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SECTION III. LAND QUALITY: THE REGULATION OF SURFACE MINING RECLAMATION IN WYOMING

I. INTRODUCTION

The Environmental Quality Act (E.Q.A.) is administered by a newly-created state agency, the Department of Environmental Quality. The Land Quality division administrator has primary day-to-day responsibility for enforcement of the E.Q.A. but is accountable both to the director of the Department of Environmental Quality and to the Environmental Quality Council.

Article 4 of the E.Q.A. established a new permit and licensing scheme which is designed to insure adequate reclamation of strip-mined lands. The licensing procedure is based on the operator's submission of a detailed reclamation plan to the administrator prior to commencing mining operations. The E.Q.A. places broad discretion in the administrator and the Land Quality Advisory Board to deny, approve or modify the proposed reclamation plan. Once approved, the reclamation plan sets the performance standards for reclaiming that area. The operator must also submit an annual report on his reclamation activity. The administrator is required by law to conduct an annual inspection of the mine site, and adjust the bond to correspond with changing conditions.

This comment contains an overview¹ of current issues relating to surface mining with a particular emphasis on the impending development of Wyoming's extensive coal deposits and an analysis of the detailed procedures which are required to obtain a license, permit, and approval of a reclamation plan.

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1. See *Hearings on H. R. 3 Before the Subcomm. on the Environment and the Subcomm. on Mines and Mining on the Regulation of Surface Mining of the House Comm. on Interior and Insular Affairs*, 93rd Cong., 1st Sess., ser. 93-11 (1973), and Reitze, *Old King Coal and The Merry Rapists of Appalachia*, 22 CASE WESTERN RES. L. REV. 650 (1971), which contains a thorough discussion of surface mining in Appalachia. Not all of the Appalachian experience is relevant to reclamation of western land, however, See also Hall, *Problems of Compartments in Politics and Thinking: The Political Games They Support and the Economic Issues They Disguise for the Coal Industry*, ROCKY MOUNTAIN MINERAL LAW FOUNDATION INSTITUTE ON WESTERN COAL DEVELOPMENT 8-1 (1973).

II. BACKGROUND INFORMATION

A. *Surface Mining*

To understand the problems which the new law attempts to solve, one must look first at the nature of the surface mining process. Wyoming's Act applies to "operations by which solid minerals are intended to be extracted from the earth."² The surface mining of solid rocks and minerals such as coal, uranium, bentonite, stone, sand, and gravel, etc.,³ are all subject to the Act. Because surface-mined coal production is projected to increase from 11 million tons in 1972 to as much as 45 million tons by 1980, coal mining has attracted the most attention and will probably remain dominant for some time to come. Moreover, 98% of Wyoming's coal is surface-mined.⁴

Surface mining⁵ involves the removal of the rock and soil overburden which covers the mineral deposit in order to extract the desired mineral.⁶ Underground mining operations, where a shaft is opened to reach the mineral deposit,⁷ are also covered under the Act but do not pose a serious surface reclamation problem because only a comparatively small area of land is affected. The two principle types of surface mining used in Wyoming are open-pit mining and contour mining.⁸

2. WYO. STAT. § 35-502.20 (Supp. 1973).

3. For a general discussion on Wyoming mining, see MINING YEARBOOK 1973, U.S. DEP'T. OF THE INTERIOR, 779 (1973) and Kovats, THE CONDITION OF SURFACE MINE RECLAMATION IN WYOMING: A REPORT TO THE STATE OF WYOMING, DEP'T. OF ECONOMIC PLANNING AND DEVELOPMENT (1969).

4. The estimated area of land surface-mined in Wyoming in 1971 was 2,737 acres. Coal mining activities account for 1,016 acres of the total. As part II of this comment indicates, the area to be affected by coal mining in 1971 included: coal, 1,016 acres; stone, 1,616; clay, 434, sand and gravel, 133; phosphate, 30; iron ore, 12; gypsum, 4; copper, 0; and all other (unknown), 984 acres. WYOMING OPEN CUT MINING ADMINISTRATOR'S REPORT, SURFACE MINING, MINERAL RELATED WASTE AND LAND RECLAMATION FOR 1971, 1 (1972). See also Glass, *Western Coal Edition*, 78 COAL AGE 186, 200 (April 1973). Glass notes that surface mining should remain dominant well into the next century with deep mines accounting for less than 2% of the state's annual production for the next 25 to 30 years.

5. NATIONAL COAL ASS'N, BITUMINOUS COAL FACTS 14, 15 (1958). See also BUREAU OF MINES, U.S. DEP'T. OF THE INTERIOR, MINERAL FACTS AND PROBLEMS 125 (1965).

6. There are six types of surface mining: (1) strip mining, (2) auger mining, (3) open pit mining, (4) dredging, (5) hydraulic mining and (6) contour mining. U.S. DEP'T. OF THE INTERIOR, SURFACE MINING AND OUR ENVIRONMENT 42 (1967). For a detailed but not technical treatment of surface mining, see Reitze, *supra* note 1, at 651.

7. NATIONAL COAL ASS'N., *supra* note 5, at 15.

8. Glass, *supra* note 4, at 200. Although open-pit and contour types of surface mining are equally represented today, the open pit method is likely to dominate future mining. Active surface mines have highwalls between 0 and 150 feet with the average between 40 and 60. As for the future, an

Because many Wyoming coal seams are quite thick, nearly flat, and often in areas of low relief,⁹ the open-pit method will be the more frequently used technique.

B. *The Magnitude of Wyoming's Coal Deposits*

To appreciate the importance of the land quality provisions, one need only review the magnitude of future mining operations. More than 235 square miles¹⁰ of Wyoming lands overlie potentially strippable coal deposits.¹¹ From 1969 through 1971, 3,936 acres were disturbed due to coal mining while 1,143 acres have been reclaimed.¹² In 1971 a total of 2,737 acres were disturbed by all types of surface mining in Wyoming; coal mining accounted for 1,016 acres.¹³

The immensity of Wyoming coal deposits is staggering.¹⁴ Wyoming has the largest coal reserves of any state—an estimated 546 billion tons within 6,000 feet of the surface. 121.5 billion tons have been mapped and measured within 3,000 feet of the surface.¹⁵ By comparison, coal production in the United States from all underground and surface mines for

open-pit with total terraced relief of up to 900 feet has been considered in the Kemmerer area. Contour stripping is used where a hilly or mountainous terrain over-lies the mineral deposit. Reitze, *supra* note 1, at 652. Open pit mines, which may or may not disturb a large surface area, tend to be a more permanent use of the land. The Wyodak open pit mine near Gillette, Wyoming, has been in operation since the mid-twenties. Some portions have been in operation since that time. Glass, *supra* note 4 at 202.

9. See discussion accompanying notes 25 and 26, *infra*.
10. 150,755 acres.
11. These statistics may understate the area of land to be disturbed. Prior to 1969, surface mines affected two to two and one-half times the pit acreage figure. Glass, *supra* note 4, at 202.
12. *Id.*
13. Recent statistics concerning disturbed areas are collected from the annual report submitted by all mining operators to the administrator of the land quality division of the Department of Environmental Quality. A copy of the report, WYOMING OPEN CUT MINING ADMINISTRATOR'S REPORT, SURFACE MINING, MINERAL RELATED WASTE AND LAND RECLAMATION FOR 1971 (1972) is available from Homer Derrer, Acting Administrator, State Office Building, Cheyenne, Wyoming 82001. The figures were also quoted in Glass, *supra* note 4 at 202. Of Wyoming's total acreage of 62,664,960 (U.S. Dep't. of the Interior, Public Land Statistics 1969-3), some 17,941 acres were utilized or occupied by mineral and solid fuels waste generated through 1971. WYOMING OPEN CUT MINING REPORT, SURFACE MINING, MINERAL RECLAMATION AND LAND RECLAMATION FOR 1971, 2 (1972).
14. Wyoming's deposits are primarily low sulphur, subbituminous coal. BUREAU OF MINES INFORMATION CIRCULAR #8531 STRIPPABLE RESERVES OF BITUMINOUS COAL AND LIGNITE IN THE UNITED STATES, 21 (1971). (Hereafter referred to as STRIPPABLE RESERVES OF U.S.).
15. U.S. BUREAU OF MINES INFORMATION CIRCULAR #8538 STRIPPABLE COAL RESERVES OF WYOMING 1, 2 (1971) (Cited hereafter as RESERVES OF WYO.).

1972 total 590 million short tons.¹⁶ Domestic consumption in the United States in 1971 was 496 million short tons.¹⁷

Presuming that 80% of the coal within 3,000 feet of the surface is recoverable, Wyoming's reserves could supply the entire United States domestic consumption for 195 years at the 1971 rate.¹⁸ The recoverable strippable reserves within 150 feet of the surface are estimated at 19 billion tons.¹⁹ At the 1971 rate of consumption, these reserves could supply the United States consumption demand for 20 years.²⁰

More than 99% of Wyoming's total coal reserves are low sulphur coals containing less than 1% sulphur.²¹ There are 31.7 billion tons of strippable low sulphur coal reserves in the United States; 13.4 billion tons or 42% are located in Wyoming.²²

The Wyodak Seam, an unusually rich coal district, is located in Campbell County near Gillette. This zone has "the greatest potential for strippable coal reserves in the Western United States."²³ Half of the total Wyoming coal reserves are located in Campbell County. In fact, a single township surrounding the townsite of Gillette contains nearly 2.9 billion tons of coal, most of which is within 500 feet of the surface.²⁴

C. Geological Characteristics

Currently, surface mining is the most economical method for mining Wyoming coal because of the small amount of overburden²⁵ that must be removed to reach the relatively thick deposits. The major coal beds currently being mined

16. 2 MINING AND MINERALS POLICY, 1973, 1-59, SECOND ANNUAL REPORT OF THE SECRETARY OF THE INTERIOR UNDER THE MINING AND MINERALS POLICY ACT OF 1970 (1973).

17. *Id.* at 1-61.

18. This figure is for comparison only.

19. Glass, *supra* note 4, at 196.

20. This figure is for comparison only.

21. Half of Wyoming reserves contains less than 0.7% sulphur. For a discussion of the importance of the sulphur content as it relates to compliance with air quality standards, see STRIPPABLE RESERVES OF U.S., *supra* note 14, at 1. And Glass, *Midyear Review of Wyoming Coal Fields*, 1972, GEOLOGICAL SURVEY OF WYOMING, 6 (1972).

22. STRIPPABLE RESERVES OF U.S., *supra* note 14.

23. RESERVES OF WYO., *supra* note 15, at 11.

24. *Id.* at 12.

