the conditions in their particular areas and how to most effectively cope with them. Many states have also acquired considerable expertise in reclamation and already have a functioning regulatory structure, which can be modified to comply with the federal statute. Many of the pending legislative proposals recognize, as S. 630 does in Section 3 (e) and as S. 993 does in Section 102 (c), that the states should

have the initial and primary responsibility in developing the specific regulations and requirements for achieving the federal standards for reclamation.

If a state does not submit a plan which meets the requirements of the Act, as determined by the Secretary of Interior, or a state fails to adequately enforce its regulations, then the Secretary of Interior could require the state to take the necessary corrective action; failing in this the federal government would issue and administer mining regulations for the state.

In our judgment direct federal regulation, as proposed in S. 2777 or H.R. 6482, or any federal legislation which would attempt to set out the specific reclamation requirements would not be desirable. Such proposals could end up by imposing uniform regulations on all the states regardless of existing conditions and fail to give any consideration to legitimate local concerns. The states are best qualified to deal with the local conditions, for example, the establishment of general land use objectives. It is more practical and realistic for Congress to require the states to establish the reclamation programs and permit the Secretary of Interior to monitor their effectiveness. The federal government should not preempt the field and create a federal administrative structure which would merely duplicate the expertise and the existing regulatory machinery of the states.

There is no advantage to the costly approach required by S. 2455 and H.R. 444. These bills would require the Secretary of Interior to develop and enforce federal regulations for all the states. The states would be permitted subsequently to submit their own plans for approval and, if accepted, they could be substituted for the federal program. Most of the states where coal is surface-mined already have some form of reclamation and surface mining regulations and would presumably be willing to modify it to comply with any federal criteria established. As a result, mine operators would, in quick succession, be responsible first to the states, then to Washington, then back to the states. This would be confusing, costly and impractical.

The state-federal cooperative approach we endorse considers the interests of both the state and federal governments in the regulation of surface mining and reclamation and gives each an active role in the areas of their primary concern. This type of legislation will insure that all the state regulatory programs will be based on the established federal criteria for reclamation, while at the same time permitting the states the flexibility necessary to develop the specific requirements most suitable for the conditions which exist in each state. By reviewing the proposed state plans and monitoring their effectiveness, the federal government can insure consistently fair and equitable treatment and eliminate

the inequities which exist among the various states. There is no need to create a complex federal administrative structure to deal with the day to day operations. Reliance can be placed on the state machinery which, with federal support, should be capable of functioning effectively. Federal funding assistance will, of course, be extremely beneficial in this regard. Many state programs suffer from a lack of adequate funding and we believe that the continuation of federal grants, even after the developmental period, would help immeasurably in improving both state administration and enforcement.

Both S. 993 and S. 630 would vest the administrative authority in the hands of the Secretary of Interior. Just as we believe that the state administrators are best qualified to establish the specific requirements for reclamation within their state, at the federal level the Department of Interior is better qualified than any other federal department to administer the federal aspects of the regulation of surface mining and reclamation. This is particularly so in view of the fact that the Mining and Minerals Policy Act of 1970 charges the Secretary of Interior with the responsibility of carrying out the policy of that Act that it is in the national interest to foster and encourage private enterprise in the development of economically sound and stable mining, minerals, metal and mineral

70-867 O - 72 - pt. 1 - 25

reclamation industries. Federal legislation on surface mining should be consistent with the directives of this recently enacted statement of National Mining and Minerals Policy.

PROHIBITION OF SURFACE MINING

The proposal in S. 1498, which calls for the outright prohibition of surface mining of coal, is both unrealistic and irresponsible, not only because a vital 44 percent of U.S. coal production is mined by surface methods, but because it ignores the fact that the technology exists for the effective reclamation of mined lands. As we have shown, reclamation can be made to work and the disturbed lands can be returned to beneficial and productive uses.

Eliminating 44 percent of the nation's coal production would have enormously damaging consequences. Let me expand a bit on what this proposal really entails: Most of the surface mined coal goes to the electric utility industry--more than 75 percent of the output of surface mines went to utilities in 1970 and it was burned to produce about 34 percent of all the steam generated electricity produced in the United States. In 1970 the electric utilities generated a total 1.5 trillion kilowatt hours, including the amount produced by the great hydroelectric dams, and more than 28 percent of this electricity was produced from surface mined coal.

If this source of coal were to be eliminated by complete prohibition, the utilities would be hard pressed to come up with a substitute source of fuel. Atomic power has not developed as anticipated and there is a shortage of domestic oil and gas reserves. Thus, if they were forced to turn to fuel oil, it would be necessary to import it. Assuming the volume were available and the existing facilities could be converted to handle fuel oil, it would result in an additional loss of $2.5 billion annually in our balance of payments.

Furthermore, it is not realistic to expect that surface mined coal could be replaced by production from underground mines. While there are ample underground reserves, to produce the 264 million tons of surface coal mined last year would require 132 additional underground coal mines of 2 million tons annual capacity, a capital investment of $3.2 to $3.7 billion, three to five years before full production could be anticipated and an additional 78 thousand trained underground miners. The effect on the cost of coal would be tremendous--the coal industry would be required to virtually duplicate its present underground mine capacity, calling for an enormous capital investment, and at the same time be required to write off as a loss its existing investment in surface mining equipment and reserves.

Gentlemen, I could go on, but I hope I have demonstrated that to prohibit surface mining would have disastrous results for the nation and its constantly increasing need for energy.

I believe also that my colleagues have demonstrated that so drastic a measure is not only unwise but unnecessary, because reclamation of mined land does work and is steadily being improved.

If a national prohibition of surface mining is unwise, any attempt to impose prohibition on a state or area basis should also be approached with the greatest caution. The consequences to the nation might be less widespread, but they could still be serious. If there are any mine sites, existing or proposed, where reclamation technology cannot cope with the topography or soil conditions at present, this should be decided on a case by case basis.

To prohibit mining in a certain area, for example, above a certain degree of slope, would be a grave mistake. Mining and reclamation which is impractical in some areas now may be quite feasible next year because of new developments in technology, such as those discussed by Mr. Morton. If the state agency will specify the reclamation requirements that must be met in the area, the operator will be the best judge of whether he should undertake a particular operation. And with fair enforcement of those requirements, sound reclamation will be achieved. However, if the state agency is to be given the power to prohibit mining where it believes the area cannot be adequately reclaimed at the present time (as provided, for example, in S. 993) this authority should be

restricted to a determination upon each individual application for a permit based on the particular facts of each case.

It is imperative that the operator have the right to request a hearing before the state agency on the denial of any permit or the issuance of any order which prohibits his mining operations. Also, since the mining of minerals has a substantial effect upon interstate commerce, federal legislation should give the operator the right to appeal to a federal review board or to the Secretary of Interior the final order of any state which, in effect, prohibits his existing or proposed mining operations. Such a review board could be an independent agency or the existing Office of Hearings and Appeals within the Department of Interior. S. 993 does not permit a direct appeal by the operator to the federal government nor does it require the state to grant an operator a hearing if his operations are prohibited. Both of these rights are essential to protect the interest of the operator and the interests of the nation, which has an important stake in the development of our natural resources.

ADVISORY COMMITTEE

Neither S. 993 nor S. 630 provides for public notice and the right to comment by all interested parties with respect to the issuance of federal guidelines or any regulations that might

be issued to assist the states in development of their particular programs. Admittedly, such guidelines or regulations would apply essentially to the states but they could be extremely important in shaping the precise nature of the state programs and thereby have a direct effect upon surface mining operators. Consequently, public notice and the right to comment should be required. In addition, we believe that an advisory committee should be established with representatives from industry, government and the private sector included, which would be required to submit its recommendations on any federal guidelines or regulations prior to issuance. The legislation should also require that state plans include an advisory committee similar in make-up and function to the one on the federal level.

OTHER SURFACE MINING CONSIDERATIONS

The legislation should define surface mining reclamation in order to further the objective of productive or beneficial use of the land. Reclamation should include planning for such use before mining and directing the mining, grading and vegetation efforts toward that objective along with the recovery of the mineral resource.

Laws and regulations, however, should stop short of specifying what the productive or beneficial use of the land should be. The owner cannot be denied the same rights as the owner of unmined

land to decide whether his property shall be used for farm or forest, park or pasture, within, of course, the same constraints applicable to other land owners.

Retaining and replacing the topsoil, as H.R. 6482 proposes, is not essential. As other witnesses have pointed out, there are often subsoils more suitable for plant growth than the original topsoil. If the criteria require successful revegetation, the operator logically will place good soil material as the growing medium.

Federal legislation should provide for alternative methods of treating the highwall in coal surface mining. There are three--probably more--acceptable methods: (1) water impoundment, (2) stair-stepping or terracing, and (3) sloping to a natural angle of repose. Criteria should allow flexibility including, but not limited to, these methods.

REGULATION OF UNDERGROUND MINING

The problems involved in subsurface mining are extremely complicated, both technically and legally. They are in most instances unrelated to surface mining and reclamation, which are the primary concern of the pending legislation. The only problems they have in common are air and water pollution, which are regulated now by Federal and state law. Including the regulation of underground mining in surface mining legislation is

therefore unwarranted. This would confuse and disrupt the effective administration of both underground and surface mining by possible conflicting regulations. To include underground mining in federal legislation which intends to rely on the state's surface mining regulatory structure is inconsistent with the predicate underlying the federal-state approach to this problem. It would require the state surface mine land reclamation inspectors to acquire a complicated new expertise in a completely unrelated field.

Furthermore, the Bureau of Mines undertook an in-depth study of the effects of underground mining and of mineral processing and a 239 page initial draft was made public in August of 1969. Although from all indications the study was intended to be an exhaustive treatment of the subject, the Department of Interior found, upon review, that it did not adequately support the recommendations that it presents. As a result, it was not to be construed to represent the official opinion of the Bureau of Mines, the Department of Interior or the Federal Government. In our judgment, before effective legislation can be enacted to regulate underground mining, it is essential to understand the dimensions of what are involved and what can realistically be accomplished.

SIGNIFICANCE OF SURFACE-MINED COAL

Coal plays a vital role in the rapidly expanding demand for energy in the United States--especially in the electric utility sector of the economy. In 1970, total bituminous coal and lignite production of 602.9 million tons accounted for 25 percent of the total production (Tables 1 and 2) and 19.7 percent of total consumption (Tables 3 and 4) of mineral energy resources and hydroelectric power in the United States. Excluding noncompetitive uses, such as gasoline for cars, coal's share of the energy consumption market ranged from 25 to 30 percent.

Of all the coal produced in 1970, 264.1 million, or 44 percent, came from strip and auger mines. The production of surface-mined coal was up 50.8 million tons, or 23.8 percent over the 213.4 million tons produced at surface mines in 1969, while underground production, due to labor difficulties and new mining legislation, was down 8.3 million tons, or 2.4 percent from the 347.1 million tons produced at deep mines in 1969. (Table 5) Further increases of surface-mined coal production are expected in 1971.

The growing contribution of surface-mined coal to the rapidly expanding U.S. energy needs is evidenced by the fact that surface-mined output increased from 9.4 percent of total coal production in 1940, to 44 percent in 1970. (Table 6) Today, as in 1940, surface mining is carried on in nearly every state where coal is

mined. Surface-mined coal not only represents a substantial percentage of the coal mined in the respective major coal-producing states, but is practically the only method of mining employed in some states. (Table 6) In fact, large reserves of Western coals can only be extracted by surface mining.

Surface-mined coal became increasingly important to the U.S. energy picture in 1970. Deep-mined coal production declined in 1970, the nuclear power program showed signs of not meeting expectations, natural gas grew short in supply and the domestic oil industry no longer had the capacity to meet U.S. utility and industrial demands. But in 1970, surface coal mining proved it had not only the reserves but also the capacity to expand and meet, on short notice, a sharp increase in the demand for energy fuel, as evidenced by the increased production of 50.8 million tons in one year.

The 1970 production of surface-mined coal not only contributed substantially in assuring an adequate supply of coal for consumption by the electric utilities, but was also a major factor in enabling the utilities to rebuild coal stockpiles from a low of 49.5 million tons (58 days supply) on March 31, 1970 to 71.3 million tons (75 days supply) on December 31, 1970, as reported by the U.S. Bureau of Mines.

In 1970, 331.4 million tons, or 55 percent, of total 1970 coal production was shipped to U.S. electric utilities. Coal

accounted for 46.4 percent of the total kilowatt-hours of electricity produced by U.S. electric utilities from all fuels and hydropower, as reported by the Federal Power Commission. Excluding hydropower, coal generated 55.3 percent of the kilowatt-hours of electricity produced by the utilities from all fuels. (Table 7) Surface-mined coal accounted for a major share of utility shipments.

Some 75 percent, or 198 million tons, of the 1970 surface-mined production of bituminous coal was shipped to U.S. electric utilities. (Tables 8 and 9) These shipments amounted to 59.8 percent of the total bituminous coal and lignite tonnages shipped to the utilities in 1970. Therefore since coal produced 46.4 percent of 1970 coal production, it is reasonable to assume that about one-fourth of the total electric energy generated in 1970 was produced from surface-mined coal.

The significance of the surface-mined coal sent to the utilities in 1970 is further evidenced in the following examples:

(1) The estimated 198 million tons of surface-mined coal shipped to U.S. electric utilities in 1970 represents the equivalent of 431.8 billion kilowatt-hours of electricity. These 431.8 potential billion kilowatt-hours (Table 10) would amount to:

a. 28.2 percent of the total electric energy production of 1,529.6 billion kilowatt-hours produced in 1970.

b. 34.3 percent of the 1,259.5 billion kilowatt-hours produced by fossil fuels (excluding hydro and nuclear power.)

c. 33.7 percent of the 1,282.3 billion kilowatt-hours produced by all fuels, including nuclear power, but excluding hydropower.

(2) The 431.8 potential billion kilowatt-hours generated from surface-mined coal closely approximates the total of 453.8 billion kilowatt-hours produced in 1970 in the New England, South Atlantic and East South Central Census Regions (18 states and the District of Columbia).

(3) The 431.8 potential billion kilowatt-hours generated from surface-mined coal would equal the output of some 62 nuclear generation plants of 1,000 MW capacity each, operating at 80 percent of plant capacity.

Any major curtailment of surface-mined coal production would result in not only a certainty of coal shortages but also in chaos in coal marketing and transportation. Additionally, replacement of surface-mined coal by deep-mined coal would require considerable time and money. Moreover, an attempt to replace surface-mined coal with alternative fuels would be fraught with many problems including defense considerations.

It is evident that a substantial increase in imports of foreign oil to replace surface-mined coal production would not only endanger

the U.S. defense posture in the event of an emergency, but would represent a substantial negative factor in the U.S. balance of payments in international trade. For example, the 264.1 million tons of coal produced at surface mines in 1970 equals 1,006.0 million barrels[1] of imported heavy fuel oil valued at over $3 billion, on an estimated 1971 basis of $3 per barrel.

If surface mine production were to be replaced by underground production, 264 deep mines of one million tons capacity each would be required. The capitalization cost of 264 deep mines would range from $3.2 billion to $3.7 billion ($12 to $14 per ton of annual capacity.) Furthermore, it requires from 3 to 5 years for a new deep mine to reach full production.

In 1970, the 264.1 million tons of surface-mined coal was produced by 24,800 mine workers (excluding mill workers), according to preliminary data from the Office of Accident Analysis, Bureau of Mines. The production of a like quantity of coal at deep mines would require a force of some 78,358 miners (excluding mill workers), as estimated by NCA.

On a 1970 basis, the estimated wages and salaries (including vacation and holiday pay) of mine production workers (including supervisors and on-site office workers, but excluding mill workers)

[1]Computed by NCA on the basis of 24.0 million Btu per ton of coal and 6.3 million Btu per barrel of oil.

required to produce 264.1 million tons of coal would be $745 million from deep mines contrasted with $248 million from surface mines.

On the basis of these comparative costs, it would have cost an additional $497 million just in wages and salaries to produce the 264.1 million tons at deep mines. This would represent an additional cost of $1.88 per ton in wages and salaries alone. Additional costs at deep mines, such as capital needed for openings and recruiting and training expenses would further increase the per ton cost of producing the 264.1 million tons at deep mines.

An additional complication in replacing surface-mined production with deep-mined production would be acquiring sufficient blocks of coal reserves to supply 264 new deep mines. There is an inherently greater rate of recovery of coal resources at strip mines than at deep mines. Official government sources[1] show the recoverability of coal resources at strip mines is 80 or 90 percent as compared with a recovery of approximately 50 percent at deep and auger mines. Therefore, deep mines would require some 60 percent more tons of coal in place than those required by surface mines to produce like tonnages. For example, deep-mined coal production of 264.1 million tons would require some 528 million tons of coal resources, whereas a like

[1]"Coal Resources of the United States, January 1, 1967 (Geological Survey Bulletin 1275)" and "The Reserves of Bituminous Coal and Lignite in the United States (By Staff, U.S. Bureau of Mines)." Later report updated and on open file at BOM.

production at surface mines would require only 330 million tons. Therefore, without regard to rank of coal, the cost of coal resources required to produce 264.1 million tons of coal would be substantially greater at deep mines than at surface mines.

A study recently released by the Bureau of Mines[1] shows there was an estimated remaining strippable resource (based on defined limits of seam thickness and depth of overburden) of 119 billion tons of bituminous coal and lignite in the United States as of January 1, 1968. Because of certain topographical and man-made limitations, only 45 billion tons of this resource are actually recoverable through existing technology and available at 1969 prices. (Tables 11 and 12.)

Of the 45 billion tons: 31.8 billion tons, or 70.6 percent, are considered low-sulfur (less than one percent); 4.0 billion tons, or 9.0 percent, are medium-sulfur (1 to 2 percent); and 9.2 billion tons, or 20.4 percent, are high-sulfur (over 2 percent.) (Table 11).

After allowance for cleaning, the 45 billion tons of strippable coal reserves are reduced to 39.6 billion tons of marketable coal, as shown in the Bureau of Mines study. We estimate that, without regard to rank of coal, the total 39.6 billion tons would supply

[1]"The Reserves of Bituminous Coal and Lignite for Strip Mining in the United States (By Staff, Bureau of Mines)." Report on open file at BOM.

U.S. electric utility coal demand for over 100 years, at the current annual consumption rate of some 340 million tons.

In the light of these basic facts, it is readily evident that any curtailment of coal surface mining would have a serious detrimental effect on the general U.S. energy sector and especially on electric power generation both now and in the future.

SUMMARY OF NCA POSITION ON PENDING BILLS

Set forth below is a summary of the position of NCA with respect to major provisions of each of the pending federal surface mining bills. Because of the numerous bills involved, it does not purport to cover every aspect of each proposal and the omission of comment on a relatively minor point should not be interpreted as an indication of approval or opposition.

S. 2777 (Mr. Gravel) and H.R. 10758 (Mr. Aspinall, et.al.)

A. Requires affected lands to be restored to a condition where its surface value is at least as great as it was prior to mining and where it may be used for the same purposes for which it was used prior to mining, as well as the maintenance of the maximum ecological value.

Comment: It is NCA's position that the return of surface mined lands to a productive use that is compatible with the climate, soil and other conditions of the area will maintain the maximum ecological value, as well as the surface value, of the land. The terms set forth in the bill (namely, surface value, prior use and maximum ecological value) are conceptually inconsistent and contradictory. The use prior to mining may have been an inferior use of the land and thus not well suited for the climate, terrain and other conditions in the area. For example, because a crop of some kind can usually be grown, agriculture is carried on in many areas where conditions are such that the yield is marginal at best or erosion cannot be effectively prevented by row crops and the land would be more suitable for pasture or forest lands or for other uses. To require that mined land be conditioned for such a prior use would definitely not achieve the maximum ecological value and could frustrate a more productive utilization of the land.

In addition, surface value is not defined in the bill, is a subjective standard and does not necessarily have any relationship to the ability of the land to be productive. Depending upon what is meant by the term, there are innumerable economic factors involved in a determination of surface value and in many instances location alone is critical regardless of whether vegetation can

be successfully grown on the land or not. Value is also relative and it is questionable whether it could be determined with any degree of precision.

Furthermore, such standards as surface value and prior use could prohibit a wide range of otherwise permissible land uses available to other land owners. If a neighboring owner of unmined land is permitted to turn his agricultural land into grazing pastures, no justification exists for requiring surface mined land to be returned to row crops because of the prior use or some surface value concept. We would urge that the surface mine operator have the same right, as any other land owner, to determine the productive use, such as for grazing, forest land, agriculture, recreation, building sites or other uses.

B. Requires the federal government to regulate surface mining in all 50 states regardless of whether the states have an effective regulatory scheme of their own and would not supercede any state law, standard or regulation, in effect or subsequently enacted, that is consistent with or more stringent than the provisions of the federal statute.

Comment: NCA opposes direct federal regulation and favors the federal-state cooperative approach which permits consideration of both the local and national concerns involved in surface mining and reclamation. Any federal legislation should set forth the

realistic criteria or standards for achieving sound reclamation and encourage the states to develop the specific regulations to meet the federal standards. If a state does not submit a plan which meets the federal requirements, or fails to provide adequate enforcement, then the federal government would step in and issue federal regulations for that state. Such an approach would insure that the state plan is based on the federal criteria by establishing the parameters within which the states would be accorded the necessary flexibility to draft the specific regulations. The development of state regulations which go beyond what is realistically required for sound reclamation should not be permitted. On the contrary, such regulations would frustrate the achievement of sound reclamation by unnecessarily adding to the cost without any corresponding benefit and cannot be aptly characterized as "more stringent control." For example, if toxic material can be effectively isolated by covering it with 10 feet of overburden, to require 30 feet does not constitute stricter control but would amount to harassment. As pointed out by our other witnesses, the requirement that mined land be returned to the approximate original contour would in most instances prevent the improved land use possible through reclamation. Such a requirement is unrealistic and does not constitute "more stringent control."

The appraoch in this bill would also create needless and confusing duplication. Assuming that the state and federal standards were consistent, effective reclamation would not be advanced by requiring the surface mining industry to comply with both the state and federal statutes at the same time and be subjected to two sets of inspectors, two sets of forms and applications, two sets of periodic reports and other data gathering devices. If the state plan meets the requirements of the federal statute, then the state statute and regulations should be permitted to supercede the federal statute as long as the state provides adequate enforcement.

C. Provides, upon petition by the state, for delegation to the state of the authority to enforce the provisions of the federal statute, provided the state statute is consistent with, or more stringent than, the federal statute and has adequate enforcement to insure compliance.

Comment: Unlike some of the other pending proposals which would permit the state law in such a situation to supercede the federal statute, this approach would require the state to enforce the federal statute along with its own regulations. As pointed out above, if the state statute meets the federal criteria it should supercede the federal statute as long as the state provides adequate enforcement. This provision could add even more duplication and confusion by requiring the state agency to enforce consistent but probably not identical provisions.

D. Requires the operator applying for a permit to provide the name and address of the owners of all surface acreage within 500 feet of any part of the proposed area of affected land.

Comment: The obligation of the operator to obtain the names and addresses of adjoining landowners must be limited to a good faith effort. Otherwise this requirement could burden the operator with the task of making an exhaustive search of land records to determine ownership and in some cases this would not be enough because it might take court action to decide the matter.

E. Requires a plan for backfilling, among other things, to be filed with an application for permit.

Comment: Replacement of suitable soil material and some grading are usually required in most reclamation plans, however, the word "backfilling" can imply a return to the original contour and this, as pointed out above, can frustrate the achievement of effective reclamation. If "backfilling" means something less than return of the original contour or complete refilling of the mined area then it should be clearly defined in the bill.

F. Provides for denial of a permit where there is probable cause to believe that the reclamation of the area of affected land cannot be achieved or if an area of ciritcal environmental concern would be destroyed.

Comment: Since the section provides for denial of a permit if the area cannot be adequately reclaimed, it is unnecessary to include the additional standard, and it should be deleted. The basis for the issuance of a permit for an area of critical environmental concern should be the same as any other area, namely, whether it can be adequately reclaimed or not. Of course, the circumstances involved will be different but that is a question of fact and another standard is not necessary. The inclusion of what appears to be a dual standard only creates confusion, especially since critical environmental concern is not defined in the bill.

G. Provides for a bond of not less than $1,000 per acre and $10,000 per operation.

Comment: This is a rather high minimum. The Secretary should be given more flexibility in this matter because many small operators who do an effective job of reclamation might find these limits difficult to live with.

H. Provides that an applicant may request a hearing in writing if his permit is denied.

Comment: This is a necessary safeguard which should be accorded the applicant.

I. Sets up a strip mining reclamation fund for the reclamation of lands previously affected by surface mining.

Comment: NCA recognizes the need for federal assistance in the reclamation of the unreclaimed lands which were affected by surface mining prior to the enactment of the reclamation statutes. In many cases the land is no longer owned by coal companies and many of the operators who mined the areas are no longer in business. As a result, a federal program is essential to cope with the many problems involved. These areas are often referred to as "pre-law lands" and "orphan banks" (this is a misnomer since the lands are owned by someone).

J. Allows the Secretary to revoke any permit if he determines that the operator has violated any provision, standard or regulation.

Comment: Before any revocation the operator should be notified of the violation and given a reasonable period of time within which to take corrective action.

K. Leaves to the Secretary of Interior the complete authority to develop and promulgate the federal surface mining and reclamation standards and revise them as may be appropriate--does not set forth any clear legislative objective or criteria as a basis for the Secretary's authority.

Comment: The bill should set forth the broad criteria so that the general objectives of the legislation can be determined and the parameters of the Secretary's authority established.

should be under Interior and the inclusion of air or water pollution control would create confusion and frustrate effective administration.

C. Establishes a National Advisory Committee to assist the Secretary of Interior in the development and revision of the federal reclamation standards.

Comment: The proposal should be amended to assure the appointment of qualified persons experienced in the field of surface mining and reclamation. In addition, the recommendation of the committee with respect to any proposed rules, regulations, standards or guidelines should be required prior to their final promulgation by the Secretary.

D. Permits the Secretary to prohibit the mining of coal in areas where reclamation is considered unfeasible because of physical considerations, such as ground surface slope.

Comment: The bill requires that a permit be obtained before any mining operations can be undertaken. Prohibition where the land in question cannot be adequately reclaimed with existing technology should be considered within the permit system on a case by case basis and not area-wide as is implied in this section. For example, ground surface slope must be considered in conjunction with the particular land for which a permit application has been submitted and the mining technique which can be used in that

terrain. As pointed out by Mr. Morton, the "mountain top" method and the "head-of-the-hollow" method can both be utilized without regard to the degree of slope, provided that certain other conditions must be conducive to their utilization.

E. Federal regulations made inapplicable where the Secretary approves a state plan that conforms to or exceeds the federal standards.

Comment: If the state plan meets the federal standards, then the federal statute should be superceded. However, as pointed out above (paragraph C--S. 2777 and H.R. 10758) even though states should have flexibility to set the specific regulations, they must stay within the parameters of the federal criteria and no deviation in this regard should be permitted. Any state regulations which exceed what is required for sound reclamation are unrealistic.

F. Controls water pollution.

Comment: Control of water or air pollution should be handled in the appropriate water and air quality statutes.

G. Requires the return of the land to productive use and the restoration of natural beauty.

Comment: The coal industry affirmatively endorses the concept of returning land to productive use after mining as the key to effective reclamation. Land returned to productive use compatible

with the topography and other conditions in the area is attractive and will blend in with the surrounding terrain. The requirement to restore natural beauty introduces a subjective standard which cannot be adequately defined.

H. Applies the federal regulations even if the state has a reclamation program, unless the state requests that its plan supercede the federal statute and the Secretary approves.

Comment: This approach would still permit dual regulation. Provision must be made to insure that the federal statute will not be in effect if the state plan meets the federal criteria, otherwise there is needless and confusing duplication.

I. Provides grants for research and development and technical assistance.

Comment: The coal industry favors federal assistance to the state and local agencies for programs of research and development and technical advisory assistance.

J. Permits the Secretary to acquire by emminent domain pre-law lands for reclamation by the federal government.

Comment: The bill also provides for the federal government to assist private owners in the reclamation of pre-law lands and primary reliance should be placed upon this approach. The broad grant of emminent domain authority, however, should not be permitted without setting forth clearly the precise limitations upon its exercise.

K. Requires restoration or reconditioning of water or land adversely affected.

Comment: The definition of reclamation should require the return to productive use. "Restoration" and "reconditioning" are undefined and should be deleted.

S. 77 (Mr. Nelson)

A. Calls for joint administration by the Secretaries of Agriculture and Interior.

Comment: The administration of federal regulation of surface mining and reclamation by two different federal agencies can only result in conflicts in jurisdiction and cumbersome administration. NCA maintains that the Secretary of Interior is the appropriate executive officer with the expertise to most effectively carry out the functions of such legislation.

B. Standards include backfillings, plantings and revegetation.

Comment: The word "backfillings" can imply return of the original contour which can frustrate the achievement of sound reclamation and should not be required. Planting and revegetation should only be required where the climate and other conditions in the area will successfully support such growth. Admittedly, in most areas where there is sufficient rainfall, vegetation can

be sustained. However, it should not be universally required since certain arid areas do not and could not support vegetation even before mining.

C. Provides for prohibition.

Comment: If prohibition is to be included, it should be restricted to a case-by-case determination with respect to the land in question for which a permit application has been filed and not on an area-wide basis.

D. Section 553 of Title 5, United States Code, made applicable to rulemaking.

Comment: This provision of the Administrative Procedure Act, which requires public notice and the right of all interested parties to comment on any proposed rules, regulations, guidelines, standards or reclamation requirements promulgated by the administrative agency, should be included in any legislation.

E. Establishes a National Advisory Committee.

Comment: The recommendations of such a committee should be mandatory prior to the promulgation of any rules or regulations or guidelines.

F. Provides for appeal to the United States Court of Appeals if any state is dissatisfied with the Secretary's final action with respect to the approval of its state reclamation plan.

Comment: NCA urges the adoption of this provision in any legislation which contemplates the approval of state plans in place of federal regulation.

G. Titles 2, 3, 4 and 5 are similar to those contained in H.R. 444 and H.R. 3299.

Comment: Comments above in paragraphs H, I and J with respect to H.R. 444 and H.R. 3299 are applicable.

S. 2455 (Mr. Moss)

A. Defines reclamation as the process of restoring an area of land affected by strip mining to a condition that it may be used for at least the same purposes for which it was used prior to the beginning of strip mining.

Comment: This definition is unrealistic since the prior use may not have been suitable to the soil, climate and other conditions in the area and could frustrate more productive uses. (See paragraph A, S. 2777 and H.R. 10758.)

B. Designates the Secretary of Interior as the executive officer to administer the Act, however, in establishing federal regulations, guidelines for state plans, or the approval of state regulations or revisions the approval of the administrator of the Environmental Protection Agency must be obtained.

Comment: The Secretary of Interior should administer the regulation of surface mining and reclamation and to require the concurrence of EPA would give rise to jurisdictional disputes and frustrate the effective administration of the statute. EPA would be required to duplicate the expertise which already exists in the Department of Interior.

C. Provides for the control of water pollution and the prevention of air pollution.

Comment: The control of water and air pollution should come under the appropriate state or federal water and air quality statutes.

D. Sets forth procedure for the promulgation of federal standards pursuant to the broad criteria set out in the bill.

Comment: The procedure is very thorough but should also be extended to the promulgation of <u>any</u> rules, regulations or guidelines for the states issued pursuant to the legislation. An Advisory Committee should also be established and be required to submit its recommendation on such matters.

E. Requires a plan of reclamation to be filed which shall include, among other things, a plan for backfilling.

Comment: "Backfilling" may imply return to the original contour which could frustrate the establishment of more productive uses. (See paragraph A and B, S. 2777 and H.R. 10758.)

F. Requires a plan to provide that reclamation be completed within reasonably prescribed time limits.

Comment: It is our position that this requirement realistically provides the flexibility necessary to cope with the various problems involved. (See paragraph M, H.R. 6482 and H.R. 7100.)

G. Requires the state agency to have the authority to prohibit surface mining operations where the area affected cannot be adequately reclaimed and to order cessation of such mining operations.

Comment: The authority of the state agency to prohibit surface mining should be similar to that accorded the federal agency which requires it to be done on a case-by-case basis in evaluating each application for a permit.

H. Permits any person to commence a civil action in the U. S. District Court against the United States or any state agency or person in connection with the violation of any provision of this legislation or any standard or regulation issued by the Secretary or any state pursuant thereto.

Comment: It should be made clear that no civil action can be brought against an operator who is in compliance according to the regulatory agency. If the agency or other government official is not properly administering the statute, the action

must be initiated against that person. A suit for damages, of course, can be brought against the operator but existing remedies are adequate and should not be included in this provision. This statutory remedy should be available only against a government agency or official for failure to enforce the statute.

The courts should also be given the authority to award costs of litigation (including reasonable attorney and expert witness fees) to any party, whenever the court determines such award is appropriate. The court should also, if a temporary restraining order or preliminary injunction is sought, require the filing of a bond or equivalent security in accordance with the Federal Rules of Civil Procedure.

I. Establishes a reclamation fund.

Comment: The reclamation fund for reclaiming mined land through fees and forfeitures is an acceptable approach. However, federal funding assistance would assure a more effective program. The authorization of the Secretary to conduct and promote research and training programs is also an essential element in assuring the achievement of sound reclamation.

J. Requires submission of a plan for resoiling and for the prevention of water in the pit.

Comment: Resoiling could imply return of the topsoil which should not be required. This should be defined to permit the use

of any soil materials capable of sustaining growth since many sub-surface materials are suitable for vegetation.

Rainwater and ground water cannot be prevented from entering the pit. The provision should require a plan for control and removal of water in the pit.

K. Provides for revocation of a permit, after a hearing, for violation of the Act or any standard or rule issued pursuant thereto.

Comment: Should give the operator notice of any violation and time to take corrective action before any revocation proceedings are initiated. An opportunity for hearing is a necessary safeguard.

L. Provides criminal sanctions for any officer, director or agent of a corporation who authorized, ordered, or carried out a violation of Title I or any standard or regulation pursuant thereto.

Comment: No criminal sanctions should be imposed unless the person knowingly authorized, ordered or carried out the violation.

H.R. 6482 (Mr. Hays) and H.R. 7100 (Mr. King)

A. Exempts any operator who intends to remove less than 250 tons of coal per year by surface mining.

Comment: The environmental effects are not related to the amount of coal mined and this exemption should be eliminated.

70-867 O - 72 - pt. 1 - 27

B. Requires restoration of affected land to a condition that it may be used for at least the same purposes for which it was used prior to mining.

Comment: This approach could preclude land use improvement possible through sound reclamation. More productive uses should not be discouraged. Reclamation should be the return to productive use. (See paragraph A, S. 2777 and H.R. 10758.)

C. Establishes a Strip Mine Reclamation Commission for the direct federal regulation of surface mining and reclamation.

Comment: NCA opposes direct federal regulation and favors the federal-state cooperative approach to reclamation whereby the federal statute would establish the broad criteria and the states would be permitted to develop the specific regulations for their areas. Direct federal regulation would tend to establish national uniform regulations and would not provide the necessary flexibility to cope with the particular terrain, climate and other conditions existing in the various states. It does not give due consideration to the legitimate local concerns involved.

D. Permits the Commission to prescribe such rules and regulations as may be necessary to carry out its functions under the Act.

Comment: Public notice, the right of interested parties to comment and the recommendation of an Advisory Commission,

similar in makeup to the one established by H.R. 3299, should be required before promulgation of guidelines, rules or regulations.

E. Permits the Commission to designate certain areas as unsuitable for surface mining.

Comment: Prohibition, if included, should be restricted to a determination on each permit application as to whether the land can be adequately reclaimed and not on an area-wide basis. (See paragraph D, H.R. 444 and H.R. 3299.)

F. Requires the Commission to hold a hearing to decide whether an area is unsuitable for surface mining upon the written application by a citizen of the state where such area is located.

Comment: This requirement alone could inundate the Commission, as well as the industry, with public hearings and frustrate effective administration. The Commission should be accorded the discretion to determine on the merits whether a particular case warrants the holding of a hearing.

G. Requires an applicant for a license to obtain the name and address of the owners of all surface area within 500 feet of any part of the proposed operation.

Comment: See paragraph D, S. 2777 and H.R. 10758.

H. Requires an applicant for a license to show the results of test borings, including the thickness of the coal seam and a complete analysis thereof.

Comment: Detailed information of this nature is not essential to the evaluation of the reclamation plan and should not be required. Even though this information is to be kept confidential by the Commission, it is vital to the operator's competitive position.

I. Provides that no license applications be approved to mine certain areas near public roads, streams, public property and land which has been mined and reclaimed prior to enactment.

Comment: The basis for denying a license to mine should be whether an applicant will comply with the requirements of the Act and the rules and regulations, i.e., achieve sound reclamation. If land next to a stream, lake or public property can be mined in compliance with the rules and regulations and adequately reclaimed, the license and permit should be granted. With respect to the lands previously mined, it would be in the best interest of the public to permit it to be reaffected in order that it can be reclaimed under the improved standards set up by federal legislation. This is the most effective way to reclaim pre-law lands without requiring public funds.

J. Provides that no license applications be approved if there has been a previous failure to comply with the provisions of the bill or any other law, rule or regulation of the United States or any state pertaining to surface mining or reclamation.

Comment: This requirement is onerous and unrealistic. The violation should at least be serious enough to have resulted in the revocation of a license or permit to mine. Statutes of this nature cover a myriad of factors and even this bill accords operators an opportunity to correct violations before any administrative action is taken. Therefore, it would be most unfair to deny a license for minor or corrected violations.

K. Requires segregation of topsoil.

Comment: Should provide for replacement of soil material suitable for sustaining vegetation since many sub-surface materials can be used and are superior in certain instances where the existing topsoil is of poor quality.

L. Requires backfilling to the approximate original contour.

Comment: This requirement could frustrate the restoration of land to more productive uses. (See paragraph B, S. 2777 and H.R. 10758.)

M. Requires reclamation to progress at a distance of 300 yards behind the extraction operations.

Comment: Reclamation should take place within reasonable time, rather than distance, limits. Consideration should be given for planting seasons, as well as time delays beyond the control of the operator, such as a labor strike or inclement

weather. The requirement in the bill would create an unsafe condition by crowding the pit with too many men and too much machinery.

N. Requires the operator to pack all fills so that underground air pockets are eliminated.

Comment: This would actually be detremental to growth. If the ground is too firm, plant life has difficulty obtaining the essential nutrients and air necessary to take hold.

O. Requires the restoration of the land to the same (or a more valuable) use that the land had before the mining.

Comment: As pointed out above, the prior land use may not have been suitable for the climate and other conditions in the area. Value is subjective not necessarily related to the productivity of the land. Reclamation should return the affected lands to productive use. (See paragraph B, S. 277 and H.R. 10758.)

P. Prohibits blasting where the course of any surface or sub-surface stream will be changed or where the banks of a stream will be ruptured.

Comment: As long as acceptable drainage patterns are restored, flooding controlled and the area adequately reclaimed in compliance with the legislative standards this prohibition is unnecessary. It is often essential to alter the course of a stream and blasting may be required to achieve this end.

The course of streams and underground water are often changed in highway construction as well as other types of construction.

Q. Prohibits blasting where vibration or concussion will be felt beyond the licensed area, unless prior written consent of the property owners (where such vibrations will be felt) has been obtained.

Comment: This provision is most unrealistic since it is not concerned with protection of structures on adjoining property. A subsequent section requires notification of persons if there are occupied buildings or dwellings within 1,000 feet of the blasting and this would appear to be a more realistic appraoch.

R. Requires monthly reports.

Comment: With inspections twice monthly, progress reports should not be required on a monthly basis.

S. Permits appeals from the Commission to be taken to the U. S. District Court of questions of law and fact and the hearing in such court shall be a hearing de novo.

Comment: A less cumbersome procedure would be to provide for the record to be established at the administrative level and permit appeal directly to the U. S. Court of Appeals rather than require the operator and other parties to go through two hearings.

T. Provides that no land or interest in land owned by the United States or any federal agency shall be leased and no

present lease shall be renewed by the United States nor any agency of the United States for the purpose of conducting surface mining operations thereon.

Comment: Prohibition on federal lands in unwarranted. The bill recognizes that sound reclamation can be achieved on private lands and there is no reason why it cannot be done on federal lands. Federal lands can be regulated in the same manner and any particular problems can be determined on a case-by-case approach. Area-wide prohibition, such as called for by this provision, can preclude the recovery of valuable resources when the technology exists to permit excellent reclamation. With most of our vast coal reserves in the West on public lands, this provision would prevent its recovery.

U. Provides that a person who falsely misrepresents a material fact in any application for a license could be imprisoned for up to six months.

Comment: No person should be imprisoned for a mistake unless it is done knowingly or willfully.

H.R. 10669 (Mr. Miller)

A. Applies to both surface and underground coal mining operations, including all surface manifestations resulting therefrom.

