# United States Minerals Policy—A Proposal to Revitalize the Exploration and Development of Domestic Mineral Resources

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During a period of growing concern over whether the nation is capable of extricating itself from seemingly interminable economic stagnation, the United States minerals industry stands at a crossroads between continued viability and a declining ability to meet the nation's mineral requirements. The industry is burdened by inconsistent governmental policies characterized by restrictions on land access and use that often bear little rational relation to statutory intent. The minerals industry is a vital element in the American economy, and a strong mineral economy is crucial to this nation's industrial and economic strength. The federal government must develop a coherent minerals policy that will promote the wise and environmentally sound use of the nation's existing mineral resources. The policy must rebuild the economic and political environment in which the United States minerals industry operates to stem the tide of mine and smelter closures and reduce our nation's growing dependence on uncertain foreign suppliers for vital and strategic mineral resources. If the government fails to develop such a policy, the nation can look forward only to a further deterioration of its minerals industry that will accompany and augment a further decline in the American economy.[1]

This Note will examine some of the myriad of problems facing the United States minerals industry, especially those encountered in the exploration phase. Current governmental policies and legislation that contribute to those problems will then be discussed. Finally, this Note will examine recently proposed legislation that would revitalize the exploration and development of domestic mineral resources.[2]

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1. *See* SUBCOMM. ON MINES AND MINING OF THE HOUSE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, 96TH CONG., 2D SESS., U.S. MINERALS VULNERABILITY: NATIONAL POLICY IMPLICATIONS 17 (COMM. PRINT NO. 9, Sept. 1980) [herinafter cited as U.S. MINERALS VULNERABILITY]. In 1973 there was a $28.5 billion trade deficit in minerals. *Id. See National Materials and Minerals Policy; Research and Development Act of 1980: Hearings on H.R. 2743 and staff working draft before the Subcomm. on Science, Technology, and Space of the House Comm. on Commerce, Science and Transportation*, 96th Cong., 2d Sess. 185 (1980) [hereinafter cited as *National Materials Policy, H.R. 2743*]. In 1978 there was a $16 billion deficit in minerals out of a $34 billion total deficit. *Id.*

2. The related problems of industry-inhibiting taxation and antitrust restrictions are beyond the scope of this Note and will be dealt with only in a cursory fashion.

## PROBLEMS FACING THE UNITED STATES MINERALS INDUSTRY

The mining industry encompasses all phases of nonrenewable mineral resource utilization, ranging from exploration activities designed to discover mineral deposits to the ultimate processing of usable material from ore. In the past decade the mining industry has witnessed a dramatic increase in the number of mine and processing plant shutdowns. For example, the number of domestic zinc smelters has been reduced by more than half, while America's import dependency has more than doubled.[3] A similar trend exists for domestic copper[4] and other mineral industries.[5] The gravity of these closures is apparent in light of the importance of the mineral industry to the nation's economic and political strength. As the Public Land Law Review Commission concluded in 1970: "[O]ur survival as a leading nation depends on our mineral supplies. The close relation between minerals and our national security is too apparent to require detailed explanation."[6]

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3. Between 1969 and 1980 the number of zinc smelters in the United States has been reduced from 14 to 6, resulting in a decline in domestic production from 1,000,000 tons to 500,000 tons with an accompanying increase in dependency on foreign sources from 20-25% to 50%. Carlisle, *Competiveness of the U.S. Minerals Industry*, MINING CONGRESS J., Jan. 1980, at 42. As a result of the closure of the Bunker Hill lead-zinc mining and milling operations in late 1981, the United States' dependence on zinc imports will increase from 50% to 60%. *End of an era in Idaho—the closing of Bunker Hill operations*, ENGINEERING & MINING J., Oct. 1981, at 35-43. The Bunker Hill closing will also have a severe impact in other areas, since it produced 21% of the domestic primary lead output and 25% of domestic primary refined silver output. *Id.* at 39. Another effect of the Bunker Hill closure will be a loss of 5,000 to 8,000 jobs in the Kellogg, Idaho, region. *Id.* For a discussion of labor difficulties as a cause of shutdown, see also *The British won the first battle of Bunker Hill; nobody won the second*, ENGINEERING & MINING J., Mar. 1982, at 59, 63.