25. For a chart comparing relative overburden on coal deposits, see STRIPPABLE RESERVES OF U.S., *supra* note 14 at 12.

are from ten to one hundred feet thick and are covered by thirty to one-hundred-fifty feet of overburden. The Wyodak mine near Gillette has a seventy-one foot thick coal bed which is covered by only thirty feet of overburden.²⁶

D. *Production Trends*

Wyoming's present coal production comes from nine coal fields located in five of the major coal-producing regions of the state.²⁷ Historically, the development of Wyoming coal was hampered by its isolation from major markets, high transportation costs, competition from oil, gas and hydropower and the low heat value of sub-bituminous coal compared with the higher heat value of anthracite²⁸ and bituminous coal.²⁹ These problems have largely abated and production is increasing dramatically.³⁰ Coal production for the first quarter of 1973 was up to 62,000 short tons over the 1972 first quarter figure of 26,000 short tons.³¹ Production from the state's mines may reach 20 million tons per year by 1975.³² In dollar value the state's production has quadrupled in the last ten years.³³

A Department of the Interior study predicts that as many as ten mine-to-mouth, coal-fired, electric generating plants could be constructed in Campbell County alone.³⁴ Moreover,

26. RESERVES OF WYOMING, *supra* note 15.

27. The active mines in 1972 included: (1) Powder River Coal Basin, comprised of Powder River Field and Glenrock Field, one strip mine each, and Sheridan Field and Gillette Field, two strip mines each; (2) Green River Coal Region, with 2 deep mines in Rock Springs Field; (3) Hanna Coal Field, with 3 strip mines and 1 deep mine; (4) Hams Fork Coal Region, the Kemmerer field with 1 strip mine; and (5) Bighorn Coal Basin, with one deep mine in each of the Gebo Field and Grass Creek Field. The coal-producing counties in Wyoming are Campbell, Carbon, Converse, Hot Springs, Lincoln, Sheridan and Sweetwater. Glass, *Midyear Review*, *supra* note 21, at 11-12.

28. *See supra* note 14.

29. For a discussion of these changing conditions see Glass, *Western Coal Edition*, *supra* note 4, at 193, 202, 203. *See also* R. AUSTIN AND P. BORRELLI, *THE STRIP MINING OF AMERICA* 8 (Sierra Club 1971). *See generally* U.S. DEP'T. OF THE INTERIOR, 1 NORTH CENTRAL POWER STUDY (1971), and U.S. DEP'T. OF THE INTERIOR S.W. ENERGY STUDY: AN EVALUATION OF COAL-FIELD ELECTRIC POWER GENERATION IN THE SOUTHWEST (1972).

30. For a summary of increasing coal production figures *see* RESERVES OF WYOMING, *supra* note 15, at 7.

31. BUREAU OF MINES, MINERAL INDUSTRY SURVEY, BITUMINOUS COAL AND LIGNITE DISTRIBUTION QUARTERLY, JANUARY—MARCH 1973, 38.

32. Glass, *Midyear Review*, *supra* note 21, at 9.

33. RESERVES OF WYOMING, *supra* note 15, at 6. For a discussion of the economic impact of coal mining on Wyoming, *see* Glass, *supra* note 4, at 186, 200, 201, 204 (1973).

34. U.S. DEP'T. OF THE INTERIOR 1 NORTH CENTRAL POWER STUDY 35 (1971) [Hereafter NCPS.] Each of the ten plants could produce 10,000 megawatts of electricity. By comparison, the Jim Bridger Power Plant presently under

the types of uses for coal are increasing. Research is presently under way to develop a plant capable of converting raw coal into a low-sulphur synthetic oil, pipeline gas and liquified petroleum gases.³⁵ The U.S. Bureau of Mines predicts that the United States³⁶ demand for coal in 1980 will be 53% higher than it was in 1967 and by the year 2000, 78% greater.³⁷

E. *Environmental Concerns*

Some environmentalists oppose all strip mining.³⁸ They are aware of the magnitude of the planned development and skeptical of coal companies' concern for the environment. The Sierra Club, for example, challenges the presumption upon which present strip mining laws are based by inquiring whether high prairie lands³⁹ are reclaimable once they have

construction in Southwest Wyoming is the second largest plant west of the Mississippi; it will produce only 1,500 megawatts of power. U.S. DEP'T. OF INTERIOR 1971 MINERAL YEARBOOK 796 (1971).

For an indication of the amount of water which would be required for development of this magnitude, see NCPS, 44.

Construction of a new 330 megawatt coal-fired, steam generating plant near Gillette at the Wyodak formation was announced September 20, 1973. The plant will employ up to 640 workers and will be completed in May of 1977. Gillette News-Record, Sept. 27, 1973, at 1, col. 1.

35. In addition, various chemical processing plants, fuel cells, gas turbines and liquid metal systems are projected for development. U.S. DEP'T. OF THE INTERIOR OFFICE OF COAL RESEARCH 1972 ANNUAL REPORT 13 (1973).

Panhandle Eastern Pipeline Co. plans a \$400-million commercial gasification plant in the Powder River Basin in eastern Wyoming. The plant, which was announced by the company on September 28, 1973, will provide permanent employment for 800 to 1,000 people and will consume 25,000 tons of coal per day. The plant is expected to be operational between 1978 and 1980. Laramie Daily Boomerang, Sept. 28, 1973, page 7, col. 4.

36. The U.S. also exported 55.9 million short tons of coal in 1972. Canada was the largest importer. BUREAU OF MINES, 42 INTERNATIONAL CODE TRADE 27 (June, 1973).

37. STRIPPABLE RESERVES OF U.S., *supra* note 14, at 1.

38. In some situations, where one or more side effects can not be prevented, prohibition of the mining operation is the only suitable remedy.

U.S. ENVIRONMENTAL PROTECTION AGENCY, LEGAL PROBLEMS OF COAL MINE RECLAMATION (Study by the University of Maryland School of Law #14010 FZU) ix (March 1972). See also H. CAUDILL, MY LAND IS DYING (1971) and R. AUSTIN AND P. BORRELLI, *supra* note 29.

For the compilation of a newspaper's successful attempt to prevent strip mining in North Carolina, see Winston-Salem Journal and Twin City Sentinel: 1971 Pulitzer Prize in Journalism for Public Service. (Available in the Hebard Room of the University of Wyoming Coe Library in the Kelly J. Patrick Biographical file, #b-k297jp). Environmentalists have been particularly vocal in Montana where a symposium was held to collect data opposing strip mining. Proceedings of the Montana Coal Symposium, Billings, Montana, 1969, and the comments of McRae, "Coal Industry at What Price? A Rancher's View." Articles advancing this point of view are collected in THE STRIP MINING OF AMERICA, *supra* note 29, at 96-99.

39. Wyoming, one of the Rocky Mountain States, embraces high mountains, elevated and sparsely vegetated plateaus, and mature undulating grassland. Trees are limited to scattered stands along stream and river valleys. In southwestern Wyoming the coal areas

been disturbed.⁴⁰ Some writers have suggested that the answer to the reclamation problem is to prohibit all strip mining.⁴¹

occupy high deserts where even native grasses are sparse. Wyoming lies astride the continental Divide, about two-thirds of the state being on the east slope and one-third on the west. Topographically, Wyoming consists of high mountain ranges separated by broad, relatively flat-floored basins. [Most of the Wyoming deposits underlie these broad basins.] The mean altitude of the state is about 6700 feet.

The climate in Wyoming is semi-arid; warm dry summers alternate with cold rigorous winters. Inclement weather is most common in January, the coldest month. Annual precipitation ranges from a low of five inches in the Red Desert of the Great Divide Basin to a high of forty-five inches in some mountain ranges. In coal areas, rainfall varies from less than six to twelve inches in the southwestern part of the state to six to eighteen inches in the Powder River Basin, where the highest precipitation occurs along the east side of the Big Horn Mountains. Late spring rains provide most of the moisture. RESERVES OF WYO., *supra* note 15, at 5.

Typical climatic conditions from Wyoming's coal-bearing regions are:

Mine Sites	Elevation in feet	Average Precipitation in inches	Average Temp (°F)	Growing Season	Years Recorded	p.h. measurement
Gillette (Wyodak)	4948	14.0	45.4	129	30	7.9 to 8.5
Glenrock (Dave Johnston Power Plant)	4556	14.88	48.0	130	52	7.8 to 8.6
Green River	6089	8.70	—	101	66	7.8 to 8.4
Walcott Jct. Carbon County	6736	10.33	41.6	82	34	8.0 to 8.4
Jim Bridger Power Plant Area in Southwestern Wyoming	6740	8.29	40.3	103	10	7.8 to 9.0

H.BEAUCHAMP, THE USE OF TOPSOIL FOR STRIP MINE REVEGETATION, 34 (1973) (Unpublished master's thesis in Range Management, University of Wyoming, Laramie, Wyoming.)

40. There are numerous provisions which indicate the legislature's intention to insure reclamation. In drafting the regulations the administrator is directed to consider the "potential for adverse environmental impact" by § 35-502.20 (e) (iii) as well as the land's capacity to support the "highest previous use" by § 35-502.21 (a) (i). The Act points to the expectation that the land will be revegetated at § 35-502.21 (a) (iv), and provisions are made for stockpiling topsoil or by some superior method, § 35-502.21 (a) and .24 (b). Moreover the application may be denied if it is "contrary to the laws or policy of this state," § 35-502.24 (i) (ii). To evaluate reseeded and revegetation problems, the administrator may use qualified experts in hydrology, "soil science, plant or wildlife ecology, and other related fields," § 35-503.22 (a) (i). The applicant may request assistance from the local soil conservation district, § 35-502.24 (c). However, because of low rainfall, siltation and acid pollution do not appear to be significant problems. Indeed, the opposite is the problem: there is so little erosion that the scars from strip mining remain unchanged for decades. . . . The chance of revegetation of strip-mined areas ranges from unlikely to impossible. R. AUSTIN AND P. BORRELLI, *supra* note 29, at 88.
41. See THE STRIP MINING OF AMERICA, *supra* note 29, at 47 the case for abolishing strip mining. See also *The West Va. Debate on Outlawing Surface Mining*, 76 COAL AGE 92 (March 1971).

They argue that the consumer demand for energy should be reduced rather than mining activities expanded to meet continually increasing energy demands.⁴² If strip mining were prohibited in Wyoming, at least 17% of the state's coal resource would be unrecoverable,⁴³ though this figure is subject to dispute.⁴⁴

The North Dakota mined reclamation law explicitly recognized that some lands are unreclaimable and prohibits mining in those areas.⁴⁵ There is no similar provision in the Wyoming Act although mining operations may be prohibited if the "proposed mining would irreparably harm, destroy, or materially impair any area that has been designated by the [Environmental Quality] Council to be of a unique and irreplaceable, historical, archeological, scenic or natural value."⁴⁶

On the other hand, those who advocate strip mining suggest that most of the land can be reclaimed.⁴⁷ The University of Wyoming Agricultural Experiment Station studied reclamation of mine spoil banks and found that those in the Kemmerer area could be successfully revegetated.⁴⁸ A University of Montana study also concluded that revegetation was possible in most sections of the state; the report noted, however, that several decades of revegetation would be required before

42. See *A Legal Solution to the Electric Power Crisis: Controlling Demand Through Regulation of Advertising, Promotion and Rate Structure*, 1 ENV. AFFAIRS 670 (1971). A brief account of the European experience in surface mining is given in STRIP MINING OF AMERICA, *supra* note 29, at 50 et seq. Several European countries have strict reclamation standards which discourage surface mining; as a result, most European countries are importers of coal. See *supra* note 39.

43. Glass, *supra* note 4, at 200.

44. Representative Warren Morton, a geologist who chairs the Wyoming House Mines, Minerals & Industrial Development Committee, says a prohibition on surface mining would render "most of the recoverable coal in Wyoming unminable." Personal correspondence, October 8, 1973.