Comment: The problems of underground mining, including subsidence, are extremely complicated and unrelated to surface mining and should not be included in any legislation dealing primarily with reclamation of land affected by surface mining operations.

B. Establishes a National Advisory Committee to assist in the development and revision of any rules, regulations or standards.

Comment: Any such Advisory Committee should be required to submit recommendations prior to the promulgation of any proposed rules, regulations or standards.

C. Calls for the Administrator of the Environmental Protection Agency to administer the Act.

Comment: It is the coal industry's position that the Secretary of Interior, with the expertise available to him in the Department, should administer any legislation enacted to regulate surface mining and reclamation. Mining and mineral development, as well as reclamation on lands administered by the Department, have been a province of the Department of Interior for many years and the expertise that has developed would be of immeasurable assistance. EPA would be required to duplicate much of this expertise and existing administrative structure.

D. Would establish rules, regulations and standards for all coal mining operations, including those on federally owned lands or lands held in trust by the United States for Indians.

Comment: Federal legislation should establish broad criteria to insure sound, effective reclamation which should be applicable throughout the United States on both state and federal lands, as well as privately owned lands. This would certainly go a long way toward clearing up the confusing jurisdictional problems involved with reclamation on public and Indian lands.

E. Requires affected land to be reclaimed so that it can be used for at least the same purposes for which it could have been put prior to the beginning of mining.

Comment: See paragraph A, S. 2777 and H.R. 10758.

F. Requires the submission of technical information with respect to the coal seam.

Comment: The detailed analysis of the coal seam is important to the operator's competitive position and is not relevant to the reclamation plan or the procedures to be followed. Regardless of the assurances, it is difficult to keep this matter confidential once it is filed with a government agency where innumerable employees have access to the information.

H. Provides for prohibition on an area basis where reclamation is considered economically or technologically unfeasible or when it is determined that such operations will result in, or contribute to, the violation of applicable air or water quality standards, or where such operations would be detremental or hazardous to public health, safety, or personal property rights, or would adversely affect a publically owned property, or its use.

Comment: Any prohibition, if it is to be included in the legislation, should be restricted to case-by-case determination involving the particular parcel of land for which an application for a mining permit has been submitted. In this way the different circumstances in each case can be evaluated. Water and air quality matters more appropriately come under the state and federal water and air quality statutes. (See paragraph I, H.R. 6482 and H.R. 7100.) Detremental to personal property rights and adversely affect publically owned property or its use are undefined in the bill and should be deleted. It should also be made clear that any violation must be of a serious and recurring nature. The operator should be given notice of the violation and reasonable time within which to take corrective action.

I. Requires each acre affected to be recalimed within six months after the commencement of the mining operation.

Comment: This is an unrealistic requirement. Reclamation must be achieved within reasonable time limits but the circumstances in each case differ and the administrative agency should be given discretion in this matter. For example, planting in the winter months is impossible and grading is also limited in wet weather. (See paragraph M, H.R. 6482 and H.R. 7100.)

J. Comment: An operator should have the right to request a hearing upon the denial, revocation, suspension of a permit or prohibition of mining. It is not provided by this bill.

K. Provides that any rules must incorporate the following standards relating to, inter alia, segregation of topsoil and sub-strata and the proper replacement thereof; the prevention of mine drainage pollution and air pollution by dust or burning refuse piles, and ground subsidence.

Comment: The control of air and water pollution, including mine drainage, more appropriately comes under the federal and state statutes. The segregation of topsoil--see paragraph K, H.R. 6482 and H.R. 7100. Ground subsidence, as it relates to underground mining, is an extremely complicated problem unrelated to surface mining and should not be included in any legislation on surface mining and reclamation.

L. Comment: A state should have the right to appeal the denial or revocation of its state plan. This right is not provided by this bill.

M. Authorizes the Administrator to make grants to promote the coordination and acceleration of research and training.

Comment: The National Coal Association favors federal assistance for research and training.

N. Provides for the reclamation of previously mined lands.

Comment: The National Coal Association supports federal assistance in the reclamation of previously mined lands.

H.R. 7447 (Mr. Whalley)

A. Provides for the direct federal regulation of the surface mining of coal and reclamation by a three-man land reclamation board within the Department of Interior.

Comment: The coal industry favors the federal-state cooperative approach rather than direct federal regulation since the former can more realistically take into consideration both the state and local, as well as the national, concerns involved. (See paragraph B, S. 2777 and H.R. 10758.)

B. Exempts persons who remove less than 250 tons of coal per year by open-pit mining.

Comment: This exemption is not warranted. Regardless of the number of tons removed, the failure to achieve adequate reclamation can be significant.

C. Provides that the board shall formulate and issue rules and regulations to effectuate the provisions of the legislation.

Comment: There should be public notice of any proposed rulemaking with the opportunity of interested parties to comment. NCA also supports the establishment of an Advisory Committee which would be required to submit recommendations prior to the final promulgation or revision of any rules and regulations.

D. Requires that an application for permit must include the names of adjacent landowners, the results of test borings which include a complete analysis of the coal seam, the crop line of the coal seam and the location of the test boring holes.

Comment: The obligation of the operator to obtain the names of adjacent landowners should be limited to a good faith effort. A complete analysis of the coal seam and other detailed information with respect thereto is not necessary to evaluate the effectiveness of any proposed reclamation plan and should not be required.

E. States that no permit shall be issued unless the plan of backfilling is approved and the board may approve terracing provided that the steepest contour of the highwall shall be no greater than 45 degrees and there be no depressions to hold water which may percolate through the soil and produce an acid drainage.

Comment: "Backfilling" may imply return to the original contour and should not be a basic requirement for reclamation. The original contour may not be the most suitable for the planned use. (See paragraph E, S. 2777 and H.R. 10758.) The operator should be permitted to terrace, rather than discretionary with the board, provided it conforms to the planned use and the conditions in the area. The language of this provision should be changed in order to make certain that the planned retention of water (rather than depressions to hold casual water) is permissible.

F. Allows the board to disapprove an application for a permit.

Comment: The bill is not clear as to the basis for denial of an application.

G. Requires monthly reports.

Comment: The number of employees, days worked and the amount of coal produced are unrelated to the reclamation progress. Further, monthly reports are too frequent.

H. Permits a mine conservation inspector to order the immediate stopping of any operation and an operator may appeal immediately to the board which shall determine whether the operation shall continue.

Comment: The board should be required to act upon an appeal of a work stoppage order immediately to avoid irreparable harm.

I. Requires the board to license mine conservation inspectors, establish the criteria for their qualifications and administer tests for the purpose of hiring such inspectors.

Comment: The establishment of criteria for inspectors and testing their knowledge prior to hiring is essential to adequate enforcement and the coal industry favors such a provision.

S. 1498 (Mr. Nelson et.al.) and H.R. 4556 (Mr. Hechler, et.al.), also H.R. 4557, 6484, 6485, 7675, 7695, 8174 and 8386.

A. Prohibits the opening of any surface mine and eliminates all coal surface mining within six months after enactment.

Comment: Complete prohibition of the surface mining of coal, or the phasing out thereof, fails to recognize that the technology exists today to achieve in most instances sound, effective reclamation of surface mined lands. This approach fails to recognize the land use improvement possible through reclamation and also, as explained above, the importance of surface mined coal to the nation's energy needs.

B. Applies to all surface and underground coal mines.

Comment: The problems involved in underground mining are extremely complex and unrelated to surface mining and should not be included in any legislation designed to deal with reclamation and surface mining.

C. Provides for the administration by the Administrator of the Environmental Protection Agency.

Comment: The Secretary of Interior is the appropriate federal official to administer surface mining and reclamation regulations. (See paragraph B, S. 2455.)

D. Prohibits the opening of any new underground mine where the state finds that such mining would result in, or contribute to, the violation of applicable air or water quality standards.

Comment: The control of water and air pollution more appropriately comes under the federal and state water and air quality statutes.

E. Provides for citizen class action suits against any person including the United States or any other governmental instrumentality.

Comment: See paragraph H, S. 2455.

F. Provides for a program to effectively reclaim the lands affected by existing surface mining operations.

Comment: Although the bill provides for prohibition, presumably upon the basis that reclamation cannot be achieved, it does recognize the fact that effective reclamation is possible with respect to the lands affected by existing surface mining operations.

70-867 O - 72 - pt 1 - 28

S. 630 (Mr. Jackson) and H.R. 60 (Mr. Saylor)

A. Defines reclamation as the restoration of an area of land or water, or both, that has been adversely affected by surface mining operations.

Comment: This definition should be amended to provide primarily for the return of the affected area to productive use compatible with the climate, soil, vegetation and other conditions of the surrounding area.

B. States that the purpose of the bill is to provide a nationwide program to prevent or substantially reduce the adverse effects to the environment from surface mining and assure that adequate measures will be taken to reclaim surface mined areas and to assist the states in carrying out such a program.

Comment: The stated purpose should be more clearly defined. NCA urges that the purpose of the legislation be recognized as three-fold: (1) during the surface mining process the operations and any effects thereof should be contained on the permit area; (2) to achieve effective reclamation after the mining operations are completed, and (3) to assist the states in carrying out such a program.

C. The Secretary of Interior is designated as the executive officer to administer the legislation.

Comment: The Secretary of Interior should administer the legislation because of the expertise and administrative structure which already exist in Interior.

D. States that the Secretary may appoint advisory committees.

Comment: An advisory committee should be created which is required to submit its recommendations prior to the promulgation or revision of any rules, regulations, guidelines or standards issued by the Secretary.

E. Provides that the criteria which must be contained in any state plans established pursuant to this bill include, inter alia, the control of water pollution and the prevention of air pollution by dust or burning refuse piles or otherwise.

Comment: The control of air and water pollution would more appropriately come under the state or federal water and air pollution control statutes.

F. Permits the Secretary to issue such regulations as are deemed necessary to carry out the purposes of the Act.

Comment: Any proposed rules, regulations or guidelines for the states should be noticed in the Federal Register and interested parties should be permitted to file comments.

G. Sets up broad federal criteria for the states to follow in setting up their plans for regulating surface mining and reclamation, and if the states fail to do so or fail to adequately

enforce their plans, then the Secretary of Interior will step in and do the job for them with federal regulations based on the same criteria.

Comment: The coal industry supports this approach which calls for state-federal cooperation. This concept permits the federal government to set up the broad general criteria to achieve sound effective reclamation and permits the states to establish the specific requirements to meet the particular conditions in each state.

H. Permits the Secretary of Interior to approve the state plans if they comply with the federal regulations and also revoke such plans if they are not adequately enforced.

Comment: The states should have the right to appeal a denial or a revocation of their state plan by the Secretary.

S. 1176 and S. 993 (Mr. Jackson, et.al.) and H.R. 5689 (Mr. Hosmer), also H.R. 4704, 4967, 6580 and 7422.

A. Provides for the regulation of both underground and surface mining.

Comment: The problems related to underground mining are extremely complicated and unrelated to surface mining and therefore should not be included in any legislation designed to regulate reclamation and surface mining.

B. Sets up broad federal criteria and guidelines, to be further implemented by the Secretary of Interior for the states to follow in the development of their state plans. If the state plans do not comply or are not adequately enforced, the federal government will step in and establish federal regulations to do the job for the state.

Comment: The coal industry supports this state-federal cooperative approach which takes into consideration the local as well as national concerns involved in surface mining and reclamation.

C. Recognizes that the initial and continuing responsibility for developing and enforcing environmental regulations should rest with the states.

Comment: This is the foundation upon which any realistic federal regulation must be based. The states must be encouraged to do the job and be given sufficient flexibility to cope with the different conditions in each state.

D. Designates the Secretary of Interior to administer the legislation.

Comment: The coal industry concurs that the Secretary of Interior is the proper executive official to administer surface mining and reclamation legislation.

E. Requires state plans to authorize the prohibition of mining operations where the area affected cannot be adequately reclaimed and order cessation of operations.

Comment: It should be made clear that any power to prohibit, if included in the legislation, should be restricted to a case-by-case determination of the land involved in each application for a mining permit. The situation and conditions for each parcel of land differ significantly and should be considered on their own merits. Prohibition on an area basis should not be permitted. Any federal legislation should also provide for appeal of any state prohibition order to federal review by the Secretary or his designee because of the significant interstate commerce and national security aspects involved.

F. Permits the Secretary of Interior to issue guidelines and rules and regulations to implement the Act.

Comment: Prior to the promulgation to any guidelines for the states, rules or regulations, public notice should be required and interested parties permitted to comment. The bill also sets up an Advisory Committee which should have a mandatory input which requires that its recommendations be made with respect to the promulgation or revision of any rules, guidelines or regulations prior to their issuance. The Advisory Committee should contain members who by experience and education are qualified.

G. Provides that if a state fails to submit a plan or its plan is disapproved or is not adequately enforced, the Secretary shall issue federal regulations for that state based upon the federal statutory criteria.

Comment: NCA concurs in this approach, however, a state should have the right to appeal to the courts a denial or revocation of its state plan by the Secretary.

H. H.R. 7422, which is similar to S. 1176 and H.R. 5689, also includes a title which would amend the federal Water Pollution Control Act.

Comment: NCA agrees that any question of water pollution from surface mining should be included in the appropriate water pollution control statute to avoid an overlap of jurisdiction. This is also true of any air pollution matters. However, with respect to the federal Water Quality Act, it is presently undergoing a major revision by Congress. It is difficult to evaluate this particular amendment in the light of the proposed revisions and any such amendment should await final action by Congress.

CONCLUSION

In summary, let me again touch upon certain points:

1. We support federal surface mining legislation which sets forth broad mandatory criteria for the states to follow in developing the specific regulations.

2. Underground mining is completely unrelated to surface mining and reclamation and should not be included in such legislation.

3. Prohibition is unrealistic because the technology exists to successfully reclaim mined lands and such action would wipe out 44 percent of our coal production at a time when our other domestic fuel sources are rapidly being depleted.

4. Any authority to prohibit surface mining should be restricted to each individual permit application based on a finding that the particular area cannot be adequately reclaimed.

5. Permit federal review of any state prohibition order.

6. Provide for public notice, comment by interested parties, and the recommendation of an advisory committee on any proposed guidelines or regulations.

7. Permit the future planned use of mined lands be determined by the operators.

Thank you, Mr. Chairman

TABLE 1.--Production of mineral energy resources and electricity from hydropower and nuclear power in the United States

Year	Bituminous coal and lignite (1,000 net tons)	Anthracite coal (1,000 net tons)	Crude petroleum (1,000 barrels)	Natural gas wet (Million cubic feet)	Electricity	
					Water-power (MM KWH)	Nuclear (MM KWH)
1966	533,881	12,941	3,027,763	17,206,628	197,938	5,520
1967	552,626	12,256	3,215,742	18,171,325	224,969	7,655
1968	545,245	11,461	3,329,062	19,322,400	225,873	12,528
1969	560,505	10,473	3,371,751	20,698,240	253,361	13,928
1970 p/	590,000*	9,481	3,515,533	21,906,900	250,611	21,801

p/ Preliminary.

TABLE 2.--Production of mineral energy resources and electricity from hydropower and nuclear power in British thermal units, and percent contributed by each in the United States

Year	Trillion B.t.u. 1/							Percent					
	Bituminous coal and lignite	Anthracite	Crude petroleum	Natural gas, wet (unprocessed)	Electricity		Grand total	Bituminous coal and lignite	Anthracite	Crude petroleum	Natural gas, wet (unprocessed)	Electricity	
					Water-power	Nuclear						Water-power	Nuclear
1966	13,986	329	17,561	18,885	2,043	57	52,861	26.5	0.6	33.2	35.7	3.9	0.1
1967	14,479	311	18,651	19,971	2,321	79	r/ 55,812	r/ 25.9	0.6	33.4	35.8	r/ 4.2	0.1
1968	14,285	291	19,308	21,372	2,331	129	r/ 57,716	24.8	0.5	33.5	37.0	4.0	0.2
1969	14,685	266	19,556	22,837	2,675	147	60,166	24.4	0.4	32.5	38.0	4.5	0.2
1970 p/	15,458	241	20,390	24,147	2,646	230	63,112	24.5	0.4	32.3	38.2	4.2	0.4

p/ Preliminary.
r/ Revised.
1/ See text for conversion factors.

TABLE 3.--Calculated consumption of mineral energy resources and electricity from hydropower and nuclear power in the United States

Year	Bituminous coal and lignite (1,000 net tons)	Anthracite coal (1,000 net tons)	Crude petroleum (1,000 barrels)	Petroleum products net: E - Exports I - Imports (1,000 barrels)	Natural gas dry (Million cubic feet)	Natural gas liquids (1,000 gallons)	Electricity		
							Water-power (MM KWH)	Net E - Exports I - Imports (MM KWH)	Nuclear (MM KWH)
1966	486,266	11,400	3,455,304	I 418,811	16,758,505	19,581	r/ 199,030	I 1,092	5,520
1967	480,416	10,800	3,590,271	I 428,200	17,801,275	20,593	r/ 226,650	E 299	7,655
1968	498,830	10,160	3,776,340	I 483,265	18,957,125	22,638	r/ 225,242	E 631	12,528
1969	507,275	8,809	3,891,395	I 556,909	r/ 20,387,827	25,067	r/ 252,602	E 759	13,928
1970 p/	517,015	8,137	3,991,695	I 665,336	21,680,463	25,843	249,811	E 800	21,801

p/ Preliminary.
r/ Revised.

TABLE 4.--Calculated consumption of mineral energy resources and electricity from hydropower and nuclear power in British thermal units, and percent contributed by each in the United States

Year	Trillion B.t.u. 1/								Percent							
	Bituminous coal and lignite	Anthracite	Crude petroleum	Petroleum products net: E - Exports I - Imports	Natural gas dry	Natural gas liquids	Electricity		Grand total	Bituminous coal and lignite	Anthracite	Crude petroleum	Petroleum products net: E - Exports I - Imports	Natural gas dry	Natural gas liquids	Electricity	
							Water-power	Nuclear								Water-power	Nuclear
1966	12,740	290	20,041	I 2,662	17,295	1,989	2,056	57	57,130	22.3	0.5	35.1	I 4.7	30.3	3.4	3.6	0.1
1967	12,587	274	20,824	I 2,660	18,371	2,043	r/ 2,318	79	r/ 59,156	21.3	0.5	35.2	I 4.5	31.1	3.4	3.9	0.1
1968	13,069	258	21,902	I 2,978	19,564	2,239	r/ 2,324	129	r/ 62,463	20.9	0.4	35.1	I 4.8	31.3	3.6	3.7	0.2
1969	13,291	226	22,570	I 3,431	r/ 21,020	2,439	2,667	147	r/ 65,809	20.2	0.3	34.3	I 5.2	32.0	3.7	4.1	0.2
1970 p/	13,546	207	23,152	I 4,105	22,353	2,526*	2,638	230	68,757	19.7	0.3	33.7	I 6.0	32.5	3.7	3.8	0.3

p/ Preliminary.
r/ Revised.
1/ See text for conversion factors.

*Note: The final 1970 bituminous coal and lignite production figure reported by BOM is 602,932,000 tons.

Source: U. S. Bureau of Mines "Monthly Petroleum Statement," December, 1970.

Table 5.--U. S. production of deep and surface-mined bituminous coal and lignite, 1969 and 1970
(000 Tons)

	Deep	% of Total	Surface						Total
			Strip	% of Total	Auger	% of Total	Sub-Total	% of Total	
1969	347,132	61.9	197,023	35.2	16,350	2.9	213,373	38.1	560,505
1970	338,788	56.2	244,117	40.5	20,027	3.3	264,144	43.8	602,932
Tonnage Change 1970 vs. 1969	-8,344	--	+47,094	--	+3,677	--	+50,771	--	+42,427
Pct. Change 1970 vs. 1969	-2.4	--	+23.9	--	+22.5	--	+23.8	--	+7.6

Source: Computed by NCA from data in U. S. Bureau of Mines MINERALS YEARBOOK and Weekly Coal Report No. 2815, August 27, 1971.

Table 6.--U. S. production of deep and surface-mined coal, by state, 1940, 1950, 1960, 1965-1970
(000 tons)

State		1940	1950	1960	1965	1966	1967	1968	1969	1970
Alabama	Deep	15,249	12,534	10,365	9,923	8,900	9,362	9,252	9,287	9,078
	Surface	76	1,888	2,645	4,909	5,318	6,124	7,188	8,169	11,482
	Total Prod.	15,324	14,422	13,011	14,832	14,219	15,486	16,440	17,456	20,560
	% of Surface	0.5 %	13.1 %	20.3 %	33.1 %	37.4 %	39.5 %	43.7 %	46.8 %	55.8 %
Alaska	Deep	174	282	67	-	-	-	-	-	-
	Surface	-	131	655	893	927	925	750	667	549
	Total Prod.	174	413	722	893	927	925	750	667	549
	% of Surface	0.0 %	31.7 %	90.7 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %
Arizona	Deep	17	4	6	-	-	1	-	-	-
	Surface	-	-	-	-	-	-	-	-	132
	Total Prod.	17	4	6	-	-	1	-	-	132
	% of Surface	0.0 %	0.0 %	0.0 %	-	-	0.0 %	-	-	100.0 %
Arkansas	Deep	1,429	664	113	74	64	45	59	61	51
	Surface	26	505	296	152	172	144	152	167	217
	Total Prod.	1,454	1,169	409	226	236	189	211	228	268
	% of Surface	1.8 %	43.2 %	72.4 %	67.3 %	72.9 %	76.2 %	72.0 %	73.2 %	81.0 %
Colorado	Deep	6,576	3,852	2,914	3,520	3,601	3,574	3,763	3,615	3,858
	Surface	12	407	693	1,270	1,621	1,866	1,795	1,915	2,167
	Total Prod.	6,589	4,259	3,607	4,790	5,222	5,439	5,558	5,530	6,025
	% of Surface	0.2 %	9.6 %	19.2 %	26.5 %	31.0 %	34.3 %	32.3 %	34.6 %	36.0 %
Georgia	Deep	42	42	4	-	-	-	-	-	-
	Surface	-	-	-	-	-	-	-	-	-
	Total Prod.	42	42	4	-	-	-	-	-	-
	% of Surface	0.0 %	0.0 %	0.0 %	-	-	-	-	-	-
Illinois	Deep	37,535	38,678	23,307	25,814	27,458	27,948	26,392	30,082	32,093
	Surface	13,075	17,612	22,671	32,670	36,113	37,185	36,049	34,640	33,026
	Total Prod.	50,610	56,291	45,977	58,483	63,571	65,133	62,441	64,722	65,119
	% of Surface	25.8 %	31.3 %	49.3 %	55.9 %	56.8 %	57.1 %	57.7 %	53.5 %	50.7 %
Indiana	Deep	8,829	9,217	4,753	2,355	1,861	1,641	2,168	2,110	2,094
	Surface	10,039	10,740	10,785	13,210	15,465	17,131	16,318	17,976	20,169
	Total Prod.	18,869	19,957	15,538	15,565	17,326	18,772	18,486	20,086	22,263
	% of Surface	53.2 %	53.8 %	69.4 %	84.9 %	89.3 %	91.3 %	88.3 %	89.5 %	90.6%
Iowa	Deep	2,505	701	200	196	264	295	293	368	423
	Surface	726	1,191	868	847	761	588	584	534	565
	Total Prod.	3,231	1,891	1,068	1,043	1,025	883	876	903	987
	% of Surface	22.5 %	62.9 %	81.3 %	81.2 %	74.2 %	66.6 %	66.6 %	59.2 %	57.2 %
Kansas	Deep	823	101	4	-	-	-	-	-	-
	Surface	2,756	2,024	885	1,310	1,122	1,136	1,268	1,313	1,627
	Total Prod.	3,579	2,125	888	1,310	1,122	1,136	1,268	1,313	1,627
	% of Surface	77.0 %	95.3 %	99.6 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %
Kentucky	Deep	48,278	64,518	44,468	50,688	55,813	58,518	60,694	64,336	62,610
	Surface	862	13,978	22,378	35,078	37,343	41,775	40,462	44,714	62,695
	Total Prod.	49,141	78,495	66,846	85,766	93,156	100,294	101,156	109,050	125,305
	% of Surface	1.8 %	17.8 %	33.5 %	40.9 %	40.1 %	41.7 %	40.0 %	41.0 %	50.0 %

Table 6.--U. S. production of deep and surface-mined coal, by state, 1940, 1950, 1960, 1965-1970--Continued
(000 tons)

State		1940	1950	1960	1965	1966	1967	1968	1969	1970
Maryland	Deep	1,503	487	260	435	429	381	354	322	238
	Surface	-	161	488	775	793	925	1,093	1,045	1,377
	Total Prod.	1,503	648	748	1,210	1,222	1,305	1,447	1,368	1,615
	% of Surface	0.0 %	24.9 %	65.2 %	64.0 %	64.9 %	70.8 %	75.5 %	76.4 %	85.3 %
Missouri	Deep	1,116	328	88	26	2	1	-	1	-
	Surface	1,981	2,635	2,802	3,538	3,581	3,694	3,205	3,299	4,447
	Total Prod.	3,097	2,963	2,890	3,564	3,582	3,696	3,205	3,301	4,447
	% of Surface	64.0 %	88.9 %	97.0 %	99.3 %	99.9 %	100.0 %	100.0 %	100.0 %	100.0 %
Montana	Deep	2,302	803	116	64	90	42	36	35	28
	Surface	1,172	1,717	197	300	329	329	483	995	3,419
	Total Prod.	3,474 1/	2,520	313	364	419	371	519	1,030	3,447
	% of Surface	33.7 %	68.1 %	62.9 %	82.4 %	78.5 %	88.7 %	93.1 %	96.9 %	99.2 %
New Mexico	Deep	1,111	727	250	434	391	668	768	836	938
	Surface	-	-	45	2,778	2,364	2,795	2,662	3,636	6,423
	Total Prod.	1,111	727	295	3,212	2,755	3,463	3,429	4,471	7,361
	% of Surface	0.0 %	0.0 %	15.3 %	86.5 %	85.8 %	80.7 %	77.6 %	81.3 %	87.3 %
North Dakota	Deep	813	433	2	1	-	-	-	-	-
	Surface	1,406	2,828	2,523	2,731	3,543	4,156	4,487	4,704	5,639
	Total Prod.	2,218	3,261	2,525	2,732	3,543	4,156	4,487	4,704	5,639
	% of Surface	63.3 %	86.7 %	99.9 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %
Ohio	Deep	17,724	14,986	9,206	11,268	13,060	15,172	16,339	18,625	18,111
	Surface	5,048	22,775	24,750	28,122	30,282	30,842	31,984	32,616	37,240
	Total Prod.	22,772	37,761	33,957	39,390	43,341	46,014	48,323	51,242	55,351
	% of Surface	22.2 %	60.3 %	72.9 %	71.4 %	69.9 %	67.0 %	66.2 %	63.7 %	67.3 %
Oklahoma	Deep	1,024	951	248	9	6	2	31	115	219
	Surface	622	1,727	1,094	965	837	821	1,058	1,722	2,208
	Total Prod.	1,646	2,679	1,342	974	843	823	1,089	1,838	2,427
	% of Surface	37.8 %	64.5 %	81.5 %	99.1 %	99.3 %	99.8 %	97.2 %	93.7 %	91.0 %
Pennsylvania	Deep	112,373	79,444	44,071	55,675	55,820	56,490	54,622	56,039	55,382
	Surface	4,230	26,427	21,355	24,633	25,623	22,922	21,579	22,592	25,108
	Total Prod	116,603	105,870	65,425	80,308	81,443	79,412	76,200	78,631	80,491
	% of Surface	3.6 %	25.0 %	32.6 %	30.7 %	31.5 %	28.9 %	28.3 %	28.7 %	31.2 %
South Dakota	Deep	4	1	-	-	-	-	-	-	-
	Surface	62	38	20	10	10	5	-	-	-
	Total Prod.	66	39	20	10	10	5	-	-	-
	% of Surface	93.9 %	97.4 %	100.0 %	100.0 %	100.0 %	100.0 %	-	-	-
Tennessee	Deep	6,007	4,486	3,939	3,581	3,730	3,954	4,624	4,473	4,350
	Surface	2	584	1,992	2,284	2,578	2,879	3,524	3,609	3,886
	Total Prod.	6,008	5,070	5,931	5,865	6,309	6,832	8,148	8,082	8,237
	% of Surface	0.0 %	11.5 %	33.6 %	38.9 %	40.9 %	42.1 %	43.2 %	44.7 %	47.2 %
Utah	Deep	3,576	6,670	4,955	4,992	4,635	4,175	4,316	4,657	4,733
	Surface	-	-	-	-	-	-	-	-	-
	Total Prod.	3,576	6,670	4,955	4,992	4,635	4,175	4,316	4,657	4,733
	% of Surface	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %

Table 6.--U. S. production of deep and surface-mined coal, by state, 1940, 1950, 1960, 1965-1970--Continued
(000 tons)

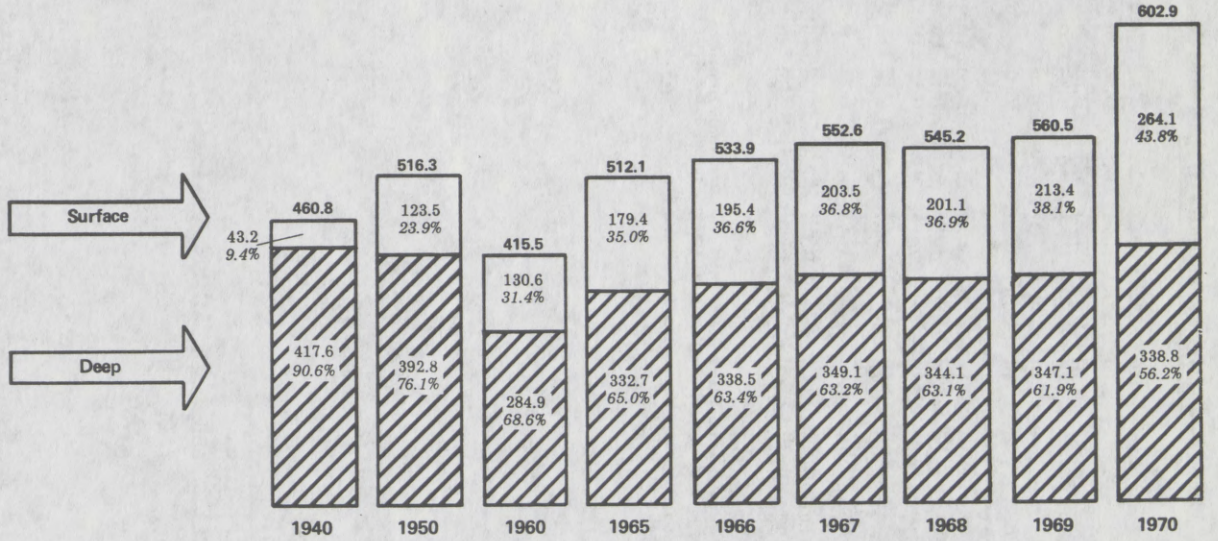
State		1940	1950	1960	1965	1966	1967	1968	1969	1970
Virginia	Deep	15,341	16,101	25,820	29,365	29,745	30,500	31,400	30,373	28,018
	Surface	6	1,566	2,018	4,688	5,820	6,221	5,566	5,182	6,998
	Total Prod.	15,348	17,667	27,838	34,053	35,565	36,721	36,966	35,555	35,016
	% of Surface	0.0 %	8.9 %	7.2 %	13.8 %	16.4 %	16.9 %	15.1 %	14.6 %	20.0 %
Washington	Deep	1,634	803	212	52	56	56	50	53	32
	Surface	16	71	16	3	3	3	128	5	5
	Total Prod.	1,650	874	228	55	59	59	178	58	37
	% of Surface	1.0 %	8.1 %	7.0 %	5.5 %	5.1 %	5.1 %	71.9 %	8.6 %	13.5 %
West Virginia	Deep	125,564	131,130	109,210	134,064	132,475	136,193	128,866	121,623	116,414
	Surface	874	12,986	9,734	15,127	17,205	17,557	17,055	19,388	27,657
	Total Prod.	126,438	144,116	118,944	149,191	149,681	153,749	145,921	141,011	144,072
	% of Surface	0.7 %	9.0 %	8.2 %	10.1 %	11.5 %	11.4 %	11.7 %	13.7 %	19.2 %
Wyoming	Deep	5,630	4,889	311	124	123	117	117	122	118
	Surface	178	1,459	1,713	3,136	3,547	3,471	3,713	4,481	7,105
	Total Prod.	5,808	6,348	2,024	3,260	3,670	3,588	3,829	4,602	7,222
	% of Surface	3.1 %	23.0 %	84.6 %	96.2 %	96.6 %	96.7 %	97.0 %	97.4 %	98.4 %
Total U.S.	Deep	417,604	392,844	284,888	332,661	338,524	349,133	344,142	347,132	338,788
	Surface	43,167	123,467	130,624	179,427	195,357	203,494	201,103	213,373	264,144
	Total Prod.	460,772	2/516,311	3/415,512	512,088	533,881	552,626	545,245	560,505	602,932
	% of Surface	9.4 %	23.9 %	31.4 %	35.0 %	36.6 %	36.8 %	36.9 %	38.1 %	43.8 %

1/ Includes Texas lignite.
2/ Includes 14,000 tons deep production in Texas and 410,169 deep production in Michigan.
3/ Includes 11,500 tons deep production in Michigan; 1,384 tons deep in Oregon; and 18,169 surface in Texas.

Source: Computed by NCA from U. S. Bureau of Mines data reported in Minerals Yearbook and Weekly Coal Report No. 2815.

Chart for Table 6

U.S. PRODUCTION OF BITUMINOUS AND LIGNITE COAL AT DEEP AND SURFACE MINES, 1940–1970



MILLION TONS AND PERCENT OF TOTAL

SOURCE: Data compiled by NCA from U.S. Bureau of Mines *MINERALS YEARBOOKS* and *Weekly Coal Report No. 2815.*

Table 7.—Energy sources for 1970 energy utility power generation.

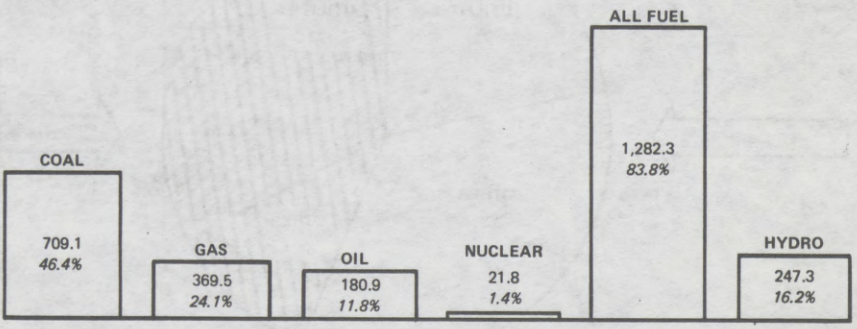
(Billion Kwhr)

	COAL	GAS	OIL	NUCLEAR	TOTAL FUEL [1]	HYDRO	TOTAL
	709.1	369.5	180.9	21.8	1,282.3	247.3	1,529.6
% of Total:	46.4	24.1	11.8	1.4	83.8	16.2	100.0
% of Total Fuel:	55.3	28.8	14.1	1.7	100.0	--	--

1/ Includes some 1.0 billion kwhrs (0.1%) production from geothermal sources and wood and waste.
NOTE: Totals may not add due to rounding.
SOURCE: Basic data from FPC New Release No. 17372, March 18, 1971.

Chart for Table 7

1970 ELECTRIC UTILITY ENERGY SOURCES



Billion Kwhrs and Percent of Total

Table 8.——Distribution of 1970 deep and surface–mined coal production to U.S. utilities and "other" markets.

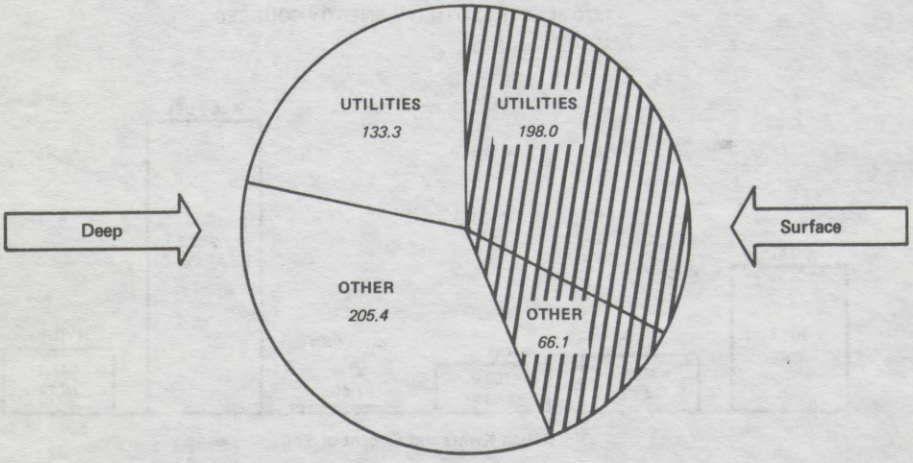
(000 tons)

TYPE OF MINING	U.S. UTILITIES	% OF TOTAL	"OTHER"	% OF TOTAL	TOTAL
Deep	133,343	39.4	205,446	60.6	338,788
Surface	198,015	75.0	66,124	25.0	264,144
TOTAL:	331,358	55.0	271,571	45.0	602,932
Surface as Pct. of Total Market	59.8	——	24.3	——	43.8

NOTE: Totals may not add due to rounding.
SOURCE: Computed by NCA from data in Table 9.

Chart for Table 8

DISTRIBUTION OF 1970 COAL PRODUCTION



Million Tons

Table 9.--1970 production and distribution of bituminous and lignite coal; NCA estimated shipments of 1970 coal production to U. S. electric utilities and "others" from deep and surface mines, respectively, by coal district
(000 tons)

Coal Producing District	1970 Coal Production 1/					Estimated Distribution Of 1970 Coal Production To: 2/			NCA Estimated 1970 Shipments Of Coal 4/ From:					
		Surface							Deep Mines To:			Surface Mines To:		
	Deep	Strip	Auger	Sub-total	Total	Total	U.S. Electric Utilities 3/	Other	U.S. Electric Utilities 3/	Other	Total	U.S. Electric Utilities 3/	Other	Total
1. Eastern Pennsylvania (Includes Md. & W.Va.-Part)	22,859	21,124	661	21,785	44,644	44,644	29,095	15,549	13,565	9,294	22,859	15,530	6,255	21,785
2. Western Pennsylvania	34,678	5,749	119	5,868	40,546	40,546	6,809	33,737	3,652	31,026	34,678	3,157	2,711	5,868
366. Northern West Virginia & Panhandle	42,646	9,132	180	9,312	51,957	31,957	32,779	19,178	24,366	18,280	42,646	8,413	898	9,311
4. Ohio	18,111	35,818	1,422	37,240	55,351	55,351	41,400	13,951	12,052	6,059	18,111	29,348	7,892	37,240
7. Southern Numbered 1 (W.Va.-Part, Va.-Part)	33,293	4,747	987	5,734	39,027	39,027	1,253	37,774	740	32,553	33,293	513	5,221	5,734
8. Southern Numbered 2 (E.Ky.,Va.(Pt), Tenn. (Pt.), W.Va. (Pt.))	113,229	34,628	16,198	50,826	164,056	164,056	63,177	100,879	32,044	81,185	113,229	31,133	19,694	50,827
9. West Kentucky	19,367	33,131	305	33,436	52,803	52,803	47,345	5,458	17,136	2,231	19,367	30,209	3,227	33,436
10. Illinois	32,093	33,026	-	33,026	65,119	65,119	48,532	16,587	21,472	10,621	32,093	27,060	5,966	33,026
11. Indiana	2,094	20,169	-	20,169	22,263	22,263	15,690	6,573	1,607	487	2,094	14,083	6,086	20,169
12. Iowa	423	565	-	565	987	987	909	78	412	11	423	497	67	564
13. Southeastern (Ala.-Tenn. (Pt.))	10,019	12,094	149	12,243	22,262	22,262	12,260	10,002	4,333	5,686	10,019	7,927	4,316	12,243
14. Arkansas-Oklahoma	270	617	7	624	895	895	-	895	-	270	270	-	624	624
15. Southwestern (Kans.Mo., Okla-Pt.)	-	7,874	-	7,874	7,874	7,874	7,209	665	-	-	-	7,209	665	7,874
16. Northern Colorado	581	-	-	-	581	581	511	70	511	70	581	-	-	-
17. Southern Colorado (Includes pt. N.M.)	4,215	2,167	-	2,167	6,382	6,382	2,278	4,104	416	3,799	4,215	1,862	305	2,167
18. New Mexico (Includes pt. Colo. and Ariz.)	-	6,555	-	6,555	6,556	6,556	6,525	30	-	-	-	6,525	30	6,555
19. Wyoming	118	7,105	-	7,105	7,222	7,222	6,411	811	-	118	118	6,411	693	7,105
20. Utah	4,733	-	-	-	4,733	4,733	1,037	3,696	1,037	3,696	4,733	-	-	-
21. No. & So. Dakota	-	5,639	-	5,639	5,639	5,639	4,642	997	-	-	-	4,642	997	5,639
22623. Montana & Washington (Includes Ore., Alaska)	60	3,973	-	3,973	4,033	4,033	3,496	537	-	60	60	3,496	477	3,973
Total U.S.	338,788	244,117	20,027	264,144	602,932	602,932	331,358	271,571	133,343	205,446	338,788	198,015	66,124	264,144

NOTE: Totals may not add due to rounding.