4. Due to either economic or environmental difficulties, Anaconda plans to significantly reduce its domestic copper smelting and ship more than 390,000 million tons (mt) per year to Japan for refining. *Anaconda will export copper concentrate to Japan for smelting*, ENGINEERING & MINING J., Jan. 1981, at 9. This is seen as part of an industry-wide trend. By 1985, the United States will ship more than 500,000 mt per year to Japan for smelting, compared with 44,565 mt in 1979. *Id.*

The production of metallic copper from ore rock consists of several stages. After ore is removed from a mine, it is crushed and the waste component of the rock is removed from copper-bearing minerals by a variety of physical and chemical means, leaving behind a copper "concentrate." The copper in the concentrate is shipped to a smelter where heat is used to drive off sulfur and other impurities, leaving behind slag and metallic copper. It is the latter smelting process for which the copper industry is becoming especially dependent on foreign capacity. *See National Materials Policy, H.R. 2743, supra* note 1, at 39, 43 (statement of Joyce Hall, Nevada Director of Mineral Resources). "[T]he United States is experiencing an increasing trend of exportation of mineral processing capacity." *Id.* at 39, 44. *See also The fading mining scene at Butte*, ENGINEERING AND MINING J., July 1981, at 9; *National Materials Policy, H.R. 2743, supra* note 1, at 262 (statement of Dr. Allen Gray, Technical Director of the American Society of Metals). The United States produced 42% of the world copper supply in 1950 but only 18% by 1972. *National Materials Policy, H.R. 2743, supra* note 1, at 262.

The dramatic downturn in all copper production during the recession of 1982 will only compound this problem. The most significant factor in the mine closings of 1982, however, has been reduced demand for copper and not the exportation of domestic production. Governmental policy differences between the United States and Japan explain why copperr concentrates produced in Arizona and Montana are being shipped to Japan. White, *Custom Copper Concentrates*, ENGINEERING & MINING J., May 1982, at 72-75.

5. The United States produced two million pounds of cobalt in 1960, but it produced none in 1972 despite doubled consumption. *National Minerals Policy, H.R. 2743, supra* note 1, at 262. For information on copper, lead and zinc smelter shutdowns, see *UK study sees, U.S. copper producers shift to exporting concentrates*, ENGINEERING & MINING J., Jan. 1981, at 9.

6. PUBLIC LAND LAW REVIEW COMM'N, ONE-THIRD OF THE NATION'S LAND, A REPORT

The threat to the nation's security from a reduction in the production capacity of the U.S. minerals industry is highlighted by the nation's growing dependence on foreign sources. By 1980, the United States was importing more than half of a growing list of minerals and metals crucial to America's industrial health and military security, including manganese and chromium for steel production, tantalum used in electronics, cobalt and nickel for jet engines, and platinum group metals for catalysts in automobiles.[7] Furthermore, the dependence on foreign sources will rise as strategic minerals become increasingly important in meeting the demands of new technology in the energy industry.[8] The United States is self-sufficient in only five of the twenty-seven nonfuel minerals generally considered to be strategic.[9] Problems associated with America's dependence on foreign imports include the vulnerability of shipping lanes,[10] the possibility of an embargo of mineral supplies that "could prove more crippling to the nation" than the 1973 oil embargo,[11] and the loss of jobs in the domes-

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TO THE PRESIDENT AND THE CONGRESS 121 (1970) [hereinafter cited as PUBLIC LAND LAW REVIEW COMM'N]. For national security examples, see *infra* notes 10-11 and accompanying text.

7. *Sagebrush Rebellion: Impacts on Energy and Minerals: Oversight Hearing Before the Subcomm. on Mines and Mining of the House Comm. on Interior and Insular Affairs*, 96th Cong., 2d Sess. 147 (1980) (statement of Dean William Dresher, College of Mines, University of Arizona, and Director, State of Arizona, Bureau of Geology and Mining Technology) [hereinafter cited as *Sagebrush Rebellion*].

8. *Id.*

9. *Id.* The Soviet Union is self-sufficient in 21 of 27 such strategic minerals. *Id. See Nonfuel Minerals Policy Review: Oversight Hearing Before the Subcomm. on Mines and Mining of the House Comm. on Interior and Insular Affairs, Part III*, 96th Cong., 2d Sess. 5 (1980) (statement of Alexander Haig, United Technologies) [hereinafter cited as *Nonfuel Minerals, Pt. III*]. The United States imports more than 50% of 9 out of 13 strategic materials, while the Soviet Union imports only 3 of the 13. *Id.* Dresher's and Haig's estimates are in agreement; only their classifications of "strategic" differ. *See Critical Minerals and Materials: Hearing Before the Subcomm. on Science, Technology, and Space of the Senate Comm. on Commerce, Science, and Transportation*, 97th Cong., 1st Sess. 25 (1981) (statement of Dr. Ernest Ambler, U.S. Bureau of Standards) [hereinafter cited as *Critical Minerals*]. The United States imports 91% of its chromium supply, 80% of the platinum group, 100% of manganese, and 90% of titanium. *See National Materials Policy, H.R. 2743, supra* note 1, at 266 (statement of Dr. Allen Gray, Technical Director of the American Society of Metals). The United States imports 90% of its supply of chromium, cobalt, manganese, and columbium; it is 75% to 90% dependent on foreign sources for aluminum, platinum, tin, tantalum, and mercury; it imports 50% to 75% of its supplies of zinc, gold, silver, tungsten, nickel, cadmium, and selenium. *Id. See Critical Minerals, supra*, at 2 (statement of Sen. Harrison Schmitt). The United States is 90% dependent on manganese and vanadium from Southern Africa, 90% on aluminum from Jamaica, Guinea, and Surinam, and 99% dependent on chromium from the Soviet Union and South Africa. *Id.* See also *National Materials Policy, H.R. 2743, supra* note 1, at 195, for a chart summarizing the import percentages of selected minerals and materials.