45. N.D. CENT. CODE § 38-14-05.1 (Supp. 1973).

46. WYO. STAT. § 35-502.24 (g) (iv) (Supp. 1973).

47. Beauchamp, *supra* note 39, concluded that if topsoil is stockpiled and reused, an adequate stand of vegetation may be accomplished. Glass concluded that revegetation of unreclaimed sites will require years to fully establish, "but it is a matter of time rather than an impossibility. Many of the older unreclaimed sites are not naturally revegetated by pioneer native plants." Glass, *supra* note 4, at 204.

48. The study found that Russian olive, caragana and Siberian elm trees survived on the soil banks. Some soil banks revegetated naturally within fifteen years when stabilized from erosion. UNIVERSITY OF WYOMING AGRICULTURAL EXPERIMENT STATION RESEARCH JOURNAL #51, *Reclamation of Strip Mine Soil Banks in Wyoming* (May 1971). Beauchamp's 1973 study concluded, however, that a planned reseeded program is necessary because the sites he tested contained an insufficient amount of natural seed, Beauchamp, *supra* note 39, at 49.

it could be determined whether the reclamation would successfully withstand climatic fluctuations.⁴⁹ Other experts have been less pessimistic and have concluded simply that reclamation is possible when the proper techniques are employed.⁵⁰ Because of the relatively high ratio of coal to the amount of surface area which must be disturbed to uncover it, there are indications that the cost per ton of an adequate reclamation program would be low in Wyoming.⁵¹ One notably successful reclamation project was conducted at the Big Horn Mine near Sheridan.⁵² Compared to the other mining areas in the state, however, the Big Horn area receives higher amounts of rainfall.⁵³

There are several revegetation and reclamation test projects presently under way⁵⁴ and the Bureau of Outdoor Recreation of the Department of the Interior has established a

49. Carl L. Wambolt, range specialist with the cooperative extension service of the University of Montana at Bozeman, said that proposed revegetation plans that introduced non-native species dependent on commercial fertilizer could diminish the productivity of grazing land and reduce wildlife habitat. He said that wide variety of native species was necessary to insure a proper nutritional supply for cattle and that several decades of revegetation would be required before it could be determined whether the reclamation could successfully withstand climatic fluctuations. Note, 4 ENVR. RPTR. 94 (1973).

50. Melvin S. Morris of the University of Montana's School of Forestry said that adequate reclamation of strip mined land was possible in Montana. Morris called for an approach to reclamation as an integral part of the mining process including stockpiling top soil, sorting overburden, and shaping the new surface to minimize runoff and erosion. He called for revegetation with native and foreign species that emphasize diversity. *Id.* at 94.

Research is being performed at the Montana State University Agricultural Research Station to determine the short and long-term hydrologic effects of surface coal mining and mine reclamation on dry lands. A search for plants which will grow well on strip mined overburden in arid areas is also under way there. For a summary of federally funded programs dealing with surface-mined lands, see SECOND ANNUAL REPORT OF THE SECRETARY OF THE INTERIOR UNDER THE MINING AND MINERALS POLICY ACT OF 1970. MINING AND MINERALS POLICY, 1973 (appendices VI-2 to VI-10).

51. In 1971 grading costs alone ranged from 1¼ cents per ton to 43 cents per ton (over \$1,000 per acre) in reclamation of coal mined lands. Comment, *Mined Land Reclamation in the Western States—A Brief Look*, 4 NATURAL RESOURCES LAW. 545, 551 (1971). Estimates of reclamation costs under pending federal legislation H.R. 4863 have ranged from 56 cents per ton to over \$1 per ton. See 4 ENVR. RPTR. 93, 94 (May 18, 1973). The concern over cost per ton figures for reclamation should be considered by consumer groups as well as environmentalists since reclamation costs will be considered a cost of production and will be reflected in the price which the consumer pays for the coal or for its derivatives. Reitze, *supra* note 1, at 716.

52. For an industry statement of a successful project, see J. Rulli, *Reclamation at Big Horn Mine*, 57 AMERICAN MINING CONGRESS JOURNAL 41 (June 1971). See also T. GWYNN, KNIFE RIVER COAL MINING CO., RECLAIMING STRIP-MINED LAND BY ESTABLISHING GAME MANAGEMENT AREAS 1 (1966).

53. See *supra* note 38.

54. APPENDIX MINES AND MINERALS POLICY 1973, *supra* note 49, at VI-2.

clearinghouse for information relating to reclamation of surface-mined lands for recreational purposes.⁵⁵

A report by the Wyoming Legislative Services Agency to the Joint Mines, Minerals and Industrial Development Interim Committee in 1972 reviewed the information available concerning the reclamation records of major coal companies and concluded that:

[E]vidence clearly exists that many recalcitrant mining operators have in the past and will continue in the future to destroy the environment unless properly controlled. It is because of these operators that some governmental bodies and environmentalists have sought to impose rigid reclamation requirements. Obviously striking a balance would be a more appropriate objective.⁵⁶

III. STRIP MINING LAWS: HISTORY

A. Wyoming

Coal has been mined in Wyoming since the middle of the nineteenth century. Since most early production was from underground mines,⁵⁷ reclamation of surface mining areas is a problem of recent origin. 1967 was the first year in which surface mining production exceeded production from underground mines.⁵⁸ In apparent response to increasing production of coal, uranium, and bentonite, the legislature passed the Open Cut Land Reclamation Act of 1969.⁵⁹ This act required operators to obtain a permit and post a bond equal to the estimated cost of reclamation. Provision of a reclamation plan by the operator was optional under this act.⁶⁰

55. The Bureau is establishing a Reclamation Information Center to collect data on the extent of surface mining and associated land disturbance, rehabilitation and restoration practices, costs, successes, failures and potential uses for mined lands. Pertinent reclamation for recreation data should be sent to: Director, Bureau of Outdoor Recreation, Dept. of Interior, Washington, D.C. 20240. 4 ENVR. RPTR. 689 (August 17, 1973).

56. INTERIM REPORT TO THE MINES, MINERALS AND INDUSTRIAL DEVELOPMENT COMMITTEE BY GERALD FOX, LEGISLATIVE SERVICES AGENCY, 1 (March 1972).

57. RESERVES OF WYO., *supra* note 15, at 7.

58. *Id.* at 7.

59. Ch. 192, § 1 to 14, [1969] WYO. SESS. LAWS 393. For a discussion of the provisions of the 1969 Act, see Comment, *Regulation of Open Cut Mining in Wyoming*, 5 LAND & WATER L. REV. 449 (1970). See also *infra* note 77. The trend toward increasing state participation in regulating the development of their resources is discussed in Carver, *The Trend Toward State Protectionism in Natural Resource Management*, 18 ROCKY MT. MIN. L. INST. 253 (1973).

60. Ch. 192, § 4, [1969] WYO. SESS. LAWS 394.

The 1969 act was criticized for its vague and inadequate reclamation standards.⁶¹ Operators were required where practical to make a reasonable effort to encourage the revegetation of disturbed lands.⁶² The primary reclamation provisions were found in the rules and regulations issued by the administrator. The 1969 act made no provision for reclamation of abandoned and unreclaimed lands. The 1973 act also failed to deal with this problem.⁶³

B. Other Western States

The states of the Northern Great Plains⁶⁴ and of the Rocky Mountain province⁶⁵ contain 90% of the strippable low sulphur reserves in the United States.⁶⁶ Most of these states have also recently revised their mined land reclamation laws⁶⁷ in anticipation of the substantial strip mining that will likely occur throughout the region.⁶⁸ Arizona and Utah have no law specifically providing for the reclamation of strip-mined lands.

The Montana legislature required a return to "useful production" of mined lands in the Montana Strip Mining

61. *Regulation of Open Cut Mining in Wyoming*, *supra* note 59, at 450. The Act was criticized because it required only that peaks and ridges be reduced to a "rolling topography." The 1969 Act was characterized by the Sierra Club as "permissive in the extreme." R. AUSTIN AND P. BORRELLI, *supra* note 29, at 90.

62. Ch. 192, § 6, [1969] WYO. SESS. LAWS 396.

63. The administrator may order a forfeiture of an operator's bond and use it to reclaim the lands which were bonded under the Act. WYO. STAT. § 35-502.22 (a) (iii) (Supp. 1973). In Wyoming, 17,941 acres of land have been utilized or occupied by mineral and solid fuel waste of all types while 4,885 have been reclaimed. Coal mining activities disturbed 3,936 acres through 1971 and have reclaimed 1,143 acres. WYOMING OPEN CUT MINING ADMINISTRATOR'S ANNUAL REPORT, SURFACE MINING, MINERALS RELATED WASTE AND LAND RECLAMATION FOR 1971 2 (1972). Sixty-eight per cent of the reclaimed coal land predates Wyoming's Reclamation Act which, like the 1973 Act, has no retroactive clause. The value of these disturbed lands prior to mining ranged from \$3 to \$50 per acre. Glass estimates basic reclamation costs of grading, minimal seed bed preparation, and seeding would average at least \$200 per acre in Wyoming. Glass, *supra* note 4, at 204. Based on these figures, the cost of reclaiming all orphan surface-mined lands in Wyoming would be roughly \$3.5 million. This figure may be high, however, since many areas are presently used as community landfill sites.

An additional \$.05 per ton tax on Wyoming's 10.9-million ton 1972 coal production would have raised over \$500,000 toward meeting the cost of reclaiming lands previously disturbed by all types of mining.

64. Montana, Wyoming, North and South Dakota, STRIPPABLE U.S. RESERVES, *supra* note 14, at 10.

65. Colorado, Utah, Arizona, New Mexico and Idaho. *Id.*

66. These two regions contain 24,691 of the 27,376 billion tons in the continental U.S. *Id.* at 19.

67. See generally *id.*

68. A summary of the laws as of 1971 appears at *id.*, Appendix B. A more recent chart comparing the laws is attached to this article in Appendix A.

Reclamation Act of 1967.⁶⁹ In 1969 the legislature added a more environmentally-oriented statement of policy⁷⁰ and generally strengthened the act. The law was amended again in 1973; the system whereby the operator contracted with the state to reclaim his mined lands was abolished in favor of a surety bonding system.⁷¹ The 1973 law also gives any resident of the state who knows a provision of the act is not being enforced standing to sue in mandamus.⁷² If, after receipt of notice of the failure to perform, the official or employee does not enforce within a reasonable time the requirements of the act or regulations issued under it, then any Montana resident may bring the mandamus action in the appropriate district court.⁷³

North Dakota added a prohibition against mining un-reclaimable land,⁷⁴ authorizing the state to use forfeited bonds and the proceeds from fines levied under the Act to reclaim orphaned lands.⁷⁵ The operator's duties were clarified by inserting specific standards for restoration of slopes, re-use of topsoil and for recontouring spoil banks in the statutes.⁷⁶

The South Dakota legislature enacted a surface mining land reclamation law in 1971; its provisions are basically similar to Wyoming's present law. An approved reclamation plan and a performance bond are required before mining can begin.⁷⁷

Colorado's Open Cut Land Reclamation Act of 1969 is of the same genre as Wyoming's 1969 Act. Both were patterned after an early Oklahoma law.⁷⁸ An intended land use plan is required but the posting of a bond is discretionary with the

69. MONT. REV. CODE § 50-1001 to -1004 (1967).

70. MONT. REV. CODE § 50-1005 (1967). See Comment, *Strip-Mining Reclamation Requirements in Montana—A Critique*, 32 MONT. L. REV. 65, 72 (1971).