1/ Production of bituminous coal and lignite in 1970, by coal producing district, as reported by U. S. Bureau of Mines in Weekly Coal Report No. 2818, Sept. 17, 1971.

2/ Shipments of 1970 coal production estimated by NCA on basis of data reported by Bureau of Mines (BOM) in "Bituminous Coal and Lignite Distribution, Calendar Year 1970" (Mineral Industry Survey report, dated March 23, 1971).

NCA adjusted the BOM 1970 coal distribution data, as reported by coal district of origin, to conform with the BOM coal production data. Because of timing of shipments of coal produced in a given calendar year, and possibly because of variances in reports received by BOM for production and distribution data, there is usually some difference in the figures reported for these two categories by BOM. For example, BOM reported 1970 coal production at 602.9 million tons and 1970 coal distribution at 598.0 million tons.

3/ The BOM distribution report shows shipments of coal, by consumer use, to all destinations in the U.S., Canada, and Mexico. NCA adjusted the BOM reported shipments of coal to "electric utilities" to exclude 1970 estimated shipments of deep and surface-mined coal to Canadian electric utilities. (No shipments were made to Mexico in 1970.) The shipments of coal to Canadian utilities are reflected in the "others" category.

4/ NCA estimated the shipments of 1970 coal production from deep and surface mines, respectively, to "electric utilities" and "others," on the basis of available individual 1970 coal company experience. With these data, NCA made a reasonable identification of the total shipments of 1970 coal production to the two consumer categories, by coal district, except for some 18.8 million tons, or 3 percent of the total 1970 coal production of 602.9 million tons. The unidentified tonnages were apportioned, for each coal district, 50 percent each to "electric utilities" and "others." This methodology enabled NCA to estimate high, medium and low ranges of shipments of coal from deep and surface mines, respectively, to "electric utilities" and "others."

By reason of the unidentified shipments of 18.8 million tons of coal, NCA's estimated tonnages shown in Table 9 for deep and surface mines, represent median shipments of coal to "U.S. utilities" and "others." The estimated possible range of shipments of 1970 coal production to U.S. electric utilities from deep and surface mines is shown in the following table (000 tons):

	Deep Mines			Surface Mines		
	High	Median	Low	High	Median	Low
	142,596	133,343	124,090	207,404	198,015	188,627
% variation from median:	+3.5%	-	-3.5%	+2.7%	-	-2.7%

70-867 O - 72 - pt. 1 - 29

Table 10.--Estimated potential generation of electricity by 1970 shipments of surface-mined coal to U. S. electric utilities

Coal District of Origin 1/	Pounds Per Kwhr 2/	Surface Coal Shipped To Utilities 3/ (000 Tons)	Estimated Potential Generation of Electricity 4/ (000 Kwhrs)
1	0.894	15,530	34,742,729
2	0.894	3,157	7,062,640
3&6	0.835	8,413	20,150,898
4	0.887	29,348	66,173,619
7	0.835	513	1,228,743
8	0.835	31,133	74,570,060
9	0.889	30,209	67,961,755
10	0.911	27,060	59,407,245
11	0.911	14,083	30,917,673
12	1.100	497	903,636
13	0.889	7,927	17,833,521
14	-	-	-
15	0.960	7,209	15,018,750
16	-	-	-
17	1.100	1,862	3,385,455
18	1.000	6,525	13,050,000
19	1.297	6,411	9,885,891
20	-	-	-
21	1.800	4,642	5,157,778
22	1.569	2,942	3,750,159
23	1.873	554	591,564
Total	0.943	198,015	431,792,116

1/ See Table 9 for identification of coal districts.

2/ Average pounds of coal required to generate one kilowatt-hour of electricity (fuel rate) in 1969, as computed on a state basis by the Federal Power Commission. To estimate potential generation from 1970 surface-mined coal NCA utilized the FPC fuel rate most applicable to the utility use of coal at coal district of origin.

3/ Estimated median shipments of surface-mined coal to utilities. (See Table 9)

4/ NCA computation. Computed by multiplying tons of coal by 2,000 pounds; divide resulting product (pounds of coal) by fuel rate (pounds of coal per kwhr) to obtain estimated potential generation of electricity.

Table 11.--Estimated remaining strippable resources and strippable reserves of coal and lignite in the United States, January 1, 1968 by rank of coal, sulfur category, and coal province

(Millions of short tons)

Rank	Remaining strippable resources	Strippable reserves	Strippable reserves		
			Low sulfur	Medium sulfur	High sulfur
BITUMINOUS COAL					
Eastern Province - Appalachian Region					
Alabama	667	134	33	74	27
Kentucky-east	4,609	781	532	189	60
Maryland	150	21	0	8	13
Ohio	5,566	1,033	0	126	907
Pennsylvania	2,272	752	0	225	527
Tennessee	483	74	5	43	26
Virginia	2,741	258	154	99	5
West Virginia	11,230	2,118	1,138	669	311
Subtotal	27,718	5,171	1,862	1,433	1,876
Interior and Gulf Provinces 1/					
Arkansas	200	149	3	118	28
Illinois	18,845	3,247	0	80	3,167
Indiana	2,741	1,096	0	293	803
Iowa	1,000	180	0	0	180
Kansas	1,388	375	0	0	375
Kentucky-west	4,746	977	0	0	977
Michigan	6	1	0	0	2/ 1
Missouri	3,425	1,160	0	0	1,160
Oklahoma	434	111	10	44	57
Subtotal	32,785	7,296	13	535	6,748
Rocky Mountain and Northern Great Plains Provinces 3/					
Colorado	870	500	476	24	0
Utah	252	150	6	136	8
Subtotal	1,122	650	482	160	8
Alaska					
Alaska	1,201	480	4/ 480	0	0
Total Bituminous	62,826	13,597	2,837	2,128	8,632

Table 11.--Estimated remaining strippable resources and strippable reserves of coal and lignite in the United States, January 1, 1968 by rank of coal, sulfur category, and coal province--Continued

(Millions of short tons)

Rank	Remaining strippable resources	Strippable reserves	Strippable reserves		
			Low sulfur	Medium sulfur	High sulfur
SUBBITUMINOUS COAL					
Rocky Mountain and Northern Great Plains Provinces 5/					
Arizona	400	387	387	0	0
Montana	7,813	3,400	3,176	224	0
New Mexico	3,307	2,474	2,474	0	0
Wyoming	22,028	13,971	13,377	65	529
Subtotal	33,548	20,232	19,414	289	529
Pacific Coast Province 6/					
California	100	25	25	0	0
Washington	500	135	135	0	0
Subtotal	600	160	160	0	0
Alaska					
Alaska	6,190	4/7/3,926	4/7/3,926	0	0
Total Subbituminous	40,338	24,318	23,500	289	529
LIGNITE					
Interior and Gulf Provinces 8/					
Arkansas	32	25	25	0	0
Texas	3,272	1,309	625	684	0
Subtotal	3,304	1,334	650	684	0

Table 11.--Estimated remaining strippable resources and strippable reserves of coal and lignite in the United States, January 1, 1968 by rank of coal, sulfur category, and coal province--Continued

(Millions of short tons)

Rank	Remaining strippable resources	Strippable reserves	Strippable reserves: Low sulfur	Strippable reserves: Medium sulfur	Strippable reserves: High sulfur
LIGNITE					
Rocky Mountain and Northern Great Plains Provinces					
Montana	7,058	3,497	2,957	540	0
North Dakota	5,239	2,075	1,678	397	0
South Dakota	399	160	160	0	0
Subtotal	12,696	5,732	4,795	937	0
Alaska					
Alaska	8	5	5	0	0
Total Lignite	16,008	7,071	5,450	1,621	0
Grand Total United States	119,172	44,986	31,787	4,038	9,161

1/ Bituminous coal resource and reserve not estimated for Texas and Nebraska.
2/ There may be isolated areas of some seams which might be classed in the medium-sulfur category.
3/ Bituminous coal resource and reserve not estimated for Montana, New Mexico, Idaho, and Wyoming.
4/ 478 million tons of bituminous and 3,387 million tons of subbituminous coal reserves in the Northern Alaska Fields (North Slope) are included in the estimates even though an economic export market, which is essential for exploitation, does not currently exist.
5/ Subbituminous coal resource and reserve not estimated for Colorado.
6/ Bituminous coal resource and reserve not estimated for Washington, and subbituminous coal resource and reserve not estimated for Oregon.
7/ Includes 179 million tons of undifferentiated subbituminous coal and lignite.
8/ Lignite resource and reserve not estimated for Kansas, Mississippi, Louisiana, and Alabama.

Source: "The Reserves of Bituminous Coal and Lignite for Strip Mining in the United States (By Staff, Bureau of Mines)." Report on open file at BOM.

Table 12.--Estimated strippable reserves of coal and lignite in the United States, January 1, 1968 by states

(Millions of short tons)

State	Bituminous coal 1/	Subbituminous coal 2/	Lignite 3/	Total
Alabama	134	0	3/ 0	134
Alaska	4/ 480	4/5/ 3,926	5	4,411
Arizona	0	387	0	387
Arkansas	149	0	25	174
California	0	25	0	25
Colorado	500	2/ 0	0	500
Illinois	3,247	0	0	3,247
Indiana	1,096	0	0	1,096
Iowa	180	0	0	180
Kansas	375	0	3/ 0	375
Kentucky-east	781	0	0	781
Kentucky-west	977	0	0	977
Maryland	21	0	0	21
Michigan	1	0	0	1
Missouri	1,160	0	0	1,160
Montana	1/ 0	3,400	3,497	6,897
New Mexico	1/ 0	2,474	0	2,474
North Dakota	0	0	2,075	2,075
Ohio	1,033	0	0	1,033
Oklahoma	111	0	0	111
Pennsylvania	752	0	0	752
South Dakota	0	0	160	160
Tennessee	74	0	0	74
Texas	1/ 0	0	1,309	1,309
Utah	150	0	0	150
Virginia	258	0	0	258
Washington	1/ 0	135	0	135
West Virginia	2,118	0	0	2,118
Wyoming	0	13,971	0	13,971
Total United States	13,597	24,318	7,071	44,986

1/ Bituminous coal reserves not estimated for Idaho, Montana, Nebraska, New Mexico, Texas, Washington, and Wyoming.
2/ Subbituminous coal reserves not estimated for Colorado and Oregon.
3/ Lignite reserves not estimated for Alabama, Kansas, Louisiana, and Mississippi.
4/ 478 million tons of bituminous and 3,387 million tons of subbituminous coal reserves in the Northern Alaska Fields (North Slope) are included in the estimates even though an economic export market which is essential for exploitation, does not currently exist.
5/ Includes 179 million tons of undifferentiated subbituminous coal and lignite.

Source: "The Reserves of Bituminous Coal and Lignite for Strip Mining in the United States (By Staff, Bureau of Mines)." Report on open file at BOM.

Senator HANSEN. Mr. Chairman, if it wouldn't be inappropriate, I would like to observe that, in my State of Wyoming, I think it ought not to be unnoticed that some of the coal companies in that State have been very helpful in doing what they could to encourage the type of research from which I am certain will result new techniques and procedures that can be very useful.

As an example of this sort of cooperation, the University of Wyoming this last September issued a research journal on strip-mining soil banks in Wyoming. The cooperative study was begun in 1964. They had in mind at that time two objectives and I understand back in 1964 the Kenner Coal Co. gave a grant of some $25,000 to the University of Wyoming.

The objectives of that study were to determine the adaptability of native plant species and, also to determine the fertilization, mulching, snow fencing for water accumulation, and/or various mechanical soil treatments that would significantly affect vegetation, establishment, and growth.

This report, in my judgment is very comprehensive and I am sure will be invaluable to surface mines and the West generally, in their land restoration work. We are proud of the fact in Wyoming we have had our own land restoration law for some time and it has been accepted in good faith by the mining industry. They have been very cooperative and as a matter of fact they have suggested a number of measures that have been since written into law that I think reflect the kind of rapport that must exist between industry and legislators if we hope to come up with workable laws.

It is one thing to hear from people not involved in the business. I don't say those persons shouldn't be heard. I do say it is crucially important that an affected industry will be heard also. I think I have a little license to speak on that point because I was Governor of Wyoming and in my judgment some of the better legislation that was passed during those 4 years was legislation in which the affected industries or segments of society had made their input.

I compliment the present Governor in trying to further perfect the legislation that we have on our law books, which I think will serve as a model for so many other States.

I might also observe that the Wyoming Association is in the opinion that the reclamation of surface mine regulation activities remain the prerogative of the individual States and they have asked that I submit their statement for inclusion in the record of this hearing.

I did this yesterday, but it seemed to me this might be an appropriate time to again just mention what was done yesterday.

Thank you, Mr. Chairman.

Senator Moss (presiding). Thank you, Senator.

Thank you, gentlemen. I appreciate it.

Our next witnesses will be in a panel, Mr. Joseph P. Brennan, director of Research and Marketing for the United Mine Workers of America, accompanied by Mr. Pnakovich, Mr. Wells, Mr. Shirley, and Mr. Turnblazer.

Will those gentlemen come forward, please?

STATEMENT OF JOSEPH P. BRENNAN, DIRECTOR OF RESEARCH AND MARKETING FOR THE UNITED MINE WORKERS OF AMERICA; ACCOMPANIED BY L. J. PNAKOVICH, PRESIDENT, UNITED MINE WORKERS OF AMERICA, DISTRICT 31; KENNETH F. WELLS, ILLINOIS STATE PRESIDENT, UNITED MINE WORKERS OF AMERICA; TOM SHIRLEY, INTERNATIONAL REPRESENTATIVE, UNITED MINE WORKERS OF AMERICA; AND WILLIAM J. TURNBLAZER, PRESIDENT, UNITED MINE WORKERS OF AMERICA, DISTRICT 19

Mr. BRENNAN. Thank you, Mr. Chairman.

Messrs. Pnakovich and Wells, who are district presidents, were not able to be here today.

I would like to ask permission, however, to file their statements as if they appeared.

Senator MOSS. That may be done; their statements will follow your testimony and any other statements you have.

Senator HANSEN. Can I interrupt just a moment to ask a question of the former panel? I would think their response might be submitted in writing.

Senator MOSS. All right, you may do that.

Senator HANSEN. Mr. Bagge, one of the large natural gas transmission companies is now negotiating with Algeria for a liquifying and transporting natural gas produced in that country to the U.S. east coast.

Can you give us an estimate of the cost of such liquified natural gas delivered to the east coast as compared with the estimated cost of gas manufactured from coal?

I would also like to ask if the price of natural gas at the wellhead, which now averages considerably less than the 20 cents per thousand cubic feet, in fact would decontrol from Federal regulations, wouldn't there be a tendency for the price of natural gas to seek its own competitive level with other fuels and thereby not only encourage the development of more natural gas but also hurry the development of the total coal gasification process?

Mr. BAGGE. I would be very happy to submit the answer to those, yes.

Senator HANSEN. Thank you very much.

(The questions and answers follow:)

QUESTIONS SUBMITTED BY SENATOR HANSEN AND ANSWERS BY MR. BAGGE

Senator HANSEN. Mr. Bagge, one of the large natural gas transmission companies is now negotiating with Algeria for liquefying and transporting natural gas produced in that country to the U. S. east coast. Could you give the committee an estimate of the cost of such liquefied natural gas delivered to the east coast as compared with the estimated or projected cost of gas manufactured from coal?

Mr. BAGGE. NCA has not prepared estimates of costs but has followed very closely evaluations which have been made by others.

Referring to imported liquid natural gas from Algeria by El Paso Natural Gas Co., Mr. John Ricca, acting director, Office of Oil and Gas, Department of the Interior, stated:

"The landed price is expected to be 63.94¢/MM Btu's at Cove Point and 68¢/MM Btu's at Savannah. These prices are subject to certain adjustments due

to changes in ship construction costs and in operating costs. To this price must be added receiving, storage, regasification and transportation costs to the point of delivery inland. The ultimate delivered price will be somewhere near 95¢ to $1.00 per MCF—much more costly than our own supplies."

We have seen a number of other such estimates and this one appears to be representative based on the current price of the gas being sold by the foreign countries and the estimated costs for tanker transport and vaporization of the liquid after it reaches U. S. shores.

The probable cost of gas from coal is greatly dependent upon the costs of the coal and the development of improved technology. The situation was summarized by the National Petroleum Council in their interim report, *U. S. Energy Outlook—July 1971*, as follows:

"Specific coal prices and quantity and location will result in varying costs from 90¢ to $1.10 per million Btu's for gas from western strip coal to $1.05 to $1.25 for gas from eastern shaft mined coal.

"A series of new processes currently in the pilot plant stage offer potential savings in plant investment. The result could be a reduction in gas price from 8¢ to 12¢ per million Btu's in Syngas. These processes still require completion of the various pilot plant programs and demonstration of the new technology in a single full-size reactor train. These developments may be ready for commercial application in the middle of the 1970–1985 period."

In considering comparative prices of various forms of supplemental gas, we want to call your attention to the matter of transporting the gas, because this could significantly affect the choice. Movement of gas by interstate pipeline costs approximately 2¢ per million Btu per hundred miles. This would make, from an economic standpoint, liquid natural gas more attractive in the coastal areas where it will be delivered by tanker, and gas from coal more attractive in inland areas where coal reserves are available.

Senator HANSEN. If the price of natural gas at the wellhead which now averages considerably less, less than 20¢ per 1,000 cu.ft. in fact, were decontrolled from federal regulation, wouldn't there be a tendency for the price of natural gas to seek its own competitive level with other fuels and, thereby, not only encourage the development of more natural gas but also hurry the development of coal degasification?

Mr. BAGGE. Yes, I believe that the decontrol of new gas prices would reinvigorate our natural gas supply base through the encouragement of increased exploration and development of natural gas. Of equal importance, decontrol of new gas prices would also encourage the timely development of a domestic synthetic fuels industry based mainly on coal gasification.

Today, as a result of producer price regulation, we are experiencing a serious national shortage of natural gas and additional gas is not now available to the utility and industrial markets. The artificially low price levels which have been established by producer price regulation have failed to encourage the necessary level of exploration and development. Thus, we are not witnessing a massive effort by the gas industry to turn to synthetic gas from coal.

The government has now committed itself to the development of a synthetic fuel industry to supplement natural gas supplies by the development, in this decade, of a synthetic fuel technology which will produce an alternative pipeline gas from our abundant national coal reserves. Coal is emerging as the feedstock for an entirely new synthetic fuel industry which, in turn, will provide the basis for maintaining the gas industry as a major energy source for the long term future. This recent development, however, has broadened the scope of the coal industry's traditional opposition to producer price regulation in the gas industry.

If we are to provide an alternative source of energy to the gas industry with the expected development of synthetic gas from coal, it can only be achieved within the framework of a free market economy without the imposition of artificial price restraints such as presently exist in the natural gas industry. Capital simply will not be committed by the nation's coal producers to the development of a synthetic fuel industry if the threat of artificial producer price regulation continues to exist as a deterrent to its development.

It is no answer to say to the nation's coal producers that the scope of the Natural Gas Act was not intended to encompass coal production because synthetic gas from coal was not contmeplated by the Congress when it enacted the Natural Gas Act. The producers and gatherers of natural gas which were specifi-

cally exempt from the Natural Gas Act can testify after two decades of price regulation following *Phillips* that even explicit assurances from the Congress are to no avail. The more recent decision of the Supreme Court in *Southwestern Cable,* which extended the Federal Communications Act to cover cable television even though the technology was unknown when the Communications Act was enacted, justifies the coal industry in seeking exemption for natural gas producers before it is willing to commit gas from coal to another generation of abortive and wholly counter-productive policies of artificial price controls.

In the opinion of the coal industry, the producer's prices for natural gas should be freed from federal control. In this regard we enthusiastically endorse any legislation which would allow the wellhead price of newly discovered natural gas to be determined in the freedom of the market place and unfettered by federal regulation.

Senator Moss. All right, Mr. Brennan.

Mr. BRENNAN. Thank you, Mr. Chairman.

My name is Joseph P. Brennan, I am director of research and marketing of the United Mine Workers of America. I wish to express the appreciation of the membership of our union to this committee for the opportunity to appear here today. With me are four representatives of the United Mine Workers who represent the broad geographic distribution of our membership. They are here to present specific testimony regarding the impact of strip mining on their particular areas and to respond to questions about these areas which may come from the various members of the committee.

For the record, I would like to introduce these men.

Leonard J. Pnakovich is president of district 31, with jurisdiction over the coal mines in northern West Virginia, with headquarters in Fairmont, W. Va.

William Turnblazer is president of district 19, which covers a part of eastern Kentucky and Tennessee, with headquarters in Middlesboro, Ky.

Kenneth Wells is president of district 12, representing the miners in the State of Illinois, with headquarters in Springfield.

Thomas Shirley is an international representative of the United Mine Workers assigned to the Peabody mine on the Black Mesa, which is located near Kayenta, Ariz.

At the outset of my remarks, I want to very firmly emphasize that the United Mine Workers of America fully recognizes that reforms in dealing with the ravages of strip mining are long overdue. As evidenced by the number of bills introduced in this session of Congress on this question, there is a growing public outcry for some form of regulatory action.

The membership of the United Mine Workers of America has a direct and immediate interest in this question. They, together with their families, live in close proximity to coal mining areas. A sizable percentage of our members derive their livelihood from this type of mining and a great deal of revenue from it goes to the United Mine Workers of America welfare and retirement fund and the anthracite health and welfare fund, thus providing pensions, hospital and medical care, and widows and survivors benefits. Therefore, I submit that as a whole, the United Mine Workers of America has as close a vested interest in strip mining as any other group in the United States.

We wholeheartedly support S. 2777. We believe this legislation will

make possible the effective regulation of strip mining throughout the United States. It will also establish a legislative framework for the eventual restoration of much of the land ravaged by past abuses of the strip mining industry.

Before beginning to discuss the specific provisions of S. 2777 we would like to make one comment about its scope.

This legislation covers all minerals extracted by surface mining. This, to us, is a logical way to approach the problem of surface mining, because we believe that regulation should be applied to all surface mine operators. The destruction of property and esthetic value because of copper, lead, iron ore or tin mining is reprehensible to the citizens of those areas. Protection must be afforded them, just as protection should be given to the residents of southern Appalachia, Kentucky, Illinois, and other coal-producing regions. It should also be pointed out that coal mining accounts for less than half of all stripping in the entire country. As such, to us at least, it makes little sense that coal should be singled out for regulation while all other extractive industries are ignored.

However, in our testimony we will limit our remarks to coal mining. We do this because we represent and speak for coal miners, and thus, are able to address ourselves only to our own industry with any degree of expertise. We are confident however, that this committee and the Congress will deal effectively with other forms of surface mining.

Our support for S. 2777 is based upon two factors.

Continued abuse of America's precious land and water resources because of underregulated strip mining must ultimately lead to a citizen revolt against all strip mining. Such a reaction will, as a matter of course, sweep away the good strip operators with the bad, and will, in time, lead to a total abolition of strip mining.

We are naturally concerned about this. Thousands of members of the United Mine Workers are employed in strip mines. Projections indicate that additional thousands will be employed in the future as demand for coal causes the expansion of existing strip mines and the opening of new ones. This is especially true in the west, where both geology and economics have combined to create an extremely favorable climate for strip mining.

Electric power production is now the largest single stimulus behind the expansion of strip mining. Looming in the future however, are large demands for coal for gasification and liquefaction. These markets have huge, but not yet clearly defined, parameters. Much of the economic justification for gasification and liquefaction will rest with the availability of strippable coal which can be mined in large quantities at competitive costs. I might point out the United Mine Workers of America have deep and continuing interest in the gasification technology. We desire that that research and development proceed expeditiously.

A second factor underlying our support for S. 2777 is perhaps not so obvious.

Coal miners live in strip areas and remain in these areas long after the power shovels have gone. Coal miners must bear the major burden of devastated hills, polluted water and all of the tragic economic consequences of unregulated strip mining.

We, as citizens and as a union, wish to change this pattern. There is no valid reason why land must be destroyed and water polluted to

produce coal. Ecological catastrophe does not have to be the price of coal. Just as death and injury do not have to be a part of the normal cost of underground coal mining. For many years the United Mine Workers of America has supported proper strip reclamation legislation before the various State legislatures. We helped in the passage of many laws now on the books. However, because we often found them to be defective either in content or enforcement, the officers of our union made a conscious and calculated decision to work toward the regulation of strip mining at the Federal level. For the record and the information of this committee, I have attached, as an appendix to this statement, copies of press releases on this question by W. A. Boyle, the president of the United Mine Workers of America. I might point out at this point that I was very impressed with the gentleman from Pennsylvania this morning and very proud of it, being a former resident of that State. It does demonstrate what can be done.

S. 2777 does many things to help bring about a reformation of strip mining practices in the interest of ecological progress. There is one thing, however, which it does not do. S. 2777 does not ban strip mining, either for coal or for any other mineral. We oppose, as a matter of policy and common logic, a total ban on strip mining.

Strip mining accounts for 45 percent of the bituminous and lignite coal produced in the United States, and over 50 percent of anthracite production. The growth of stripping has been continuous and steady over the past decade. Much of this strip coal is used by electric power companies and makes possible the operation of large central power stations.

Given this level of production and the dependence of utilities and other consumers on strip coal, banning stripping is neither desirable nor feasible. There is no readily available substitute in the short run for strip coal, either from underground coal or from alternate sources of energy.

Strip mining is an economic, efficient, and safe way to produce coal. What is wrong with stripping is the cavalier way in which many strip operators have treated our precious land and water resources. Assuredly, such waste and devastation must and can be stopped without killing the industry in the process.

A more important reason, insofar as we are concerned, for opposing the abolition of strip mining, is the effect on the health and safety of coal miners. Strip mining, while undesirable from an ecological point of view, is extremely desirable from a health and safety standpoint. Strip mines have a much lower accident rate and a far lower fatality rate than do underground mines, although the level of both is still unacceptable.

Strip mining does not have to contend with many of the environmental hazards which cause death and injury in underground mines, such as roof fall, methane formation, et cetera. Thus, to the extent that coal is mined through surface mining, the life and health of the coal miner is much better protected than would be the case if all coal was produced from underground mines.

In opposing abolition, as a matter of general principle, we do not oppose the banning of stripping in areas where reclamation is not possible. There are places in the United States where a combination of

ecological and other factors should cause the prohibition of strip mining. The Secretary of the Interior, under the terms of S. 2777 could refuse to permit stripping in such areas. However, an outright ban on stripping is a solution which may have a great deal of superficial appeal but which, like most panaceas, will cause many more problems than it solves and, indeed, is a solution which cannot be applied at this time in the United States without severe damage to our economic and social progress.

S. 2777 contains several basic methods to control strip mining. We would like to discuss them for the information of the committee.

Permits are required for every coal operator wishing to extract minerals by the surface mining method. Such permits are granted by the Secretary of the Interior upon application by the operator and when the Secretary is convinced that the proposed stripping will include definitive reclamation provisions which will permit the return of the land to a value that will be commensurate with the original value of the land, or at the very least, returned to its prestripping condition.

Preplanning is the key to the legislation. Under the concept of preplanning, the operator has to build reclamation into his total stripping operation before he begins to strip. Further, he has to place a cost on his reclamation and post a bond sufficient to cover that cost. The application has to spell out, in detail, reclamation proposals, giving time schedules and other necessary information. Failure to carry out this plan can be easily detected and the operator stopped from further stripping until he completed and complies with his preplan as spelled out on his application.

This approach makes reclamation a part of the normal cost of production and an integral part of the mining cycle. No longer should restoration be an afterthought, something that is done out of a spirit of good citizenship, or to avoid the wrath of an aroused citizenry. Our concept of a stripping operation, a concept which is embodied in S. 2777 is that it extends from the preplanning stage until the area is restored. Regulations should be applied for the entire period.

The permit system is both a method of control and a form of industrial discipline. It should bring the question of reclamation to the fore, before stripping damage is done. It should focus the attention of both the operator and the Government on both the problems and potentials of reclamation. Moreover, since the operator, himself, has laid out what he plans to do in the way of reclamation, the Secretary, or other appropriate regulatory officials, have a benchmark against which to judge performance.

We cannot see any real objection on the part of the operator to the permit arrangement so long as neither the regulations nor the decisions of the Secretary are arbitrary. The rules will be clearly spelled out and fairly applied. The permit system is really in line with the concept of capital budgeting or forward planning as practiced by most progressive large and small American companies. The only difference is that S. 2777 suggests the application of budgeting techniques to land, an application of immense potential to both the coal operators and the Nation.

The bonding provisions of S. 2777 have one major objective; to force the operator to put up enough money to reclaim according to his plan, if for some reason he fails to do so. There are established mini-

mum bonds in S. 2777. These are included for the guidance of the Secretary only, and should not be considered as the maximum allowable. The bond should be based on what is needed to get the job done. If the reclamation is difficult the bond will probably be higher than where reclamation is relatively easy. In a limited number of cases it is conceivable that the bond will be so high that the economic viability of the operation will be threatened. This is a cost that all concerned should accept as a part of the trade-off between environmental quality and economic progress.

All too often in the past, the bond in stripping operations has been a payment for devastation. It should no longer be so, but instead should become a true guarantee of good faith on the part of the operator that he will do what he has promised to do. The community and the Nation deserve no less than this.

Under the terms of S. 2777 regulations will be established by the Secretary of the Interior. Because it is impossible to apply the same rules to all strip mines, the Secretary is given certain latitude in the application and development of these regulations, so long as he uses his discretion to assure maximum ecological value.

We believe that the Department of the Interior is the logical place for enforcement under the terms of S. 2777. The Department possesses expertise in the mineral industries. It enforces various Federal laws and it is the custodian of vast amounts of Federal land.

On the other hand, there is a great deal of knowledge about the impact of strip mining and the damage done to the environment by strip mining outside the Department of Interior. To bring this knowledge to the fore, S. 2777 provides for the use by the Secretary of experts from other governmental agencies. It also establishes a strip mining advisory commission, with membership appointed by three somewhat diverse governmental departments.

The Secretary of the Interior would appoint three members. Since he is the administrator of the act, his appointing of members of the advisory committee is logical and necessary.

The Secretary of Agriculture would appoint three members. Much of the stripping done in the United States is in areas of great interest to our agriculture community. Moreover, the Secretary of Agriculture has, at his disposal, some of the most knowledgeable experts in the world on land reclamation, soil conservation, reforesting, et cetera. We believe that such expertise should be used.

Finally, the responsibility for the Federal antipollution law rests with the Administrator of the Environmental Protection Agency. Obviously, any major effort in the control of strip mining should contain a major input from those concerned with the protection of the environment. Therefore, the bill includes provisions for the appointment of three representatives on the advisory commission by the Administrator of the Environmental Protection Agency.

S. 2777 contains provisions for revoking the permit of an operator who is not complying with the terms of his permit. While there is protection afforded to the operator in the bill, it is clearly the intention of S. 2777, as we understand it, to move quickly on a strip mining operation that is deviating from proper reclamation standards.

This is as it should be. Little comfort can be taken by anyone by sending an operator to jail after he has irreparably destroyed thou-

sands of acres of valuable land. The time to stop a strip operation not in compliance with the law is at the moment when noncompliance begins or as soon thereafter as possible.

One major provision of S. 2777, a provision which is not contained in any other bill, is the revolving fund. This fund is established from money appropriated from the Federal Treasury. Additional moneys will be raised through appropriations, sales, fines, et cetera. The purpose of the fund, as we understand it, is to reclaim land ravaged by past stripping and to restore this land, insofar as possible, to a useful condition. When so restored, the land may be used for public purposes, for recreation, or for any other socially desirable goal. There are several points to keep in mind when considering this section of S. 2777. First, it deals strictly with orphan banks. As such, it should not apply to any new or any on-going stripping operations. The only exception is that bonds forfeited under the terms of the law would be used to restore the land covered by the bond before it could be used for general purpose. Second, S. 2777 tries to avoid any hint of giveaway on the part of the Federal Government. Title to land reclaimed under the terms of the revolving fund is held by the Secretary of the Interior. Powers of eminent domain may be used and contributions of land may be accepted.

In addition, it is the intention of S. 2777, as we understand it, to use the revolving fund as a development fund; that is, a fund which will take presently worthless land and turn it into valuable property. To the extent that this is possible we believe the moneys will be well spent.

S. 2777 contains a provision for State control over stripping under certain circumscribed conditions. We have some misgiving on this section because of many State failures in the past to adequately control stripping or to effectively enforce proper statutes.

However, we recognize that the State government can play a meaningful role in strip regulation if it has the will and incentive to do so. The threat of Federal takeover and the surveillance of the Federal Government might help to provide that incentive. S. 2777 makes possible State control but provides necessary Federal safeguards.

We hope that our pessimism about the performance of the States will prove to be erroneous. However, based upon our past experience we believe that the regulation of strip mining will become more and more a Federal matter and the whole thrust of S. 2777 as we understand it, is aimed in that direction.

Finally, S. 2777 contains a criminal penalty provision that applies to both individual operators and officers of corporations. This is a necessary feature to insure compliance with the act by the fringe of the industry, by the sharp operators who are willing to make a profit at the public expense. As is usual, they are infinitely small in number, but unchecked they can cause the whole intent of S. 2777 to be seriously undermined, as the conduct of the entire industry descends to the level of the most unscrupulous.

S. 2777 is, in our opinion, an effective answer to a pressing national problem. It does not hold back the extraction of needed coal by a method that is feasible, economic, and safe. At the same time, it places essential limitations on the strip mining industry and insures that in

meeting the needs of today, we will not leave devastation for the generations of tomorrow.

S. 2777 will, if enacted and enforced, permit America to maximize the value of her mineral resources without destroying her land and water. It will force a change in the method of operation for many operators, a change which may well be painful—but the price of progress is never small. The realization that the rewards of prompt and effective action far exceed the costs involved should impel all sides of this controversy toward a proper legislative framework for the stripping industy of tomorrow.

Thank you.

(The following material was submitted for the record:)

February 16, 1971

FOR IMMEDIATE RELEASE

The United Mine Workers of America today expressed disappointment with the reported Administration strip mining proposals because of their lack of federal standards and failure to call for funds to restore already stripped out lands.

The UMWA has called for federal strip mine standards to end competition among the states, based upon the lowest acceptable standard. It has also sought congressional support for a revolving fund to recover and restore stripped out lands for private and public recreational use, housing sites where practical and desirable and for industrial purposes.

"Experience has shown that reliance upon the states does not do the job. Each state will seek the lowest acceptable standard; only federal standards and federal enforcement will end competition that leads to environmental decay and assure full restoration of the land.

"The Federal Water Quality Act has not worked adequately because the states have sought approval of the lowest possible quality standards. Federal standards for strip mining alone will eliminate drawn out legal challenges by the states and attempts of strippers to hide behind state law,"
W. A. (Tony) Boyle, UMWA president, said.

Boyle added that the UMWA has sought a federal revolving fund to begin the big job of land recovery in stripped out areas. He pointed out that restoration would create needed jobs in both the anthracite and bituminous regions, restore their tourist and recreational potential and permit sound economic growth.

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UMWA NEWS RELEASE

"We have asked for a $25 million revolving fund to get this monumental job underway. Parks could be created for camping and other recreation and the fund, in part, would be replenished from users taxes now charged in federal parks. Restored land having private recreational, commercial or industrial value could be sold or leased under stipulated conditions that would guard the environment. The same kinds of conditions could be applied to land made available for home building. Money realized from sale or lease could also be used to replenish the restoration fund.

"Department of the Interior studies have shown that stripped out lands can be reclaimed at an economic cost. It is our view that such recovery should have as high a priority as moon exploration since the alternative is a lunar-like landscape here on earth," Boyle said.

FOR RELEASE MONDAY, FEBRUARY 22, 1971

While reiterating its support for federal strip mining land reclamation standards, the United Mine Workers of America today branded "as so much political grandstanding" attempts to outlaw coal mine stripping altogether.

The union's charge came in response to legislation introduced last week in the House of Representatives to prohibit all coal mine stripping. In responding to the introduction of the legislation, the UMWA noted that the majority of sponsors are big city congressmen without direct knowledge of the problems or its solutions.

"Virtually everything man does causes pollution and ecological imbalance. Preservation of modern civilization requires restoration of the environment through intelligent clean-up and reclamation policies. There seems to be a suicidal tendency among some preservationists who decry any use of nature's bounty for man's purposes while enjoying in fullest affluence the products of such use," W. A. (Tony) Boyle, UMWA president said.

Boyle added that the choice before the country is coal mining by methods that result in land and water restoration or power blackouts. He added that the prohibition of stripping will simply push up the price of electric power without ending pollution from mining activity.

"Those who would end stripping should follow their logic to its true conclusion, and call for the end of underground mining as well. That might end water pollution, gob heaps and other similar problems. It would, however, also end modern American society and the jobs of most Americans including those of coal miners.

"There are some 129 billion tons of strippable coal in the United States and both economic electric power and mine workers jobs are dependent upon its extraction. The United Mine Workers of America believes that the best answer for the nation and its members lies in uniformly enforced federal standards of land reclamation.

UMW PRESS RELEASE MONDAY, FEBRUARY 22, 1971

"We are opposed to the approach of the Nixon Administration because it relies on state standards which, in turn, will create state competition at the expense of the environment. We are for federally regulated strip mining to protect the environment because this is the only viable alternative before the nation.

"We are appalled at an approach which would cost the nation badly needed jobs and essential electric power. We note that some of the sponsors of the legislation to outlaw stripping are from oil producing states and suggest that they introduce legislation to bar oil drilling--particularly offshore--since that also creates massive problems of water and air pollution and land deterioration," Boyle said.

September 14, 1971

FOR IMMEDIATE RELEASE

W. A. (Tony) Boyle, president, United Mine Workers of America, today said the union is in "total agreement" with the U. S. Bureau of Mines on the need to eliminate culm banks that pollute the atomosphere, poison the waters and present hazard to life and health throughout the nation's coal fields.

The UMWA president cited a recent Bureau of Mines study which found some 300 burning banks causing serious air pollution, fire hazards, explosions and avalanches. He said that other hundreds of coal non-burning banks create nearly as great a hazard and stressed that the UMWA has long sought public action to eliminate the heaps.

"We have called and worked for legislation to clean up the banks and have asked for applied research to find uses for these unsightly and dangerous heaps which, according to the Bureau of Mines, are directly responsible for at least 55 deaths.

"We agree with the Bureau on the need to find practical uses for coal mine waste as aggregate for highway and building materials. Demonstration projects, and possibly a measure of initial public subsidy, could well create a new industry offering needed employment in Appalachia and elsewhere. Experimental projects also are in order to determine whether culm bank materials can be used as fill in abandoned mines and to prevent subsidence resulting from continuing underground mining.

"Funding to move forward in these areas is imperative. We intend to give needed legislation highest priority in our legislative program in the present Congress," Boyle said.

FOR RELEASE SUNDAY, SEPTEMBER 26, 1971

The United Mine Workers of America today endorsed "with enthusiasm" H.R. 10758, the Strip Mine Control Act of 1971, introduced early last week by Rep. Wayne Aspinall (D., Col.), chairman of the House Interior Committee.

"H.R. 10758 is consistent with the environmental, energy and economic needs of the nation. Its enactment will do much to insure that UMWA members and others in the coal regions will not be forced to live with polluted air and water in lunar landscapes. This legislation, if enacted, will protect the jobs of thousands of mine workers, while creating needed new jobs through meaningful cleanup of already stripped out lands. We support the measure with enthusiasm and will work hard for its enactment," W. A. (Tony) Boyle, UMWA president, said.

Boyle emphasized that H.R. 10758 makes reclamation part of the surface mining cycle and termed it the strongest and most effective measure for the regulation of stripping that has ever been placed before the Congress. He added that the Administration's proposals are "a mere band-aid" that will bind up neither past nor future environmental wounds. He further pointed out that the bill introduced by Rep. Kenneth Hechler (D., W. Va.) to ban stripping entirely is a "preservationist pipe-dream" that would lead to energy famine while causing more mine workers to face the hazards of deep mining.

Noting that surface mining for coal accounts for less than half the stripping that takes place throughout the nation, Boyle expressed satisfaction with the all-inclusive nature of the Aspinall bill which would be applied to the extraction of all minerals.

"The craters of the moon are duplicated in the Minnesota iron range and the copper mines of Montana. Environmental considerations are as serious in these areas as in Appalachia and the need for effective land restoration is as great," he added.

UMWA NEWS RELEASE

Boyle stressed that the UMWA is "firmly on the record" for federal standards and regulation. He applauded H.R. 10758 for requiring the filing of comprehensive reclamation plans and the posting of bond consistent with restoration requirements before stripping permits may be granted by the Secretary of the Interior.

"If enacted into law, this measure will limit stripping only to those areas where restoration is entirely feasible. The bill would provide an effective voice for environmental values through a mandatory federal interagency Strip Mine Advisory Commission with equal representation from the Environmental Protection Agency, the Department of Ariculture and the Department of the Interior. It would also make possible citizen petitions to halt unacceptable stripping.

"The UMWA is particularly gratified by the bill's requirement for a revolving fund to permit the federal government to acquire and restore already stripped out lands for such uses as recreation, industrial development and housing. The creation of the proposed Strip Mine Reclamation Fund will mean that the nation at last will set out to undo the damage resulting from past merciless pillage of its lands.

"Our union and its members are grateful to Rep. Aspinall for his sponsorship of this carefully designed measure. His approach is highly constructive and the measure merits positive action by the present Congress," Boyle said.

Senator Moss. Thank you, Mr. Brennan.

Mr. BRENNAN. Next I would like to have Mr. Turnblazer submit his statement.

Senator Moss. Very well, Mr. Turnblazer, you may proceed.

Mr. TURNBLAZER. Mr. Chairman and members of the committee, strip mining of coal began in this area during the last World War and gradually increased to the present time. It was not until the 1960's that attempts were made by the various States to require some reclamation of the stripped areas. This legislation is woefully inadequate and the enforcement is pathetic.

There is a running fight going on at the present time between the administrators of the laws and the conservationists. In Kentucky they charge that the administrator sides with the coal companies at all times. In Tennessee it is admitted that the staff of inspectors cannot cope with the job, as too many small strip mines are opening. Many road contractors are coming into the coal industry for a fast dollar. These are the so-called fly-by-nights and of course, they will not reclaim anything unless there is a strictly enforced law. The States cannot, as has been demonstrated, cope with these people, the streams or the environment. So, we must rely on the Federal Government to come to the rescue of our area or there will be no effective reclamation of the stripped areas of yesterday and the thousands of acres that are now being stripped.

The Tennessee Valley Authority, which is a Government agency, obtains approximately one-half of its coal from the strip and auger mines. For the most part this coal comes from the TVA area, and that agency does not seem to care for the valleys of the Kentucky and Cumberland Rivers.

While it is true that the TVA now requires certain reclamation practices by their suppliers of coal, nothing has been done by this agency for the areas from which they received coal for the past 15 years. Most conservationists state that TVA is the real culprit for the devastation of the mountain areas of eastern Tennessee and southeastern Kentucky. However, they are not alone, as the Georgia Power Co. and the Duke Power Co., along with several lesser companies, are now going full blast in the destruction of the beautiful mountains in our area.

Anyone who visits the area will readily see that the creeks and rivers are full of silt and each flood goes higher in the towns and villages below the areas where extensive stripping has taken place. In fact, several people lost their lives in the Cumberland Valley when a pit of water broke the spoil bank after a hard rain. These people were washed away in their sleep and never knew what hit them. This occurred in Campbell County, Tenn., and the coal which had been removed from the land went to the TVA. TVA has acquired thousands of acres of land in Kentucky and Tennessee and now some of this land which was secured from the Koppers Co. is being stripped by contractors.

During the past several years, many conflicts have arisen between the landowners in the mountain areas and the strippers. The strippers have obtained rights to mine coal through leases from several of the large land companies or coal companies. These leases are based on old

deeds which were made about the turn of the century. These deeds are termed "broad form deeds" wherein the land companies obtained the mineral rights to the coal and any other minerals, while the seller retained the surface rights to live on or to farm. Many large companies own the minerals for several thousands of acres of land. Prior to World War II the coal had been mined only by the underground method. With the coming of the strip machinery the land companies claimed they could mine the coal by this method as the deed was silent as to the method of mining the coal. The irate surface owners thought otherwise and in the circuit courts of the eastern counties of Kentucky they were upheld. However, on appeal to the court of appeals, it was held that the companies had the right to disturb the surface and mine by the strip-mining method even though when the deeds were executed no one could have contemplated the use of strip or auger mining machinery as it was not even invented. Resentment smolders and the fight is continuing as it has for the past 20 years. People of the mountains continue to complain of the damage to their fields, streams, and homes as the dirt and refuse of the stripped away overburden is flushed down the mountain with each spring rain. Many of the mountain people have laid in front of the bulldozers and dared the operators to come forward. Many have sat in front of coal trucks that haul the coal. Just this month a professor was jailed for sitting in front of a coal truck and impeding the free flow of traffic. The people have no faith in the States in enforcing the reclamation acts, as all of the jobs are political appointments. Two counties of Kentucky have passed bans on strip mining by the fiscal courts and others are contemplating zoning regulation which will greatly reduce stripping in their respective counties. These efforts, however noble, will not effectively reclaim the land that has heretofore been stripped. All of the States have failed to provide legislation that would reclaim the so-called orphan pits. The Appalachian Regional Commission is presently working on 65 mine area reclamation projects but you can readily see this will take hundreds of years to accomplish anything worthwhile. It is absolutely necessary for the Federal Government to take command of the stripping industry and require adequate reclamation projects. It must enact legislation that will require prompt and efficient restoration of the land as it is disturbed.

We believe the Federal Government is the only fair way for if we rely on the States, as we have in the past, we will have one State with a good law and the people of that State will be discriminated against if the law of the adjoining States are not as stringent. Then reclamation will become based totally upon competition.

Federal legislation is urgently needed also because the damage to land does not stop at State lines. We saw an influx of strippers into Tennessee when Kentucky enacted a law in 1966. The Tennessee law was passed in 1967 and some of the same strippers went back to Kentucky. The damage to the headwaters of Cumberland River in eastern Kentucky will eventually find its way to Nashville and then on back into Kentucky, going eventually into the Ohio River. I know first hand that strip mining in one county of Tennessee caused damage in a county in Kentucky. There the Corps of Engineers have a flood control canal around the city. The canal became full of silt as a result of

uncontrolled strip mining in Tennessee and this required the expenditure of several hundreds of thousands of dollars to remove the silt from the canal. Had the Tennessee law been complied with, or had it been enforced, there would not have been such damage in the State of Kentucky. This is also true between other States.

We urge the enactment of meaningful legislation that would rigidly regulate strip mining in the future. Before a person or a company could strip coal they should be required to submit a plan for restoration and a sufficient bond that if forfeited it would cover the cost of restoration. This would eliminate a lot of the fast buck fellows that have come into the industry to make a quick dollar and who will leave when they can find a more lucrative calling. These are the people who give the stripping industry the bad image and they should not be allowed to reap the benefits without suffering some of the costs of restoring the land for the future generations. We urge the administrator of the strip mining legislation to be allowed to completely ban strip mining in those areas which cannot be effectively reclaimed.

We appreciate the opportunity to submit our views on this very important subject which is dear to the hearts of the mountain people. We hope a wise Congress will come to our rescue.

Senator Moss. Thank you, Mr. Turnblazer.

Mr. BRENNAN. Mr. Chairman, our last witness is Mr. Thomas Shirley.

Senator Moss. You may proceed, Mr. Shirley.

Mr. SHIRLEY. Mr. Chairman and members of the committee, my name is Tom Shirley. I am an international representative of the United Mine Workers of America, assigned to work in the Black Mesa area, Navajo Indian Reservation. I am also a full-blooded Navajo Indian and have spent all my life on or near the Navajo Reservation except for 2 years spent in the U.S. military service.

My remarks here today will deal mostly with the Black Mesa mine of the Peabody Coal Co. However, by inference at least, I will be dealing also with the entire western part of the country, a region of vast untapped coal resources, resources of immeasurable wealth, but resources which must not come into the American economy at the expense of our as yet unspoiled western environment.

Let me begin with the benefits. Coal production on the Black Mesa will bring more than $100 million in royalties to the Navajo Tribe over the next 35 years. It will result in the employment of 375 men, most of whom will be Indians. It will bring a payroll of more than $3 million per year, contributions to the UMWA welfare and retirement fund, which will make possible additional hospital, medical, and pension benefits. All of the economic development which is possible through the development of resources should come to Navajo lands, a valuable source of jobs and income. We estimate that about $9 million of auxiliary income will be generated annually as a result of the Black Mesa payroll.

Along with the 375 men employed at Black Mesa, an additional 175 men will be employed by Salt River project at the Navajo powerplant. Presently, Salt River project is training 22 young Navajos in Phoenix for employment in the powerplant at Page. We anticipate that the bulk of the employees at Page will be Navajos. The total payroll of the powerplant will exceed $2 million per year.

Bechtel Corp. is employing a considerable number of Navajos in powerplant construction. More importantly, provisions for apprenticeship training have been made to increase the number of Indians at the plantsite.

However, these benefits are not the only ones which will come to this area of the country with the construction and operation of the strip mines and the power stations.

Coal from the Black Mesa mine will move to the Navajo power station via a railroad which, according to present plans, will be powered by electric energy. This railroad will also employ members of the Navajo Tribe and will bring additional income and benefits to the tribe.

In addition, the railroad's electric power will be purchased from the Navajo Tribe from power provided by one of the electric stations involved.

Finally, 55,000 kilowatts of power generated at the Navajo station will be made available to the tribe for its further development.

These are the benefits which we anticipate receiving with the development of Navajo and Hopi coal resources. These benefits will mean much to the people of the reservations and, indeed, can help to accelerate the economic development of the reservations and bring the Navajo and Hopi Indians more into the mainstream of American life.

For many years our coal resources have lain fallow. For many years those resources did not contribute to the well-being of the tribes. Now the development of western coal has made our resources valuable and has brought to our area hundreds of millions of dollars of capital investment, which means hundreds of jobs and millions of dollars in wages and other benefits.

But, there is a cost involved. Coal is mined on the Black Mesa by stripping. Potentially, based upon past experience, economic progress would be purchased at the cost of ecological devastation.

We, as mineworkers or as Navajos, do not want to see this happen. We do not want ugly spoil banks, open craters, or acid water on the Black Mesa. Fortunately, we do not believe that the ecology will have to be sacrificed in the interest of economy. In this respect, Black Mesa may well be a model for the stripping industry of the future, especially in the West.

The Black Mesa mine did not occur without careful planning and years of negotiations preceded the first strip shovel. Approval of the tribes involved, as well as the Federal Government had to be obtained.

The net result of all of these preliminary steps was a contract covering the Black Mesa operation. An integral part of this contract is reclamation, which will be built into the mining cycle, and which will progress along with the removal of the coal.

There are standards established against which the coal company will be judged. Both the tribes involved and the Federal Government will maintain a close watch to see that the prestripping plan is strictly adhered to by the company as the operation moves forward.

The standards which have been established and the control mechanism built into the Black Mesa contract should make possible the restoration of Navajo land. When the power shovels have gone, our lands should be at least as good as before they came.

Hopefully we look for even more. There are experiments being conducted on the Black Mesa with different types of grasses and other ground cover. Some of these grasses are not native to the region and have to be imported. If successful, our lands should be improved and their future value enhanced.

I would like to make one final point on the Black Mesa mine. The United Mine Workers of America represents the employees of Peabody Coal Co. working at the Black Mesa operation. As such, our union is responsible for seeing to the adherence by the company of the National Bituminous Wage Agreement and all of its provisions. This includes wages, working conditions, hours of work and training and upgrading of employees. Under the terms of the contract, the employees of the Black Mesa mine, and their families, will receive the full benefits of the UMWA welfare and retirement fund, including pensions, hospital and medical care, and widows and survivors benefits. But, in addition to this, the UMWA intends to exert its full resources to see to it that the coal company honors its reclamation agreement. Our members will live in the area involved in the strip mining for many years after the mining is completed. We want their surroundings to be as desirable as the limits of nature permit.

What is happening at Black Mesa may well be the prolog to western coal development. There are vast resources available to a Nation with a seemingly limitless demand for energy. Power stations are only one facet of the overall demand picture. Gasification and liquefaction technology is even now coming to demand a portion of America's coal reserves as major oil and natural gas companies acquire vast tonnages of coal as a future source of raw material.

Strip mining is very much a part of western coal's future. But, at least, we have a chance to build our economy without tearing down our ecology. We can demand strict control. We can insure that reclamation is a part of the mining process; that reclamation is put into the mining process before the shovels turn over the first dirt; that coal companies insure that their preplans are carried out; and that Federal authority can intervene to stop an operation which fails to meet environmental standards.

The West is the future energy resource base of America. It can also be an example for all Americans of the resolution of the conflict betwen the demand for a prosperous America and an equally strong demand for a clean America.

Thank you.

Senator Moss. Thank you.

Mr. BRENNAN. Thank you, Mr. Chairman.

Mr. Moss. Thank you. The statements of Mr. Pnakovich and Mr. Wells will be in the record in full.

I appreciate your summarizing your statements, they are very good and contain additional information in the record.

I am pleased to hear that you are confident, Mr. Shirley, that Black Mesa will be operated in a manner which will allow the land to be restored.

Of course there has been a great deal of publicity about Black Mesa and much concern. You point out the economic benefits which are

quite obvious to the Indian tribes that own the land and will receive the royalties, but also the employment and now you put in you are going to get 55,000 kilowatts of electricity from the powerplant when it is built which will go on to the reservation which has been somewhat deficient for electric power up to now; is that right?

Mr. SHIRLEY. Yes, sir.

For the record, I believe very conservatively I would say 75 percent of the homes on the reservation do not have electricity.

Senator MOSS. So this is a great improvement to the living conditions when electricity can come into the homes.

Mr. SHIRLEY. Yes, sir.

I might also mention, for the record, that there is 65 percent unemployment on the Navajo Reservation.

Senator MOSS. And this will make a great change in the number of jobs which will become available.

I have been down there and had a look at it myself and I am concerned, as everyone is, that there be no permanent damage of any sort. I am somewhat reassured to hear from the Peabody representative here today, as well as you, that there is restoration work going on and that there will be no permanent damage on Black Mesa after the coal is removed.

I appreciate your statement too, Mr. Turnblazer, about the problem of local enforcement. I raised that issue, as you heard, with earlier witnesses as I did yesterday. One thing that concerns me about the administration bill is this 2-year delay and if, as you say, there are what you call fly-by-nighters or others opening these small mines then stripping them, and the States don't have the resources and numbers of personnel to deal with them, then if we have a 2-year delay we will have more of our area damaged before any legislation takes hold.

I have a strong feeling that there ought to be a shorter time of getting meaningful regulations into operation for that reason.

I am glad to have your comment on that because it sharpens that particular thing that we need to discuss in the committee.

Well, it was all very excellent testimony and I appreciate it.

(The statements referred to by Mr. Brennon follows:)

STATEMENT OF KENNETH F. WELLS, ILLINOIS STATE PRESIDENT, UNITED MINE WORKERS OF AMERICA

Mr. WELLS. Mr. Chairman and members of the committee.

My statement is on behalf of the United Mine Workers, both active and retired, who live and work in the Midwestern States.

I want to extend my appreciation to this committee for the opportunity of expressing our views advocating strong Federal control over surface mining and voicing our disappointment with State reclamation laws. Legislation such as S. 2777 will put land reclamation on a sound pay-as-you-go basis in a fashion that will allow the strip mining industry to endure.

Although coal production leads mineral mining in the Midwest, stripping sand, gravel, shale, clay, silica, and limestone creates a similar land reclamation problem. We want to make it patently clear that

the United Mine Workers is not here to impair or hamper the continued development and expansion of any of these industries, but we are here to acknowledge the need for Federal legislation that will insure a sensible and reasonable land-reclamation program.

Our experience tells us that the permanent scarring of thousands and thousands of acres of land each year will inevitably arouse public consternation to a point where the surface mining method will vanish—depriving the Nation's economy of these needed natural resources at an equitable price.

We do not want to see this happen, but, on the contrary, we want strip mining to continue to flourish, and we are confident it will grow and prosper if restoration laws are adopted and authoritatively enforced.

In our home State of Illinois we have experienced the enactment of loosely worded, ineffective reclamation laws that yielded little or no results whatsoever. Of the estimated 160,000 acres stripped in Illinois, 107,000 were ravaged before any legislative action was taken.

Only now, after over 100 years of stripping in Illinois, the State is making a survey to determine the location and condition of this desolate and nonproductive land—and then only in the hope that, if matching Federal funds become available to restore this prelaw land, Illinois will have all the necessary details for participation.

S. 2777, proposed by Senator Gravel, provides for a well-planned restoration program based on the chemical and physical condition of the mining area;

It grants the Secretary of Interior broad administrative powers to regulate the surface mining industry;

It requires sufficient bond to insure restoration of mined lands;

It provides funds and a means to reclaim land virtually destroyed prior to its effective date;

It gives the Secretary enforcement powers—powers that can be retained by the Department of Interior or transferred to State agencies; and

It empowers the Secretary of Interior to license strip mine operators.

By and large, this bill is designed to rid the surface mining industry of the scarred lands it has left in its wake and give it the opportunity to continue to feed these all important natural resources into the Nation's economy.

STATEMENT OF L. J. PNAKOVICH, PRESIDENT, UNITED MINE WORKERS OF AMERICA, DISTRICT 31

Mr. PNAKOVICH. Mr. Chairman and members of the committee, my name is Leonard J. Pnakovich. I am the president of District 31, United Mine Workers of America, Fairmont, W. Va.

As this committee is well aware, there was a great debate on surface mining in the State of West Virginia during the last legislative session in January and February of 1971. Many proposals were put forth by various members of the legislature to control surface mining. These proposals ranged all the way from a preservation of the status quo at one extreme to the complete abolition of surface mining on the other.

The United Mine Workers of America in West Virginia took a position opposing the abolition of strip mining. It was our opinion as representatives of the coal miners of West Virginia, charged both by moral responsibility and by law with representing the members of our union, that we had to protect the jobs and livelihood of the surface miners in the State of West Virginia.

On the other hand, the membership of the United Mine Workers of America is deeply concerned with the environment in which they live. Coal miners do not enjoy living in devastated land areas where waters are fouled, where air pollution is the rule, and where the landscape rivals that of the moon. We believe that the environmental problems associated with the surface mining of coal must be solved if the surface mining industry in this country is to continue.

In part, as a result of our efforts, the West Virginia Legislature on March 13, 1971, passed a stringent strip-mining bill. This bill, we believe, is a start toward effective regulation of strip mining in the State of West Virginia. It will require the mining companies to apply to the Department of Natural Resources for a prospecting permit to determine the quality and height of the coal field, the characteristics of the coal, the overburden, the slope of the mountain, and other factors which affect the reclamation of strip-mined areas. It would also require a company to apply for a mining permit before any work is performed. Such an application would involve the submitting of a preplan or proposal for mining. The preplan would cover all phases of mining. From that point on every phase of the operation from the initial cut through the various parts of the mining, until the final grading and seeding, is planned and controlled by the State agency. In our opinion, this type of control is vital if we plan to arrive at an intelligent compromise between the demands of the American people for economic progress and the very legitimate demands of coal miners and the residents of coal mining areas for some relief from the devastation which has been characteristic of surface mining in the past.

Mr. Chairman, we are proud of the record of the West Virginia legislature with regard to these mining laws. We believe that it is an intelligent start and if properly enforced it will permit a proper reclamation program for the surface mining industry in the State of West Virginia. However, our experience has told us that once the emotional fervor surrounding the issue dies and the enforcement passes to a State governmental agency, a sort of bureaucratic apathy sets in and enforcement lags. Such a lag, in effect, negates the whole intent and purpose of the West Virginia law. It will, in the final analysis, permit coal operators to revert to their old ways and further devastation to our West Virginia landscape to continue.

Moreover, the application of State-by-State laws poses another problem. West Virginia has a strong strip mine law, as does Pennsylvania. West Virginia and Pennsylvania coal compete in the marketplace with the coal from other States. We do not believe that a part of the competitive process should be the leniency or stringency of strip mine regulations. We feel that the people of the United States deserve, and the coal miners of nothern Appalachia demand that reclamation be a built-in part of the cost of production of coal. If this is done by Fed-

eral statute, by national standards, and if possible, through State regulation, then we believe that we can retain the best features of surface mining in northern Appalachia and prevent the further destruction of our landscape.

It must be remembered, Mr. Chairman, that legislation is effective only to the degree it is implemented. It is for this reason that we support either Federal regulations and Federal enforcement, or at the very minimum, the development of Federal regulations and the overseeing of State enforcement of those regulations by the Federal Government.

We know that to the extent the surface-mining industry continues to devastate our landscape the jobs of coal miners are in jeopardy. The American public will not tolerate the destruction of the hills of West Virginia, Pennsylvania, eastern Kentucky, or the other parts of Appalachia simply because the coal industry is not prepared to do what is necessary to reclaim what they have destroyed. We also know that our coal miners are no longer willing to live in such surroundings and it is, therefore, our responsibility to see to it that proper reclamation is, in fact, carried out.

In conclusion, Mr. Chairman, I would like to comment briefly on the question of abolition. Abolition of strip mining in northern Appalachia, would be an economic and social catastrophe. The people of Appalachia, of necessity, have to work. They are not blessed with wealth. Our people want to live and work, to raise and educate their children. They want to live in Appalachia, and hand to their children a better region than they inherited. The abolition of surface mining would be a severe economic shock to the entire Appalachian coalfield. In West Virginia, alone, where surface mining is often conducted in conjunction with underground mines, approximately 8,000 underground miners could suffer loss of employment in addition to those who would be thrown out of work in the surface part of the industry.

We want, and need, economic growth in the northern Appalachian region. Coal is the center of our economic resources. Our economy is built upon coal and the future of our region, in many ways, is tied to the economic viability of the coal industry.

Abolition is not an answer, it is a panacea. Like many panaceas it sounds good and has a certain superficial logic, but it falls before the hard rational analysis that we believe the members of this committee must make as they consider what controls to place upon surface mining in the United States.

It appears to us, therefore, that there are some hard choices that have to be made. We can have the economic advantages that come with surface mining. We can also have protection of our environment and reclamation of our surface areas damaged by strip mining. What is needed is the development and the application of proper regulations which will force the coal operator to preplan, to apply whatever technology is available and to develop new technology, and to strictly enforce the law so that the reclamation of surface-mined areas will become an integral part of the strip-mining process.

(Whereupon, at 12:35 p.m., the hearing was recessed to reconvene at 2 p.m. the same day.)

AFTERNOON SESSION

Senator Moss. The committee will come to order. We will proceed with our hearing.

The panel of Donald Emigh, Dennis Olsen, and Ralph Watson, all those gentlemen come to the table, please.

We are pleased to have you and we look forward to hearing your testimony. We have been talking mostly about coal here but our problems aren't limited to coal lands by any means. So we will be glad to have your point of view on other types of open surface mining.

STATEMENT OF G. DONALD EMIGH, CHAIRMAN, PHOSPHATE LANDS CONFERENCE; ACCOMPANIED BY DENNIS M. OLSEN, COUNSEL FOR PHOSPHATE LANDS CONFERENCE; AND RALPH A. WATSON, MINERAL DEVELOPMENT DEPARTMENT, FMC CORP.

Mr. EMIGH. Thank you, Mr. Chairman. My name is G. Donald Emigh. I appear as chairman of the Phosphate Lands Conference, and ad hoc group formed in 1966 and composed of western phosphate ore producers. With me here for this presentation being made on behalf of the Phosphate Lands Conference are Mr. Ralph Watson, representing another company in our conference, and Mr. Dennis M. Olsen, counsel for our conference.

In my presentation I will, among other matters, review activities of the Phosphate Lands Conference since its formation which will serve as a foundation for, and give added meaning to our analysis of the proposed legislation.

Most of us engaged in mining western phosphate do so by surface mining methods. The vast majority of the western phosphate deposits are under the administration of the Department of the Interior and are available for development and production through leases from the Department of the Interior.

Western phosphate deposits are largely in Montana, Idaho, Wyoming, and Utah. They are sedimentary beds first laid down horizontally in the bottom of ancient seas 200 million years ago. After being deposited they were covered with thousands of feet of younger rocks. Later the area was subjected to severe movements of the earth's crust, resulting among other things, in the formation of the present Rocky Mountains.

Along with the other sedimentary formations, the phosphate beds were thereby twisted and contorted, faulted and folded, so that now they exist as broken, fragmented segments lying in all altitudes, from flat to vertical. The prospecting and development, by surface trenching and drilling, to determine the mineability of the phosphate in any one relatively small area, is not simple.

It is not economically feasible, nor in cases even possible to completely outline the position and grades of an ore body before mining. Consequently, even when mining is being done, unexpected geological conditions develop which necessitate quick changes in operating plans including removal of overburden and mining of the ore.

I have mentioned that most of the western phosphate comes under the jurisdiction of the Department of the Interior. In May 1966, the

western phosphate industry was shocked to see published by the Department of the Interior proposed new regulations governing the mining of phosphate under Federal leases.

Ostensibly these proposed regulations were to insure mined-land reclamation; however, their wording was such as to go far beyond mined-land reclamation. They also disregarded the geological conditions I have mentioned. It was obvious to us in western phosphate mining that these proposed regulations were impractical and could have put the industry out of business.

We western producers did not object to mined-land reclamation but we felt the Government's proposed regulations, under the guise of reclamation, unnecessarily took away freedom of action normally enjoyed in our free enterprise system. Accordingly, the Phosphate Lands Conference was formed for the purpose of working with Interior to develop regulations to accomplish the objective of mined-land reclamation without the onerous problems of Interior's proposals of May 1966.

Within 6 months, we prepared and submitted to the Department of the Interior, at their request, our comments illustrating the problems and failings of the proposed regulations together with proposed regulations which we felt achieved the desired results of mined-land reclamation without the unnecessary interference of the Federal Government in our methods of prospecting and mining.

A copy of our proposed regulations is submitted as exhibit A. We understood the Department would comment to us on these proposed regulations in January, 1967. There was, however, no official response. On July 20, 1967, we were surprised when a new and even more restrictive set of proposed regulations were published by the Department of the Interior which completely ignored our prior comments and our proposed regulations.

Once more the Phosphate Lands Conference went to Washington to again meet with the Department of the Interior. Our regulations were resubmitted together with our explanation of the problems posed by the July 20 proposed regulations. This meeting in Washington in December, 1967, was with a group from Interior not involved in our prior discussions and apparently with little or no knowledge of the prior discussions. Our comments on the Department of Interior proposed regulations of July 20, 1967, are set forth in exhibit B attached.

Revised proposed regulations of Interior were published on November 2, 1968, and ultimately regulations were adopted on January 18, 1969, to be administered under the auspices of Bureau of Land Management. These regulations still contained many unnecessary problems.

Then on March 24, 1971, the Department of the Interior published another set of proposed regulations pertaining, among other things, to mined-land reclamation to be administered by the USGS, and which in many instances directly conflict with the already adopted regulations. The conference also commented on these proposed regulations.

Meanwhile in 1968, legislation relating to mined-land reclamation was introduced in the Senate as S. 3132 and S. 3126. The conference appeared at the hearings on these bills in April, 1968, and noted that this legislation would unnecessarily allow adoption of regulations posing many of the same problems already encountered in the Department of the Interior regulations.

At the request of the committee, the conference prepared and submitted a redraft of S. 3132 which eliminated most of these problems by inclusion of appropriate guidelines but still provided for adequate mined land reclamation.

We now note that both S. 3132 and S. 3126 have been again introduced—without modification—as S. 630 and S. 77 respectively. The other bills proposed also pose most of the same problems found in S. 630 and S. 77. Because we believe our redraft of S. 3152 resolves many of the problems posed by the legislation now under consideration, we will be most willing to discuss its provisions with this committee, or its staff, at any time.

In 1970, the conference cooperated with the Idaho Legislature in the drafting of mined land reclamation legislation which was ultimately enacted by that State. While this legislation also has some problem areas, to a large extent it avoided many of the problems posed by the legislation being considered in these hearings, and it will achieve the objective of adequate mined land reclamation.

We in western phosphate mining are completely in accord with mined land reclamation and protection of the environment, and practice it. As an example, before the first regulations were proposed, we voluntarily entered into a program with the U.S. Forest Service to develop methods for reclaiming surface mined lands.

I might expand a little bit here, Mr. Chairman. Here is a publication of the Forest Service put out this year on that 5-year program. It is not a part of our exhibits. I can furnish them to the committee.

Senator Moss. We would like to include it by reference, so we will make reference to it in the record and you leave copies and we will have it in our file.

Mr. EMIGH. This is called Surface Mining Rehabilitation, put out by the U.S. Forest Service, January of 1971. It would be by area, region four, which is in Utah.

Senator Moss. Thank you.

Mr. EMIGH. The significant point to make is that we believe that we have in good faith attempted to work out solutions to the problems of achieving mined-land reclamation, but that our good faith efforts and our comments and proposals on a Federal level have been largely ignored.

We believe that we have demonstrated that regulations and legislation can be formulated that does not have the problems posed by the legislation which is under consideration. These problems will be noted by Mr. Olsen and Mr. Watson. It is unquestioned that mined-land reclamation and protection of the environment is of vital natural concern. We know that it is of vital concern to us. In such circumstances we can only look to this committee for assistance.

The western phosphate industry is important to our Nation and particularly important to the economy of our Western States. We submit herewith as exhibit C, a report prepared in 1967, which illustrates the economic significance of the western phosphate industry. As pointed out in the brochure, phosphate has many uses from fertilizers to pharmaceuticals.

We have contributed millions of dollars of cash flow to the people of our States in the form of payrolls, taxes, supplies, purchase of power and railroad freight, et cetera. In 1967, our annual payroll was

$122 million; our plant investment directly related to western phosphate was in excess of $654 million over the Nation, and out of this we have disturbed in the past 20 years, 1,781 acres, all of which will eventually be reseeded.

We will cooperate with our Government in its efforts to beautify America. We simply want to keep the freedoms necessary for us to survive in a competitive industry.

Thank you, Mr. Chairman. Our next panel member is Mr. Dennis Olsen who will present an analysis of proposed legislation for your committee.

(The exhibits referred to by Mr. Emigh were retained in the committee files.)

Senator Moss. Thank you, Mr. Emigh, and we will hear from you, Mr. Olsen.

Mr. OLSEN. Thank you, Mr. Chairman. The Phosphate Lands Conference expresses its appreciation to the subcommittee for this opportunity to present its views on Senate bills 77, 630, 993, 2455, and 1498. This critique is presented in the context of the past activities of the conference relative to regulations and legislation pertaining to the protection of the environment.

My oral presentation is a summary of the detailed written analysis being submitted which contains references to the sections of the bills supporting the comments given. Although S. 1498 affects only coal, there will be brief comment on that bill in the event that such legislation ultimately serves as a pattern for other legislation.

To continue with a brief analysis of the proposed legislation, we first note that none of the bills establishes standards which define or limit in any detail the activities which may be required or prohibited. As a result, for example, regulations promulgated pursuant to the acts could preclude mining if the operations even slightly impaired natural beauty and if reclamation activities required by the regulations to avoid the impairment of beauty were so expensive as to make extraction uneconomic.

All the bills would permit backfilling to be required even though a pit was in a remote, arid region, high on a mountain under circumstances which would require the uphill hauling of millions of tons of earth, and despite the fact that there was ore in the bottom of the pits which advancements in mining technology or further domestic need would make it economically feasible to extract.

In effect, these bills would allow the taking of land by the prevention of its use. The unfettered discretion granted to establish requirements for mining and reclamation which could result in a loss of use of land poses the question of whether the taking of the land in this manner would meet the requirements of due process of law.

The intent and purpose clauses of the bills speak in terms of preventing and eliminating adverse environmental effects. This is impossible. With no guidelines to govern or limit the requirements to be imposed by the regulations, the power to prohibit mining would be unlimited in the context of such purpose clauses.

S. 630, S. 993, and S. 2455 clearly imply that the reclamation requirements of the bills and regulations are to apply retroactively to the pits and other areas that were affected by mining prior to the effective date

of the legislation. The sections of the bills resulting in this circumstance are noted in the detailed written statement.

All should stipulate that only those portions of a surface mine which are opened up after the effective date of the State plan or Federal regulations would be subject to the regulations. Otherwise, obviously the economics of the whole operation can be affected after the fact and retroactively.

Several sections of S. 993, S. 630, S. 77, and S. 2455 allow the Secretary of the Interior to act or make determinations based solely on his judgment, resulting in the Secretary having unfettered discretion which prevents effective judicial review.

In the past, the courts have upheld the position of the Department of the Interior that certain acts of the Secretary are not subject to judicial review. Furthermore, when review was permitted, legislation or regulations which granted the Secretary authority to act based solely on his judgment, made the reversal of any such actions, almost impossible to obtain.

Legislation should specifically provide that any action of the Secretary is subject to judicial review and that the judgment of the Secretary is not to be the sole criteria in determining whether or not he has acted properly.

S. 630, S. 77, and S. 2455 provide for the regulation and control of extracting methods as well as reclamation activities. Adequate reclamation can be achieved without interference with extraction methods. Mining plans often have to be changed with practically no notice.

Delays and other problems incumbent in submitting and obtaining approval of extracting methods would create an onerous and unnecessary burden on the mining operator.

Overburden and ore must be removed as part of the mining operation. The method used in doing this is irrelevant from the standpoint of reclamation of the land. The economics of the operation and the variations in mining conditions require that the operator be allowed to utilize the extraction methods dictated by these conditions and not by a party having no economic responsibility for the success of the operation, nor, for that matter, perhaps not having the expertise and background for the particular type of mining required.

Since all the bills provide for criminal penalties for failure to comply with the regulations, crimes may be created by administrative fiat. The stigma of criminal action is unwarranted. A civil penalty based on provable damages resulting from a violation would be understandable, but the imposition of civil and criminal penalties even if no damage occurs cannot be justified.

Injunctions may be imposed which would permit not only a mine but also the plants dependent upon a mine to be closed for even the slightest infraction. No restriction is placed on the use of this remedy. If it is to be available at all, then it should be permitted only when substantially irreparable harm is apt to occur.

Little, if anything, is provided in the bills to avoid the problem of conflicts among Federal and State authorities. Several agencies, for example, would be authorized to dictate procedures and regulations for avoiding water or air pollution, and different agencies have responsibility for administering the surface of public lands.

S. 630 and S. 993 allow the Secretary to instigate judicial action but do not allow the operator to challenge the Secretary in the courts. S. 77 and S. 2455 provide that appeals of the decision of a Secretary must be heard and decided by the Secretary.

Fairplay would require that departmental appeals and hearings be held before an examiner who is independent of the department in question and who would be authorized and required to make findings of fact in each case. The right to appeal a decision of the adminstrative agency to the courts should be clearly established, with an option to proceed de novo in a Federal district court or on the administrative record to a circuit court.

Under S. 2455, regulations governing the issuance of permits may not be promulgated in time to prepare applications and obtain permits within the 180-day period stipulated. We draw attention to the detailed analysis of the bills for reference to that particular problem.

All the bills should provide for the allowance of sufficient time after regulations become effective for the submission and approval of applications for permits. S. 2455, S. 993, and S. 77, without any guidelines, provide that mining may be prohibited.

The power to prohibit mining, particularly as permitted under these bills, is like a dagger at the throat. The threat of its imposition will pervade all phases of negotiations relative to the adequacy of reclamation plans and the granting of permits.

It threatens the right to the use and enjoyment of property and jeopardizes capital invested with the good faith anticipation that lands acquired could be mined. To avoid these evils, the use of such power should either be eliminated or limited by carefully defined standards.

The bills stipulate that under certain circumstances, Federal regulation may be supplanted by State regulation and vice versa. They should further provide, however, that such change of authority would not affect the validity of or be allowed to change the requirements of an approved permit or reclamation plan.

S. 993 excludes Indian and federally owned land from the purview of the bill and allows Federal departments to promulgate environmental regulations separate and apart from those promulgated pursuant to S. 993. The effect would be to grant authority to the Federal agencies to adopt regulations without the benefit of any guidelines or limitations and which would have all the problems which hopefully will be eliminated from the proposed legislation. If there is to be regulation on a Federal level, there is no need for this to be done under two separate administrative schemes.

With respect to S. 1498, we would simply say this bill would eliminate all surface mining of coal, within 6 months from enactment and would not permit the opening of any new, abandoned or inactive surface coal mines. If this bill were to be the pattern for all mining, its effect would be a national calamity.

As is noted in our written analysis, this bill presents almost all the problems previously noted with respect to the general mining legislation.

In conclusion, the conference again asserts that it is possible to eliminate the problems posed in the pending legislation without im-

pairing the objective of adequate mined land reclamation. It is essential that there be guidelines limiting the authority of the administrating agency. Otherwise, industry will find its mining methods being dictated by an agency without any opportunity or challenging its authority.

Mr. Ralph Watson will now discuss some suggested modifications of the bills under consideration, and I might mention his comments again at page 39 of our submission.

Senator Moss. Thank you, Mr. Olsen, and we will be glad to hear from you, Mr. Watson.

Mr. WATSON. Thank you, Mr. Chairman, and members of the committee. My name is Ralph Watson of Mineral Development Department, FMC Corp.

Doctor Emigh has touched briefly on the activities of the Phosphate Lands Conference, and Dennis Olsen has presented an analysis of certain features of the bills being considered. Those comments provide the background for our specific suggestions relative to S. 77, S. 630, S. 993, S. 2455, and S. 1498.

The following constitute additional provisions which the conference respectfully suggests be considered for possible inclusion in the proposed legislation, at least as it may pertain to western phosphate mining. To a large extent, these suggestions are made with a view to preventing the adoption of provisions which have been included in regulations proposed or adopted, by the Department of the Interior, which if included in future regulations pursuant to any legislation would present real problems to the mining industry while doing little to enhance reclamation.

The bills should state clearly that the purpose is to prevent where reasonably possible, or to reduce the effects of mining but not to absolutely eliminate any alleged adverse effects. There should be no inconsistency or ambiguity in this regard.

The Phosphate Lands Conference, as indicated in the proposed regulations submitted by it to the Department of the Interior and in its redraft of S. 3132—90th Congress, 2d session—now S. 630, believes that the most feasible approach to the reclamation of surface mined lands is for a reclamation plan to be submitted and approved. However, it is virtually impossible to have such a plan before exploration is commenced.

Prior to exploration, no one knows what extracting operations will be conducted, if any, on the lands in question. For example, large areas containing phosphate deposits are classified as subject to the Mineral Leasing Act, notwithstanding almost a total lack of knowledge of the extent, attitude, quantity, quality, mineability, or workability of the deposits.

At the commencement of exploration activities, neither the United States nor the mining company has any appreciable knowledge of the nature of the mineral deposits on the leased lands. For example, it is impossible to determine:

(a) The precise location of the proposed mining operation.

(b) The area where the overburden will be stored.

(c) The amount of surface that will be disturbed.

(d) The nature of the excavation that will be necessary in order to obtain the ore.

(e) The size of the piles of removed overburden and their location and design.

(f) The nature and extent of erosion problems, if any.

(g) What livestock operations might be interfered with.

(h) What streams, if any, will be interfered with.

(i) What crops, including foliage, timber, et cetera, will be disturbed, and the extent thereof.

(j) Size and types of equipment to be utilized for exploration, development, or extractive operations.

(k) Capacity, character, standards of construction, size, and location of structures and facilities to be built.

It is impossible at the time of the commencement of exploration activities to determine what steps will have to be taken in order to remove the ore. Consequently, it would not only be impossible to describe these operations, but in addition, it would be impossible to determine what reclamation activities would be needed. The best time to submit a plan is shortly before mining commences in a given area.

It is recommended that provisions be inserted in any legislation which would not unnecessarily interfere with exploration activities.

First let me discuss our methods of exploration—finding the economic ore body. First, we walk or jeep the area. We hunt for marker beds—the Rex chert above or the limestone below. We then prepare geologic maps putting all the geologic factors on paper. Then we drill for information to add to that map.

This means we drill widely spaced holes or occasionally dig comparatively small trenches. The core samples let the skilled geologist slowly build a geologic picture which then pinpoints the target area—see exhibits A–1, B–1, and C–1 submitted herewith. The first drill hole dictates the location of the second one and so on.

The next step after exploration is development of the ore body, providing you have found ore. We now settle down to determine the number of tons of ore, the tons of overburden and the mining cost estimates. Grade of ore is most important as this affects our plant operations. Mining methods and equipment are studied and alternate plans are prepared. But we still have, even at this point, unknown mining factors.

Regulations previously proposed by the Department of the Interior require the operator to present to the Department, a plan of his operations including where holes will be drilled, et cetera, and further granted to the Department the authority to designate changes in these plans and thus control where holes would be drilled.

It is impossible to plot in advance the location of drill holes. If the regulating agency were to dictate the location of such drill holes, it would be necessary to either have a representative from the agency on the scene when the drilling was taking place or to have the operator obtain permission to drill each hole.