71. MONT. REV. CODE § 50-1041 (1973).

72. MONT. REV. CODE § 50-1055 (1973).

73. There is no mandamus provision in the 1973 Wyoming Act. An interested party may demand an administrative investigation by filing a written complaint under Article 7, WYO. STAT. § 35-502.46 (Supp. 1973). The Wyoming general law on mandamus may be sufficiently broad to provide relief. See notes 210-213 *infra*.

74. N.D. CENT. CODE § 38-14-05.1 (Supp. 1973).

75. N.D. CENT. CODE § 38-14-08 (Supp. 1973).

76. N.D. CENT. CODE § 38-14-05 (Supp. 1973).

77. S.D. COMP. LAWS § 45-6A-7 (Supp. 1973).

78. See OKLA. STAT. ANN. TIT. 45 §§ 701-13 (Supp. 1967). *Regulation of Open Cut Mining in Wyoming*, *supra* note 59, at 450.

administrator.⁷⁹ For a full comparison of these laws see the chart which accompanies this article in Appendix A.

IV. ARTICLE 4. LAND QUALITY

A. Purpose and Policy

The general provisions of Article 1 list potential environmental harms which the E.Q.A. seeks to minimize or avoid.⁸⁰ The legislature intended to both preserve and enhance the quality of the state's resources by planning their development, use and reclamation. In the general compliance section of Article 4, the E.Q.A. states that while reclamation is performed in the public interest it constitutes an expense to the operator.⁸¹ The primary responsibility for developing a feasible reclamation plan falls on the operator.⁸² Though it must be approved by the State Department of Environmental Quality, the reclamation plan should be consistent with the orderly and economic development of the mining property.⁸³ The performance bond and inspection requirements are intended to insure that the land is reclaimed to its highest prior use⁸⁴ in compliance with the approved plan, whether by the operator, according to the reclamation plan, or by the state through the use of a forfeited bond if the operator fails to comply with the provisions of the E.Q.A.

79. COLO. REV. STAT. § 92-3-1 et seq. (Supp. 1973). The Colorado law was praised by industry spokesmen because it depends on "the initiative of the operator guided by flexible requirements." Comment, *Mined-Land Reclamation in the Western States—A Brief Look*, 4 NATURAL RESOURCES LAW 545, 550 (1971).

80. WYO. STAT. § 35-502.2 (Supp. 1973). "[P]ollution of the air, water and land of this state will imperil public health and welfare, create public or private nuisances, be harmful to wildlife, fish and aquatic life, and impair domestic, agricultural, industrial, recreational and other beneficial uses . . ."

81. WYO. STAT. § 35-502.20 (Supp. 1973).

82. WYO. STAT. § 35-502.24 (Supp. 1973).

83. WYO. STAT. § 35-502.21 (Supp. 1973).

ESTABLISHMENT OF STANDARDS—

(a) The council shall, upon recommendation by the advisory board, establish rules and regulations pursuant to the following reclamation standards for the affected areas, including but not limited to:

* * *

(iii) A time schedule encouraging the earliest possible reclamation program consistent with the orderly and economic development of the mining property.

84. The "highest prior use" language will require a definition in the rules and regulations, which had been issued as of press time, some five months after the law became effective on July 1, 1973.

B. *Administrative Structure*

Article 4 of the E.Q.A. is administered by the Land Quality Division of the State Department of Environmental Quality.⁸⁵ The administrator reports to the Director of the Department⁸⁶ and to the Environmental Quality Council.⁸⁷ The Land Quality Division administrator is directed to work with an advisory board appointed by the Governor⁸⁸ to develop comprehensive programs to deal with environmental problems,⁸⁹ recommend rules and regulations for promulgation by the Council,⁹⁰ and submit an annual written report to the Governor.⁹¹ The five member advisory board consists of two members representing the "public interest," one member representing industry, one member representing agriculture and one member representing political subdivisions. Not more than three members of the board may be from the same political party.⁹²

The administrator of the Land Quality Division⁹³ possesses broad power to administer and enforce the Act. He is primarily responsible for the permit and licensing process,⁹⁴ for setting bond levels,⁹⁵ and for interpreting and applying the Rules and Regulations.⁹⁶ He may also retain qualified experts for advice on reclamation techniques and the adoption

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85. WYO. STAT. § 35-50.4 - 502.7(d) (Supp. 1973). The land quality division is the successor to the powers, duties, regulatory authority and functions of the open pit land reclamation section of the office of the commissioner of public lands and the department is the successor to the sanitary engineering service branch of the division of health and medical services, which sections and branches are abolished as of the effective date of this act.
86. Robert Sundin, Dept. of Environmental Quality, State Office Building, Cheyenne, Wyoming 82001.
87. WYO. STAT. §§ 35-502.11 and .12 (Supp. 1973).
88. WYO. STAT. § 35-502.13 (Supp. 1973).
89. WYO. STAT. § 35-502.14 (a) (Supp. 1973).
90. WYO. STAT. § 35-502.14 (b) (Supp. 1973).
91. WYO. STAT. § 35-502.14 (c) (Supp. 1973).
92. WYO. STAT. § 35-502.13 (a), .13 (b) (Supp. 1973). The Governor initially appoints one member for a six year term, two members for four year terms and two members for two year terms. Thereafter all appointments are for four years. The Governor fills vacancies by appointment.
93. As of October 1, 1973, there were 168 permits outstanding under the Open Cut Land Reclamation Act of 1969 which have not been renewed as required under .20(b). This is due to the fact that the Governor had not appointed a Land Quality advisory board. Section .20(b) of the Act provides a one year period for renewing these permits; the Environmental Quality Council may extend the period if the Land Quality administrator is unable to review the outstanding permits in the one year period.
94. WYO. STAT. § 35-502.22 (a) (iv) and 10 (a) (ii) (Supp. 1973).
95. WYO. STAT. § 35-502.22 (a) (ii) and .10(a) (ii) (Supp. 1973).
96. WYO. STAT. § 35-502.10 (a) (viii) and (ix) (Supp. 1973). These sections require consultation with the advisory board and the director.
97. WYO. STAT. § 35-502.22 (a) (i) (Supp. 1973).

of rules.⁹⁷ The administrator's decisions may be appealed to the Environmental Quality Council.⁹⁸

C. Standards

Article 4 does not contain specific reclamation provisions; it does contain general standards⁹⁹ against which the specific performance requirements contained in the rules and regulations, such as slope bans and minimum vegetative cover,¹⁰⁰ may be tested.¹⁰¹ The broad guidelines are intended to provide guidance for the administrators of the Act and to provide latitude to adapt the law to the peculiar circumstances of each proposed operation.¹⁰² In drafting the rules and regulations, the Director, the Council, the Administrator and the Land Quality Advisory Board are to consider the potential for adverse environmental impact,¹⁰³ the highest previous use¹⁰⁴ of the affected lands,¹⁰⁵ the earliest possible reclamation timetable consistent with the orderly and economic development of mining property,¹⁰⁶ and the stockpiling and re-use of topsoil if possible.¹⁰⁷

The legislature added special provisions for operations presently being conducted with permits issued under the Open Cut Land Reclamation Act of 1969.¹⁰⁸ Their application pro-

98. WYO. STAT. § 35-502.12(a) (iii) (Supp. 1973).

99. See Morris, *Environmental Statutes: The Need for Reviewable Standards*, 2 ENV. LAW 75 (1971).

100. It has been suggested by John R. Quarles, Acting Deputy Administrator of the Environmental Protection Agency, that "[p]recise statutory performance requirements such as slope bans and minimum vegetative cover are not necessary in strip mining legislation." Such requirements could hamper the effectiveness of a mining program in adjusting to new systems and technologies that would further reduce environmental damages associated with mining. Quarles, 4 ENVR. RPTR. 93 (May 18, 1973).

101. WYO. STAT. § 35-502.21 (Supp. 1973).

102. Representative Warren Morton, Chairman of the Wyoming House of Representatives Mines, Minerals and Industrial Development Committee. Personal correspondence, October 8, 1973.

103. WYO. STAT. § 35-502.20(e) (iii) (Supp. 1973).

104. WYO. STAT. § 35-502.21(a) (i) (Supp. 1973).

105. WYO. STAT. § 35-502.21 (Supp. 1973).

106. WYO. STAT. § 35-502.21(a) (iii) (Supp. 1973).

107. WYO. STAT. § 35-502.21(a) (v) (Supp. 1973). The relevant text is from Sections 35-502.21(a) (k) through (vi).

108. WYO. STAT. § 35-502.20(c) (Supp. 1973) provides that

[A]n operator presently operating under a permit issued by the State land commissioner in accordance and in full compliance with the Open Cut Land Reclamation Act of 1969 will be issued a permit upon submission to the administrator of:

(i) The information, maps and other exhibits required by this act; and

(ii) A reclamation plan which fulfills to the board's satisfaction all of the requirements of this Act.

cedure is simplified¹⁰⁹ and the fact that they are already operating is to be considered.¹¹⁰

The rules and regulations promulgated under the 1969 Act remain in effect until superseded by new ones.¹¹¹

D. *Lands Included Under the Act*

There are two categories of land which are exempt from coverage under the Act. Federal lands¹¹² over which the United States has exercised its power of federal pre-emption are not subject to state regulation.¹¹³ Indian tribal lands are the primary example of federal pre-emption.¹¹⁴ Other federal lands are subject to a wide variety of federal regulations,¹¹⁵ but since the requirements are mutually acceptable, the state of Wyoming regulates reclamation activity on federal lands, with one minor exception.¹¹⁶ The federal government retains

109. WYO. STAT. § 35-502.20(d) (Supp. 1973).

110. WYO. STAT. § 35-502.21(a) (vii) (Supp. 1973).

111. WYO. STAT. § 35-502.6(b) (Supp. 1973).

112. The federal government owns 40% of the surface lands and approximately 72% of the mineral rights in Wyoming. Exploration rules for federal lands are found in Title 43 of the Code of Federal Regulations. Glass, *supra* note 4, at 207.

113. The mere fact that the federal government has the authority to regulate an area does not foreclose the possibility of state regulation so long as the federal government does not preempt the field. In *Head v. New Mexico Board of Examiners in Optometry*, 374 U.S. 424, 430 (1963), the Supreme Court said that state statutes "must be upheld unless there is found such actual conflict between the two schemes of regulation that both cannot stand in the same area, or evidence of a Congressional design to preempt the field." See *Minnesota Rate Cases*, 230 U.S. 352 (1913), and *Warren Trading Post Co. v. Arizona Tax Commission*, 380 685 (1965). See also Berger & Mounce, *The Applicability of State Conservation and Other Laws to Indian and Public Land*, 16 ROCKY MT. MIN. L. INST. 347, 349 (1971).