It is submitted that both procedures are impractical and in fact, unnecessary inasmuch as the location of such holes is determined by geologic conditions, and the operator for economic reasons will not drill any more holes than is necessary. Reclamation of the areas affected by exploration activities could be accomplished without the submission of a plan of operation prior to commencing the exploration activities

by establishing the requirements for such reclamation in the regulations.

Regulations with an open end allowing the regulating agency to change unilaterally the obligations of a mining operator should be forbidden. Otherwise, the operator would never know what costs might be added as a result of the changes. In such circumstances, it would be practically impossible, particularly for a small operator, to obtain a bond inasmuch as the bonding agency would not know the extent of its exposure.

Further, financing of this mine would be difficult. Section 107 of S. 2455 allows the Secretary to revoke a permit if an operator has violated the act or any regulations issued pursuant thereto, even if the violation was unintentional and regardless of whether or not the operator is willing to correct his default. In view of the other remedies available, it would seem that this remedy should either be eliminated or its use governed by some specific guidelines.

Section 105(3) of S. 2455 stipulates that permits shall be valid for only 1 year. Renewals may be granted, but there is nothing in the bill to preclude the imposition of additional requirements resulting from amendments to the act or regulations adopted after the initial permit was issued.

The short duration of the permit precludes any long range planning and increases the risks to investment thus discouraging development and resulting in waste of a natural resource. It is suggested that permits should be valid for the duration of the operation.

Any regulations adopted should contain time limits within which the regulating agency must act on proposed plans submitted by an operator. An operator must be able to program his plans for operation, and extensive delays may result in a failure of the enterprise with the resulting loss of investment.

Section 105(a) of S. 2455 stipulates that the bond submitted by an operator shall be for the duration of the strip mining at the operation and for a period of 5 years thereafter, unless released sooner as provided in section 110. Oftentimes a mining operation will last for many years, although, of course all the surface will not be disturbed at one time.

We submit that it is unnecessary and wasteful to be required to submit a bond on the whole operation at its inception. Rather we suggest that, as provided in the Idaho Mined Land Reclamation statute, the bond be obtained initially only as to the lands that will be disturbed during the first year and that it be increased each year for the additional land to be disturbed in the forthcoming year. The bond should also be reduced as to land reclaimed during the operation.

S. 993, S. 630, and S. 77 provide for the establishment of advisory committees. Section 6(a) of S. 77 apparently allows the Secretary of the Interior and the Secretary of Agriculture to each establish regional committees. It would seem that one advisory committee should be ample to serve both Secretaries.

All proceedings of the advisory committees should be open to the public. The conclusions and recommendations and the reasons therefore, should be a matter of public record and available for consideration in the event that any action of the administrating agency is chal-

lenged. Representation on the committees should be balanced and reflect all significant interests.

In conclusion, the conference again expresses its appreciation for this opportunity to comment on S. 77, S. 630, S. 993, S. 2455, and S. 1498.

While the conference believes that adequate reclamation of surface mined western phosphate lands could be accomplished without Federal intervention, nevertheless, the conference offers its cooperation in working together with the committee to draft proposals and changes in the proposed bills which would retain the idea of treating the problems of mined land reclamation on a localized basis, but which would nevertheless establish standards and guidelines to define the power of the administrating agency to impose requirements on the industry either by Federal or State regulation.

Thank you.

Senator JORDAN (presiding). I take it the Phosphate Lands Conference is not enthusiastic about any of these bills. Which ones do you like the best? (Laughter.)

Mr. OLSEN. Senator Jordan, I would say that we feel that all the bills pose essentially the same problems, all of which could be solved by some proper language and proper modification. I don't believe we have any favorite as far as one that we could prefer over the rest.

Senator JORDAN. Are all of the suggestions that you would make included in your statement here or would you have to rewrite a bill?

Mr. OLSEN. I think, Senator Jordan, it would be necessary to essentially redraft these bills as we did with S. 3132 in 1968 and of course we did submit that redraft and to a large extent we felt this did solve the problems but it did result in rather substantial changes in that particular bill.

Senator JORDAN. What was the main thrust of S. 3132 that is not to be found in any of these bills before us?

Mr. OLSEN. I think the main thrust of all the bills is the same, Senator, the problem being, perhaps, that there are just no guidelines, no limitations in the bills and we think it is possible to put some in.

Senator JORDAN. Were there guidelines in S. 3132?

Mr. OLSEN. There were not.

Senator JORDAN. Well, I understood you to say that was the criticism of the bills before us.

Mr. OLSEN. S. 3132, Senator Jordan, is the same as S. 630.

Senator JORDAN. Yes.

Mr. OLSEN. And it hasn't been changed, so our objections are still the same and we find the same type of problem in these other bills.

Senator JORDAN. But I understood you rewrote S. 3132.

Mr. OLSEN. We submitted a redraft of it, Senator, that's as far as it went.

Senator JORDAN. What happened to it, where is it?

Mr. OLSEN. We don't know. We submitted it and we have had no response since that time.

Senator JORDAN. How different is the mining of phosphate from the strip mining of coal?

Mr. EMIGH. In the first place, they are both sedimentary beds, Mr. Chairman, so they are similar in that regard. The phosphate formation is an old bed. Of course, coal is also. However, it is deformed

and twisted and broken into isolated distorted segments which we now hunt for and call ore beds, so it is not generally flat-lying as is coal.

We are, therefore, able to mine only the small fragmented segments and then only a portion of those, whereas most coal formations you are working with a flat horizontal formation.

Senator JORDAN. Phosphate beds might be broken and vertical rather than horizontal?

Mr. EMIGH. Yes.

Senator JORDAN. In your opinion, the same methods of mining probably wouldn't work as the same methods used in the coalfields?

Mr. EMIGH. No, sir; no such method is used whatsoever. We would love to use draglines; we cannot do it. Draglines are the cheapest form of heavy equipment for moving earth. We can't use them unfortunately because of the distorted nature of the deposits.

Senator JORDAN. The coal people testified this morning that they were not able to do a satisfactory reclamation job because their competitors, who didn't do the job, had a price advantage over them. Do you find that situation obtains in the phosphate industry?

Mr. EMIGH. I don't believe so, Mr. Chairman.

Senator JORDAN. You all have about the same kind of problems?

Mr. EMIGH. Yes.

Senator JORDAN. I know you have extensive operations in my State and as far as I know, it has been quite a satisfactory operation. I am impressed by this pamphlet put out by the Forest Service that shows there has been a good deal of reclamation going forward. Was this done without the assistance of Government regulations?

Mr. EMIGH. That was started 2 or 3 years before any information pertaining to land reclamation existed and beyond that. My company and the other companies started this type of work 10 years before that.

Senator JORDAN. Just as a voluntary effort of the phosphate industry people to do a reclamation job without duress from any government legislation?

Mr. EMIGH. That's right; yes.

Senator JORDAN. How much ahead of the reclamations of the mining, are you? Do you complete the whole operation before you start to reclaim it or do you reclaim closely behind where you are working?

Mr. EMIGH. A combination of both. In general, a pit will last for quite a few years and you can't start reclamation until you finish that pit because you are constantly putting overburden back on to overburden. We do reclaim each year those portions that we can reclaim.

We have done just this at Monsanto each year. But this open pit mining you will find, as with coal and others, it is often a matter of years between the time when you finish mining and you can start reclamation, because you are reusing the same ground all the time.

Senator Moss (presiding). By that you mean you are turning back the overburden and getting the mineable phosphate for many years?

Mr. EMIGH. Yes, sir; up to—oh, depending upon the size of the pit—roughly 3, 4, or 5 years. We are going back and putting overburden on top of overburden and having to put it on top of these piles. So there is a lag period there. This exists in all surface mining operations.

Senator Moss. Your group is the western phosphate industry, and you are not involved with the southeastern areas such as Florida and that part of the country?

Mr. EMIGH. No, sir.

Senator MOSS. And because it is western, it is mostly mountainous and steep grades?

Mr. EMIGH. Yes, sir; also some in southeastern Idaho.

Senator MOSS. The regulations you have had problems with as far as Interior is concerned, all have to do with public domain lands?

Mr. EMIGH. Yes, sir. I beg your pardon. In some of the recent ones I put out, they attempted to impose some of the regulations on privately owned Federal lands on which the Federal Government had the mineral rights.

Senator MOSS. I am quite disappointed to hear of the problems you have had with the Department and I surely hope that we won't have the same sort of lack of communication in dealing with the legislation before us. I do appreciate your coming in with very specific recommendations on various parts of the bills, so that it focuses our attention and we will certainly be able to look at it and make a judgment based on those recommendations.

I respect the fact that you represent the people that are actually doing the work out there in the field and, therefore, are constrained by the economic and practical pressures that exist, as well as the requirements for protecting the environment and restoring the disturbed lands.

Mr. EMIGH. May I make one comment here, Mr. Chairman? You just mentioned the problems we had with the regulations. May I explain that because of the individuals involved in the Government bureau, we have had no problems in the field to date. Our concern is the future—what might develop—especially this continual push for more and more concern for ecology and the environment.

But as far as our personal dealings with Interior people, we have had no problem to date.

Senator MOSS. There is no doubt that there has been a great awakening and public feeling for the need to protect the ecology of our country and this brings on the necessity for having some kind of guidelines and enforcement procedures to make sure permanent damage is not done and that there is restoration.

That's what we are trying to get to with hearings on this series of bills and we will try to work out the best one we can from the many before us.

I thank you gentlemen very much for your presentation. It has been helpful to us and we appreciate your appearance.

Senator MOSS. Our next witness is Peter Borrelli, eastern representative of the Sierra Club.

We are very glad to have you, Mr. Borrelli, and look forward to hearing from you, sir.

STATEMENT OF PETER BORRELLI, EASTERN REPRESENTATIVE OF THE SIERRA CLUB

Mr. BORRELLI. Thank you, Mr. Chairman.

Senator MOSS. You have a large pamphlet here entitled "The Strip Mining of America," which we are very pleased to have; this will be included in the record by reference so we will have it before us.

Mr. BORRELLI. Mr. Chairman, my name is Peter Borrelli, I am the eastern conservation representative of the Sierra Club on whose behalf I am appearing here today.

The Sierra Club, throughout its long history, has expressed concern over the environmental impact of mining operations in general. More specifically it has in recent years been alarmed by the substantially unregulated and destructive practice of surface mining, and has actively participated in legislative efforts and litigation aimed at reshaping the laws governing this mining technique.

For this reason it now welcomes the chance to participate in the historic task of shaping a national policy on surface mining. With the committee's permission and in the interest of time I would like to summarize the data and recommendations contained in the report "The Strip Mining of America" distributed to members of the committee in September, additional copies of which are before you today. We ask that the report be made a part of the record of these hearings.

Although surface mining techniques are by no means limited to the extraction of coal, we call your attention specifically to coal because of the massiveness of the operation and the steadily expanding demand for cheap coal to produce electricity.

For nearly a decade Congress has had before it legislative recommendations to regulate strip mining. The problem continued to receive little attention even after 1967 when the Department of the Interior sent to Congress its study, "Surface Mining and Our Environment." The report on conditions as of 1965 claimed that 3.2 million acres, the size of Connecticut, had been devastated.

Congress disregarded those compelling findings and the last 5 years have seen an unprecedented mining boom. The result today is that an area twice the size of Connecticut lies ravaged beyond earthly recognition.

The dramatic growth of strip mining has been in response to a variety of technological and economic factors: (1) the development of ever-larger earthmoving machinery, (2) the increasing demand for cheap coal to generate electric power, (3) tighter and more costly Federal safety regulations in deep mines, and (4) the willingness of coal companies—now heavily controlled by the Nation's largest oil companies—to ignore public criticism in the face of high sales and profits.

Much of the environmental problem, the details of which will be summarized by other witnesses, stems from the technology of strip mining—a primitive technology at best based on the economics of scale. In flat or gently rolling terrain such as that of southeastern Ohio or the Black Mesa where are stripping is practiced, giant earthmoving equipment has brought about an upheaval of the earth unequaled since the ice age. The largest such machine currently in operation in Muskingum County, Ohio, cost $25 million and has removed 22 million cubic yards of earth and rock in the less than 2 years it has been in operation. Bearing the somewhat ironic name "Big Muskie," it has a 310-foot beam and scoops earth with a 220-cubic-yard bucket.

With machinery now in operation, as much as 185 feet of overburden can be removed from a seam of coal. Larger machines will theoretically make even more coal available.

Strip mining of the past is only a hint of what is to come in the future—and while it was possible to write off strip mining as just another Applachian problem, every reliable prediction suggests that strip mining for coal will soon become a national problem of considerable dimension.

The critical factor is the demand for coal. Barring fundamental, far-reaching national energy policies, an escalating demand for coal is assured for the next 40 years. The demand is linked most directly to electric power generation which presently accounts for more than 60 percent of domestic coal consumption. Present estimates indicate an eightfold increase in electric power generation in the next 40 years and because of the high price of oil, the limited availability of natural gas, and scarcity of acceptable new hydroelectric sites, these three energy sources will increase marginally compared to coal. Nuclear energy under the most favorable circumstances will only overtake coal as the principal source of electric power near the end of the century.

The most-dramatic illustration of this future trend is the Southwest power development under construction in the Four Corners region of the Colorado Basin. This involves six giant powerplants, one of which is in operation, four under construction, and one in the planning stage.

Those plants, which will send most of their power to southern California, will have a combined capacity of over 14,000 megawatts, comparable to the entire TVA complex. All six are coalburning plants. Five of the six are dependent upon strip mined coal. When fully operable they will consume more than 40 million tons of strip mined coal annually plus 1.2 million tons of deep mined coal. This one project will add nearly 20 percent to the 1969 level of strip mine production.

Conservative projections indicate that total coal production will rise from 600 million tons in 1970 to about 1.9 billion tons by the year 2010.

Assuming no major changes in the regulatory structure governing strip mining and a steady proportionate rise in activity, strip mining will by the year 2000 account for nearly 62 percent of coal production—compared to 40 or 42 percent last year.

Future strip mining will predominantly be in the West on a scale far larger than anything seen in the East. Portions of six Western States—Arizona, Colorado, Montana, New Mexico, North Dakota, and Wyoming—face a topographic and environmental upheaval. Oklahoma, Texas, and Washington also face intensified surface mining activity.

Despite its distance from major markets, western coal is low in sulfur, a boon to electric utilities struggling to meet new air pollution regulations.

But the biggest rush for western coal will come with the development of large-scale coal gasification programs. Government officials estimate that in 20 years 300 million tons of western coal—half of last year's production—will be gasified.

The Bureau of Mines has recently disclosed that beneath 13 States west of the Mississippi lies 77 percent of the country's total of economically strippable coal reserves of 45 billion tons. Much of the Nation, therefore, may soon be as scarred and ruined as Appalachia.

It is not our contention that all coal production must be halted or

even that power consumption can be arbitrarily cut off. It is our contention, however, that the methods of production require careful scrutiny and evaluation in the context of comprehensive energy and environmental objectives before the above trends are allowed to continue unchecked.

Nineteen of the twenty-three States where coal strip mining is practiced have some form of regulation—Alaska, Arizona, Missouri, and New Mexico have no regulation. In most of these States the regulations are a weak attempt to placate the public conscience through a series of loose regulations requiring some form of registration, moderate bonding, "round the top" of spoil banks, preventing "unreasonable" siltation and pollution, and replanting "where practicable." The effect of these regulations is difficult to notice.

Kentucky, West Virginia, and Pennsylvania in response to widespread public outcry over the clearly documented effects of coal strip mining have the toughest laws in the Nation. All three States require permits and bonding. Kentucky and West Virginia limit the steepness of the slope which can be mined. All three require specific forms of backfilling to cover the exposed coal bed and auger holes—particularly potent sources of pollution.

Pennsylvania generally requires complete regrading up to the top of the highwall in the bituminous coalfield. Pennsylvania also requires treatment of runoff water. All three States have specific requirements concerning replanting of the disturbed surfaces. All three States have crews of reclamation inspectors and supervisors, and give a lot of publicity to their regulatory and reclamation efforts.

The results in these States are, nevertheless, dismal. In West Virginia and Kentucky it is difficult to detect any improvement in strip mining practices or effects since the passage of their tough laws in 1966 and 1967, respectively. In fact the environmental damage per mile of strip contour has grown markedly since the passage of these laws because of the use of larger machines to make deeper cuts, higher highwalls, and longer swaths of loose overburden.

Anyone who has watched strip mining in operation in either of these States cannot help but be impressed with the careless abandon with which the great machinery gouges the earth—creating far more destruction than is necessary even from the operator's point of view.

In Pennsylvania the improvements are noticeable—particularly the improved appearance from regrading to the top of highwalls. But the spoils are still unstable, the slopes still erode, acid still leaches into the streams, and the consecutive ridges of area stripping are still as ugly and useless as ever. Black locusts and legumes still struggle to provide at best spotty growth over the barren and poisonous mounds of pulverized rock and shale. Even in Pennsylvania it is exceedingly rare to find any piece of strip mined land devoted to any productive use. Ninty-nine percent of the land is still a perpetual burden on the community.

There are two basic reasons for the failure of regulation. One is lack of enforcement. The feeble regulatory efforts of West Virginia and Kentucky are just no match for the immense political and economic power of the coal industry. Every one of the regulations mentioned above is routinely violated in both States, with impunity.

The occasional crackdown and enforcement is an empty gesture for public consumption. Lack of enforcement is less notorious in Pennsylvania, though quite prevalent. Pennsylvania can at least balance the scale with some real enforcement, but blatant violations of the law abound.

The second basic reason for the failure of regulation is that regulations in all three States prescribe procedures to be followed, rather than results to be achieved. Ultimately, no State holds the strip mine operator accountable for the condition of the land he leaves, nor requires him to meet any proper standard of reclamation. He is merely required, to the degree the requirements are enforced, to follow certain planning, grading, and planting procedures, the success of which in returning the land to continuing productivity is not required.

Out of dissatisfaction with its present laws, the Pennsylvania Legislature is currently considering further regulations requiring an initial assessment of the highest and best use to which the unstripped land could be used; detailed planning and cost estimates of how to restore the land to a specific proposed use; segregation of topsoil and compaction of soil where necessary; and a bond equal to 200 percent of the estimated cost of reclamation.

The proposal does not provide for public hearings on the suggested reclamation plan; nor does it include careful segregation of the substrata that would prevent acid-bearing shales from scattering loosely throughout the spoil; nor does it require any long-term evidence of the success of reclamation before the bond is released.

Stiffer regulation than these could be devised. Yet one Pennsylvania engineering study, by Meridian Engineering, Inc., Philadelphia, suggests that reclamation meeting standards approximately the same as those being proposed in Pennsylvania, were they rigorously applied, would cost as much as $5,000 an acre.

With respect to costs of reclaiming land, the experience with TVA's suppliers has indicated that reclamation exenditures range from $300 to $600 an acre. The limited experience of suppliers, State and Federal agencies, however, suggests that reclamation in this region, especially if one were to specify the future use of the land, would cost between $3,000 and $8,000 per acre.

Such high costs suggest that if the external costs of acid drainage, stream siltation, erosion, et cetera, were fully transferred to the internal costs of the operator, there would be little or no stripping. Norman Williams, former deputy director of the West Virginia Department of Natural Resources, more succinctly says: "The profit of the strip mine operator is in direct proportion to the environmental costs he is allowed by the State to pass along to the community."

Similarly in Kentucky, enforcement officials have publicly stated that if the laws were enforceable, the majority of stripping would cease. These same officials, however, confess that enforcement is virtually impossible given the political influence of the coal industry.

When applied to a process as inherently destructive as strip mining, regulation is a deceptive practice. It deceives the public into thinking that the environment is being protected. Exceedingly stringent regulations would deceive the coal operator into thinking that the earth could be fully restored at an economic cost he could bear.

Ideal regulation has not been tried. There are no really sound figures on what it would cost in various terrains, what environmental detriment would still remain, and what its impact would be on the economics of strip mining. It would take a decade at least to establish these conclusions on pilot projects, even under a Federal crash program. Meanwhile, another 2,000 square miles of our land would be irredeemably destroyed by stripping as usual. This is too high a price to pay to try to salvage a mining process which is unnecessary in any case.

In recognition of the environmental and social blight of strip mining, the Sierra Club board of directors this May approved the following resolution:

> In view of the irreversible environmental damage caused by surface mining and the ineffectiveness of regulation to mitigate the environmental impact of surface mining, the Sierra Club advocates a total and immediate ban on all surface mining of coal, in conjunction with appropriate steps to prevent any compensating increase in other environmentally disastrous methods of obtaining or transporting fuel.

For this reason we have in the House supported H.R. 4556 and ask that this committee give primary consideration to S. 1498, sponsored by Senators McGovern and Nelson.

The administration bill, "Mined Areas Protection Act of 1971," typical of many of the bills under consideration, would establish a set of Federal reclamation standards administered by the Department of the Interior. State laws and performance under State laws would be required to meet those standards. If State law or performance were guilty, the Secretary of the Interior would be authorized to intervene and enforce directly within the State either the State law or the Federal standards.

The Environmental Protection and Enhancement Act of 1971 sponsored by Senators McGovern and Nelson would terminate completely strip mining for coal 6 months following enactment. Administration of the act would be vested in the Environmental Protection Agency—hopefully a much stronger controlling agency than the Department of the Interior has been.

No new strip mines could be inaugurated following passage of the act. Existing strip mines would be required to submit within 60 days plans for the termination of strip mining and for the reclamation of the disturbed land—following guidelines laid down by the EPA Administrator. Strip mine production would cease in 6 months, although the EPA Administratior could authorize a longer time for the completion of reclamation.

Where the operator failed to reclaim, EPA could do the work and bill the operator. The bill also establishes under EPA a regulatory structure to control and prevent environmental pollution from underground mining for coal, including environmental licensing, performance bonding, preplanning, monitoring and reporting, and standards for the refusal to permit mining where such mining "would result in, or contribute to, the violation of applicable air or water quality standards or where such mining would be detrimental to the public health and welfare."

The bill prohibits underground mining in areas covered by the Wilderness Act, and propounds particularly stringent controls for

underground mining in national forests. Finally, the bill would establish a reclamation fund providing up to 90 percent Federal support for reclamation of previously strip-mined lands owned by Governmental bodies, or for the purchase and reclamation of such lands when they are intended for use by the public.

This bill grasps the nettle of coal mining practices firmly; end strip mining promptly, carefully regulate deep mining, and accelerate reclamation efforts.

At present the Federal Government has no regulatory role in the conduct of strip mining at all, but the lessons of State regulation suggest that the Federal role should develop in term of preventing strip mining, not in term of regulating it. The history of regulation and the prospects for regulation are too dismal to give hope that Federal intervention into this field will have any salutory effect.

Some political analysts and legislators sympathetic to the need for stringent controls have suggested a variety of ways in which the Federal Government might affect partial prohibition:

1. Prohibition of Federal and TVA purchases of strip-mined coal. TVA, which consumes about one-tenth of the coal burned by the entire electric industry, obviously stand in a position to influence the mining practices of the coal industry. Last year about half of the 32 million tons consumed by TVA came from strip mines.

2. Prohibition of contour strip mining and deposition of spoil material sat on elevations lower than the seam of coal from which they were removed.

3. Prohibition of strip mining where the ratio of overburden depth to the thickness of the seam of coal is above a certain standard. This would have the effect of concentrating future strip mining in areas where the ratio of land destruction to coal production is least damaging.

4. A tax of $2.50 per ton, on strip-mined coal to remove the competitive advantage of strip mining over deep mining. The tax could be used for Federally administered reclamation.

5. Prohibition of strip mining in counties or river watersheds where the hill slopes measure more than 15 degrees from the horizontal between the undisturbed coal seam and the projected toe of the spoil bank. Such a regulation would in effect ban strip mining in southern and central Appalachia and the gentler hills of Ohio.

But such proposals merely chew away at the problem; they do not digest it. And while the gradual tightening of the noose on strip mining may be politically palatable, it is a relatively poor way to facilitate the type of long-term, energy-production planning that is required. In fairness to our need for energy and electric power, and to those who must produce it, the national debate on strip mining should reach a decisive conclusion which promises to serve the country well for the next 40 years, and which stimulates rational and creative technology and economic planning. The evidence at hand suggests that that conclusion must be to end strip mining coal—all of it—promptly and until such time as ecologically sound methods of surface mining and reclamation planning are perfected.

As yet no method of strip mining or of reclamation exists that in varying degrees does not cause stream pollution, landslides, accumu-

lation of highly mineralized water, flooding, destruction of land for agricultural purposes, dislocation, or disturbance of subsurface streams, destruction of aesthetic values, destruction of recreational areas, and destruction of the future use of the area.

If this committee is thinking along the old line recently espoused by Assistant Interior Secretary Hollis Dole that prohibiting strip mining would result almost immediately in an intolerable disruption of our present economic structure and a real depression in our standard of living, I suggest that you listen to the plight of deep miners and residents in those areas that are being stripped.

I cannot deny that the action called for in S. 1498 would not involve some economic adjustment. But "the present economic structure" of the coal industry which the administration seeks to protect is one that has only attained competitive advantage at intolerable costs to the land and the people.

Thank you.

Senator Moss. Well, thank you for your statement, Mr. Borrelli.

Obviously, there would be very severe dislocation if we stopped strip mining abruptly. Do you have any recommendation as to how that gap could be filled?

Mr. BORRELLI. We have, as the report before you indicates, outlined a number of procedures by which a considerable portion of the lag, in a relatively short period of time, could be transferred to deep mining operations.

Our basic feeling, Senator, in this regard is that our deep mining technology is sufficient so that the volume production could be maintained in a relatively short period of time. We recognize, on the other hand, that the coal industry has perhaps not been as fully responsive to the Coal Mine Health and Safety Act providing healthy and safe operating conditions in deep mines.

We feel, however, that operations of deep mines, in a manner consistent with the Coal Mine Health and Safety Act is well within the reach of the industry. Foreign producers of coal have remarkable health and safety records.

Just the other day I ran across a statistic that indicated that the worst safety record in Germany was equal to the no better than the best statistical record in the U.S. mines. We feel the capability is there.

If you look at the statistics, for example, that relate to the relationship between coal production in the United States and strip mining activity, there is a tremendous differential. We have in recent years increased our total production. On page 16 of our report, you will note a very rough diagram. It comes from the National Coal Policy Conference. It indicates that we have for many years been maintaining a total U.S. production of about 500 million tons of coal.

Our production is about 600 million tons. Obviously, that is a substantial increase.

Total strip mining operation production has increased quite dramatically in comparison. At the end of this year, our total strip mining production will be in the neighborhood of 60 to 65 percent.

The point I am trying to make is that we can meet our energy demands. We can meet our coal production demands and still reverse the method of operation. We have gone virtually overnight into a

strip mining operation. I think we can in a very short period of time go back to a deep mining operation.

Senator Moss. What would your reply be to the testimony that there are areas, particularly in the west and desert areas where deep mining is not feasible? The only way to recover the coal and use it, is by stripping and restorage.

Mr. BORRELLI. There may be some validity to that argument. As yet, I don't think it has undergone vigorous and independent analysis, but in assuming that is the case, particularly with some of the thick seams in the west, I don't think at this point in time, it is either responsible for the Congress or to allow a technology as primative as strip mining to proceed into an area of the country as yet untouched and on such a great scale without demanding a higher level of performance on the part of that technology.

This obviously calls for some type of crash program, perhaps, on the Federal level, to bring the strip mine technology that is presently practiced in this country up to some higher level of performance that assures not only environmental protection, but maintains the supposed production needs of industry. But, at this point to say, "All right, boys, you can go out there because you have convinced us that there is, one, a demand and no other way to get it without a more thorough and vigorous analysis of the situation," I think is foolhardy.

Senator Moss. Thank you. Senator Jordan.

Senator JORDAN. I have no questions.

Senator Moss. Thank you very much, Mr. Borrelli. We appreciate your testimony, and as I indicated, the document will be in the record by reference.

Mr. BORRELLI. Thank you.

Senator Moss. We now have several witnesses present. The National Crushed Stone Association, Mr. S. James Campbell, vice president, and executive vice president of Harry T. Campbell Sons' Co.

STATEMENT OF S. JAMES CAMPBELL, VICE PRESIDENT OF THE NATIONAL CRUSHED STONE ASSOCIATION, AND EXECUTIVE VICE PRESIDENT OF HARRY T. CAMPBELL SONS' CO.; ACCOMPANIED BY ROBERT M. SCOTT, COUNSEL FOR THE ASSOCIATION

Mr. CAMPBELL. The guest with me is available in order to answer questions. Both Mr. Dunn and Mr. Carter were unable to be with us this afternoon, but Mr. Robert M. Scott, of Gall, Lane, Powell & Kilcullen, is available with me.

Senator Moss. Well, you may proceed.

Mr. CAMPBELL. I am S. James Campbell, vice president of the National Crushed Stone Association, and I am here to present the position of that association wth respect to proposed surface mining legislation. I am also executive vice president of Harry T. Campbell Sons' Co., a division of the Flintkote Co., Towson, Md. With me today is Mr. Robert M. Scott, counsel for the association.

The National Crushed Stone Association is composed of stone quarry operators throughout the United States. Our members produce aggregates that are required by the building and construction industries and by the basic industries of our country—steel, chemicals, agricul-

ture, et cetera, in order to produce their own products. As evidenced by the fact that this association has long had a committee on reclamation and land use, our members have long given consideration as to what policies our industry ought to follow with respect to depleted quarries.

With regard to the requirements of several of the bills this committee is now considering, I would call to your attention the unique character of our industry. Quarries have to be located in, or near, urban areas because of the high cost of transporting heavy stone materials. Consequently, our industry is already subject to heavy local regulation through zoning and area growth plans. Again, a quarry operation disturbs very little land—the average quarry encompasses less than 30 acres. Because almost 85 percent of the materials excavated from a quarry is sold, there is virtually nothing left for land fill. Moreover, typical types of quarries have a life expectancy of about 81 years.

Last year, in the Mining and Minerals Policy Act of 1970, Congress enacted a national policy that our depleting mineral resources be developed intelligently to meet the present and future needs of our minerals-oriented society. That national policy also provided that land should be reclaimed in such a manner as to lessen adverse impact on the environment. We wholeheartedly concur with both objectives and submit that a companion and coextensive national policy should be that of flexible reuse of mined land. We further submit that primary responsibility for developing the means to effectuate this policy should be placed upon the States.

When we refer to a flexible land reuse policy, we mean that the nature of land reclamation should be a function of its projected reuse. These are attached and, incidentally, I am referring here to just a summary of our complete statement which also has been given to you.

Senator Moss. Yes, the complete statement will be in the record in full and the document will be included by reference.

Mr. CAMPBELL. Thank you. Consider for a moment some actual examples of various reuses to which quarried lands near population centers have been put. Each of such reuses involved a different kind of land reuse preparation. In New Jersey, quarrying removed a mountain that was physically blocking the growth of Montclaire State College and enabled that college to expand. In Missouri, quarries provide access to huge underground warehouses, and a quarry now houses the stadium of Southeast Missouri College. Quarries serve as solid waste disposal sites in Baltimore and Richmond, and as reservoirs for Philadelphia. Quarries are often turned into lakes for residential and recreation areas.

Obviously, the manner in which land is to be reused should determine its reclamation requirements. In our view, rigid, uniform Federal rules for reclamation would hamper putting depleted quarries to their optimum reuse, rather than promoting national policy which envisions flexible land reuse goes hand in hand with our national mining and minerals policy.

We believe also that the primary responsibility for developing the means to effectuate such policy should be placed upon the States. Determining patterns of land use is and has always been the function of

State and local government. The reuse of quarried land is already a matter of extensive State and local concern and direction through zoning, building codes, and area growth planning. Uniform Federal rules dealing with land reuse would only conflict with and undermine State and local efforts to provide for their rational growth and development.

Moreover, the desirability of tailoring reclamation requirements to individual State and local problems and physical conditions cannot be overlooked. What constitutes intelligent land reuse in Arizona may bear no relationship at all to what constitutes intelligent land reuse in Mississippi, or in Vermont. National uniformity for the sake of uniformity, in the face of diverse conditions existing among the several States would, in our judgment result in the waste of our land resources.

So long as the primary responsibility for program development rests with the States, we endorse Federal legislation. We propose that such legislation define the term "reclamation" to specify that flexible land reuse is the will of Congress. The failure to make this clear will, we submit, invite guidelines ordering a return to as near original condition as possible irrespective of possible alternative uses that would result in a higher use of such land. Second, we feel that any Federal guidelines or State standards should be required to be consonant with the Mining and Minerals Policy Act of 1970. If not, all development of mineral resources could be frustrated by making the ultimate cost of extraction prohibitive.

Third, Federal guidelines should not be used to deny the States authority to tailor regulations to local needs. Certainly there has been a tendency for Federal guidelines promulgated under certain other acts to usurp State prerogatives envisioned by Congress.

Fourth, we feel that at both Federal and State levels, the administrators of the law should be required to avail themselves of advisory committees which include industry members. Substantial expertise is available, and the administrators should be required to take cognizance of it.

Fifth, we feel that if any State declines to develop an adequate plan, the Federal administrator should don the shoes of the State government to develop one. He should be required to convene a State advisory committee, and to tailor rules to that State to meet its local needs.

Sixth, any legislation must direct that, in considering the adequacy of a reclamation plan of an existing quarry operator, the agency must consider such plan in the light of the remaining number of productive years of such quarry. Obviously, an operator who has but 10 productive years left cannot be expected to assume the same cost burden of reclamation as an operator who still has 50 years of production over which to spread the cost of reclamation. If such consideration is not required, premature closing of some quarries will occur to avoid being subjected to the legislation.

Finally, we submit that any legislation should provide for adequate judicial review.

The National Crushed Stone Association feels that a national policy of flexible quarried land reuse, with primary responsibility on the States for developing means to effectuate that policy, would conform with the aims stated in the Mining and Minerals Policy Act of 1970, and would best meet the Nation's needs.

We would be happy to answer any questions the committee might pose, and to provide any possible assistance to the committee.

I think primarily, in summary we are suggesting that there is quite a distinction between strip mining which is often used interchangeably with our open pit quarries and we are most anxious, as we know many of you are well aware of this, that this type language be included in the legislation.

Senator Moss. Thank you, Mr. Campbell, we are very glad to have your statement and your guidance. I think you are correct in saying that so many people are concerned about strip mining, they get an idea that the problems are all just that, primarily coal. But actually we are talking about the disturbance of the surface of the earth, therefore, it would include your quarries as well as strip mining, and yet your problem is quite different.

In strip mining only a small part of the volume is taken out and therefore there is the spoil to be put back and resurfaced and so on, whereas you take out practically everything, there is very little that you lay aside, is that right?

Mr. CAMPBELL. That is correct, sir. We would have to create another quarry to fill up the one we dug out.

Senator Moss. So filling the hole is not the answer in your business, it is how you utilize the hole and make it compatible with its surroundings so it isn't a danger and an eyesore and I understand that is what your booklet shows in part, how many of these open quarries have been converted into lakes or storage areas or entrances to storage areas.

Mr. CAMPBELL. Our major contribution, I might add, is to screen our quarries with good landscapping while we are there operating. This is creating a berm to complete the hiding of the quarry from the traveled highway. This is our best service to the community, of course, complying as we do with the air pollution and water pollution laws. But we should be screening our operations while in these communities. Obviously at the end of the 80 year, a decision at that time should be made as to the use. It may be used as a sanitary landfill. There could be many decisions made 50 years from now that we could never probably make today.

Senator Moss. To what extent is it possible to plan this ultimate use when you begin the quarry?

Mr. CAMPBELL. The planning of the reuse, I think, often we could guess what we might think, knowing today's technology, what might be a feasible use, but to suggest that we would have the wisdom for 50 years hence is asking an awful lot not only of the industry members but the bonding companies themselves who would be holding a bond for that length of time. It is a difficult bonding situation.

Senator Moss. It is a difficult and different problem from what we have been talking about mostly today. I will ask my colleague if he has any questions?

Senator JORDAN. I have no questions.

Senator Moss. Well, we do appreciate having this and in anything more about your problem, we may wish to submit some written questions to you at a later time as we discuss this in the committee.

Mr. CAMPBELL. We would be most flattered and it would certainly help our organization.

Senator Moss. Thank you very much.

(Mr. Campbell's prepared statement follows.)

STATEMENT OF S. JAMES CAMPBELL, REPRESENTING NATIONAL CRUSHED STONE ASSOCIATION

I am S. James Campbell, Vice President of the National Crushed Stone Association, and I am here to present the position of that Association with respect to proposed surface mining legislation. I am also Executive Vice President of Harry T. Campbell Sons' Company, a Division of The Flintkote Company, Towson, Maryland. I am accompanied by William L. Carter, Executive Vice President of the Association; James R. Dunn, Professor of Economic Geology, Rensselaer Polytechnic Institute, and Chairman of the Board of James R. Dunn and Associates, Inc., Consulting Geologists; and Robert M. Scott, Gall, Lane, Powell and Kilcullen, counsel for the Association.

The National Crushed Stone Association (NCSA) is a non-profit trade association. Its members, who quarry and process rock into useful crushed stone products, produced approximately 70% of the 860,000,000 tons of crushed stone mined or quarried throughout the United States in 1969—the last year for which figures are available. Without aggregates, as crushed stone products are frequently called, most building and construction would quickly grind to a halt for want of concrete, blacktop, and other critical building and construction materials. Moreover, the so-called basic industries, such as steel, chemicals, lead, agriculture, glass and paint, require our industry's products in order to produce their own.

The members of our industry have long been concerned with the problem of balancing the goal of intelligent development of our needed mineral resources—as formulated by Congress in the Mining and Minerals Policy Act of 1970 and supported by this Association—with the companion goal of intelligent reuse of land disturbed by the extraction of minerals therefrom. Accordingly, NCSA created a Special Committee on Reclamation and Land Use which is composed of persons intimately involved in developing and creating effective and realistic programs for the return of quarries as they are worked out to a useful purpose. As this Committee is aware, the question is not simply that of the refilling of holes in the ground or of angling the walls of the quarry to a certain angle; rather it is how to get the most out of worked out quarries as reuseable resources.

Perhaps it is the unique character of our industry that has caused us to focus on the problem of land reuse. First, because of the high cost of transporting aggregates when viewed in relation to the selling price of our product, quarries must be located in or near urban areas for that is where most construction activity takes place. Second, the average quarry encompasses less than 30 acres. Third, the average life expectancy of a quarry is approximately 81 years. Fourth, because almost 85% of the material excavated from the quarry is disposed of by the sale thereof, there is little material left for fill purposes. The plain fact is that very little land is disturbed by a stone quarry operation. For these reasons, the crushed stone industry has an especial interest in any proposed legislation which deals with reclamation, restoration or optimum land reuse.

INDUSTRY POSITION

The position of the National Crushed Stone Association is that the Mining and Minerals Policy Act of 1970 properly sets forth the goals this nation should seek to achieve in order to maximize the economic and efficient development of its natural resources. And it is our position that any legislation that concerns the reclamation, reuse or optimum development of mines or quarries should be consistent therewith. Accordingly, we propose that there be a declaration of a national policy which envisions a flexible land reuse concept and that the primary responsibility for developing the means to effectuate such policy be placed upon the states.

In support of its position, the National Crushed Stone Association submits that (1) considerations of mineral resource development, expanding population, and environmental quality, taken together, dictate the establishment of a national policy to promote intelligent reuse of mined and quarried land; (2) the determination of appropriate quarried land reuse is a function of state and local government; (3) because of differing conditions among the several states, uniform regulations that apply nationally are not feasible; and (4) Federal legislation on this subject should provide that the primary responsibility for program development shall be that of the several states.

1. Considerations of mineral resources development, expanding population, and environmental quality, taken together, dictate the establishment of a national policy to promote intelligent reuse of mined and quarried land

In the Mining and Minerals Policy Act of 1970, Congress formulated and announced a national policy, with which we wholeheartedly concur, of promoting the intelligent development of our mineral resources to meet the demands of our minerals-oriented society. The question is no longer whether, but *how* our valuable and depleting mineral resources should be developed.

One important aspect of the Mining and Minerals Policy Act is its expression that land should be reclaimed after mineral extraction in such a manner as to lessen adverse impact on the environment. The key term, as we see it, is "adverse" impact. It is inconceivable, as we are sure this Committee is aware, that Congress wants "reclamation" to mean return to original condition in every case, irrespective of the existence of more advantageous reuses of the land involved. For example, total revegetation to a wild state comparable to the surrounding environment might well be the optimum reuse of an open pit mining operation in the Rocky Mountains; but reuse of a stone quarry in the suburbs of New York City is a very different matter. There revegetation to a wild state would be senseless since adaption for residential or commercial use might well be the most advisable and efficient reuse of such land. Return to original condition in such cases would be a waste because *the nature of land reclamation should be a function of its projected reuse.*

Consider for a moment some actual examples of the reuse of quarried land near population centers, each of which involved a different kind of land reuse preparation. Montclaire State College in New Jersey needed room to grow, but was physically blocked by a 16 acre mountain. A quarrying operation not only removed that obstruction, but, in addition, produced a great deal of needed construction materials in the process. That land is now being used for dormitories, parking and athletic fields. Not all quarrying, therefore, results in a hole in the ground.