114. *The Shoshone Indian Tribe and Arapahoe Indian Tribe v. Wyoming and Gulf Oil Co.*, Nov. 7, 1969, Docket #5367, unreported decision in U.S. D.C. Wyoming is discussed in Berger & Mounce, *supra* note 113, at 379. The case held that a Wyoming regulatory agency, the State Oil and Gas Commission, has no jurisdiction over wells located on Indian property. See Berger & Mounce, *supra* note 113, at 349 n.2, for a full discussion of the case.

Federal regulations concerning mining on Indian land are found at 25 C.F.R. § 177 (1972) or 35 Fed. Reg. (1969). There are no coal mines presently operating on Indian land. Glass, *supra* note 4, at 201.

115. Dietrich, *Mined Land Reclamation in Western States*, 16 ROCKY MT. MIN. L. INST. 143, 191 (1971). The basic federal regulations are found at 34 Fed. Reg. 852 (1969), and are also cited at 43 C.F.R. § 23.2 (1972). See also 30 U.S.C. § 181-287, § 351-359, § 601 to § 604 (1964) and 23 U.S.C. § 317 (1964). 4 ENV. RPT. 77, 78 (March 6, 1973). See also Ferguson & Haggard, *Regulation of Mining Law Activities in the National Forests*, 8 LAND & WATER L. REV. 391 (1973).

116. One strip mine was exempted by the state under the 1969 Act because it is totally on public land and it is only a temporary mining method for the company. The U.S.G.S. inspects that mine and also periodically checks all other operations that affect public land. Glass, *supra* note 4, at 202.

the power to impose stricter controls on its lands.¹¹⁷ There is some indication that obtaining approval for access over public lands will be a troublesome process for operators who must traverse federal lands to reach their mines, but that topic is beyond the scope of this comment.¹¹⁸

The Wyoming E.Q.A. contains two exclusionary provisions. The first category of excluded activities is composed of minor surface disturbances, such as excavations, extraction of sand, gravel or dirt by a landowner for his own non-commercial use, excavations for buildings and excavations by government agencies for public projects which are regulated by other agencies.¹¹⁹

In addition, the E.Q.A. creates two groups of operators who are exempt from the provisions of the E.Q.A. Since the effective date of the 1969 Act¹²⁰ was July 1, 1969, any operator who completed or substantially completed¹²¹ mining prior to that date is not subject to regulation under either Act. Second, an operator who was included under the 1969 Act but who substantially completed his mine before July 1, 1973, is exempt from regulation under the 1973 E.Q.A.

E. *Permit Application*¹²²

To conduct a mining operation in Wyoming, an "opera-

117. *Utah Power and Light Co. v. United States*, 243 U.S. 389 (1917). See also Olsen, *Surface Reclamation Regulations on Federal and Indian Mineral Leases and Permits*, 17 ROCKY MT. MIN. L. INST. 149, 160 (1972).

One should note that Congress is presently considering laws to increase federal participation in regulation of surface mining reclamation. Both the House and Senate Interior Committees are preparing legislation. 4 ENV. RPTR. 592, 593 (August 10, 1973). See HOUSE INTERIOR MINING AND ENVIRONMENT SUBCOMMITTEE PRINT #3 and S. 425 for this session.

118. See Lonergan, *Access to Intermingled Mineral Deposit Mining Claims and Private Lands Across Surrounding Public Domain and National Forest Lands*, 8 LAND & WATER L. REV. 125 (1973); Due, *Access over Public Lands*, 17 ROCKY MT. MIN. L. INST. 171 (1972); and Biddle, *Access Rights over Public Lands Granted by the 1866 Mining Law and Recent Regulations*, 18 ROCKY MT. MIN. L. INST. 415 (1973).

Lonergan, *id.* at 139 discusses the requirement of a § 102 N.E.P.A. environmental impact statement for this type of use of federal land.

119. WYO. STAT. § 35-502.20(d) (Supp. 1973).

120. WYO. STAT. § 30-96.4(a) (Supp. 1969).

121. This language was criticized for its ambiguity in *Regulation of Open Cut Mining in Wyoming*, *supra* note 59, at 451.

122. Application forms and further information concerning the detailed application procedures are available from the administrator of the Land Quality Division.

tor"¹²³ must obtain both a "mining permit"¹²⁴ and a "license to mine for minerals."¹²⁵ The issuance of a permit, which is amendable¹²⁶ and transferable¹²⁷ certifies that the operator has:

1. Complied with the extensive application requirements of Section 24(a).¹²⁸
2. Submitted an acceptable plan for public inspection with the county clerk of the affected counties.¹²⁹
3. Published notice of his application in a local newspaper of general circulation.¹³⁰
4. Submitted an acceptable plan for reclaiming the land.¹³¹

123. WYO. STAT. § 35-502.3(e) (ix) (Supp. 1973) defines "operator" as: "any person, . . . , engaged in mining, either as a principal who is or becomes the owner of minerals as a result of mining, or who acts as an agent or independent contractor on behalf of such principal in the conduct of mining operations" WYO. STAT. § 35-502.23 (Supp. 1973):

A mining permit is the certification that the tract of land described therein may be mined by an operator licensed to do so in conformance with an approved reclamation plan. No mining may be commenced or conducted on land for which there is not in effect a valid mining permit to which the operator possesses the rights. A mining permit once granted remains valid and in force from the date of its issuance until the termination of all mining and reclamation operations, except as otherwise provided in this Act.

124. WYO. STAT. § 35-502.3(e) (xi) (Supp. 1973):

"Mining permit" means certification by the director that the affected land described therein may be mined for minerals by a licensed operator in compliance with an approved reclamation plan. No mining may be commenced or conducted on land for which there is not in effect a valid mining permit. A mining permit shall remain valid and in force from the date of its issuance until the termination of all mining and reclamation operations, except as otherwise provided in this Act.

125. WYO. STAT. § 35-502.3(e) (xiii) (Supp. 1973):

"A license to mine for minerals" means the certification from the administrator that the licensee has the right to conduct mining operations on the subject lands in compliance with this Act; for which a valid permit exists; that he has deposited a bond conditioned on his faithful fulfillment of the requirements thereof; and that upon investigation the administrator had determined that the licensed mining operation is within the purpose of this Act.

126. WYO. STAT. § 35-502.24(a) (xii) (Supp. 1973):

(a) Applications for a mining permit shall be made in writing to the administrator and shall contain . . . (xii) A minimum fee of \$100 plus \$10 for each acre in the requested permit but the maximum fee for any single permit shall not exceed \$2,000.00. The permit is amendable without public notice or hearing if the area sought to be included by amendment does not exceed 20% of the total permit acreage, is contiguous to the permit area, and if the operator includes all of the information necessary in his application to amend that is required in this section including a mining and reclamation plan acceptable to the administrator. The fee for a permit amendment shall be \$200 plus \$10 for each acre not to exceed \$2,000.00.

127. WYO. STAT. § 35-502.25 (Supp. 1973).

128. See note 132 *infra*.

129. WYO. STAT. § 35-502.24(d) (Supp. 1973).

130. WYO. STAT. § 35-502.24(e) (Supp. 1973).

131. WYO. STAT. § 35-502.24(b) (Supp. 1973).

5. Mailed a copy of the notice to all surface owners of land within the permit area and to those within one-half mile of the proposed permit area.¹³²
6. Attached proof of the notice and mailing to the permit application form.¹³³
7. Obtained either an instrument of consent from the surface landowner or an order from the Environmental Quality Council in lieu of the surface owner's consent,¹³⁴ and paid the minimum permit fee of \$100.00 plus \$10.00 per acre.¹³⁵

132. WYO. STAT. § 35-502.3(e) (vii) (Supp. 1973).

133. WYO. STAT. § 35-502.24(e) (Supp. 1973).

134. WYO. STAT. § 35-502.24(b) (x) (Supp. 1973). This section of the Act requires an operator to obtain either the surface owner's written consent to mine or an in lieu order from the Council. This provision taken at face value does not raise serious constitutional questions. Section .24(b) (x) (c) provides, however, that the Council may issue the in lieu order only if the mineral estate owner's use does not "substantially prohibit the operations of the surface owner." This requirement is arguably unconstitutional in that the mineral owner who bargained for and obtained a mineral estate will be denied by state action the right to mine his coal. This could be held to constitute a taking in derogation of an existing contract and without just compensation. Article 1, § 33 of the Wyoming Constitution provides that, "Private property shall not be taken or damaged for public use or private use without just compensation."

The question of what constitutes a taking is beyond the scope of this comment, but the reader is referred to Michelman, *Property, Fairness and Utility*, 80 HARV. L. REV. 1165 (1967), Sax, *Takings, Private Property and Public Rights*, 81 YALE L. J. 149 (1971), Aris Gloves, Inc. v. U.S., 420 F.2d 1386 (Ct. of Claims 1970) and Sardino v. Federal Reserve Bank of New York, 361 F.2d 106 (2nd Cir. 1966).

Two trends are worthy of note. Justice Holmes' opinion in *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393 (1922) suggested that any government action resulting in an excessive reduction in the value of private property was a taking. (*But see* U.S. ENVIRONMENTAL PROTECTION AGENCY, LEGAL PROBLEMS OF COAL MINE RECLAMATION 111 (1972) and *Village of Euclid v. Ambler Realty Co.*, 272 U.S. 365 (1926)). An extension of Holmes' position is found in *Sun Oil v. Whitaker*, 483 S.W.2d 208 (1972), discussed in Note, 7 LAND & WATER L. REV. 175 (1973), and Patton, *Recent Changes in the Correlative Rights of Surface and Minerals Owners*, 18 ROCKY MT. MIN. L. INST. 19, 35 (1973).

The Holmes' view was unpersuasive to several courts which have avoided the taking question by focusing on the reasonable use of the land concept and on the original intent of the parties. The court in *Smith v. Moore*, 172 Colo. 563, 564, 474 P.2d 794, 795 (1970) held that the right to strip mine coal would not be implied unless it is clearly expressed in terms so plain as to admit of no doubt. Other cases concerning strip mining have restricted the owner of the mineral estate from damaging or destroying the surface estate. *See Stewart v. Chernicky*, 266 A.2d 259 (Pa. 1970); *Acker v. Guinn*, 464 S.W.2d 348 (Tex. 1971); and *West Virginia-Pittsburgh Coal Co. v. Strong*, 129 W. Va. 832, 42 S.E.2d 46 (1947). Patton concluded, "Absent a contrary intention affirmatively and fairly expressed in the instrument severing the mineral estate, a court will not permit the owner of unspecified minerals to engage in strip-mining or other operations which substantially destroy the surface." (*Id.* at 42). If the court which considers the constitutionality of the Wyoming Act follows the philosophy which Patton sets out, then a denial of a permit under § .24(b) will be upheld as constitutional.