We have also learned that *excavations themselves can be valuable resources.* Quarries have provided the access to huge underground warehouses in mined-out areas in Springfield and Kansas City, Missouri, and elsewhere. A quarry now houses the stadium of Southeast Missouri College. Quarries have served, or are serving, as solid waste disposal sites in Baltimore and Richmond; as reservoirs for Philadelphia; as hillside home sites in St. Louis. In some instances, quarries which appear to be abandoned are, in fact, being temporarily held where further development and need for the mineral is expected in the future—its most valuable projected use.

It is obvious that the manner in which land is to be reused should determine the reclamation requirements therefor. Rigid, uniform rules for reclamation would, in our judgment, hamper and restrict putting land to its optimum reuse.

We believe that considerations of mineral resource development, demands for land to serve the needs of our growing population, and environmental quality must be accommodated. And we submit that, with respect to reclamation, a flexible land reuse policy goes hand in hand with our National Mining and Minerals Policy.

2. The determination of appropriate quarried land reuse is a function of State and local government

Determining patterns of land use has historically and necessarily been the function of state and local government which has been exercised through zoning, building codes, and area growth planning. The reuse of quarried land is fully within this ambit of state concern. Blanket federal rules respecting reclamation would conflict with and undermine efforts of state and local authority to provide rational growth and land development.

3. Because of differing conditions among the several States, uniform regulations that apply nationally are not feasible

State regulations tailored to local physical and economic conditions would promote intelligent reuse of land better than blanket federal guidelines. In April 1964 Dr. Julian Feiss, then of the office of the Assistant Secretary for Minerals of the Interior Department, addressed a conference on surface mining called by the Council of State Governments. Dr. Feiss urged that states promulgate regulations for reclamation closely tailored to meet local needs. He stated in part:

"A vast open pit operation in the deserts of our Southwestern states is quite different from surface mining operations in Appalachia. Northeast stone quarries which have integrated into both the economy and the scenery for well over 100 years, cannot be compared to gravel pits, temporarily established to furnish road materials for a new superhighway. The degree of destruction, if and when it occurs, and the degree of its duration, is dependent upon climate, physiography, geographic location, vegetation, land values, and other economic aspects which may or may not make rehabilitation desirable; water and stream pollution may be a serious problem in one region; in another, they may not be problems at all."

Approximately 25 states have now responded to the call for local action by the passage of legislation, at least with respect to certain kinds of surface mining operations. However, in 1971, the Secretary of the Interior's letter of transmittal accompanying the Administration's reclamation bill advised that state efforts suffer because of a lack of uniformity. Moreover, in a recent speech to the Canadian Provincial Mine Conference, Dr. Elbert F. Osborn, Director of the Bureau of Mines, observed that under the Administration's reclamation bill, regulatory inconsistencies between the states would be eliminated. These positions, we submit, fail to recognize the need for individual state attention to its own localized problems. Such positions, as we see them, seek to gain uniformity for the sake of uniformity. Such policy would be unwise, for it would result in a waste of our mineral resources. Each state has, as Dr. Feiss recognized, its own particular problems that require particular attention.

4. Federal legislation on this subject should provide that the primary responsibility for program development shall be that of the several States

If a national land reuse policy is to be enacted, such legislation should clearly define the term "reclamation" in order that it will properly reflect that its goal is intelligent, flexible land reuse. An inadequate definition of this key term could imply, even though it were not the intent of this Committee, that a return to native condition was the aim of such legislation.

Such legislation should specify that any federal guidelines to be promulgated thereunder and the state regulations to be enacted pursuant thereto should be compatible with the Mining and Minerals Policy Act of 1970. If either the federal guidelines or the state regulations concerning reclamation do not pay heed to the Mining and Minerals Policy of the United States, it is entirely possible that such guidelines and regulations will include requirements that will make the extraction of our minerals so costly as to defeat the objectives of the Mining and Minerals Policy of this nation.

Such legislation should also specify that the federal guidelines are not to be used to deny to the states their right to formulate the best means, within their respective borders, for effectuating such national land reuse policy. This approach seems necessary in view of the tendency of certain federal guidelines which have been promulgated under other Acts to become fixed, all-encompassing and *overriding* standards.

We believe that such legislation should provide for the creation of a National Surface Mining Policy Board which shall include representatives from the mining industry. That Board should have two primary functions:

(1) To advise the Secretary of Interior in the formulation of any federal guidelines to be promulgated; and

(2) To advise the Secretary of Interior with respect the acceptability of state plans submitted for the Secretary's approval.

Such Board would provide substantial expertise in these matters, and the Secretary of Interior should be required to take cognizance of the Board's expertise in his administration of such legislation.

Such legislation should also require that each state, in the formulation of its plan to be submitted to the Secretary of Interior for his approval, shall do so in conjunction with a State Advisory Committee and that such Advisory Committee shall include members of the mining industry in that state. Such Advisory Committee would be comparable, statewise, to that of the National Surface Mining Policy Board we have proposed above. The legislation should also provide that, in the event a state declines to develop a plan, the Secretary of Interior shall be empowered to develop, in conjunction with an Advisory Committee which shall be composed of persons from that state, including representatives of the Mining industry in that state, a plan for such state which

shall take into consideration the particular conditions, needs and requirements of such state. In this way, the advantages of tailoring rules to local needs would be preserved and our mining and minerals policy effectuated.

It is our opinion that any legislation dealing with this subject should make provision that any party, including a state, that is aggrieved by any decision of the Secretary of Interior made pursuant to such legislation shall have the right to seek judicial review of such decision.

Finally, we submit that criminal penalties should not be included in any legislation. Most bills before this Committee and most state legislation provide for injunctive relief, civil penalties for violations, and the posting of a reclamation bond as a pre-condition for receiving a surface mining permit. Because of the civil penalties provided, the injunctive relief available, and the bond requirements, there is no need whatsoever for the addition of criminal sanctions to assure that the operator will make every effort to comply with the law. Indeed, the possibility of criminal prosecution and of excessively heavy civil penalties would serve to discourage the development of our mineral resources.

CONCLUSION

The National Crushed Stone Association submits that legislation drawn along the lines suggested above would conform with the provisions of the Mining and Minerals Policy Act of 1970 and will meet the nation's needs. We are prepared to work with your Committee to achieve workable, effective legislation in this area.

Senator Moss. Our next witness is Mr. Malcomb Baldwin of the Conservation Foundation, if he will please come forward.

STATEMENT OF MALCOMB BALDWIN, SENIOR LEGAL ASSOCIATE, THE CONSERVATION FOUNDATION

Mr. BALDWIN. I am Malcomb Baldwin, staff attorney of the Conservation Foundation. Our testimony reflects the conclusions we arrived at in the course of a study we conducted.

Federal control over surface mining throughout the country is urgent—far more urgent than the leisurely pace of congressional or executive branch action would suggest. The Interior Department's 1967 study, "surface mining and the environment," found surface mining to be a serious environmental and land use problem, and recommended Federal action. But the problems noted then have become worse—and there has been no Federal action. The few State surface mine laws enacted since 1967 have not effectively controlled the many external costs of surface mining. Moreover, strip mining for coal has increased dramatically during the past few years.

The extensive social causes of strip mining have frequently been discussed and need not be repeated here, but a major point to stress is that the States, even those with the most advanced laws, have done a remarkably bad job of enforcement. This is true in the East, in Pennsylvania where anthracite fields in the northeast of the State have been badly regulated, in Kentucky and West Virginia, and in the West where Utah and New Mexico, two of six States that contain approximately half of all United States low sulfur reserves have no coal stripping law. Elsewhere in the West, the laws are weak, permissive, poorly staffed, and funded.

The Federal Government's regulation of coal stripping is deficient as well. In 1969 regulations of the Department of the Interior are not retroactive despite the fact that millions of acres of coal lands were leased before that time. Other deficiencies in the regulations in staff-

ing and inspection, in lack of citizen participation, indicate a poor performance by the Department of the Interior.

We have concluded that a new national regulatory scheme should be developed. It should be developed rapidly on an uninformal basis with maximum simplicity by an agency with enforcement capabilities. We would endorse the state regulatory role only if totally supervised and approved by the Federal Government.

If States could come up with Federal approved laws, regulations and implementation plans within 6 months of the passage of any act. Two years is far too long to wait for any State compliance in terms of the environmental damage that would result in the meantime. If the States do not act within this period, the Federal Government should itself develop regulations, permits, inspection programs to control coal stripping on public and private lands.

We recommend that EPA should be given the Federal enforcement role and that that is consistent with the general enforcement duties. The substance of our program has essentially seven points. First, a ban on all contoured stripping and augering. We know stripping or augering for coal on slopes of 13 degrees or more. The ban should be effective 6 months following enactment of legislation.

Second, a 6-month moratorium on the granting of all new State permits and Federal and Indian land leases for strip mining. During this moratorium EPA would issue detailed regulations for permissible strip mining. The permits issued following the moratorium would be issued directly by EPA or an approved State program by the State.

Third, EPA would inaugurate a study into specific technical problems associated with area stripping, including the effect of acidity and mobidity on reclamation. It would classify coal lands in the United States on the basis of chemical and other character. Within 18 months EPA should be prepared to exclude from strip mining further areas where satisfactory reclamation is not developed technologically feasible.

Pending the determinations the burden of proof that reclamation is feasible should rest with the permit applicant.

Fourth, opportunity for public hearings should be clearly available at the permit application state. It should be available as well at the critical intervals during the mining procedure in order to monitor compliance with permit stipulations and certainly it should be available prior to the release of the performance bond. Citizen suits against EPA and the States and the permit holders to insure compliance should also be allowed.

Five, the States should identify and catalog previously stripped and unreclaimed land and establish reclamation priority. Federal funds should be made available to assist reclamation and priorities should be given to reclamation projects in their employment of former strip mining workers.

Six, a hardship order should be established by the Federal Government. It could grant temporary variances to any of the above stipulations in order to deal with specific energy supply situations. This would only be action taken during transition periods. The board would hold public hearings and make its final reports public. The regulatory structure should be itself supported by a system of fees paid on the basis of acreage disturbed by the strip miner.

Now, it should be noted that we have not recommended abolishment of all coal stripping. We recognize if Congress does not abolish all coal stripping it does take a risk. The risk is that our administrative system does work and can assure reclamation where feasible.

In the environmental field, the Nation has had vast experience with shattered hope in this regard. The abolitionist argument cannot be easily dismissed and we do not intend that it should be.

Rigorous regulation of coal stripping will be extremely difficult. A good deal of concern has been voiced about the implications of regulation of coal stripping in energy employment and safety. To begin with, there should be no energy problem either in the short or long term resulting from the schemes we suggest.

Approximately 100 million tons of coal used by utilities come from contour mining. There are various ways this deficit could be made up should contour mining be abolished.

For example, over 200 million tons of pulverized coal burned by utilities could easily be substituted by oil or gas. Then there is a possibility of adjustment in the residual oil import problems.

Particularly in the Midwest. That may be necessary to make up a short-term deficit. Then there are deep mines that could be expanded by three-shift operations that could be constructed and, finally exports of high quality coal going on every day. These, too, can be regulated and export quotas could be set.

A combination of these measures would yield far more than we need to make up the deficit of an abolition of contour mining. Then, of course, the hardship board, which would look at these cases on an individual basis, could grant variances on a temporary basis. When it comes to employment, our figures suggest 14,000 men put out of work by contour and auger abolition and the others in related industries, perhaps a total of 28,000 people could find jobs in other pursuits.

For example, in deep mining, deep mining construction and in the construction of deep mine equipment and deep mines themselves, the industries that support deep mining. We suggest that a reclamation program using the equipment similar to that to strip mine for coal could take care of the remaining employment problem.

Federal support for such a program would put dollars in some of the most depressed areas of the country.

Finally, a word about deep mining itself. We simply can't send men into unsafe and unhealthy mines. But deep mining can be as safe as surface mining. The Mine Health and Safety Law must be enforced, it hasn't been. There are several ways it could be improved.

We need improved fine collection systems that have been grossly inadequate in the past. We need research in the long haul mining method. For example in the United Kingdom they have 300,000 miners, three times as many as the United States, but their record of fatalities is one-quarter of our record. Their black lung record is also better than ours.

Research in the long haul method has been grossly inadequate in this country. We do know some large mines have a good safety record. We also know black lung disease can be overcome as a danger. The Director of the Bureau of Mines has recently noted a steady improvement in compliance with dust standards in the law.

So, in conclusion, we have concluded if any technology is employed and the present law is enforced there can be a breakthrough in safety in deep mines. Certainly this is important for environmentalists who are concerned particularly with strip mining. We must insist that deep mining be saved. This is a crucial argument for abolition of strip mining. This should be the essential concern of Congress as well. It is important that Congress hold hearings on the enforcement of the mine safety legislation and that these are overdue.

Thank you very much.

Senator Moss. Thank you for your statement, Mr. Baldwin. Were you here this morning when they showed the pictures of Pennsylvania?

Mr. BALDWIN. No; I wasn't, I heard about them and I have seen pictures of successful reclamation.

Senator Moss. I was going to ask you your impression of that, whether you felt that was adequate reclamation. If you didn't see them you couldn't very well answer that. But, at least, that is one State that seems to be actively attempting, at least, to meet the problem of the surface mining. I am a little concerned about your suggestion that we ought to emphasize deep underground mining to get our coal.

Assuming that we could solve the health and the safety problems which plague us on underground mining, aren't we still going to waste a lot of our coal by leaving it in the ground to support the roof of the mine?

Mr. BALDWIN. As I suggest, there is a good deal of research that could be done in a long-haul method which is different than the roman pillar method which is wasteful. That has been demonstrated in Great Britain. I believe there are three long-haul mines in this country and to our knowledge the Bureau of Mines has conducted no research into that method.

Senator Moss. We do have a very severe problem with subsidence at times now that are also giving us difficulty. I tend to think that there may be more problems with the deep mines than there are with the surface mines, providing requirements for restoration and seeding and all the rest of it are strictly enforced.

Mr. BALDWIN. We can't neglect the environmental problems associated with deep mining either. We wouldn't suggest those be ignored by Congress, but in terms of environmental priorities, certainly the strip mine use is far greater.

Senator Moss. Well, I appreciate your testimony and we will give it very careful consideration.

Senator Jordan, do you have a question?

Senator JORDAN. Yes. I believe I understood you to say you would suggest the substitution of gas and oil as an auxiliary source in order to relieve strip mining; is that correct?

Mr. BALDWIN. What we are talking about is the abolition of contour mining. Anything above 15 degrees in slope. Approximately 100 million tons of coal used by utilities companies from contour mines. We estimate that deficit, should contour mining be abolished, could come from several sources. One would certainly be from other coalfields. Area strip mining could also, under our scheme, continue on a rigorously regulated basis. So you are not outlawing all strip mining. There would certainly have to be some coal coming from deep mines, as well

as from area mines, but in addition I think you would have to consider changing the import quota, particularly in the Midwest.

As you know, residual is freely imported in the East but this is not the case in other parts of the country.

Senator JORDAN. How about gas, you suggested gas?

Mr. BALDWIN. Well, as you know there is a scarcity of natural gas and I think we should be talking primarily at this state about short-term supplies from the oil industry.

Senator JORDAN. I have no more questions.

(The document referred to follows:)

THE CONSERVATION FOUNDATION

1717 Massachusetts Avenue NW Washington DC 20036 • (202) 265-8882 Cable: CONSERVIT

Testimony by

THE CONSERVATION FOUNDATION

before the

SUBCOMMITTEE ON MINERALS, MATERIALS, AND FUELS

UNITED STATES SENATE

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

November 17, 1971

I. INTRODUCTION

Federal control over surface mining throughout the country is urgent -- far more urgent than the leisurely pace of Congressional or Executive Branch action would suggest. The Interior Department's 1967 study, Surface Mining and the Environment, found surface mining to be a serious environmental and land use problem, and recommended Federal action. But the problems noted then have become worse -- and there has been no Federal action. The few state surface mine laws enacted since 1967 have not effectively controlled the many external costs of surface mining. Moreover, strip mining for coal has increased dramatically during the past few years.

As a result of staff studies during the past year, the Conservation Foundation has become convinced that immediate Federal action on the strip mining of coal is imperative. However, many of the bills now being considered would legislate for all forms of surface mining. We believe these bills to be inadequate, because they do not recognize the problems peculiar to each form of strip mining. Most of the bills suggest broad, weak, and slow Federal supervision of state action. In our view, enactment of such legislation would only give the

70-867 O - 72 - pt. 1 - 33

appearance of action; indeed, it might postpone real resolution of what has become a serious environmental problem. Certainly these bills would have little effect on the most urgent surface mining issue: the abuses of coal stripping.

Compared to other forms of surface mining, coal stripping involves by far the greatest land area. In 1965, the latest year for which accurate figures are available, coal stripping accounted for 80% of all contour stripping and 41% of all acreage disturbed by surface mining. Large numbers of acres in Appalachia and the Illinois-Indiana Basin have been stripped for coal, and the pattern may be repeated in large regions of the West. The problem at once has become a major land use issue and, because of the importance of coal, a major national energy issue as well.

The environmental abuses inherent in coal stripping, described in many public and private reports, produce significant long- and short-term costs. These costs are borne neither by the coal producer nor the coal consumer. The external costs of coal stripping have been largely neglected by the states and Federal government, due to inadequate law and/or weak enforcement controls. Year after year Congress has deferred surface mine legislation. This lack of Congressional action must now be

assessed in the light of the failure of the state and Federal land-management agencies to act.

We believe that effective public policy requires strong Federal legislation on coal strip mining in order to redress the present regulatory imbalance that favors the use of coal, and, in particular, strip-mined coal. Federal controls over the major environmental effects of oil, gas, and nuclear energy production are operative today; we believe that they should be matched by similar concern about land and water abuse from coal production. Moreover, in the face of increasing Federal interest in coal gasification and in control over power plant siting, it is essential that there be a corresponding Federal control over strip mining, on which gasification and much of the utility industry would rely.

In short, comprehensive Federal controls on coal strip mining are consistent with the long-range economic welfare of the nation. The risks of short-range economic dislocation, affecting employment and energy supply, and the serious hazards of substitute work in deep mines present no serious barriers; they can be minimized with other Federal action that we shall suggest.

II. EXTERNAL COSTS ASSOCIATED WITH STRIP MINING

The apparently "cheap" coal derived from strip mining, and especially fron contour stripping, is, in fact, extremely costly. Neither the strip mine operator nor the consumer pays full costs. Some are passed on to society as a whole.

On certain kinds of land, strip mining simply cannot be conducted without ignoring certain very real costs. On steeply sloping land, "highwalls" are created; it is extremely expensive to "reduce" them. Moreover, improper placement of spoil can lead to unstable soil conditions, resulting in landslides, erosion, sedimentation, and acidification. On flat lands external costs are more easily controlled. However, if pyritic seams are present it is difficult to prevent acidification of nearby streams.

Only some of the costs -- such as the damage done to homes by mudslides -- are susceptible to precise economic measurement; in most instances, it is impossible to calculate the vast environmental or social effects of coal stripping. But the difficulty of measuring such costs should not lead to the erroneous conclusion that they are insignificant; they are merely elusive.

Among the many effects of strip mining, we believe the following to be most costly to society:

1. Water Pollution: It is caused by strip mining in a variety of ways. Leaching of pyritic soils exposed by stripping creates high levels of acid in waters on and off the mine site. Erosion and landslides, provoked by the improper placement of spoil and by failure to reclaim mined land, create stream siltation and sedimentation.

2. Flooding: The pre-existing dangers of flooding may be substantially increased by sediment from strip mines, which decreases the carrying capacity of streams, and by increased run-off from strip-mined areas.

3. Fish and Wildlife: Acid and silt from strip mines destroy aquatic life -- acid because of its corrosive effect on organsims; silt because of its tendency to bury flora and fauna through accumulation.

Wildlife habitat, of course, is removed by surface mining.

4. Personal and Real Property: Landslides, floods, and blasting associated with strip mining regularly destroy personal and real property.

5. Aesthetics: To many persons, the scars left by strip mining in the form of naked spoil banks and highwalls, choked streams and open trenches create mile after mile of unrelieved ugliness.

6. Economic Losses: Strip mining erodes a region's long-term tax base through its destruction of other economic development options and, in many areas, of recreational opportunities and natural beauty that attract tourists. Stripping may reduce a region's ability to attract new industry by creating environmental blight. Overall, studies indicate that these influences are seldom offset by employment opportunities or by tax revenues

brought to a region by stripping.

Reclamation can reduce these losses, but the key here is reclamation cost. It varies greatly, depending, inter alia, on the slope of the land, its acidity, and the degree to which reclamation is carried out. Strippers rarely spend more than $300 an acre on filling, although the few studies on restoring contour strip mines to their previous slope conditions indicate much higher costs. One study, completed in 1965, concluded that the cost of restoring a natural slope was $15.73 per linear foot of highwall, or approximately $2700 per acre disturbed. (F. E. Griffith et al., Demonstration and Evaluation of Five Methods of Backfilling of Strip Mine Area; U. S. Bureau of Mines; Dept. Inv. 5772) In an Elkins, West Virginia,demonstration project, the average cost for reclamation of 561 acres, exclusive of the costs of clearing and revegetation, was $1685 per acre. (R. B. Scott, et al., Cost of Reclamation and Mine Drainage Abatement, Elkins Demonstration Project; FWQA Public No. 14010; 1970).

Paul Averitt, of the United States Geological Survey, has written:

> "...According to a report of the U. S. Department of the Interior (1967, p. 113), the minimum cost of strip mine reclamation is about $100 per acre, and the national average is about $230 per acre. These costs allow for only a minimum level

> of reclamation in which slope angles are reduced, drainage improved, and a cover crop of some sort is planted. They do not contemplate restoration of the original contour of the land, or of a natural-appearing contour. Regrading for this objective would require costs ranging from $900 to $2700 per acre. (Griffith and others, 1966)." (Paul Averitt, Stripping Coal Resources of the United States, January 1, 1970; Geological Survey Bulletin 1322; p. 26.)

Reclamation costs on the higher end of Averitt's scale are most accurately applied to the regrading required for contour strip mines. Unfortunately, neither state nor Federal laws require this kind of reclamation investment. In effect, sellers of strip-mined coal have received a subsidy that has yielded disastrous environmental results.

III. INSTITUTIONAL PROBLEMS IN CONTROLLING EXTERNAL COSTS

A. AT THE STATE LEVEL

While the states have increased the scope and degree of regulation of strip mining in recent years, the effectiveness of this control still leaves much to be desired.

Pennsylvania, West Virginia, and Kentucky have relatively strong strip mine laws -- laws that might well suffice under several proposed Federal surface mine bills. But their well-publicized failures to control the infliction of external costs and to assure adequate reclamation of strip-mine sites have often been less a function of the law itself than of the quality of its enforcement.

In Pennsylvania, despite improvements in enforcement, there is a notable absence of effective control over anthracite strip mining in the north-east part of the state. In Pennsylvania's central region, the problems of landslides, sedimentation, and erosion are typical of Appalachian coal mining abuse.

In West Virginia, the enforcement failure has been condemned even by employees of the enforcing agency, the Department of Natural Resources. The state-wide strip mine

abolition movement has gathered momentum in the last few years simply because the apparently sound state law has been largely ignored.

In the course of our own staff study we have devoted special attention to strip-mine problems in Kentucky. Here again there has been a noticeable failure to prosecute violators of the law. Furthermore, the state reclamation commission rarely exercises its prerogative to withhold additional permits from violators. Political and economic pressures, as well as understaffing in the state's Reclamation Division, are reasons given for inadequate enforcement. As one state official told us: "You can go down on any job in Kentucky and it could be closed down within the day ... Every job has a violation, but some of them are minor."

A review of other state strip mine laws reveals an even less rigorous enforcement picture. In Tennessee, for example, the strip mine operator can take three years to accomplish reclamation; there is no slope restriction; and the Director of the Reclamation Division is prohibited from denying a permit if the area is found environmentally unsuitable for reclamation!

Looking west of the Mississippi, there are no coal strip mine laws in Utah and New Mexico -- two of the six states in the West that contain some one-half of all U. S. low-sulphur coal reserves. Existing regulations in the other four states, Colorado, North Dakota, Montana and Wyoming,

are permissive and weakly enforced by poorly-funded and under-manned state agencies. Wyoming, for example, has budgeted only $20,000 per year for all inspection activities for strippable minerals, and allows the state land commission to employ only one inspector. As in Colorado and Montana, reclamation requirements are lax. (The Federal government is obliged to enforce strip mine laws on public lands.)

State regulation of coal strip mining, therefore, presents a sorry spectacle, in the East and in the West, defying the urgent need for strong environmental control.

B. AT THE FEDERAL LEVEL

The Federal record to date, however, also suggests the need for substantial legal and regulatory changes. A maze of statutes, regulations, field manuals, bureaucracies, and traditions govern the administration of coal strip mining on Federal and Indian lands. The laws are imprecise. Public agency performance is characterized by vague lines of authority, conflicting powers, and serious understafffing in critical positions.

The laws themselves do not even mention strip mining. Nor do they prohibit stripping in wilderness or proposed wilderness areas. The Court procedures that the leasing

acts require prior to cancellation of a lease are intricate and time-consuming.

Regulations promulgated in 1969 by the Department of the Interior, placing great responsibility for environmental protection in the Bureau of Land Management and the U. S. Geological Survey, lie at the heart of the administrative system. Their inadequacy is highlighted by the fact that they do not apply retroactively; the vast acreage of strippable coal leased prior to 1969 -- some 2.4 million acres -- is neglected.

Even where they do apply, the Interior Department regulations are weak. They grant the B.L.M. and U.S.G.S. no power to prohibit stripping in particular regions, nor do they authorize sanctions that could be applied quickly against a stripper who violates his mining or exploration plans. Staffing and inspection capabilities of the Department are sadly inadequate. In addition, the regualtions provide little check on agency activity or procedures, since they lack provisions for public participation.

These regulatory deficiencies suggest serious administrative inadequacy on the part of the Interior Department, and we have seen little eagerness towards correction. For example, the Department has been reluctant to prepare environmental impact statements under the National Environmental Policy Act before issuing strip mine leases or mining permits, despite the major environmental implications of strip mining.

IV. THE NEED TO FILL THE GAPS IN NATIONAL POLICIES AND RECONCILE ENERGY AND LAND USE

In the absence of Federal control over coal strip mining, there will continue to be a serious gap in national policies relating to both energy and land use. Some of these deficiencies, and the precedents for filling this gap, are suggested below.

First, uneven Federal regulation of the energy industry now unduly favors coal (and particularly strip-mined coal) over other competing fuels. Strong Federal regulation is required to redress this imbalance.

There is a great need to change Federal policies that now encourage the use of strip-mined coal over other fuels that are potentially less damaging to the environment. Coal itself is the only energy source whose trade is not directly regulated by the public.

The Federal regulatory imbalance concerning environmental controls is even more striking. The Federal government now regulates the major environmental effects of oil (off-shore production, oil imports), gas (transmission), and atomic energy. In each of these cases, environmental controls affect the cost of the particular fuel and its

ability to compete with others. But this process of "internalizing" social costs has not affected coal strip mining. The result of this uneven Federal regulatory role in the energy field is to stimulate a market for this most primitive and environmentally destructive form of fuel production.

Second, unless the Federal government takes strong regulatory action on coal strip mining before gasification of coal becomes economically feasible, great environmental damage will result as coal is stripped for gasification.

A direct and major link between coal stripping and the nation's thirst for energy involves Federal support for the production of high-quality pipeline gas from coal. Federal gasification programs are designed to serve utilities and homes with clean fuel that will buttress dwindling supplies of domestic natural gas.

But gasification plants would require vast amounts of coal. In order to bring costs down to competitive levels, the industry can be expected to use cheap, strip-mined coal -- unless, of course, new legislation intervenes. There are alterntives to strip mining coal for gasification. A recent report by the Bureau of Mines indicates that in situ (underground) gasification of coal is both economically feasible and practical. There may be environmental problems

with this approach, but,unfortunately, no in situ gasification research is being conducted by either the Bureau of Mines or the Office of Coal Research.

Third, the precedents for Federal control over coal strip mining -- the Coal Mine Health and Safety Act and a host of new Federal environmental protection measures -- also indicate a need for a strong Federal strip mining act.

The Coal Mine Health and Safety Act of 1969 authorizes the Bureau of Mines to inspect, and, if necessary, to close down deep mines, to make them safe.

Recent Federal pollution measures affecting land use provide other kinds of precendents for Federal regulation of coal strip mining. The Clean Air Act and new administrative procedures under the 1899 Refuse Act both authorize the Environemntal Protection Agency to control new land uses which adversely affect the environment.

A strong Federal act regulating strip mining would fill a crucial gap in the package of land-use bills now before Congress pertaining to power plant siting, coastal zone management, and national land-use planning. The power plant siting bills particularly ignore the environmental impact of producing the coal on which power plants rely, even though the land-use impact of coal stripping may be substantially greater than that of a plant itself.

V. A PROPOSAL FOR FEDERAL REGULATION OF COAL STRIP MINING

Our review of strip mine regulations at the State and Federal level, and of the prospects for extensive coal stripping in the next decade, leads us to the conclusion that a new national regulatory scheme must be developed rapidly, on a uniform basis (consistent with regional environmental factors), and with maximum simplicity. It should be instituted by an agency with special enforcement capabilities.

A program that relies essentially on State control, supervised and approved by the Federal government, may provide a suitable regulatory mechanism. It has the merit of being flexible in terms of particular regional needs and differences while being consistent with traditional federalist approaches. We recognize, however, that state enforcement of even limited state laws has been inadequate, and that there are substantial administrative problems involved in devising Federal schemes for overseeing state operations.

A state law and implementation system approved by the Federal government is vulnerable to delays. Certainly the

two-year period that some bills would allow for the states to produce acceptable regulations would result in serious environmental dislocations during that time. Therefore, we recommend that Federal law should give the states a regulatory role, but that it should allow them not more than six months to develop Federally-approved laws, regulations, and implementation procedures. Failing such approval, Federal standards and enforcement should apply.

Given the general condition of state law and the urgency of radical cahnges, it may well be that the foregoing proposal might result in direct Federal control over coal strip mining in many states, through Federal permits, regulations, and inspection programs. Such a direct Federal role would find some precendent in Federal enforcement of the Coal Mine Health and Safety Law.

We believe that the Environmental Protection Agency, which is responsible for enforcing most of the nation's Federal environmental protection laws, is in the best position to enforce strip mine legislation. This separation of enforcement duties from the Department of the Interior's development and management functions is consistent with the theory behind the Administration's environmental reorganization proposals. Conflicts of interest historically apparent within the Department of the Interior can be resolved by giving EPA enforcement authority over coal strip mining.

70-867 O - 72 - pt. 1 - 34

The role of EPA would be to conduct the necessary research on coal strip mine operations and reclamation, to develop and enforce operating and reclamation standards by permit and inspection programs on Federal and Indian lands, and to do the same within the states whose laws do not measure up.

We propose Federal requirements that distinguish between contour and area stripping. In area strip mining, a trench is cut into the earth and the coal is then removed. On slopes of 13° or more, it is necessary under ordinary conditions to conduct contour stripping, creating a bench and highwall in order to expose the coal. Generally, therefore, contour mining techniques apply to any slope of 13° or more. This is a distinction recognized in several state strip mine regulations, and marks the point at which the most destructive form of strip mining commences. We believe that regulations based on the 13° criteria are administratively more manageable than other suggested schemes, such as those based on overburden-to-coal-seam ratios, prohibition of spoil deposits above a coal seam, prohibition against creating a highwall and bench, or strip mine performance criteria.

A. REGULATORY POLICY

We recommend the following actions:

(1) CONTOUR STRIPPING: Stripping or augering on land with an average slope of 13° or more should be abolished six months after the enactment of Federal legislation regulating coal strip mining.

The states have proved themselves incapable of enforcing, on their own initiative, procedures to control the abuses of strip mining for coal. They are often unwilling to require satisfactory reclamation on contour-stripped lands because this would create prohibitive economic burdens for mine operators. While the resulting environmental neglect suggests that contour strip mining should be abolished immediately, employment hardships and the energy needs of the country present competing values. Taking these values into account, we recommend that all contour stripping cease within six months of the date of enactment of the Act. Thereafter, reclamation would be the only activity on the contour-stripping site. Reclamation of contour mines active at the date of enactment of the bill would continue pursuant to an EPA-approved plan. In the absence of a plan, EPA reclamation

standards should apply.

Because the environmental problems are similar, we recommend the same action for auger mining.

(2) AREA STRIPPING: New stripping on all lands with an average slope of less than 13° should be subject to a six-month moratorium to determine where reclamation is feasible and capable of being enforced.

Area stripping does not present the same magnitude of social costs, particularly off-site, that contour stripping does. Furthermore, satisfactory reclamation of a site is generally possible, at least in the moist regions of the Midwest where most area stripping has been conducted to date. Some deposits of coal cannot be mined in any other way. Moreover, we note that in the brown coal fields of West Germnay, for example, highly successful area mine reclamation has been practiced for years under the most stringent government regulations. For these and other reasons, we do not believe that it is necessary to abolish all area stripping for coal. However, we believe that sufficient doubts and problems surround reclamation of area stripping to merit a six-month moratorium on all new permits and leases for area strip mining. The six-month moratorium

would not affect existing area strip mining operations; coal would still flow, as necessary, to utilities and other coal-dependent industries. Coal production from area strip mines could, in fact, be allowed to increase after six months, when contour stripping would cease, so long as reclamation were both feasible and strongly enforced. The result of this scheme would be that area strip mining would be governed by standards proclaimed (or approved) by EPA, whether the land is Federal, State, Indian or private, six months from the date of enactment of the Act.

(3) EPA should begin immediately a comprehensive study of reclamation problems associated with coal strip mining.

We recommend that new legislation authorize EPA immediately to coordinate Federal research and begin new studies of specific technical problems associated with strip mining, especially the effects of acidity and aridity on reclamation. EPA should classify immediately all coal lands in the United States by acidity of the seams, by feasibility of stripping, by the effect of the climate on reclamation, and components contibuting to air pollution. The study should be complete within 18 months. Findings might very well indicate that

certain public lands should be withdrawn from stripping until external costs can be controlled and reclamation becomes feasible. Pending the completion of this study, all applicants for permits to area strip mine would have the burden of showing that the control of external costs is guaranteed and that reclamation is technically feasible.

(4) CITIZEN SUITS: Environmental regulation of coal stripping would be improved by citizen participation in EPA decision making, and by giving citizens standing to bring suit against private parties as well as against State and Federal governments.

The public should be involved in EPA decisions at several stages. There should be opportunities for public hearings on stripping permit applications, and prior to the release of the performance bond.

Because the ordinary citizen is barred in many states from legal redress, whether against a stripper or against the State, we strongly recommend that a new Federal strip mine act enable any injured person to file suit against any persons or any government for failure to meet the standards of perormance requirements of the law.

(5) RECLAMATION AND EMPLOYMENT PROGRAM: The States and the Federal government should enter into a partnership to restore unreclaimed land.

More than one million acres of unreclaimed land that was once stripped for coal have little economic value and continue to produce acid mine drainage, erosion, and aesthetic blight. Most of this is private land. These lands must eventually be made useful to the nation. We recommend a joint State-Federal program, in which initially the states should catalogue and establish reclamation plans and priorities for these lands and the Federal government should provide the funds and special expertise. Then the states and/or the Federal government should proceed selectively to reclaim or rehabilitate.

We recognize that there are problems of windfall profits to private owners benefitting from the enhanced value of their lands. However, liens could be applied by states, to assure that an owner of reclaimed land would repay the state for any increment in value resulting from reclamation, at least up to and including the resulting increment in fair market value of the land. We recommend that new legislation require a thorough study of the "revolving fund" mechanism whereby public acquisition and resale of subsequently reclaimed lan can fund the purchase or more such land.

As noted below, reclamation efforts could help significantly to provide employment for the approximately 28,000 men who might be unemployed following abolition of contour stripping.

VI. IMPACT OF THESE PROPOSALS ON THE NATION'S ENERGY NEEDS AND THE HEALTH AND SAFETY OF DEEP-MINE COAL MINERS

A. CONTOUR STRIPPING:

We do not believe that the measures suggested for the abolition of contour strip mining need result in an energy crisis for the nation, either in the long- or the short-term. However, we do recognize that abolition will require certain positive steps by the Federal government to ensure adequate fuel supplies, particularly for electric utilities. Recognizing that contour strip mining accounts for approximately 20% of domestic coal production, we recommend tax incentives to spur development of other energy sources and conversion to other energy production systems. We believe that the nation's environmental needs and energy demands can be reconiled.

First, many electric utilities have the capacity of converting to alternative fuels, such as oil, or, if available, natural gas. Coal provided about 60% of the total fossil fuel BTU's consumed by utilities -- some 306 million tons -- in 1970. Data from the National Coal Association reveals that most power plants buying pulverized coal can

convert to oil and gas relatively easily. Of a total of 223 million tons burned in power plants annually, approximately two-thirds can be supplanted by other fossil fuels as far as the plants themselves are concerned. Breaking this figure down by regions likely to use contour-mined coal: in the Middle Atlantic region, 43,000 tons of coal could be supplanted by oil and gas; in the South, 48,000 tons; in the Midwest, 14 million tons; in New England, 33,000 tons; in the Border states, 37,000 tons. If, as the National Coal Association reports, contour strip mining supplies 100 million tons per year to the utility industry, abolition of contour strip mining would not cause severe hardship for the utility industry; it has the capacity to convert to other fules, if only on a temporary basis.

Second, in abolishing contour strip mining, we may very well create a need for a new residual oil supply for utilities. On the East coast, there is virtually no quota on residual imports. In the Midwest and other regions, quotas may have to be relaxed or suspended for a temporary period. In the past, oil companies have been unable to compete with low-cost strip-mined coal. In the long-run, by raising coal prices by abolishing contour stripping, it may be that residual sales can be more profitable, thus encouraging the production of more residual in domestic refineries.

Third, the production of coal from deep mines can be increased. One suggestion toward that end is the development of three shift operations in deep mines. A study of Austin and Borrelli estimated that three-shift operations, along with a 6th production day from mines now working 5 days only, could provide an additional 150 million tons of coal annually -- far more than would be required to make up the lost production from contour stripping. This action would increase mining employment at a time when many jobs would be lost through abolition of contour mining. From expanded production of new and existing deep mines and from increased "punch" mining using surface roads in existing contour mine operations, an additional 50 million tons could be made available within six months. This, again, is far more than is necessary to fill energy needs caused by regulations we suggest.

Fourth, exports of high-quality metallurgical coal, which totalled 56.2 million tons in 1969, are projected to increase with coal production generally. Since substantial portions of these exports are under long-term contracts, this trade cannot be suspended overnight. However, the need to make up the deficit caused by the abolition of contour stripping suggests that exports should be permitted to increase until domestic coal needs are satisfied. Short-run energy pinches could be met by curtailing the exportation of

highquality coal not bound by long-term contracts.

Fifth, our proposal might create instances in which utilities and other coal companies find themselves in a bind, facing disruptions in supply that cannot be solved readily. These cases must be examined individually. Therefore, we recommend that the Committee consider the creation of a special Federal Board to investigate, and, if necessary, to recommend solutions to potential hardship cases, by granting temporary variances. The Board could begin its investigations immediately after passage of the Act. We recommend that the Board include one member from the Environmental Protection Agency; one from the Federal Power Commission; one from the Office of Emergency Preparedness; one from the energy industry; and one to represent the public. In the course of its investigations, the Board would be required to hold public hearings and be required to make its actions public.

B. AREA STRIPPING:

The immediate energy-supply implications of our recommendations respecting area coal stripping will be minimal. Contour stripping would be abolished only after six months. Where area stripping is underway, it will not be affected by the moratorium. Moreover, should short-term energy-supply problems result, the review board that we have suggested would examine the matter and make recommendations on a case-by-case basis.

Any long-run economic implications of new controls on area stripping likely to result from the EPA studies we recommend are not unlike those strict controls required by increased national concern with air pollution or environmental protection generally. Strong Federal coal-stripping regulations will eliminate the current breach in national environmental and energy policy by incorporating coal stripping's social cost in the market place. As a result, production and consumption will much more nearly reflect the full gamut of environmental constraints.

C. EMPLOYMENT AND RECLAMATION:

With the reclamation program that we suggest, and additional short-range Federal assistance to strip mine workers, our regulatory recommendations should not cause any serious social distress, as the following figures suggest.

In 1969, the Bureau of Mines stated that there were,on the average, 22,358 men working each day in coal strip mines, and 2,596 men in auger mines in the United States. From figures relating to tonage of coal produced by contour and area strip mines, it can be assumed that of the 22,358 strip miners, half were employed in contour mines. The abolition of contour mining within six months of the Act's passage would put those working in contour, as well as auger mines, out of work -- a total of some 13,775 men. The employment impact will not be limited to the mining industry, however, but will include related industries. These effects may be expressed in a multiplier. The Regional Research Institute of West Virginia University has calculated that the multiplier for the surface mining industry in West Virginia is 2.07. Applying this figure to surface mining in the nation as a whole, 28,514 people would lose their jobs upon abolition. It is not unreasonable to assume, that under present conditions, with some relocation and

retraining, at least 10,000 of these people can find work in deep mines and industries related to deep mining. But if the entire 10,000 were employed in the mines and none in related industries, this would amount to an addition of 10% in the work force currently employed in deep mines. (1969 Bureau of Mines figures.) Given the increasing demand for coal, the increase in price likely with the abolition of contour stripping, and the employment needs of the coal industry, we believe that 10,000 men could be trained and absorbed in the deep mining industry within two years.

This leaves 18,000 people still without jobs. Here the reclamation program could provide relief. If we assume that the multiplier factor in the reclamation industry would be 1.5 -- a conservative figure, since reclamation involves many procedures required for strip mining -- then only 12,343 men would need be employed in reclamation to wipe out unemployment from contour stripping abolition. This is approximately one-half the number of men employed in contour and auger mining on the approximately 100,000 acres strip mined since 1969. Since there are approximately one million acres of unreclaimed land, it would appear that 12,343 men could be employed in the unreclaimed lands program. Now if each of these men were paid $10,000 per year to beautify and make productive the area in which they

live, $120 million would go into some of the most depressed areas in the country. Capital equipment used in contour and auger mining could, of course, be used in reclamation. Reclamation, therefore, can be a tool for reemployment as well as economic conversion.

In summary, then, we recognize that retraining problems, temporary dislocations, and imperfections in the labor market causing local chronic unemployment would undoubtedly occur if contour stripping were abolished, despite the reclamation program. But, as we have attempted to show, these need only be short-range, localized problems. They may have to be solved with temporary relief payments or Federal assistance.

D. COAL MINE HEALTH AND SAFETY

One frequently hears the concern that abolishing one kind of strip mining would actually send men into unhealthy and unsafe deep mines. From our analysis of the coal mine health and safety issue we are convinced that deep mining can be made as safe as surface mining is now, and more safe, certainly, than some other hazardous occupations. That the record today in deep mines is not as good as it should be is not the fault of the mine health and safety law. Enforcement has been seriously inadequate. The General Accounting Office, for example, has issued a report on the first 18 months of enforcement of the law and has found that the "Department's policies for enforcing health and safety are extremely lenient, confusing, uncertain and inequitable."

Enforcement of the law has had many problems, one of which involves the assessment procedure. According to this lengthy procedure, when a violation is discovered the Bureau sends a notice to the violator who is given 15 days to protest. The Bureau can amend or affirm the notice, and the violator has another 15 days to protest. If there is no agreement, hearings are held, and finally the violator can take the matter to court.

There were no collections or assessments last year. From January to September of this year, the Bureau assessed violators approximately $6.3 million; affirmed $5.2 million but collected only $0.8 million. The collection process clearly needs improvement.

In 1970, in fact, the law was not fully enforced. This fact, combined with higher coal production, while perhaps accidental, may explain why last

year the deaths in deep mines were higher than in 1969. But the experience of the first nine months of this year indicates that the fatality rate is lower than during the same period in 1969 and 1970. One can make some comparision with the experience in the United Kingdom. The U.S. has 100,000 deep miners; and the United Kingdom has 300,000. The fatality rate per million man hours in the United Kingdom is one-quarter of the rate in the United States. The U.K. has a much lower rate of black lung disease. There, a long wall method of deep mining is practiced, as opposed to the room and pillar procedure, used predominantly in this country.

We have 33 long wall mines in the U.S. Experience in the United States reveals that long wall mining dramatically reduces roof-fall and haulage accidents. There is no Bureau of Mines research on the use of this technique.

We have figures from some of the large captive mines in this country which demonstrate that greatly increased safety can be achieved in underground mining. The U. S. Steel Company, for example, one of the top 20 producers of coal, had a fatality rate of .08 per million man hours in 1970. Not surprisingly, the company's production costs were higher than the United States average.

Better law enforcement can reduce accident rates from roof-falls and explosions. These were some of the highest causes of deaths last year. Examination by the Bureau of Mines of 84 roof-fall accidents in 1970 indicated that the vast majority of them were due to mine-law violations. We note that there were 41 deaths from explosions last year and so far in the first nine months of this year there have been only two.

As for black lung disease, we are making progress. Dr. Osborn, Director

of the Bureau of Mines, notes that: "Even though shortages of sampling equipment and mine inspections have prevented full coverage of all mines, 75% of the underground mine sections where dust levels have been determined by the Bureau are below the three-milligram limit."

He goes on "In fact, 45% of them are already below the two milligram level, which does not become the official limit until the end of next year." Dr. Lorin Kerr, Director of the Department of Occupational Health of the UMW, believes that "if the law is enforced, there is no question that the pneumoconiosis can be eliminated within one generation."

We have concluded that if new technology is employed and the present law is enforced, there can be a breakthrough in safety in deep mines. Environmental quality advocates must insist that the effort be made. This should be a concern of the Congress, too. It is important that the Congress hold long-overdue hearings on this issue.

Senator Moss. We have been joined by the senior Senator from Kentucky and we are glad to have you, sir. If you have any comments you would like to make, we would be glad to have you do so.

STATEMENT OF HON. JOHN SHERMAN COOPER, A U.S. SENATOR FROM THE STATE OF KENTUCKY

Senator Cooper. Thank you. I am not a member of this committee. I understand you will be having another day of hearings.

Senator Moss. Yes, on December 2.

Senator Cooper. I would like to be a witness at that time.

I might say briefly, of course, that I am interested in this subject for obvious reasons, my State of Kentucky, which also supplies a great many people now, is the second largest producer of coal in the United States and it is believed this year it may be the largest producer. Also it is the only State that has two types of surface mining. It is strip mining in the eastern part of the State and the hilly mountainous region and in the western part there is a small area but very much a devastated area.

Also, the Tennessee Valley Authority mines a good deal of the coal mined in our State and a great part of it comes from strip mines. I might say also, I will put in the record and explain it later in my full testimony.

In 1969 there were 36 million tons and over of coal produced in underground mines of the United States. Forty-four million tons from the surface. In 10 months that balance changed from 63 million tons underground mines to 1 million surface mines. I am coauthor of this bill and I am glad to join this introduction because I believe we have to have a Federal act. One which will be applicable to all States and also to remove the argument of any discriminatory competition.

I have studied the bill fully, I don't think it is adequate, I think it is too slow in coming into operation.

I am not satisfied about the enforcement proceedings. I frankly wonder if they should be in another area, EPA, rather than Bureau of Mines. But in my statement I want to say now, that I intend to discuss those points, to make enforcement more adequate. I did also want to point out that the problem has arisen since enactment of the Coal Mine Safety Act, one which I supported, and I pointed out on the floor at that time the effect of some provisions in that act is the reduction of stripping.

That has happened. I think some change can be made in that rule without any reduction in safety but which would halt this movement from underground mining to stripping.

I may say I don't take any great pleasure out of it, but the predictions I made on the floor at that time unfortunately have all come true. There has been no improvement in the safety and there has been a great loss of employment and it has turned the coal mining business into the strip mining business.

Senator Moss. Thank you, Senator Cooper, and thank you, Mr. Baldwin, for your testimony.

Mr. Baldwin. Thank you.

Senator Moss. Mr. Louis Hunter, executive secretary of the National Independent Coal Producers.

Mr. HUNTER. Thank you, Senator Moss.

I would like to introduce a surface mine operator, Mr. Gene Davidson of the Joanne Coal Co. of Albert, Ky., also on the board of directors of the Surface Mine Association, which is a member of the National Independent Coal Producers Association.

He is a qualified man. There are a lot of statements that were made here today that I don't believe they can back up or are qualified. I would like to agree with you on the subject of abondoning surface mining. It would certainly be disastrous to this country because about 60 percent of the coal produced today is done in surface mining.

As you know, we do have a bad record in deep mining. I am primarily in deep mining and we have a bad record. I know it would be a great blow to the economy and to the health and welfare as well if we go to deep mines.

Thank you.

STATEMENT OF LOUIS HUNTER, EXECUTIVE SECRETARY, NATIONAL INDEPENDENT COAL PRODUCERS; ACCOMPANIED BY GENE DAVIDSON, JOANNE COAL CO., ALBERT, KY.

My name is Louis Hunter, I am executive secretary of the National Independent Coal Operator's Association, a noprofit organization of over 400 small mine operators located throughout the States of Alabama, Virginia, Kentucky, West Virginia, Tennessee, Ohio, and Iowa. I have owned and operated small mines, was superintendent of one large operation for 6 years and have been in the mine industry for the past 20 years, including surface mining.

The National Independent Coal Operator's Association is in favor of safety, but cannot see where more legislation will help. We are and will continue to strive for good reclamation. The Surface Mining and Reclamation Association, which has headquarters in Pikesville, Ky., is a chapter of National Independent Coal Operator's Association always made it compulsory for the members to do a good job of reclaiming their land which has been mined. The members of the Surface Mining and Reclamation Association have always been cooperative and complied with the State laws of Kentucky.

The National Independent Coal Operator's Association, on behalf of its members, proposes that the Federal Government set guidelines for surface mining and reclamation, and leave the administration of the program to the State government. It is our belief that the only legitimate role for the Federal Government to play in the area of mines land reclamation is that of guidance and financial assistance to the States, so they may develop intelligent programs for land reclamation and reuse, and to provide financial backing for research in this area.

In support of this position, NICOA submits that:

One, administration of mined land reclamation by the Federal Government rather than the States would create many problems to the industry.

Two, setting of reclamation standards by the Federal Government rather than the States would not provide proper reclamation and land reuse.

Three, Federal regulation would create a terrible economic hardship for the coal industry by greatly increasing costs when prices are frozen.

Four, the States are developing satisfactory reclamation programs without Federal intervention.

Administration of mined land reclamation by the Federal Government rather than the States would create many problems to the industry. The experience of NICOA members with direct Federal regulation of mining has been confusing. It appears to us that the kind of confusion, waste and inefficiency experienced under the Federal Coal Mine Health and Safety Act of 1965 should under no circumstances repeated in the area of mine land reclamation.

It is a little hard to describe to this committee exactly what Federal administration of mine safety has meant to small mine operators. Our members have been deluged by a blizzard of paper work, a storm of forms and record keeping. Federal authorities are constantly calling upon our members, not about efforts to have safe mines, but rather about the records that have to be kept. It is our experience that Federal inspectors spend so much bureaucratic time making sure that i's are dotted and t's crossed that paperwork has replaced legitimate efforts to have safer mines. The public has to pay for it all, of course, in the form of higher costs, and is getting absolutely nothing for its money.

Moreover, our members have found that it takes forever to get anything approved by Federal bureaucrats. Almost every one of the bills introduced thus far call for some form of Federal licensing before mining operations can begin. We have every reason to believe, based on our experience with a Federal presence in the mines that it takes years of frustration to get anything approved; and the country can't wait that long for its coal.

What we are trying to stress is that in our experience Federal intervention means Federal bureaucracy, and it is so easy for even the best intended acts to drown in bureaucracy. We recognize that some is necessary to do the job, but as we shall point out, in our experience the States can do the same or a better job with a fraction of the red-tape and at a fraction of the cost.

Perhaps the worst aspect of Federal presence is that it can be completely counterproductive. Costs multiply without getting better results. For example, since the passage of the Mine Safety Act, fatalities are increasing instead of decreasing and the fatalities in the mines in Virginia have risen substantially. A great deal of money has been spent and the cost has been passed on to the public, but nothing has been gained.

Since the Federal Coal Mine Health and Safety Act of 1969 has been in effect, there have been over 1,300 mines closed in the following 19 States: Kentucky, West Virginia, Virginia, Pennsylvania, Tennessee, Alabama, Ohio, Montana, Kansas, Arkansas, Colorado, Maryland, Oklahoma, Illinois, Indiana, New Mexico, Utah, Washington, and Wyoming.

A survey is being made to determine how many have closed due to the Federal Coal Mine Health and Safety Act of 1969. According to data from the Bureau of Mines, there have been 267 mines closed due to the act. This represents over 20 percent, but I feel sure when a

complete survey is made, there will be a higher percentage. This represents over 1,700 employees in the 276 mines—and a daily tonnage of over 24,000 tons or approximately 6 million tons annually.

As of this morning, I sent out 900 some odd questionnaires to the operators, whose names and addresses I have, and the latest count is 232 mines that have closed. So we don't want to happen to the surface mines what has happened to the operators of the deep mines.

In a time of concern for the economy in this country, this is a terrific blow, as many thousands of wage earners are effected directly or indirectly by the closure of this many mines.

Setting of reclamation standards by the Federal Government rather than the States would not provide proper reclamation and land reuse. The area of surface mine operations and reclamation is one which, by its very nature, can be effectively and realistically regulated only on the State or local level. This fact was expressly recognized by the Department of the Interior when it sent one of its high-ranking officials, Mr. Julian Feiss, to a conference on surface mining called by the Council of State Governments in 1964. Mr. Feiss encouraged the States to work out land reclamation programs, tailored specifically to local conditions, stating in part:

> A vast open pit operation in the deserts of our Southwestern states is quite different from surface mining operations in Appalachia. Northeast stone quarries, which have integrated into both the economy and the scenery for well over 100 years, cannot be compared to gravel pits, temporarily established to furnish road materials for a new superhighway. The degree of its duration is dependent upon climate, physiography, geographic location, vegetation, land values, and other economic aspects which may or may not make rehabilitation desirable. Water and stream pollution may be a serious problem in one region; in another, they may not be problems at all.

NICOA wholeheartedly agrees what surface mine reclamation must be tailored to local conditions. We further submit that uniform Federal regulation, whether by direct standards setting or by overtightening guidelines, would contravene the basic principle that determining the use and reuse of land is exclusively a State and local function. Through zoning and area planning, our population growth can be handled in an orderly manner. The way that land is reclaimed is a function of its anticipated future use, and therefore exclusively a matter of State and local concern.

For example, in the last 2 or 3 years, land in Kentucky and Virginia that has been surface mined has been reclaimed in different ways for a variety of different reuses. In Wise, Va., the Federal Government has just financed construction of an airport on reclaimed land.

Elsewhere, mined land is being used for housing developments, lakes, parks, game preserves, bowling alleys, manufacturing sites, and a whole host of other uses. Greenhouses are being constructed on surface mine bench in east Kentucky. One can almost hear a bureaucrat in the back room of the Interior Department in Washington laying down uniform rules, wholly ignorant of and ignoring the reuses of land planned by local and State government.

It is clear, moreover, that State and local governments are not meeting their responsibilities in the area of surface mine operations and reclamation practices. In 1964 only a few States had acted in this area. Today 22 States have done so, including all States in which mining is a major industry.

Federal regulations would create a terrible economic hardship for the coal industry by greatly increasing costs when prices are frozen. Federal intervention, as shown above, will mean greatly increased costs without greatly increased benefits. This would create an undue burden on the coal industry, in view of the fact that such costs would have to be absorbed by coal operators because of the President's price freeze.

Recently the Cost of Living Council ruled that employers must absorb, without raising prices, the cost of complying with the Occupational Safety and Health Act of 1970. Undoubtedly, increased costs from reclamation legislation could not be passed on in the form of higher prices. While it is true that the present price freeze is temporary, everyone knows that price controls will thereafter become a lasting feature of our economy. The Wall Street Journal predicted controls for 10 years.

Most of the bills introduced thus far ignore the cost factor. That of course, is wholly consistent with the Mine Safety Act philosophy that the sky is the limit. But in those times of wage and price controls, increased cost is a factor to receive the greatest attention.

It is enough of a burden for a mine operator to absorb reasonable reclamation costs imposed by State legislation. It is unthinkable that an additional burden of the cost of wasteful Federal bureaucracy should be added without securing any measurable advantage.

The States are developing satisfactory reclamation programs without Federal intervention. NICOA points to the fine work being done by Virginia, West Virginia, Pennsylvania, Kentucky and 18 other States. It is hard to imagine what benefits could be derived from a Federal presence that would justify disruption of satisfactory and orderly State regulation.

Representatives of the West Virginia and National Wildlife Federations toured a controversial strip mine near Coopers Rock State Forest Wednesday and concluded it was one of the best they have seen.

"I have looked at about 40 strip mines, and I like this one better than any I have seen from the standpoint of protecting the environment," Dave Bratner, president of the West Virginia Wildlife Federation, said.

The strip mine viewed by a tour of 15 persons Wednesday was one begun recently by the H. L. Kennedy Co. after 8 months of legal haggling.

The federations took the tour, directed by personnel from the State natural resources department, after receiving complaints from citizens who said siltation and acid mine drainage from strip mines were ruinng natural trout-fishing streams.

Alan Krug, a representative of the National Wildlife Federation, said the Kennedy mine was a typical operation and said he could see no reason to oppose its continued operation.

Krug said the wildlife federation does not oppose strip mining.

Bratner said he was impressed with the steps Kennedy had taken to catch siltation and other drainage before it reached streams.

Gov. Arch A. Moore, Jr., asked the natural resources department in February to suspend Kennedy's permit until the situation could be reviewed. The State reclamation board of review unanimously ruled to allow Kennedy to strip mine the area near the scenic State forest.

For the foregoing reasons, the National Independent Coal Operator's Association is opposed to Federal regulation of reclamation prac-

tices in surface mining and request you leave the enforcement and regulation to the States. I am in agreement with Thomas Jefferson on the way our Government should operate.

Of course I am a great believer in Thomas Jefferson and I think he would see it this way too. I might say that the States of Kentucky and Virginia, Pennsylvania, and West Virginia are doing a good job and they have good laws.

Senator Moss. Thank you, Mr. Hunter, for your statement on behalf of the National Independent Coal Producers and we do have State laws in 22 States where we have had complaints about failing to properly enforce those laws and the question is: What should the Federal Government do to get the States to enforce their laws or meet certain standards without displacing? That is one of the problems before this committee.

One of the things I have asked some of the other witnesses about is whether we should permit this 2-year lag period before we get out any Federal guidelines or regulations.

Do you think the Federal Government ought to compel, sooner than the 2-year period or just leave it to the States?

Mr. HUNTER. I think the State should be given sufficient time to administer the laws, and if not, I think the Federal Government should step in. I am not opposed to Federal regulation. I think if the State was not doing the job, the Federal Government should step in.

But the reason the 1,300 mines closed was due to too much regulation. Too many inspections by State and Federal and a lot of it is duplication. I would hate to see the Federal Government completely do away with the State's governments, and it is inclined to be going that way, sir.

Senator Moss. Well, we thank you for your testimony.

Senator Jordan?

Senator JORDAN. No questions.

Senator Moss. Mr. Davidson, you are prepared to answer questions? Do you want to make any statement?

Mr. DAVIDSON. I don't care about making any statement. I will answer any questions if I can.

Mr. HUNTER. In contour stripping, and it is very mountainous in his area——

Senator Moss. Senator Cooper.

Senator COOPER. It is believed that Kentucky has the strictest strip mining laws. I think that is correct in terms of the law itself. I think our people have done a pretty good job of enforcing it.

But, as I said a few minutes ago, in the last year they have been sensationalized. That is because they have been driven out of business with no safety and half of our coal is being mined from these strip mines.

My judgment is unless there is some change in the law, the mine safety law, which would, in fact, increase the safety to take out some provisions that have nothing at all to do with safety. I don't see how we can do it.

Mr. HUNTER. Our fatality rates and accident rates are higher now since the Federal Health and Safety Act of 1969 went into effect. In fact, we furnished Congressman Edmondson a statement of my colleague—Mr. Corbin, who was president then, made the statement and

I helped him gather it. The Bureau of Mines own statistics proved that the fatality rates and accident rates are higher now than they were prior to the enactment of the Federal Health and Safety Act.

Senator Moss. Thank you very much. We appreciate your testimony, Mr. Hunter and Mr. Davidson.

Senator Moss. Our next witness is Mr. Frank Wachter, of the National Industrial Sand Association. We will be glad to have you, sir.

Senator Jordan will take the chair for a few moments, I have to be out. I will be right back.

Senator JORDAN (presiding). You may proceed, Mr. Wachter.

STATEMENT OF FRANK C. WACHTER, CHAIRMAN OF THE COMMITTEE ON PUBLIC AFFAIRS OF THE NATIONAL INDUSTRIAL SAND ASSOCIATION

Mr. WACHTER. Senator Jordan, Senator Cooper, I am Frank C. Wachter, vice president of the Pennsylvania Glass Sand Corp. of Berkeley Springs, W. Va. I am appearing on behalf of the National Industrial Sand Association in my capacity as chairman of that association's committee on public affairs.

The members of the association account for about 90 percent of the Nation's production of industrial sands. This part of the surface mining industry has been described by word and picture in the association's 1968 publication entitled "Shaping the Land—Planned Use of Industrial Sand Deposits," which has been made available to this subcommittee. Its features that are pertinent to the legislation before you, I will briefly refer to.

The type of reclamation that would be suitable for coal if it were written in the bill, would prevent, I would say, at least half of our operations from continuing.

Industrial sands are high-purity silica, or quartz, sands which are the principal ingredient of glass and are used or consumed in the manufacture of a wide diversity of ceramic, chemical, metallurgical, and other products. Its necessity is exemplified by the fact that it received one of the top Government priorities in World War II and the Korean war. Tonnagewise, it is one of the smaller extractive industries, with production in 1969 totaling 29 million tons.

Deposits of suitable size and quality are limited in geographic location and vary widely in their physical characteristics and methods of extraction, ranging from unconsolidated grains that may be dug or dredged from dunes or water to granite-hard rock that must be blasted from formations comprising the sides of mountains, ridges, and bluffs.

On pages 7, 8, and 9 of the booklet before you, you can see some of these physical characteristics. Particularly on page 9, in the lower right-hand corner, I would invite your attention to a deposit just 100 miles from Washington in the east panhandle of West Virginia. It comprises the east slope of a typical Appalachian ridge. It sits at an angle of approximately 45 degrees and it is about 300 feet thick. We have been wondering for some time how this could be rehabilitated. We have already solved some of our other problems with different forms of deposits and at the present time we have working on the problem here at this deposit the man who is the principal author of this

booklet, Mr. Kenneth Shelly, who is one of the outstanding professionals in this field in the country.

Generally only a small area of ground is disturbed each year, and some of the existing sites have been worked for over 50 years and even 100 years. Overburden varies from one to over 100 feet in one instance but generally is small relative to the depth of the deposit.

Because of quality requirements, transportation costs, and limited geographic distribution, operations occur in only about half the States, and in several of these there is only one operation.

Members of this industry have already been engaged in reclamation of their lands. Some examples may be seen in pages 22, 23, and 24 of the above-mentioned publication, which also shows us how to plan land development before extraction. This booklet is part of an ongoing industry program to encourage the combination of mineral extraction and land development among operators and professional planners. It was prepared by a leading professional practitioner in this field. In addition, we have received and used the reports of five reclamation research projects at the University of Illinois sponsored by the National Sand and Gravel Association. These are instructive and valuable aids.

Our association is concerned with the bills before you which address themselves to the surface mining of all minerals, such as S. 77, S. 630, S. 993, and S. 2455. We know that the land comprising many of our deposits cannot be restored to its original contours without digging an equally large cavity to obtain the material, and that even if this were economically feasible, which it is not, restoration of each cavity would involve the digging of an endless number of holes. We also know that we are not the only mining industry facing this problem.

What is to be done in such cases? Are the Nation's industries and citizens to be denied the minerals and products they cannot do without? Not unless we are prepared to revert to the material civilization we found on this continent when we came.

The answer appears to us to lie in imaginative adaptation of the mined land to a new and different use, or, if no immediate use is contemplated, to a condition and appearance that are acceptable in the particular circumstances. The variety of possibilities could and should be infinite.

If such an approach to the problem is made, the law will have to make it clear to those who administer it that the real meaning of reclamation is flexibility and that extraction of minerals where and when they are needed shall not be prohibited in the name of complete restoration of the surface of the land.

It goes without saying that pollution of land and water cannot be tolerated.

In our view, congressional guidelines for State implementation are desirable, and they have our support, provided that such legislation clearly sets forth a policy of imaginative accommodation between the Nation's mineral needs and considerations of environmental desirability. The sacrifice of either in favor of the other would appear to us to be unresponsive to our responsibility.

We join in the recommendations of the National Sand and Gravel Association concerning other phases of legislation in this area, and we thank the subcommittee for this opportunity to express our views.

Senator Moss (presiding). Well, thank you, Mr. Wachter, for your testimony and for providing us with these various publications which help us to understand not only the problem that you have but what you are doing about it and have been doing about it. Your problem is much the same as the crushed stone people that were before you earlier, in that when you take materials out there really is nothing left to put back in. You made a cavity and you must deal then with the cavity in the earth so it doesn't become a danger point or an eyesore on the landscape.

These pictures I have had a chance to glance at, a few of them, indicate that there are a number of things which you do already to make those acceptable and consequently no permanent damage to the beauty of our land.

We are certainly glad to have had you come and testify and give us a point of view of your industry because, as I said earlier, we get to thinking all about the coal people and they are important and have a bigger problem, perhaps, than you do, but nevertheless we want to consider what your situation is when we draft our legislation so that we can make it applicable and not onerous to you and to help you in the effort you are making to restore and utilize your excavated land for the benefit of our residents.

I don't know if my colleagues have any questions?

Senator JORDAN. I have no questions.

Senator COOPER. I am not a member of the committee but your testimony is very interesting and you believe your industry should be treated differently in separate legislation if any legislation is enacted with regard to coal?

Mr. WACHTER. I have been mixed up in legislation of this specific character in a number of different States. Our company operates in nine different States. Most recently Pennsylvania has just passed legislation in this field that extends legislation on coal to which it has applied to all other surface mining. This consideration of this problem in Pennsylvania has been going on for 3 years. Originally other mineral industries in Pennsylvania wanted separate bills. The administration of the executive government of Pennsylvania had a preference for a single bill for all surface mining. The way it has turned out, this is what has come through. There has been in the past 3 years considerable difficulty in getting language into a bill that was flexible enough to accommodate other surface mining operations and not just coal. There was naturally a strong tendency to take the coal law on the books and modify as little as possible to come up with an acceptable bill.

I think the direct answer to your question is this, sir. If the bill itself can be made flexible enough in what its requirements are for reclamation, or what its requirements are for a permit to operate at all, if that can be flexible enough, then the variety of different types of reclamation can be taken care of, in regulations rather than the bill, and also in the case of individual applications for permits. I think it is feasible to put them all in one bill, but it takes a much more careful draftsmanship to do it.

Senator Moss. Thank you very much, Mr. Wachter. We appreciate it.

Senator Moss. Mr. Thieme of the National Sand and Gravel Association. Did I pronounce your name right?

STATEMENT OF WALTER I. THIEME, CHAIRMAN OF THE BOARD OF AMERICAN AGGREGATES CORP. OF GREENVILLE, OHIO

Mr. THIEME. Yes, that is correct.

I am Walter I. Thieme, chairman of the board of American Aggregates Corp. of Greenville, Ohio. I appear on behalf of the National Sand and Gravel Association, whose member companies produce the major portion of commercial sand and gravel production in the United States. My remarks are directed to those bills which include all minerals, S. 77, S. 630, S. 993, S. 2455, and S. 2777.

Sand and gravel comprise a major portion of the so-called construction aggregates, minerals whose principal use is in the construction and maintenance of all kinds of roads and structures. They are low-value, short-haul commodities; in many cases, the cost of transportation to the site of use exceeds the value at the point of origin. Because of these characteristics and because of the preponderance of construction activity in urban areas, extraction of sand and gravel is usually concentrated in or near urban areas.

Sand and gravel extraction is entirely area surface mining, as distinguished from the commonly used term strip mining. Since the overburden often is thin when compared with the deposit mined, it is manifestly impossible to speak of restoring the ground to its original condition in a majority of operations.

The U.S. Bureau of Mines figures for 1970 are expected to show, when published, national production of sand and gravel at approximately 944 million tons. The final figures for 1969—the latest completed by the Bureau of Mines—show 937 million tons for all U.S. production of which 731 million tons, or 78 percent was commercial production as distinguished from Government and contractor production. The Bureau reports about 6,300 operations, with production in every State.

I might mention here, that the impact of these bills in number of companies fixed. There may be more companies fixed in the sand and gravel industry than perhaps all the rest of the mining put together, because this is such a scattered, fragmented industry.

Based on an estimated average yield of 65,000 salable tons per acre, this works out to be an average of about 2.3 acres consumer per operation per year. While this method of calculation might be questioned, I can cite the figures for our own company to give a picture of the size of sand and gravel operations.

Even though we are one of the larger producers of sand and gravel in the United States, our average plant consumes only 11.2 acres of deposit per year. Thus, in evaluating the administrative feasibility of regulating sand and gravel operations, it should be remembered that this is an industry with a very large number of operations of comparatively small size and which mine at a relatively slow rate areawise each year.

Whether or not the land requirements for sand and gravel extraction can be considered moderate, the fact is, that the necessary and historic concentration of such facilities in and near metropolitan areas has led to expensive competition for land and to extensive regulation of aggregate-bearing lands through the zoning authority of local and county jurisdictions.

At the present time 15 States have surface mining statutes which include sand and gravel. The 1969 commercial production in those States accounts for 23 percent of national commercial tonnage. In addition, in at least five major producing States work has been in progress in their legislatures on surface mining regulation which would include sand and gravel. California, Ohio, Pennsylvania, Massachusetts, and New Jersey are among these. See appendix A.

In 11 States, not presently having State laws, local, county or regional jurisdictions have widespread control over sand and gravel extraction through their zoning authorities. So far as the association has been able to determine, these jurisdictions regulate in excess of 50 percent of the sand and gravel operations in each of these States, probably reaching as much as about 85 percent of the operations in California and Maryland. These 11 States account for 53 percent of 1169 national commercial tonnage. See appendix B.

The sand and gravel operations in these two categories of States—for example, those having State reclamation laws and those in which there is extensive local regulation—totaling 26 States, had 1969 commercial production amounting to 76 percent of national commercial production. It is to be noted that not all operations are covered in the 11 States listed as having extensive local control.

On the other hand, the States not lised in these two categories have varying degrees of local control. In the absence of the kind of nearly complete survey which only the Bureau of Mines is able to achieve, it seems a reasonable estimate that approximately two-thirds of commercial production is presently under State and/or local control, with local control in a substantial preponderance.

In many cases where there are State regulatory statutes, sand and gravel operations are under dual jurisdiction, since most of the State statutes do not provide for supersedence of local zoning regulations on reclamation requirements.

In summary of the regulatory situation, it is reasonably predictable that in the near future something like 75 percent of commercial sand and gravel production will be under control regardless of possible Federal action.

Zoning control of sand and gravel extraction is nothing new in the industry. Neither is planned after-use of mined land new to the industry. The company with which I am associated began planned reclamation in the early twenties and has never yet left a property in derelict condition. Zoning controls spread extensively and rapidly beginning at the close of World War II and by 1952 had become such a significant factor that the National Sand and Gravel Association established a special study committee. In 1955 the association began a program, which still continues, designed to convince both the industry and the land-planning profession that the public interest requires:

One, the orderly, economic, and full development of sand and gravel resources, and

Two, the restoration of worked-out lands to after-uses amenable and suitable to the surrounding environment.

We have promoted, we believe with significant success, the multiple-use concept of land planning—development of the mineral values fol-

lowed by return of the land to uses such as recreation, residential, institutional, industrial, and commercial sites and waste disposal sites. Some of the major publications in this program have been made available to this committee and are listed in the appendix C.

This program has been commended by Mr. Laurence S. Rockefeller of the Conservation Foundation, by Mr. John A. Carver, Jr., at the time when he was Under Secretary of the Interior, and by Senator Lee Metcalf when he presided at the 1968 hearings on Surface Mining Reclamation before the Senate Committee on Interior and Insular Affairs.

Reclamation in our industry is already being aided by the location of our major operations in the metropolitan regions where open land is scarce and expensive. Many of our operators have found it profitable to reclaim their properties for a multitude of different uses—from lakeside housing developments to sanitary landfills. Where this economic factor is present, it is no more necessary to legislate reclamation than it would have been to legislate the excavation in the first place. Thus, this economic factor is another reason why sand and gravel reclamation is being, and will be, accomplished regardless of the enactment of any further legislation on the subject.

The policy of the National Sand and Gravel Association on Federal control of mined-land reclamation, adopted by its board of directors in January 1968, and reconfirmed in August 1971, is as follows:

> The Association is opposed in principle to direct federal control of reclamation in the sand and gravel industry; in the event that the enactment of such legislation seems probable; however, efforts should be made to assure the reasonableness and administrative workability of such legislation, the protection of the public interest in the maintenance of sand and gravel reserves, and the avoidance of a multiplicity of regulatory sources.

With the widespread and still growing extent of both local and State government regulation of land use in sand and gravel extraction and with the growing acceptance of good multiple-use planning by the industry, and with solid economic reasons favoring sand and gravel reclamation, we respectfully submit that Federal intrusion into this area may serve only to complicate matters.

With the overriding authority granted to the Secretary of the Interior by the proposed Federal laws, there could be a real possibility of stifling flexibility and imagination in planning after-uses of land if an attempt is made to set up guides and criteria burdened with specific numbers and dimensions.

This association particularly objects to the possibility of three sets of regulations. As previously pointed out, many operations in States having a State surface mining statute requiring permit and bond, also fall under zoning ordinances requiring permit and bond, while both may have specific reconditioning requirements. If, under a Federal law, the Secretary of the Interior does not approve a State plan and moves in with Federal regulations, the State and local governments appear to be under no obligation to yield their jurisdiction and the operator ends up under three sets of regulations, permits, and bonds.

If the Congress does see fit to pass such a law, we suggest that it can be improved and made more workable by some changes which we offer.

First, we suggest that the Federal administering agency and the States be empowered to decline jurisdiction where appropriate studies and hearings establish that reclamation is being adequately regulated

by local jurisdictions or is being accomplished in practice. Further, in this connection, it should be provided that operation and reclamation shall be subject to only one source of regulatory authority.

Second, the statute should recognize that some deposits are of such depth that reconditioning beyond the requirements of public safety and protection of offsite resources is manifestly not feasible or that at least it will take a very long time to refill such pits with acceptable waste. The public interest is not necessarily served by prohibiting the development of such deposits. We suggest, therefore, that it be made clear that the regulatory agencies have discretionary power to permit extraction in such cases, providing other environmental safeguards can be met.

Third, it should be made clear that the Federal law can be applicable only to lands affected after the effective date of the act. In particular, in S. 630, surface mined area is defined as an area on which the operations of a surface mine are concluded after the effective date. . . . This wording would bring under the purview of the act those portions of a continuing operation which had been worded previous to the passage of the act. This is inequitable and possibly unconstitutional.

Fourth, it should be made clear that modification of reclamation plans as deemed desirable because of unanticipated geologic, economic, or land-use factors is permissible.

Fifth, a Federal Surface Mining Board of Review should be established to hold hearings on disapproved State plans and individual aggrievances of mine operators.

Sixth, a section should be added providing for judicial review of any final order issued by the suggested Board of Review.

A Board of Review and judicial review are provided for in the Federal Mine Safety Act and are appropriate additions to any surface mining act.

To sum up, for the past 16 years it has been one of the foremost policies of the National Sand and Gravel Association, under the direction of its board of directors, to sponsor and fund an education and research program in the cause of sound land use.

A great deal has been accomplished in multiple use of aggregate-bearing lands through the efforts of many people in the industry and the professional planners. Without question, that doctrine needs wider application. We hope that any Federal enactment will not stifle imaginative multiple-use planning in rigid criteria and multiple layers of authority.

We are submitting separately for the record our suggested wording for modifications in the several bills.

Senator Moss. Very good. We will be glad to have them and include them in the record so that we have before us the specific recommendations that you make on the bills that we are considering.

We appreciate you coming to present this statement and to point out the size of your industry. All of us recognize that there are sand and gravel mine pits in every State of the country, and therefore, probably the commonest of our land disturbance areas.

We certainly want to give attention to it and not in any way be unreasonable in the relation; although, we want also to have the maximum degree of restoration or utilization of the open areas created so that they are not defacing to our landscape.

In the State that I come from, or the city from which I come, we have our sand and gravel pits on the mountainside all around us and we dig in them and leave some of them in pretty bad shape. We probably need a little edification done out there. I am sure that much more can be done.

Well, I appreciate that. I don't know if I have any specific questions to ask. Maybe my colleagues do.

Senator JORDAN. I have no questions.

Senator COOPER. No questions.

Senator MOSS. Thank you very much, sir.

(The documents referred to follow:)

APPENDIX A

STATES HAVING STATE SURFACE MINING STATUTES WHICH INCLUDE SAND AND GRAVEL—TONNAGE FROM U.S. BUREAU OF MINES

	Commercial production in 1969, million tons
Alabama	8.2
Colorado	10.7
Georgia	3.8
Illinois	43.3
Iowa	16.7
Kentucky	8.1
Missouri	10.9
North Carolina	7.5
Oklahoma	4.1
Oregon	12.0
South Dakota	3.3
Tennessee	5.6
Virginia	12.0
Washington	18.0
West Virginia	5.9
Total	170.1

1969 National Commercial Production=730.7 million tons. Above States represent 23% of National Commercial.

1969 National Total Production=937.0 million tons. Above States represent 18% of National Total.

APPENDIX B

STATES HAVING EXTENSIVE LOCAL CONTROL (ESTIMATED AT MORE THAN 50% OF THE JURISDICTIONS) BUT NO STATE CONTROL OF SAND AND GRAVEL EXTRACTION (TONNAGE FROM U.S. BUREAU OF MINES)

	Commercial production in 1969, million tons
California	102.7
Connecticut	7.8
Indiana	25.3
Maryland	14.0
Massachusetts	16.5
Michigan	50.7
Minnesota	41.8
New Jersey	20.3
New York	26.6
Ohio	49.1
Wisconsin	31.8
Total	385.9

1969 National Commercial Production=730.7 million tons. Above States represent 52.7% of National Commercial.

1969 National Total Production=937.0 million tons. Above States represent 41.4% of National Total.

APPENDIX C

Publications of the National Sand and Gravel Association on Rehabilitation of Sand and Gravel Lands

1. Case Histories: Rehabilitation of Worked-Out Sand and Gravel Deposits; National Sand and Gravel Association, 1961.
2. "Site Utilization and Rehabilitation Practices for Sand and Gravel Operations"; by Schellie and Rogier, 1963.
3. "Simultaneous Excavation and Rehabilitation of Sand and Gravel Sites"; by Anthony M. Bauer; A General Survey and Analysis of Pre-Operational Planning Factors and Procedures; First Research Project of the University of Illinois, 1964.
4. "Practical Operating Procedures for Progressive Rehabilitation of Sand and Gravel Sites"; by Craig Johnson; Second Research Project of the University of Illinois, 1965.
5. "Selecting Land Use for Sand and Gravel Sites"; by David R. Jensen; Third Research Project of the University of Illinois, 1967.
6. "Site Planning for Sand and Gravel Operations"; by John G. Baxter; Fourth Research Project of the University of Illinois, 1968.
7. "Realizing the Recreation Potential of Sand and Gravel Sites"; by George Pickles; Fifth Research Project of the University of Illinois, 1970.
8. "Land Use and Planning and the Sand and Gravel Producer"; by Vincent P. Ahearn, Jr., 1964.
9. "Soil Surveys for Exploration and Revegetation"; National Sand and Gravel Association, with the technical assistance of the U.S. Department of Agriculture, Soil Conservation Service.

National Sand and Gravel Association—National Industrial Sand Association

SUGGESTED AMENDMENTS TO S. 77

Title I, Section 101(b)(2)—it is suggested that the following be substituted:

(2) No person shall be permitted to continue or commence operations to mine by strip or surface methods without first securing from the Secretaries a permit or license applicable to those areas mined after the effective date of this Act.

Title I, Section 101(b)(5)—it is suggested that the following be substituted:

(5) Surface and strip mining operations and reclamation procedures shall be required to be preplanned, and approved by the Secretaries prior to issuance of a permit or license; such plans may be modified from time to time to reflect discovery of unanticipated geological, operational, economic, land-use or other factors.

Title I, Section 101(b)(7)—it is suggested that the following be substituted:

(7) If warranted, the Secretaries may prohibit strip and surface mining in those cases where reclamation is considered unfeasible because of phsyical considerations, such as ground-surface slope, but not limited thereto; the Secretaries may permit strip and surface mining in those cases where it is manifestly unfeasible to recondition the area of mineral extraction provided that damage to off-site resources can be prevented and public safety be insured during and following the mining operation.