If, on the other hand, the court concludes, that the mineral is specifically named in the conveyance and strip mining is the only way to develop the resource, then the mining will be permitted and the provision held un-

The permit is valid for the life of the mining and reclamation operation so long as the operator complies with the terms of the Act and the rules and regulations.¹³⁶ The operator may request the local soil conservation district to provide reclamation data or research assistance for the development of his reclamation plan.¹³⁷

In addition, if the owner of the mineral estate does not also own the surface rights, then he must obtain either a signed release from the landowner or post a surface-owner protection bond in addition to the state's reclamation bond.¹³⁸ The second bond is required to obtain a permit or license and must be provided before the operator may commence mining unless the landowner signs a consent form waiving the bond.¹³⁹ The purpose of the bond is to guarantee payment to the surface owner for damages to the surface estate, to the crops and forage, to the tangible improvements of the surface owner and for those damages resulting from the disruption of the surface owner's operation.¹⁴⁰ The surface owner may collect on the bond in an amount which is determined by the parties themselves, by a suit at law against the permittee, or by a suit in equity upon the bond.¹⁴¹

The E.Q.A. also provides that the surface owner who owns a valid adjudicated water right may sue for damages due to pollution, diminution or interruption of supply which results

constitutional, at least in that particular application. The landowner consent provision of the Wyoming Act undoubtedly restricts a mineral owner's use of his property, but a finding of a mere "regulation" of his right is insufficient to void the law on constitutional ground.

Finally, whether the denial of a permit to mine under the provisions of § .24(b) is upheld or not will probably depend on the facts of the case, the severity of the injuries, the terms of the original conveyance and the more subtle demands of the energy crisis and its counterforce, the demand for environmental protection. *Id.* at 40.

135. WYO. STAT. § 35-502.24(a) (xii) (Supp. 1973). The maximum fee is \$2,000.
 136. WYO. STAT. § 35-502.23 (Supp. 1973).
 137. WYO. STAT. § 35-502.24(c) (Supp. 1973).
 138. WYO. STAT. § 35-502.33 (Supp. 1973).
 139. WYO. STAT. § 35-502.33(a) (i) (Supp. 1973).
 140. WYO. STAT. § 35-502.33(a) (ii) (Supp. 1973).
 141. WYO. STAT. § 35-502.33(a) (ii) (Supp. 1973). The owner of the mineral estate is considered to have the dominant estate and the surface owner the sub-servient estate. Brimmer, *The Rancher's Subservient Surface Estate*, 5 LAND & WATER L. REV. 49, 52 (1970); Getty Oil Co. v. Royal, 442 S.W.2d 591 (Tex. Civ. App. 1967); and Sun Oil Company v. Whitaker, 483 S.W.2d (Tex. 1972). The contrary view is set out in Patton, *supra* note 134, at 19. This provision will encourage mineral owners to obtain the surface rights as well as the mineral rights because of the expansive range of damages which this provision imposes on them. For provisions relating to federal lands, see 30 U.S.C. § 54 (1970); see also Note, *Surface Damage Under a*

from surface mining.¹⁴² Possible damage to water rights does not appear to be bondable under Section .33(a) provisions for surface owner protection bonds. Damages resulting from pollution of a subterranean stream with a permanent, distinct, known channel are excluded from this provision.¹⁴³

The landowner consent requirement may be subject to an attack on constitutional grounds since the owner of a mineral estate is arguably deprived of his property without just compensation. Courts appear to be divided on the question of whether the owner of a mineral estate may destroy the surface estate in the process of strip mining under color of an implied right of the dominant estate.¹⁴⁴

A public hearing¹⁴⁵ will be held on the permit application for new permits of any interested persons file a written notice required under Section .24(e).¹⁴⁶ A decision on the permit application must be reached by the administrator within thirty days after the final hearing or after completion of the application. If the application is protested, then the council must reach its decision within thirty days.¹⁴⁷

F. *Approval, Modification, or Denial of a Permit*

The operator's application for a mining permit may be denied if he has (1) filed an incomplete application;¹⁴⁸ (2) not paid the proper fee;¹⁴⁹ (3) proposed an operation which is contrary to the law or policy of the United States or of this state;¹⁵⁰ (4) proposed an operation which would "irreparably harm, destroy, or materially impair any area that has been

Federal Oil and Gas Lease, 11 Wyo. L.J. 116 (1957) and *Holbrook v. Continental Oil Company*, 278 P.2d 798 (Wyo. 1955). Coal mining is also regulated under 30 U.S.C. § 81 (1970).

142. WYO. STAT. § 35-502.33(b) (Supp. 1973).

143. WYO. STAT. § 35-502.33(b) (Supp. 1973).

144. There is a mixed trend of decisions away from the dominance of the mineral estate. See *supra* note 146, and particularly, Patton, *supra* note 134, and Brimmer, *supra* note 141, at 59.

145. The hearing is held according to the provisions of the Wyoming Administrative Procedures Act. WYO. STAT. § 9-276.19 (Supp. 1973).

146. WYO. STAT. § 35-502.24(f) (Supp. 1973).

147. WYO. STAT. § 35-502.24(h) (Supp. 1973). If a decision has not been reached within thirty days, the applicant would probably have a cause of action in mandamus. See notes 210-213, *infra*. The Act makes no provision for a case which extends past the deadline.

148. WYO. STAT. § 35-502.24(g)(i) (Supp. 1973).

149. WYO. STAT. § 35-502.24(g)(ii) (Supp. 1973).

150. WYO. STAT. § 35-502.24(g)(iii) (Supp. 1973). "Any part of the proposed operation, reclamation program or the proposed future use is contrary to the law or policy of this state or the United States."

designated by the council to be of a unique and irreplaceable, historical, archeological, scenic, or natural value;¹⁵¹ (5) previously had a license or permit revoked or a bond forfeited;¹⁵² (6) proposed an operation which would create a nuisance or endanger the public safety;¹⁵³ (7) been unable to post the required bond;¹⁵⁴ or (8) has a plan against which written objections have been filed by an interested person.¹⁵⁵

If the administrator acts with the advice of the advisory board to deny, modify, or rule unfavorably on an operator's application, then the operator may appeal the decision to the Council.¹⁵⁶ The Environmental Quality Council will conduct a hearing¹⁵⁷ following the provisions of the Wyoming Administrative Procedures Act.¹⁵⁸

G. *License Application Procedure*

An operator¹⁵⁹ must also obtain a license to mine after the permit is granted.¹⁶⁰ Using forms provided by the administrator the operator must supply his name and address,¹⁶¹ a copy of the mining permit for the area,¹⁶² the number of acres and location of the area to be affected by the mining operation during its first year of operation,¹⁶³ the estimated dates of commencement and termination of the proposed mining,¹⁶⁴ and a \$25.00 application fee.¹⁶⁵ The administrator must then

151. WYO. STAT. § 35-502.24(g) (iv)-(v) (Supp. 1973).

152. WYO. STAT. § 35-502.24(g) (vi) (Supp. 1973).

153. WYO. STAT. § 35-502.24(vii)-(viii) (Supp. 1973).

154. WYO. STAT. § 35-502.24(g) (ix) (Supp. 1973).

155. WYO. STAT. § 35-502.24(g) (x) (Supp. 1973). The mere filing of a written objection would probably be insufficient grounds to deny a permit but could be cited along with other grounds for denial as an expression of public opposition to the project.

156. WYO. STAT. § 35-502.12(c) (ii) (Supp. 1973).

157. WYO. STAT. § 35-502.12(a) (ii) (Supp. 1973). The Act provides for administrative review of the administrator by the Environment Quality Council.

158. The hearing follows the provisions of the Wyoming Administrative Procedures Act, WYO. STAT. § 9-276.19 (Supp. 1973).

159. If the applicant did not also hold the original mining permit, then he must supply a written copy of the transfer by which he obtained the permit rights under Section 35-502.27(b) (ii) and a statement that he has never had a permit revoked, license revoked or bond forfeited for an intentional and substantial violation of the provisions of the Act.

160. WYO. STAT. § 35-502.27(a) (Supp. 1973). Note that Section 35-502.27(b) (ii) requires a copy of the permit to accompany the license application.

161. WYO. STAT. § 35-502.27(b) (i) (Supp. 1973).

162. WYO. STAT. § 35-502.37(b) (ii) (Supp. 1973).

163. WYO. STAT. § 35-502.27(b) (iv) (Supp. 1973). These provisions apply if that area is less than the full permit area.

164. WYO. STAT. § 35-502.27(b) (v) (Supp. 1973).

165. WYO. STAT. § 35-502.27(b) (vi) (Supp. 1973).

promptly review the application.¹⁶⁶ If it is consistent with the terms of the permit and the provisions of the Act then he will require the operator to post a bond¹⁶⁷ in an amount sufficient to insure reclamation of the lands to be disturbed during the first year of mining.¹⁶⁸ Upon receipt of the bond, the administrator must promptly issue the license to mine.

No provision is made in the Act for amending a license. The mining permit under which the license is granted may be amended.¹⁶⁹ A license may be revoked at any time if the advisory board becomes aware of the existence of any fact, reason or condition justifying such action.¹⁷⁰ An intentional misstatement or bad faith omission in the application which would have resulted in an original denial of the license constitutes sufficient grounds for revoking a license.¹⁷¹

A license may be suspended by the advisory board and mining operations halted¹⁷² for a substantial violation of the terms of the license or of the act.¹⁷³ The suspension may not be "unreasonably prolonged" and must be lifted when the violation has been corrected to the board's satisfaction.

H. *Bond Provisions*

Before he begins to mine, the operator is required to post a reclamation and performance bond¹⁷⁴ to assure his compli-

166. WYO. STAT. § 35-502.27(c) (Supp. 1973).

167. WYO. STAT. § 35-502.34 (Supp. 1973).

168. WYO. STAT. § 35-502.27(c) (Supp. 1973). See the discussion of the bond provisions in the text accompanying notes 174 to 195.

169. WYO. STAT. § 35-502.24(a) (xii) (Supp. 1973).

170. WYO. STAT. § 35-502.29(a) (i) (Supp. 1973). "The board shall revoke an operator's license: (i) If at any time it becomes aware of the existence of any fact, reason or condition that would have caused it to deny an application for a mining permit whether or not such condition existed at the time of said application."

171. WYO. STAT. § 35-502.29(a) (ii) (Supp. 1973).

172. WYO. STAT. § 35-502.20(a) (Supp. 1973).

173. WYO. STAT. § 35-502.29(b) (Supp. 1973).

174. WYO. STAT. § 35-502.34 (Supp. 1973). To strengthen this section a bond of cost plus 25% could be required to insure reclamation by the operator. The Act does provide that any "operator whose bond is forfeited may be denied a second permit." This provision would be ineffective if the operator had no further intention to mine in Wyoming. Even though the Act contains no specific statutory authorization, this cost-plus concept could be incorporated into the rules and regulations. Under the Act the administrator may adjust the operator's estimate; the cost to the state would be higher than the operator's cost because the state would have to bring in the equipment while the operator usually has the equipment already on the mine site. Personal interview with Homer Derrer, Acting Administrator of the Land Land Quality Division, and Strip Mining Engineer of the Open Cut Land Reclamation Act, September 1973.

ance with the requirements of the Act, the rules and regulations and, primarily, to insure that mined lands will not be left unreclaimed.¹⁷⁵ The amount of the bond is set by the administrator with the director's approval.¹⁷⁶ The bond must be sufficient to recover the cost of reclamation of lands to be affected¹⁷⁷ during the first year of operation. Determination of the level is based upon the operator's cost estimate which is submitted with his permit¹⁷⁸ and license¹⁷⁹ applications, and upon the administrator's own cost estimates.

The minimum bond is \$10,000;¹⁸⁰ the Act prescribes no maximum. The amount of the bond is adjusted from year to year to remain consistent with the total size of the unreclaimed area.¹⁸¹ If the operator believes the required bond is excessive he may request a hearing before the Environmental Quality Council.¹⁸² If an interested party believes the required bond is insufficient to cover reclamation costs, then he may file a written complaint with the director under the provisions of Article 7.