Title I, Section 101(b)(8)—it is suggested that the following be substituted:

(8) Where practicable, reclamation work shall be required to be integrated into the mining cycle, and appropriate time limits shall be established for the completion of reclamation.

Title I, Section 101(b)—it is suggested that a new subsection be added to be designated (11) and to read as follows:

(11) If the Secretaries find after public hearing that regulation of a mining industry, or a segment thereof, is being accomplished in a manner commensurate with the purposes of this Act by a regional, county, or local agency, the Secretaries may decline jurisdiction over such operations.

Title I, Section 102(c)—it is suggested that appeal be taken to a Federal Surface Mining Reclamation Board of Review instead of to the Secretaries. Suggested wording is separately attached.

70-867 O—72—pt. 1——36

SUGGESTED AMENDMENTS TO S. 630

Definitions. Section 2

For Subparagraph (b), substitute the following:

(b) "reclamation" means activity which is taken during and following a mining operation to prevent or substantially reduce adverse environmental effects.

For Subparagraph (e) substitute the following:

(e) "surface mined area" means any area on which the operations of a surface mine are conducted after the effective date of a State plan or of the regulations issued under Section 8 of this Act, whichever is applicable;

Congressional Finding. Section 3

For Subparagraph (a) substitute the following:

(a) That extraction of minerals by surface mining is a significant and essential industrial activity and contributes to the economic well-being, security, health and welfare of the nation.

For Subparagraph (c), substitute the following:

(c) That regulation by the Secretary and cooperation by the States as contemplated by this Act are appropriate to prevent or substantially reduce such burdens and adverse effects;

State Plan. Section 7(a)(1)

For this subsection substitute the following:

(1) he determines that, in his judgment, the plan includes laws and regulations which—

(A) promote an appropriate relationship between the extent of reclamation that is required and the need for development of the nation's mineral resources;

(B) provide that an adequate mining plan be filed with, and approved by the State agency and a permit be obtained to insure, before surface mining operations are commenced or continued, that they will be conducted in a manner consistent with said mining plan, provided that modification of such mining plans may be filed with and approved by the State agency from time to time when such modifications are commensurate with the purposes of this Act;

(C) contain in connection with surface mines and surface mined areas, criteria relating, where applicable, to (i) the control of erosion, flooding and pollution of water, (ii) the isolation of toxic materials, (iii) the prevention of air pollution by dust or burning refuse piles or otherwise, (iv) the reclamation of surface mined areas by revegetation, replacement of soil, or other means, (v) the maintenance of access through mined areas, (vi) the prevention of land or rockslide, (vii) the protection of fish and wildlife and their habitat, and (viii) the prevention of hazards to public health and safety;

(D) promote the reclamation of surface mined areas by requiring that reclamation work be planned in advance and completed within reasonably prescribed time limits, provided that such reclamation plans may be modified from time to time to reflect discovery of unanticipated geological, operational, economic, land-use or other factors;

(E) provide for evaluation of environmental changes in surface mined areas and in areas in which surface mines are operating in order to accumulate data for assessing the effectiveness of the requirements established;

(F) provide adequate measures for enforcement and civil penalties for failure to comply with applicable State laws and regulations; periodic inspections of surface mines and reclamation work; periodic reports by mining operators on the methods and results of reclamation work; the posting of performance bonds adequate to insure that the requirements of the permits are met; and the revocation of permits for failure to comply with the terms of the permits;

(G) provide that any surface mining operation and the reclamation of surface mined areas shall be subject to not more than one source of regulatory authority for the administration of laws and regulations under this Act; and

(H) allows discretionary authority in the State agency to approve applications for permits in those cases in which backfilling, grading, resoiling and/or revegetation of the area of land from which minerals are extracted are manifestly unfeasible provided that the proposed plan provides for the prevention

of damage to off-site land, water and air and insures public safety both during and following the extraction operation.

Add a new Section 7(c) as follows:

(c) In the event that the Secretary does not approve a plan submitted by a State in accordance with this section, or in the event of the withdrawal of the Secretary's approval in accordance with Subsection (b) above, such State may appeal the Secretary's decision to the Federal Surface Mining Reclamation Board of Review, in accordance with Section —— and Section —— of this Act.

Federal Regulation of Surface Mines. Section 8(a)

Before the last sentence of this paragraph insert the following sentence:

If the Secretary finds, after public hearing and in consultation with the aforesaid advisory committee, that regulation of surface mining operations of particular mining industries or of segments thereof is being performed in a manner commensurate with the purposes of this Act by regional, county or local agencies he may decline jurisdiction over such operations.

Add a new Section 8(f) as follows:

(f) A mine operator aggrieved by any decision of the Secretary made pursuant to this section shall be entitled to review by the Federal Surface Mining Reclamation Board of Review in accordance with Section —— and Section —— of this Act.

We suggest the addition to S. 630 of provisions for a Federal Surface Mining Board of Review and judicial review. The attached wording follows similar provisions in the Federal Mine Safety Act.

SUGGESTED AMENDMENTS TO S. 993

Section 101. Definitions

For Subsection (e), substitute the following:

(e) "mined area" means the surface and subsurface of an area in which mining operations are conducted after the effective date of this Act and includes roads appurtenant to any such area, land excavations, workings, refuse banks, tailings, spoil banks, and areas in which structures, facilities, equipment, machines, tools, or other materials or property which result from, or are used in, mining operations are situated;

For Subsection (h), substitute the following:

(h) "Reclamation" means activity which is taken during and following a mining operation to prevent or substantially reduce adverse environmental effects.

Section 102. Congressional Findings and Declarations

For Subsection (d), substitute the following:

(d) that the cooperative effort established by this Act is necessary to the prevention or substantial reduction of the adverse environmental effects of present and future mining operations; and

Section 201. State Environmental Regulations for Mining Operations

Subsection 201(a)(3)—substitute the following:

(3) the regulations require reclamation of mined areas by revegetation, replacement of soil, or other means; that a reclamation plan be prepared and approved in advance of initiation or continuance of mining operations; that so far as feasible reclamation work be made an integral part of the mining operation and be completed within reasonably prescribed time limits; that a reclamation plan may be modified from time to time to reflect discovery of unanticipated geological, operational, economic, land-use or other factors.

Subsection 201(a)(4), substitute the following:

(4) the regulations require posting of performance bonds in amounts at all times sufficient to insure the reclamation of mined areas in the event that the permit conditions are not complied with or that reclamation is not completed in accordance with the reclamation plan;

Subsection 201(a)(8), substitute the following:

(8) the regulations designate a single agency, or with the Secretary's approval an interstate organization, upon which the responsibility for promulgating, ad-

ministering and enforcing regulations and issuing permits is conferred by the State. Full participation in promulgatiing regulations shall be insured to those agencies responsibile for air quality, water quality and other areas of environmental protection;

Subsection 201(a)(9), substitute the following:

(9) the aforesaid State agency or inerstate organization has vested in it the regulatory and other authorities necessary to carry out the purposes of this Act. Such authority shall include, but not be limited to, discretionary authority to prohibit mining operations where the area affected cannot be adequately reclaimed and to permit mining in those cases in which backfilling, grading, resoiling and/or revegetation of the area of land from which minierals are extracted are manifested unfeasible, provided that damage to off-site natural resources can be prevented and public safety insured both during and following the extraction operation. Such authority shall also include the authority to bring or request the bringing of civil and criminal actions for violation of applicable laws and regulations;

Section 201. State Environmental Regulations for Mining Operations

Add new subsection designated (f), as follows:

(f) In the event that the Secretary does not approve a plan submitted by a State in accordance with this section, or in the event of withdrawal of the Secretary's approval in accordance with subsection (e) above, such State may appeal the Secretary's decision to the Federal Surface Mining Reclamation Board of Review, in accordance with Section —— and Section —— of this Act.

Section 202. Federal Regulation of Mining Operations

Add a new subsection to be designated (d), as follows:

(d) If the Secretary finds after public hearing that regulation of surface mining operations of particular mining industries or of segments thereof is being performed in a manner commensurate with the purposes of this Act by regional, county or local agencies he may decline jurisdiction over such operations.

Also add a new subsection to be designated (e), as follows:

(e) A mine operator aggrieved by any decision of the Secretary made pursuant to this section, shall be entitled to review by the Federal Surface Mining Reclamation Board of Review in accordance with Section —— and Section —— of this Act.

We suggest the addition of S. 993 of provisions for a Board of Review and judicial review. Suggested wording, in general following the Federal Mine Safety Act, is separately attached.

SUGGESTED AMENDMENTS TO S. 2455

For the definition of "reclamation" substitute the following:

(3) "Reclamation" or "reclaim" means the return of the land disturbed by mineral extraction to some useful purpose where it can be reasonably accomplished and the prevention of damage to off-site natural resources during and following the extraction operation;

For the definition of "surface mine" substitute the following:

(5) "surface mine" means (A) any area of land from which minerals are extracted from their natural deposits by mining on the surface after the effective date of this Act, (B) private and public ways and roads appurtenant to such area, and (C) lands, excavations, workings, refuse banks, dumps, spoil banks, structures, facilities, equipment, machines, tools, or property on the surface, resulting from, or used in, extracting minerals from their natural deposits by strip mining methods after the effective date of this Act, or the onsite processing of such minerals;

Effective Date Section 101. Add the following subsection to be designated (d):

(d) If the Secretary finds after public hearing that regulation of a mining industry, or a segment thereof, is being accomplished in a manner commensurate with the purposes of this Act by a State, regional, county or local agency, the Secretary may decline jurisdiction over such operations.

Application for Permits, Section 103. Subparagraph (a)(8), regarding requirements for reclamation plan—substitute the following:

(8) A complete plan of reclamation for the area of land to be affected, including, but not limited to, the method of strip mining, engineering technique,

the character and description of the equipment, prevention of harmful water drainage or discharge from the site of the operation, a plan for backfilling, grading, resoiling, and revegetation where applicable, an estimated time schedule for completion of each of the phases, and an estimate of the cost of reclamation per acre.

Approval of Applications. Section 104. For subsection (a) substitute the following:

(a) Upon the filing of an application in accordance with Section 103 of this title, the Secretary shall investigate and may approve or disapprove the application. No permit application shall be approved if the Secretary finds on the basis of information set forth in the application or from information available to him and made available to the applicant that the requirements of this Act, or standards, rules and regulations adopted thereunder, will not be observed, or that there is probable cause to believe that the plan of reclamation proposed in the application cannot be achieved. In those cases in which backfilling, grading, resoiling and/or revegetation of the area of land from which minerals are extracted are manifestly unfeasible, the Secretary may approve the applicaton provided he finds that the proposed plan provides for the prevention of damage to off-site land, water and air resources and insures public safety both during and following the extraction operation.

Bonding Requirements. Section 105. For the first sentence in subsection (a) substitute the following:

(a) After a permit application has been approved, but before a permit is issued, the applicant shall file with the Secretary the bond for performance, on a form prescribed and furnished by the Secretary, payable to the Secretary and conditioned that the operator shall faithfully perform all the applicable requirements of hs permit or any revisions to the permit approved by the Secretary.

Revocation of Permits. Section 107. Substitute the following:

Sec. 107. The Secretary may revoke any permit if, after a hearing, he determines that the operator has violated any provision of his permit or any revisions to the permit by the Secretary.

Reclamation. Section 108. For subsection (b) substitute the following:

(b) The objectives of this Act are: (1) To prevent or substantially reduce damage to natural resources arising from surface mining; (2) Return the land disturbed by surface mining to some useful purpose in all cases where it can be reasonably accomplished; and (3) Foster the orderly and economic recovery of the mineral resources of the nation.

The Secretary shall evaluate all applications in the light of these objectives.

Title II. Section 201(a)(9), regarding requirements in a State plan—substitute the following subsection:

(9) the State agency responsible for the administration and enforcement of the regulations has vested in it the regulatory and other authorities necessary to carry out the purposes of this title, including, but not limited to, discretionary authority to prohibit or to permit surface mining operations where the area of mineral extraction cannot be fully reclaimed, to order cessation of mining operation because of imminent hazard to persons or property, to revoke permits for failure to comply with the terms of the permit or of the provisions of the regulations or laws under which permits are issued, and to bring or request the bringing of civil actions for violation of applicable laws and regulations;

It is recommended that Board of Review and judicial review be provided for. Suggested language following in general the Federal Mine Safety Act is separately attached.

PROPOSED AMENDMENTS TO S. 2777

First, it is suggested that "Surface Mine" be used throughout the Bill in place of "Strip Mine."

Definitions: Section 2

Subparagraph (3), definition of reclaiming—substitute the following:

(3) "Reclamation" or "reclaim" means the return of land disturbed by mineral extraction to some useful purpose or acceptable condition to the extent that it can be reasonably accomplished and the prevention of damage to off-site natural resources during and following the extraction operation.

Subparagraph (5), definition of Surface Mine—substitute the following:

(5) The term "surface mine" means (A) any area of land from which minerals are extracted from their natural deposits by mining on the surface after the effective date of this Act, (B) private ways and roads appurtenant to such area, and (C) lands, excavations, workings, culm banks, refuse banks, dumps, spoil banks, structures, facilities, equipment, machines, tools, or other property on the surface, resulting from or used in extracting minerals from their natural deposits by surface mining methods after the effective date of this Act, or the onsite processing of such minerals.

Permit for Surface Mining. Section 3

Add the following subsection to be designated (d):

(d) If the Secretary finds after public hearing that regulation of a mining industry, or a segment thereof, is being accomplished in a manner commensurate with the purposes of this Act by a State, regional, county, or local agency, the Secretary may decline jurisdiction over such operations.

Applications for Permit. Section 4

Subparagraph (a)(5), substitute the following:

(5) unless waived by the Secretary, the written consent of the owner of the surface of the land upon which the applicant proposes to engage in strip mining stating that the applicant or his agents, and any officer, employee or agent of the Federal government may, at any time within a five-year period immediately after the operation is completed or abandoned, enter upon such land for the purpose of inspection and reclamation;

(10) A complete plan of reclamation for the area of land to be affected by the operation for which such permit is sought, including but not limited to, an explanation of the method of surface mining to be used in such operation, a description of the engineering technique to be used in such operation including information with respect to the character and description of the equipment to be used, a description of the system to be used to contain harmful water drainage, or discharge from the site of the operation, a plan for backfilling, grading, resoiling and revegetation where applicable, an estimated time schedule for completion of each of the phases, and an estimate of the cost per acre of the proposed reclamation.

Subparagraph (c), regarding revisions in the permit—substitute the following:

(c) During the term of the permit the operator may apply to the Secretary for a revision of the permit to reflect the discovery of unanticipated geological, operational, economic, land-use, or other factors. The Secretary may grant the operator such revision if he finds that such a change is commensurate with the purposes of this Act.

Approval of Application for Permit, Section 5

For Section 5(a) substitute the following:

Upon the filing of an application under Section 4 of this Act, the Secretary shall investigate and may approve or disapprove the application. No application for a permit shall be approved if the Secretary finds, on the basis of information set forth in the application, or on the basis of information available to him and made available to the applicant, that the requirements of this Act, or standards and regulations adopted thereunder, will not be observed, that an area of critical environmental concern or historical value would be destroyed by the proposed surface mining, or that there is probable cause to believe that the plan of reclamation proposed in the application cannot be achieved. In those cases in which backfilling, grading, resoiling and/or revegetation of the area of land from which minerals are extracted are manifestly unfeasible, the Secretary may approve the application provided he finds that the proposed plan provides for the prevention of damage to off-site land, water and air and insures public safety both during and following the extraction operation.

Performance Bond, Section 6(a)

For the first sentence in this paragraph substitute the following:

After a permit application has been approved, but before a permit is issued, the applicant shall file with the Secretary a bond for performance, on a form prescribed and furnished by the Secretary, payable to him as Secretary and conditioned that the operator shall faithfully perform all the requirements of his permit or any revision to the permit approved by the Secretary.

Revocation of Permits. Section 9(a)

For this paragraph substitute the following:

(a) The Secretary may revoke any permit issued under this Act, if, after a public hearing, he determines that the operator has violated any provision of his permit or any revisions to the permit approved by the Secretary.

Release of Bond. Section 11(a)

For this paragraph substitute the following:

(a) Two full years after the completion of the planting of an area of land affected by surface mining or the completion of such other type of reclamation as may be required by the permit, the operator may file a request, on a form provided by the Secretary, for the release of the bond required under this Act, or for the release of such portion of bond as may be assignable to the completed portion of the land affected. The request shall state—

(1) the location of the area and number of acres;

(2) the permit number;

(3) the amount of bond; and

(4) if applicable, the type and date of planting of vegetative cover and the degree of success of growth.

For the second sentence in (b) substitute the following:

If the Secretary finds that the reclamation meets the requirements of the permit he shall send by registered mail to the operator a release of such bond or other security.

Standards Section 12

Subsection (d), substitute the following:

(d) Such standards shall consider the nature of the industry involved and any regional differences which would require variations of applicable standards to prevent or substantially reduce adverse environmental effects.

It is suggested that a Federal Surface Mining Reclamation Board of Review be provided in addition to the judicial review set forth in Section 5. Suggested wording is separately attached.

SUGGESTED WORDING TO BILLS

Sec. (a) An agency is hereby created to be known as the Federal Surface Mining Reclamation Board of Review, which shall be composed of five members who shall be appointed by the President, by and with the advice and consent of the Senate.

(b) The terms of office of members of the Board shall be five years, except that the terms of office of the members first appointed shall commence on the effective date of this section and shall expire one at the end of one year, one at the end of two years, one at the end of three years, one at the end of four years and one at the end of five years, as designated by the President at the time of appointment. A member appointed to fill a vacancy caused by the death, resignation, or removal of a member prior to the expiration of the term for which he was appointed only for the remainder of such unexpired term. The members of the Board may be removed by the President for inefficiency, neglect of duty, or malfeasance in office.

(c) Each member of the Board shall be compensated at the rate of —— for each day of actual service (including each day he is traveling on official business) and shall, notwithstanding the Travel Expense Act of 1949, be fully reimbursed for traveling, subsistence, and other related expenses. The Board, at all times, shall consist of two persons who by reason of previous training and experience may reasonably be said to represent the viewpoint of surface mine operators, two persons who by reason of previous training and experience may reasonably be said to represent the viewpoint of conservation interests, and one person, who shall be Chairman of the Board, who shall be a graduate engineer, forester, landscape architect, or attorney, with experience in the surface mining industry, and who shall not, within one year of his appointment as a member of the Board, have had a pecuniary interest in, or have been regularly employed or engaged in, or have been an officer or employee of the Department of the Interior.

(d) The principal office of the Board shall be in the District of Columbia. Whenever the Board deems that the convenience of the public or of the parties may be promoted, or delay or expense may be minimized, it may hold hearings or conduct other proceedings at any other place. The Board shall have an official seal which shall be judicially noticed and which shall be preserved in the custody of the secretary of the Board.

(e) The Board shall, without regard to the civil service laws, appoint and prescribe the duties of a secretary of the Board and such legal counsel as it deems necessary. Subject to the civil service laws, the Board shall appoint such other employees as it deems necessary in exercising its powers and duties. The compensation of all employees appointed by the Board shall be fixed in accordance with the Classification Act of 1949, as amended.

(f) Three members of the Board shall constitute a quorum, and official actions of the Board shall be taken only on the affirmative vote of at least three members; but a special panel composed of one or more members, upon order of the Board, shall conduct any hearing provided for in section 14 and submit the transcript of such hearing to the entire Board for its action thereon. Every official act of the Board shall be entered of record, and its hearings and records thereof shall be open to the public.

(g) The Board is authorized to make such rules as are necessary for the orderly transaction of its proceedings, which shall include requirement for adequate notice of hearings to all parties.

(h) Any member of the Board may sign and issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents, and administer oaths. Witnesses summoned before the Board shall be paid the same fees and mileage that are paid witnesses in the courts of the United States.

(i) The Board may order testimony to be taken by deposition in any proceeding pending before it, at any stage of such proceeding. Reasonable notice must first be given in writing by the party or his attorney proposing to take such deposition to the opposite party or his attorney of record, which notice shall state the name of the witness and the time and place of the taking of his deposition. Any person may be compelled to appear and depose, and to produce books, papers, or documents, in the same manner as witnesses may be compelled to appear and testify and produce like documentary evidence before the Board, as provided in subsection (h). Witnesses whose depositions are taken under this subsection, and the persons taking such depositions shall be entitled to the same fees as are paid for like services in the courts of the United States.

(j) In the case of contumacy by, or refusal to obey a subpoena served upon, any person under this section, the Federal district court for any district in which such person is found or resides or transacts business, upon application by the United States, and after notice to such person to appear and give testimony before the Board or to appear and produce documents before the Board, or both; and any failure to obey such order of the court may be punished by such court as a contempt thereof.

(k) The Board shall submit annually to the Congress as soon as practicable after the beginning of each regular session, a full report of its activities during the preceding calendar year. Such report shall include, either in summary or detailed form, information regarding the cases heard by it and the disposition of each.

REVIEW BY BOARD

Sec. (a) A state or an operator notified of an order of the Secretary made pursuant to Sec. 7 or Sec. 8 may apply to the Federal Surface Mining Reclamation Board of Review for annulment or revision of such order.

(b) The state or operator shall be designated as the applicant in such proceeding, and the application shall recite the order complained of and other facts sufficient to advise the Board of the nature of the proceeding. The application may allege: the Secretary's failure to approve a state plan, or his withdrawal of such approval, is arbitrary, capricious, or unreasonble within the intent and spirit of Sec. 7 of this Act; that the state plan submitted to the Secretary substantially complies with the provisions of Sec. 7 and should be approved; that the state, in administering a plan previously approved by the Secretary, has complied substantially with it and has enforced it adequately, and a revision of the state's previously approved plan is not appropriate or

necessary to effectuate the purposes of this Act; that denial or revocation of a permit made by the Secretary pursuant to Sec. 8 is arbitrary, capricious, or unreasonable; or that the action of the Secretary in denying or revoking such permit is not supported by a failure of the applicant to comply with the spirit and intent of this Act or the regulations issued by the Secretary pursuant to Sec. 8. The Secretary shall be the respondent in such proceeding, and the applicant shall send a copy of such application by registered mail or by certified mail to the Secretary at Washington, District of Columbia.

(c) Immediately upon the filing of such an application the Board shall fix the time for a prompt hearing thereof.

(d) Pending such hearing the applicant may file with the Board a written request that the Board grant such temporary relief from such order as the Board may deem just and proper. Such temporary relief may be granted by the Board only after a hearing by the Board at which both the applicant and the respondent were afforded an opportunity to be heard, and only if respondent was given ample notice of the filing of applicant's request and of the time and place of the hearing thereon as fixed by the Board.

(e) The Board shall not be bound by any previous findings of fact by the respondent. Evidence relating to the action complained of and relating to the questions raised by the allegations of the pleadings or other questions pertinent in the proceeding may be offered by both parties to the proceeding. If the respondent claims that the action complained of is substantially in compliance with Sec. 7 or Sec. 8 of this Act, as the case may be, the burden of proving such claim shall be upon the respondent, and the respondent shall present his evidence first to prove such claim.

(f) If the Board finds that the allegations of the applicant, as described in Sec. (b) are correct, the Board shall make an order, consistent with its findings, revising or annulling the act of the respondent under review, or shall order the respondent to take action in accordance with its findings. If the Board finds that the allegations of the applicant are not correct, the Board shall make an order denying such application.

(g) Each finding and order made by the Board shall be in writing. It shall show the date on which it is made, and shall bear the signatures of the members of the Board who concur therein. Upon making a finding and order the Board shall cause a true copy thereof to be sent by registered mail or by certified mail to all parties or their attorneys of record. The Board shall cause each such finding and order to be entered on its official record, together with any written opinion prepared by any members in support of, or dissenting from, any such finding or order.

(h) In view of the urgent need for prompt decision of matters submitted to the Board under this section, all action which the Board is required to take under this section shall be taken as rapidly as practicable, consistent with adequate consideration of the issues involved."

JUDICIAL REVIEW

Sec. (a) Any final order issued by the Board under Section —— shall be subject to judicial review by the United States court of appeals for the circuit in which the state or mine affected is located, upon the filing in such court of a notice of appeal by the Secretary, or the state or operator aggrieved by such final order, within thirty days from the date of the making of such final order.

(b) The party making such appeal shall forthwith send a copy of such notice of appeal, by registered mail or by certified mail, to the other party and to the Board. Upon receipt of such copy of a notice of appeal the Board shall promptly certify and file in such court a complete transcript of the record upon which the order complained of was made. The costs of such transcript shall be paid by the party making the appeal.

(c) The court shall hear such appeal on the record made before the Board, and shall permit argument, oral or written or both, by both parties. The court shall permit such pleadings in addition to the pleadings before the Board, as it deems to be required or as provided for in the Rules of Civil Procedure governing appeals in such court.

(d) Upon such conditions as may be required and to the extent necessary to prevent irreparable injury, the United States court of appeals may, after due

notice to and hearing of the parties to the appeal, issue all necessary and appropriate process to postpone the effective date of the final order of the Board or to grant such other relief as may be appropriate pending final determination of the appeal.

(e) The United States court of appeals may affirm, annul, or revise the final order of the Board, or it may remand the proceeding to the Board for such further action as it directs. The findings of the Board as to facts, if supported by substantial evidence on the record considered as a whole, shall be conclusive.

(f) The decision of a United States court of appeals on an appeal from the Board shall be final, subject only to review by the Supreme Court as provided in section 1254 of title 28 of the United States Code.

Senator Moss. Mr. Donald H. Askins, president of the Wise County Environmental Council, will be our next witness.

STATEMENT OF DONALD H. ASKINS, PRESIDENT OF THE WISE COUNTY ENVIRONMENTAL COUNCIL, AN AFFILIATE MEMBER OF THE CONSERVATION COUNCIL OF VIRGINIA

Mr. ASKINS. Mr. Chairman, I have some photographs that I would like to submit to the subcommittee.

Senator Moss. We will be glad to have them and they will be in the record by reference.

Mr. ASKINS. Mr. Chairman, members of the committee, I am Donald H. Askins, president of the Wise County Environmental Council, which is an affiliate member of the Conservation Council of Virginia, a consortium of conservationist organizations having a membership in excess of 300,000.

I am sure that you are all familiar with the environmental despoilation that results from strip mining. However, if I may have your indulgence, I would like to review a few facts and figures that indicate the kinds, the degree, and the extent of degradation that this industry inflicts upon the public.

The U.S. Geological Survey study of the Beaver Creek Basin in Kentucky provides the classic investigation of the effects of strip mining upon a watershed. There it was found that sediment concentrations in Cane Branch, the stripped hollow, during the study period commonly exceeded 30,000 p.p.m.—parts per million in the stream water—during storms, whereas the maximum concentration was only 553 p.p.m. in the 2½ years of record at Helton Branch, the unstripped hollow. The annual sediment yield from areas not affected by mining averaged about 25 tons per square mile compared with an average of more than 1,900 tons per square mile for Cane Branch during the 4 years following cessation of mining, 1959–62. The average annual sediment yield from the spoil banks was about 27,000 tons per square mile during this period, more than a thousand times greater than the yield from undisturbed areas.

Stripping also increased the rate of chemical weathering.

During the period 1957–62, Cane Branch transported a net dissolved-solids load of approximately 1,370 tons per square mile of drainage area, as compared with 111 tons per square mile transported by Helton Branch. Thus, the rate of chemical degradation in the Cane Branch study area was about 12 times faster than that in Helton Branch study area. During the same period, the spoil banks alone

contributed a net dissolved-solids load of approximately 14,000 tons per square mile. This represented a rate of chemical degradation of the spoil banks that was about 126 times the rate for the unmined Helton Branch area.

The chemical weathering and the heavy sedimentation combine to cause a decrease in the variety and abundance of invertebrate bottom fauna.

Cane Branch supported an average of only 30 benthic organisms per square foot of riffle during the 1959–65 period. Larvae of mayflies and caddisflies, the primary food for most small stream fish, were almost entirely absent. In Helton Branch and Little Hurricane Fork, which are unaffected by mining, the populations averaged 178 and 211 organisms per square foot respectively.

Another U.S. Geological Survey study—circular 526—summarizes the adverse effects of mine drainage on streamwater quality.

Whenever streamwater quality is affected seriously by coal mine drainage, many economic limitations are placed on the value of that water for recreational, industrial, and municipal uses. An abundance of mine drainage constituents increases water treatment costs and necessitates more frequent replacement of water treatment facilities. River structures and navigation equipment often need special protection from corrosion by mine drainage. Deposits of sediment create an unattractive environment and render streams and lakes that receive mine discharge unfit for fishing, swimming, and other recreational uses.

In Pound, Va., the Pound Reservoir, an impoundment created by the U.S. Corps of Engineers for recreational and municipal water usage, has been completely killed by acid drainage from strip mines in the watershed. Monitoring by the State water control board last November produced pH readings of 2.5 to 3. Fish set out in baskets in the lake died within minutes. Abatement efforts over the past year have not been successful in bringing the drainage under control, but the citizens of Pound still have to rely on the acid-filled reservoir for their water supply.

Even in situations where acid producing material is not a problem, the land is still impoverished by the leaching away of micronutrients in the soil. Observation of the natural revegetation of orphan lands 15 to 20 years old would lead one to infer that nutrients were scarce in strip mined land, for rarely does one see the successional state that one would expect in, say, an old field that had been left fallow for 15 years. The most common sight is barren gullied spoil banks, devoid of any growth except an occasional sumac and volunteer locust. The few soil tests that we have made on unreclaimed strips indicate that after 17 years the soil is still critically deficient in nitrogen, phosphorus, and potassium.

Another kind of degradation resulting from strip mining is the esthetic despoilation of the landscape. Much of the natural beauty and grandeur of the mountains of Virginia, Kentucky, and West Virginia has already been irretrievably destroyed, and the ravage mounts daily. The effects of acid mine drainage can perhaps be reversed, but a mountain cannot be put together again, regardless of what Mr. Guckert says. The esthetic degradation resulting from strip mining in

mountainous terrain is irremediable and everlasting. The Congress should give this point serious meditation.

Perhaps the most frightening aspect of strip mining is its extent and rapid growth in recent years. In southwest Virginia, strip mining of coal has been practiced since near the end of World War II. During the period from the end of World War II to July 1966, when the first reclamation legislation was passed in the general assembly, approximately 24,900 acres of land surface were disturbed by stripping. Since July 1966, an additional 10,300 acres have been disturbed. Thirty-five thousand acres of a six-county area have been ripped apart and bulldozed over mountainsides to provide a steady source of deadly sediment for practically every watershed in that six-county area. And this figure represents the disturbance of land surface necessary to recover only 9 to 10 percent of the total strippable reserves. What will be left of southwest Virginia when 100 percent of the reserves have been stripped?

Still, if we were talking about only southwest Virginia, perhaps the Nation could afford to sacrifice a fragment of itself—assuming that the sacrifice were necessary for the welfare of the whole. But not only southwest Virginia is involved—there are Kentucky, Tennessee, Alabama, West Virginia, Ohio, Indiana, Pennsylvania, and 45 billions of tons of strippable coal west of the Mississippi, an area strip mine stretching from the Dakotas to Montana, from Montana to New Mexico. The magnitude of the land mass involved almost staggers the imagination. Almost, but not quite—which is too bad, for those of us who are familiar with stripping can envision the coming devastation. Can we bear a sacrifice of this magnitude? And is the sacrifice necessary?

A recent article by Mr. Wilson Clark of the John Muir Institute for Environmental Studies suggests that the sacrifice of environmental quality, the esthetic degradation, and the human impoverishment that accompany strip mining are not necessary. According to Mr. Clark's article, which assesses the feasibility of solar energy conversion, the technology for practical utilization of the sun's energy as electricity is on the verge of realization. Homes have been built in Washington, D.C., that are heated and cooled year round by solar energy, using only $4.65 worth of supplemental fuel oil. The initial installation cost of the solar heating-cooling unit was only $2,500, about $1,000 more than conventional units. Dr. Maria Telkes of the University of Pennsylvania is working on plans for solar-heated modular homes which she hopes to have completed by 1973. Dr. Aden Meinel of the University of Arizona has already produced a workable plan for large-scale conversion of solar energy to electricity. Using only 13,000 square miles of desert land, he projects a series of units that could more than adequately meet the Nation's electricity requirements for the next 100 years.

If Mr. Clark's assessment is valid, if conversion of solar energy to electricity is this nearly feasible, why is our Government not doing everything it can to make utilization of this nonpolluting, inexhaustible energy source a practical reality? Why has the Department of the Interior, instead, espoused a policy that we must depend on coal for energy for the next 30 years? Why is Interior issuing prospecting per-

mits on Government lands as fast as it can—almost 750,000 acres permitted in the 12 months ending July 1970—rather than seeking less destructive alternatives? One can only conclude that somewhere someone's priorities are distorted.

A large number of the people whom I represent would like to see, as the first step toward redirecting some national priorities, the abolition of strip mining in the United States. But should the Congress, as I fear, fail to heed Mr. Hechler, Mr. Nelson, Mr. McGovern and their colleagues, and place its faith instead in regulation, the following suggestions we feel constitute the minimum regulation necessary to prevent wholesale despoilation of the land stripped, especially in mountainous terrain.

SLOPE LIMITATION

Degree of slope is of primary consideration in any attempt to minimize the environmental and esthetic impact of strip mining. The smaller the degree of the slope, the less area exposed to erosion and the easier it is to restore the disturbed land to some semblance of its original condition. The maximum permissable slope should be in the 15–20 degree range.

HIGHWALL LIMITATION

The height of the highwall, the degree of slope, and the length of the outslope are all interrelated factors, and one will affect the other. Thus, the higher the highwall, the more earth will be moved off the bench, creating a longer, less stable outslope with greater erosion problems and more likelihood of slides. Also, the higher the highwall, the more difficult it is to minimize the esthetic impact. A 30-foot highwall can eventually be screened by tree growth, but highwalls 100 to 150 feet in height, such as are being created presently in southwest Virginia, cannot be screened by anything. And those highwalls are being created right now in Kentucky and southwest Virginia.

RESTRICTION ON THE AMOUNT OF OVERBURDEN REMOVED FROM THE BENCH

As indicated earlier, the most serious problems of stabilization and chemical degradation arise in connection with the outslope. It is therefore necessary that most, if not all, of the disturbed earth be retained on the bench and regarded, rather than being pushed over the side of the mountain as is the current practice.

TIME LIMITS FOR RECLAMATION

Both sedimentation and acid formation can be reduced by rapid stabilization of the disturbed area achieved through reclamation procedures running concurrently with the stripping operation. It is necessary that regulations establish time limits requiring backfilling, grading and seeding to be kept current with the operation. All backfilling and grading should be completed before the necessary equipment is moved from the operation.

RESTRICTION OF DISTURBANCE NEAR WATERWAYS

Regulation designed to protect stream-water quality should prohibit disturbance of land within 100 feet of permanent waterways—from toe of spoil to edge of stream—and prohibit relocation of streams except with special authorization. Permanent waterway is being defined as a stream shown on the 7½-minute series of topographical maps published by the U.S. Geological Survey.

PUBLICATION OF APPLICATIONS

Because the damage created by strip mine operations is not limited to the immediate area of the operation, but extends to surrounding property in the form of physical damage caused by blasting and slides, and in the case of water pollution may affect the property and welfare of citizens miles away, and because the scars left by stripping devalue adjacent property, the citizenry have the right to know of imminent threat to their health and property and to protect both through legal means. Therefore, applications for permits to strip mine or prospect for coal should be published, and opportunity provided for public hearings prior to issuance of permits.

RESPONSIBILITY FOR PLAN OF OPERATION AND RECLAMATION

Most of the mineral rights and much of the land surface in southwest Virginia, and in all of Appalachia, are owned by large, out-of-State corporations and holding companies. For almost 100 years these absentee owners have exploited both the land and the people, while assuming very little responsibility for the damage they have caused to the physical environment and the lives of the people. Frequently they lease stripping rights to out-of-State operators who have as little sense of responsibility to the area as they do. A case in point is the Boston-based Perini Co., which is currently stripping in Wise County for the Pittston Corp. Perini's operations have produced some of the most irresponsible stripping practices in the State.

When the operator is native to the area, it is not just to ask him to stand solely liable for the operation when he frequently is, in effect, working for an out-of-State corporation that reaps much of the profit but bears none of the responsibility.

In either case, regulations should make the owner of mineral rights jointly responsible and liable with the operator for the plan of operation and reclamation.

Regardless of the course Congress elects to follow, regulation or abolition, one of the loudest arguments strip mine operators are going to make for being left alone will concern the economic benefits bestowed by industry upon the area in which it works. I can only make inferences about the national situation, but the economic impact of stripping in Virginia is revealed pretty clearly in the Department of Labor and Industries' 1970 Annual Report.

The total tonnage strip mined and augered in Virginia in 1970 amounted to 6,978,382 tons, or 20 percent of total coal production in the State. There were 852 production workers employed, each of whom

produced about 8,190 tons, for which he received on the average, wages totaling $7,123. That is an average for six counties. The wages varied from county to county, Wise County production workers receiving on the average about $6,800.

A comparison of these figures with those for underground mining gives a vivid picture of the kind of economic impact strip mining has. The total tonnage produced underground in Virginia amounted to 27,996,342 tons. Underground mines employed 8,236 production workers, each man producing about 3,399 tons. for his production, each man earned, on the average, between $10,247 and $11,258.

In other words, the strip mine production worker earned 80-some odd cents per ton for the coal he produced, while the deep miner was earning about $3 per ton.

Taking the comparison a stage further reveals some other interesting aspects of the economic impact. According to the tonnage-per-man figures, had the tonnage which was stripped and augered been deep mined, production would have required 2,053 workers, and they would have created 1,201 additional jobs, that is additional jobs other than the 852 strip mining positions. Figuring wages at the lower of the above figures given for underground mining, these new jobs would have added $16,458,493 in spending power to workers in the area.

We have in southwest Virginia several individual operators who have recently become millionaires, but when a resident of the area compares the present state of the general economy with that prior to 1968—when stripping almost doubled in activity—he finds it difficult to discern the immense economic benefits stripping has supposedly brought to the area. He still has the same choice of business to patronize, he is still confronted by some abandoned store fronts, he still sends his children to the same second-grade schools, and he still drives home or to town on the same rutted highways that have been destroyed by overloaded coal trucks.

Thank you.

Senator Moss. Thank you for your testimony, Mr. Askins, pointing out the problems that apply particularly in Wise County but generally in the State of Virginia and the adjacent States where there is a large amount of strip mining going on. We are glad to have you come and present these figures and your point of view for our consideration.

I have no specific questions. Are there questions?

Senator JORDAN. No questions.

Senator COOPER. I have been interested in your testimony. I have been in Wise County. Of course, there are similar situations across the land in southeastern Kentucky. You made several recommendations and we now have those requirements. One is that the overburden has to be deposited on the bench and not pushed over the side of the mountain. Two, you cannot mine within 100 feet of the waterway, and third, that reclamation must take place concurrently with operations. I think that is the most important. If reclamation doesn't occur almost jointly with the operations, you are likely never to get it. So I think that is important.

Now, you have noted that strip mining has increased by 100 percent since 1968 in strip mine areas, and I noticed it increased 50 percent in our State since 1968.

Mr. ASKINS. Those figures, Senator Cooper, since 1968 strip mining in southwestern Virginia doubled to what it had been previous to 1968, in 1970 it increased one-third again.

Senator COOPER. To what do you ascribe the increase?

Mr. ASKINS. I don't know what all the factors are that are involved. I don't think, however, the Mining Health and Safety Act is responsible for it. Certainly it wasn't in existence in 1968. There is growing evidence that it is competition from strip miners that are driving the small deep miners out, rather than not being able to comply with the Mining Health Safety Act. Also, the fatalities that several of the people mentioned here today, I believe are still being caused by roof falls, primarily, and not by the provisions of that act.

I think, according to Mr. Bethel, about 7 percent in 1970.

If I might, I would like to clarify one thing Mr. Guckert said this morning. He mentioned the visit by some Virginia people up to Pennsylvania and how impressed they were with the work that had been done up there and they were running back home to start doing the same thing. I talked to Commissioner Roller last week, after their return from up there, and Mr. Roller's comment to me was that the topography they were working with is totally different from that of southwest Virginia and the sort of reclamation he is doing in Pennsylvania is completely unfeasible for work in southwest Virginia. The degree of slope does have something to do with it.

Senator Moss. Yes, I am sure it does.

Well, thank you very much, Mr. Askins, for your testimony. We appreciate it. This completes our list of witnesses for today. I point out again there will be a further hearing in this room on December 2 at 10 a.m., when we will hear further witnesses on the bills that are before us.

We are now recessed until December 2.

(Whereupon, at 4:30 p.m., the hearing was adjourned, to reconvene at 10 a.m. on December 2, 1971.)