The operator may tender cash, government securities or both in lieu of a bond.¹⁸³ If bond is tendered it must be signed by a corporate surety licensed to do business in Wyoming. The advisory board may also require the record mineral owner to join as principal.¹⁸⁴ The surety may cancel the bond only after ninety days notice to the director and after the requirements of the bond have been fulfilled.¹⁸⁵ If the surety's license to do business in Wyoming is cancelled, then the permit to mine will be suspended unless another surety is substituted within ninety days.¹⁸⁶

175. Bonding provisions are a standard feature of western state mined land reclamation laws. Compare MONT. REV. CODE § 50-1039 (5) (Supp. 1973) with COLO. REV. STAT. § 92-13-8(1) (Supp. 1969) and N. MEX. STAT. § 63-34-18 (Supp. 1973).

176. WYO. STAT. § 35-502.34(c)(i) (Supp. 1973).

177. WYO. STAT. § 35-502.3(e)(xvi) (Supp. 1973).

178. WYO. STAT. § 35-502.24(b) (Supp. 1973).

179. WYO. STAT. § 35-502.27(b)(iv) (Supp. 1973).

180. WYO. STAT. § 35-502.34(c)(i) (Supp. 1973). The total bond for sand and gravel, scoria or jade mining may be less than \$10,000 but must be at least \$200.00 per acre.

181. WYO. STAT. § 35-502.34(e) (Supp. 1973).

182. The provisions for a hearing before the Environmental Quality Council are set out at WYO. STAT. § 35-502.12 (Supp. 1973). See also *supra* note 158.

183. WYO. STAT. § 35-502.35 (Supp. 1973).

184. WYO. STAT. § 35-502.34(b) (Supp. 1973).

185. WYO. STAT. § 35-502.36 (Supp. 1973).

186. WYO. STAT. § 35-502.37 (Supp. 1973).

Bond forfeiture proceedings are brought by the Attorney General at the formal request of the director who must obtain approval from the Council to begin proceedings.¹⁸⁷ After receipt of notice from the Attorney General of the possible forfeiture, the operator has thirty days to request a hearing before the Council. If no request for a hearing is tendered then the Council must order the bond forfeited.¹⁸⁸ If a request for a hearing is received, then within thirty days the Council must hear the operator's presentation of statements, documents or other relevant information before ruling either to withdraw the violation notice or to order the bond forfeited.¹⁸⁹ If the forfeited bond is inadequate to reclaim the affected lands, the Attorney General may sue to recover the full reclamation cost.¹⁹⁰

The bond is the state's primary guarantee of reclamation.¹⁹¹ The Act provides a two-part procedure for its release. Upon completion of the reclamation plan after mining has ceased on any affected land, the administrator may consult the advisory board and recommend a release of up to 75% of the bond on that portion of the affected land. The director must hold at least \$10,000 for five years, unless the operator obtains a written release from the surface owner, and the approval of both the administrator and the director.¹⁹² Their approval must be based on an on-site inspection by the administrator which finds that the reclamation plan has been successfully completed.¹⁹³

When the operator believes he has successfully completed the reclamation he may request a release of the retained bond. The director must obtain the administrator's inspection report and rule on the request within sixty days. If the request is denied, the director must notify the operator of the reason for denial and recommend corrective actions. When these

187. WYO. STAT. § 35-502.38 (Supp. 1973).

188. WYO. STAT. § 35-502.38(b) (Supp. 1973).

189. WYO. STAT. § 35-502.38(c) (Supp. 1973).

190. WYO. STAT. § 35-502.39 (Supp. 1973).

191. The provisions of WYO. STAT. § 35-502.28 (Supp. 1973) requiring an annual inspection by the administrator, an annual report by the operator, and an annual adjustment of the bond are also relevant.

192. WYO. STAT. § 35-502.34(d) (Supp. 1973).

193. WYO. STAT. § 35-502.40(b) and (c) (Supp. 1973).

are completed, the director must order the state treasurer to release the bond.¹⁹⁴

I. *Duties of the Operator—Annual Report*

To preserve his permit and license, the operator must comply with all requirements of the Act¹⁹⁵ and submit an annual report to the administrator within thirty days of the anniversary date of the permit. Generally, the report must contain information on the progress of mining and reclamation activities, deviations from the reclamation plan, a revised timetable of operations and an estimate of the number of acres to be disturbed during the next year.¹⁹⁶ After an on-site inspection¹⁹⁷ by the administrator the reclamation plan may be amended to conform to changing conditions.¹⁹⁸ The director must review the bond to insure that it will adequately insure reclamation of lands to be affected during the coming year.¹⁹⁹ A renewal of the license to mine may be refused for failure to comply with these provisions.²⁰⁰ The operator must also maintain a sign at each entrance to an operation which lists his permit number, the name of his local agent, and the name, address and phone number of the operator.²⁰¹

Section .32(b) provides that the operator must protect affected topsoil, impound or dispose of toxic wastes, follow the reclamation plan and generally prevent pollution.

V. SPECIAL LICENSE TO EXPLORE FOR MINERALS BY DOZING

Some forms of mineral exploration are conducted by stripping away surface ground cover with a bulldozer.²⁰² Un-

194. Wyo. STAT. § 35-502.40(c) (Supp. 1973).

195. Wyo. STAT. § 35-502.32(a) (Supp. 1973).

196. Wyo. STAT. § 35-502.28(a) (i) to (iii) (Supp. 1973) lists the full requirements.

197. The U.S. Bureau of Mines has been experimenting with the use of satellites to monitor open pit and strip mining operations using photographs taken during the Gemini V and Apollo VI flights. These types of mines can be monitored with conventional technology if the sharpness of the imagery is sufficiently high. Possibilities also exist for semi-automated change detection processes. U.S. BUREAU OF MINES INFORMATION CIRCULAR #853, SATELLITE MONITORING OF OPEN PIT MINING OPERATIONS (1971).

198. Wyo. STAT. § 35-502.28(c) and (d) (Supp. 1973).

199. Wyo. STAT. § 35-502.28(d) (Supp. 1973).

200. Wyo. STAT. § 35-502.28(b) (Supp. 1973).

201. Wyo. STAT. § 35-502.32(b) (Supp. 1973).

202. The general mining laws of the U.S. do not regulate exploration by bulldozing. The new Wyoming Act will now require all operators who explore by bulldozing for minerals to obtain a license from the state and post a bond.

regulated prior to 1973,²⁰³ these activities now require state approval. If the proposed exploration covers more than forty acres in any four contiguous sixteenth sections,²⁰⁴ the full provisions of the E.Q.A. apply and the operator must obtain a regular permit and license to mine. If the area affected is under 40 acres, he need only obtain a special mineral exploration license which is valid for one year.²⁰⁵

To obtain the special license, the operator must consult the rules and regulations which are available from the administrator,²⁰⁶ after their promulgation by the Council. Generally, the application must include a reclamation plan and a timetable for re-countouring the land to its original topography and for re-vegetating the area disturbed.²⁰⁷ The operator must post a bond in an amount adequate to cover the cost of reclamation, as determined by the administrator.²⁰⁸ A \$25.00 application fee is also required.²⁰⁹ The administrator must inspect the site before the bond can be released.

VI. CONCLUSION

In order to insure compliance with the Environmental Quality Act of 1973, the legislature must provide generous funding for its administration. The permit, licensing and inspection procedures are complex and time-consuming. In addition, there appear to be genuine problems in insuring re-vegetation of disturbed areas of Wyoming's arid lands. With proper funding and initiative, the Land Division administrator could play an active role in developing answers to these problems.

The fact that the Governor did not make appointments to the advisory boards until mid-October also suggests a weakness in the Act. The absence of a mandamus provision which would permit private citizens to assist in the enforcement of the Act leaves the public's interest protected only by administrators and council members appointed by the gover-

203. WYO. STAT. § 35-502.31(h) (Supp. 1973).

204. WYO. STAT. § 35-502.31(h) (Supp. 1973).

205. The rules and regulations had not been issued as of our press deadline.

206. WYO. STAT. § 35-502.31(a) (Supp. 1973).

207. WYO. STAT. § 35-502.31(b) (i) and (ii) (Supp. 1973).

208. WYO. STAT. § 35-502.34(a) (Supp. 1973).

209. WYO. STAT. § 35-502.31(b) (Supp. 1973).

nor and robs the system of a genuine check-and-balance mechanism. Mandamus²¹⁰ may be brought by any citizen against a state officer or employee who has failed to perform his statutory duty under the laws of the state.²¹¹ It may be granted only in the absence of an adequate remedy at law, where the duty to perform is clear, certain and undisputable, and where it appears that it will be effectual as a remedy.²¹² The enactment of regulations may be compelled by mandamus, where, as in the Act, the duty to promulgate regulations is imposed by law.²¹³

Finally, one should not overlook the possibility of federal legislation to regulate or prohibit surface mining. Reclamation of surface-mined lands in the post-Appalachian period is an understandably sensitive topic with powerful lobby groups. By placing most substantive reclamation standards in the rules and regulations the Wyoming legislature intended to establish a flexible system capable of meeting minimum federal standards and thereby to retain state control over reclamation of surface-mined areas. A federal pre-emption of reclamation would void even this effort, however.

210. WYO. STAT. § 1-877 (1945) (Supp. 1973).

Mandamus is a writ issued in the name of the state to an inferior tribunal, a corporation, board or person commanding the performance of an act which the law specially enjoins as a duty resulting from an office, trust, or station.

211. Montana provides specific statutory authority for any resident of the state to bring a writ of mandamus against any state officer or employee who has a duty to enforce any provision of Montana's strip mining law. The resident must first bring the violation to the attention of the public officer or employee. MONT. REV. CODES ANN. § 50-1055 (Supp. 1973): Absence of specific authority in the Act does not defeat the remedy. Mandamus may be brought against any state official, including the governor. *State ex rel Irvine v. Brooks*, 14 Wyo. 393, 84 P. 488 (1906). Writs of mandamus against state officials will be brought in the Wyoming Supreme Court. WYO. CONST. art. 5, § 3.

212. *State ex rel Whitehead v. Gage*, 377 P.2d 299 (Wyo. 1963); *LeBeau v. State ex rel. White*, 377 P.2d 302, 304 (Wyo. 1963).

213. In the case of *Richmond Funeral Directors Association v. Groth*, 202 Va. 792, 120 S.E.2d 467, 470 (1961), a city official was required by ordinance to promulgate rules and regulations relating to parking at places where funerals were held. The court pointed out that:

Under the ordinance, the respondent is vested with discretion as to what shall be contained in the rules and regulations to be promulgated by him. Since mandamus does not lie to direct the manner in which the respondent should exercise his discretion, we cannot control the contents of the rules and regulations. However, under the ordinance, the respondent has no discretion as to whether or not he shall promulgate the rules and regulations in the first instance Mandamus is proper to compel him to perform his duty, without controlling the manner in which he exercises his discretion.

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In the final analysis, the success of the E.Q.A. of 1973 will depend on the administrative capability of the offices which the legislature established to enforce the Act and upon the ability, integrity and initiative of the administrators who fill them.

ROBERT E. BROWN

APPENDIX A
COMPARISON OF STATE STATUTORY REQUIREMENTS
REGARDING THE REHABILITATION OF
SURFACE MINED LANDS IN THE WESTERN UNITED STATES

Effective Date of Current Laws	Colorado	Montana	N. Mexico	N. Dakota	S. Dakota	Wyoming
7/1/69, (Amendment— 7/1/69)	COLO. REV. STAT. (1969)	MONT. REV. CODE (Supp. 1973)	N. Mex. STAT. (Supp. 1973) § 63-34-1	N. D. CENTURY CODE (Supp. 1973)	S. D. COMP. LAWS (Supp. 1973)	WYO. STAT. (Supp. 1973)
Title of Current Law	The Colorado Open Cut Reclamation Act of 1969 § 92-13-1	The Montana Strip Mining and Reclama- tion Act § 50-1034	Coal Surface- mining Act § 63-34-1	Reclamation of Strip- Mined Lands § 38-14	Surface Mining Land Reclamation Act § 45-6A	Wyoming Environmental Quality Act § 35-502.1
Minerals Subject to Regulation	coal	coal, clay, phosphate rock, uranium § 50-1034	coal	all minerals	all except oil & gas	any mineral
Operations exempted from the law	§ 92-13-3(3) none	10,000 cu. yds. removed	§ 63-34-2(b) none	§ 38-14-02 10 ft. overburden	§ 45-6A-2(9) 1,000 tons removed exempted from permit re- quirements but must rehabilitate	§ 35-502.20(a) none except 4,000T over- burden removed on 2/yr which exempt from certain provisions of Statutes § 35-502.20F
	§ 50-1086(7) § 50-1403(9)			§ 38-14-04	§ 45-6A-10	

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	Colorado COLO. REV. STAT. (1969)	Montana MONT. REV. CODE (Supp. 1973)	N. Mexico N. MEX. STAT. (Supp. 1973) § 63-34-1	N. Dakota N.D. CENTURY CODE (Supp. 1973)	S. Dakota S.D. COMP. LAWS (Supp. 1973)	Wyoming WYO. STAT. (Supp. 1973)
Lands Protected from Mining	none	unique values; must area strip § 60-1042(2)	none	unique values or if unreclaimable § 38-14-05.1	none	unique values
"Affected Land" includes access road & railroads	no	yes § 50-1086(5)	no	no	roads: yes railroads: no § 45-6A-2(1)	yes no § 35-502.3(e) (XVI) [see (t) (VIII)]
Prospecting covered by the law	no	yes § 50-1041	no	no	yes	yes § 35-502.30
Bond	Determined by the Board	\$2,000/operation, \$200-\$2500/ac. not less than estimated cost of state governments rehabilitating land	Determined by Commission	\$500/ac.	Estimated cost of rehabilitation	not \$10,000 and determined to ensure rehabilitation
Fines	§ 92-13-8(1) \$50-\$1,000	§ 50-1039(5) rules-\$100-\$1,000/day; order-\$500-\$5,000/day	§ 63-34-18 \$1,000/day	§ 38-14-04 § 38-14-07 \$50-\$1,000/day	§ 45-6A-12 \$1,000/day	§ 35-502.34 1st offense \$10,000/day 2nd offense \$25,000/day willfall violation \$50,000/day § 35-502.49
	§ 92-13-13(2)	§ 50-1056	§ 63-34-19	§ 38-14-12	§ 45-6A-31	

	Colorado COLO. REV. STAT. (1969)	Montana MONT. REV. CODE (Supp. 1973)	N. Mexico N. MEX. STAT. (Supp. 1973) § 63-34-1	N. Dakota N.D. CENTURY CODE (Supp. 1973)	S. Dakota S.D. COMP. LAWS (Supp. 1973)	Wyoming WYO. STAT. (Supp. 1973)
ADMINISTRATIVE SANCTIONS						
Suspension or Cancellation of Permit	yes § 92-13-13	yes § 50-1050	yes § 63-34-17 § 63-34-20	yes § 38-14-09	yes § 45-6A-23	yes § 35-502.29
Reinstatement Possible	yes	yes	yes	no-and must cease other mining activities within the state within 90 days of forfeiture	yes	yes for suspension of "License to Mine"
Denial of Subsequent Permits to Operate	§ 92-13-8 yes § 92-13-8	§ 50-1050 (2) repeated violations § 50-1050 (2)	§ 63-34-17 no	§ 38-14-07 yes § 38-14-07	§ 45-6A-24 yes	§ 35-502.29 (b) yes § 35-502.48
MINING PERMIT REQUIREMENTS						
Permit Term	1 year	1 year	life of operator	3 years and 3 years to rehabilitate	1 year	life of project
Submitted to Which Agency	Land Reclamation Board	State Board of Land Commissions § 50-1039 (1) § 50-1036 (11)	Coal Surface Mining Commission	Public Service Commission	State Conservation Commission	Department of Environmental Quality Land Division § 35-502.24 (a)
	§ 92-13-5	§ 50-1039 (1)	§ 63-34-6	§ 38-14-04	§ 45-6A-8	§ 35-502.23
	§ 92-13-5	§ 50-1039 (1)	§ 63-34-2 (c)	§ 38-14-04	§ 45-6A-8	§ 35-502.24 (a)

	Colorado STAT. (1969)	Montana MONT. REV. CODE (Supp. 1973)	N. Mexico N. MEX. STAT. (Supp. 1973) § 63-34-1	N. Dakota N.D. CENTURY CODE (Supp. 1973)	S. Dakota S.D. COMP. LAWS (Supp. 1973)	Wyoming WYO. STAT. (Supp. 1973)
Information Concerning Operator's Past History Required	no	yes § 50-1039 (F) (G)	no	no	no	yes § 35-502.24 (a) (111)
Mining Plan Required	no	yes § 50-1044	yes § 63-34-9	no yes	§ 45-6A-7	§ 35-502.24 (a) yes
Rehabilitation Plan Required	no	yes § 50-1043	yes § 63-34-9	yes § 38-14-05 (8)	yes § 45-6A-17	yes § 35-502.24 (b)
Intended Land Use Plan Required	yes § 92-13-6(1) (b)	yes § 50-1043	no	yes § 38-14-05 (8)	no	yes § 35-502.24
Provisions for Public Remonstrance	no	yes	no, (by rules and regula- tions-public hearing on environmental impact; public hearing on mining permit)	yes	no	yes
		§ 50-1037 § 50-1043 § 50-1056 § 50-1057		§ 38-14-07 § 38-14-09 § 38-14-10		§ 35-502.46
REGULATORY MEASURES						
Regulatory Agency	Land Reclamation Board § 92-13-4 § 92-13-5	Department of State Lands § 50-1036 (11)	Bureau of Mines and Mineral Resources § 63-34-10	Public Service Commission § 38-14-02 (12)	State Conservation Commission § 45-6A-8	Department of Environmental Quality Land Division § 35-502.5(111)
Regulations Primarily Set By:	Statute, some by agency § 92-13-11	Statute and agency	Agency (with public hearings) § 63-34-10	Statute	Agency	Agency § 35-502.6

	Colorado COLO. REV. STAT. (1969)	Montana MONT. REV. CODE (Supp. 1973)	N. Mexico N. Mex. STAT. (Supp. 1973) § 63-34-1	N. Dakota N.D. CENTURY CODE (Supp. 1973)	S. Dakota S.D. COMP. LAWS (Supp. 1973)	Wyoming WYO. STAT. (Supp. 1973)
Provisions for Monitoring to be Performed by the Agency	no	no	no	no	no	yes § 35-502.10 (a) (VII) (c)
Reports Required from the Operator to the Agency	yes	yes	As determined by Commission	yes	yes	yes
Annual	§ 92-13-6(1) (B)	§ 50-1049	no § 63-34-13	§ 38-14-05 (7)	§ 45-6A-18	§ 35-502.28
Inspection Requirements	Administrative Discretion	yes	To be set by regulation	no	no	yes, by regulation
Prior to permit approval	§ 92-13-7	§ 50-1038(5)	no § 63-34-14			§ 35-502.9 (a) (V)
Annually	no	yes	no	no	no	yes § 35-502.28 (c)
Report Required from Agency to the Legislature or Governor	no	no	no	no	yes § 45-6A-30	yes § 35-502.14
Monitoring	no	no	no	no	no	yes § 35-502.10 (a) (VII) (c)
Specified Commencement of Rehabilitation	no	As soon as possible	Integral Part of mining operation § 63-34-8	no	no	Earliest possible time § 35-502.24

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	Colorado COLO. REV. STAT. (1969)	Montana MONT. REV. CODE (Supp. 1973)	N. Mexico N. MEX. STAT. (Supp. 1973) § 63-34-1	N. Dakota N.D. CENTURY CODE (Supp. 1973)	S. Dakota S.D. COMP. LAWS (Supp. 1973)	Wyoming WYO. STAT. (Supp. 1973)
Specified Completion of Rehabilitation	no	Before machinery removed from operation site § 50-1044	Reasonable amount of time § 63-34-8	Within 3 years of expiration of permit (extendable by two years) § 38-14-05 (10)	no	no
Trading and Shaping	According to proposed future land use § 92-13-6	To original contour § 50-1044(1)	Regulated by the commission § 63-34-8(a)	To original contour or rolling topography unless determined otherwise by plan for a higher use § 38-14-05	According to approved plan § 45-6A-17	To assure at minimum, highest previous use § 35-502.21 ₂₄
Slope Restriction of Spoils	no	To approximate contour of the land highwall 20 § 50-1044(1)	no	Final cut 35 degrees to permit traverse by farm machinery § 38-14-05(4)	no	no—to blend into surrounding terrain § 35-502.21
Drainage consideration	yes § 92-13-6(1) (d)	yes § 50-1044(1)	no	yes § 38-14-05(3)	yes § 45-6A-17	yes § 35-502.21
Aesthetic consideration	no	no	yes § 63-34-10(c) (4)	yes § 38-14-05.1	yes § 45-6A-17	yes § 35-502.21

	Colorado COLO. REV. STAT. (1969)	Montana MONT. REV. CODE (Supp. 1973)	N. Mexico N. MEX STAT. (Supp. 1973) § 63-34-1	N. Dakota N.D. CENTURY CODE (Supp. 1973)	S. Dakota S.D. COMP. LAWS (Supp. 1973)	Wyoming WYO. STAT. (Supp. 1973)
Topsoiling	no	yes	no	2 ft. where available if not, as much as possible § 38-14-05 (2)	yes § 45-6A-17	yes, unless other types of soil are superior § 35-502.21
Burial of Toxic Materials	yes § 92-13-6(1) (e)	Yes § 50-1044(J)	no § 63-34-10(c) (4)	no	no	yes § 35-502.24
Revegetation	no	Permanent cover, diverse cover, self- regenerating § 50-1044	no	According to rehabili- tation plan—must be perennial or annual crop specie § 38-14-05 (8) (9) (10)	no	Native or superior, self-regener- ating vegetation; planting on the contours § 35-502.21 § 35-502.24
Minimum Period of Time to Evidence Vegetative Stability	no	At least 5 years § 50-1047 (3)	no	no	no	At least 5 years § 35-502.34