10. *Nonfuel Minerals, Pt. III, supra* note 9, at 22-26, 53-64 (statement of Rear Admiral Robert Hanks, Retired, Institute for Foreign Policy Analysis). According to Admiral Hanks, traffic in the main shipping lanes in the North and South Atlantic could be severely reduced by hostile Soviet action. *Id.*

11. *See also National Materials Policy, H.R. 2743, supra* note 1, at 116-17 (statement of Dr. James Boyd, former chairman of the National Advisory Commission to the Office of Technology Assessment). Despite a lack of public awareness, "the sudden disruption of the supply of some of [the strategic minerals] could reduce the quality and availability of products that have become necessities in the economy." *Id. See generally* Overton, *The Resources War—It Can't be Won Without Waging*, MINING CONGRESS J., Mar. 1981, at 33-52; *Critical Minerals, supra* note 9, at 1 (statement of Sen. Harrison Schmitt). *See* U.S. MINERALS VULNERABILITY, *supra* note 1, at 82-83. "Opportunities to manipulate supplies and prices will increase as production and marketing by developing countries move further from existing rules and institutions." *Id.* at 83. *See also Nonfuel Minerals Policy Review: Oversight Hearing Before the Subcomm. on Mines and Mining of the House Comm. on Interior and Insular Affairs, Part II*, 96th Cong., 1st Sess. 65-66 (1979) (state-

tic minerals industry.[12] Furthermore, the National Defense Stockpile, the nation's hedge against shortages, contains reserves "far below what they should be today and far below what our national policy originally conceived as necessary."[13]

Reductions in mineral production, strategic reserves, and mining-related employment have causes rooted in a number of federal policies which affect the minerals industry. Both these federal policies, and proposed modifications to these policies which might revitalize the mining industry, will be discussed.

## GOVERNMENT POLICIES: THE ROOT OF THE PROBLEM

### *Federal Policies—In General*

An important factor in the decline of the U.S. minerals industry is the debilitating effect of a wide range of conflicting and counterproductive governmental policies.[14] Too often federal policies and regulations are promulgated in a vacuum without adequate consideration of their effects on the nation's overall economic health.[15] Federal policies affecting mineral interests are numerous and diverse without any significant coordination.[16] If any one consistent trend can be recognized in the evolution of

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ment of Dr. John F. Elliot, Prof. of Metallurgy, Mining and Minerals, Massachusetts Institute of Technology) [hereinafter cited as *Nonfuel Minerals, Pt. II*]. A cartel interruption would be "catastrophic." *Id. See generally* Fine, *Has U.S. mining become a national security problem?*, ENGINEERING & MINING J., Aug. 1982, at 15.

12. *See, e.g., supra* note 3.

13. *Nonfuel Minerals, Pt. III*, *supra* note 9, at 9 (statement of Alexander Haig, United Technologies); *see infra* notes 31-37 and accompanying text.

14. *See* U.S. MINERALS VULNERABILITY, *supra* note 1, at 39. Because of government hostility to mineral development "the Nation's mineral security has . . . become dependent, not upon the free market system, but upon the political process." *Id.* "[G]overnment policies have proved to be counterproductive to the discovery and the development of mineral deposits." *Id.* at 68.

While some of the decline in the U.S. minerals industry can be attributed to the current recession and accompanying downturn in demand, the recession cannot explain the trend of the increasing reliance on foreign production. *See supra* notes 3-6 and accompanying text.

A decline in the domestic supply may contribute to some of the decline, but this factor is considered to have been substantially offset by the greater efficiency in the utilization of large low-grade desposits through the economies of large-scale operations. *See* R. BOSSON & B. VARON, THE MINING INDUSTRY AND DEVELOPING COUNTRIES 35 (1977). Furthermore, declines in supply often are more the result of federal restrictions on access to public lands than an exhaustion of known reserves. *See infra* notes 19-25 and accompanying text.

Another factor contributing to the decline of the domestic minerals industry, but which is beyond the scope of this Note, may be high United States labor costs.

15. *National Materials Policy, H.R. 2743*, *supra* note 1, at 73 (statement of Robert Warren, Nevada Mining Association). "[T]he minerals industry is too often burdened with [regulatory] uncertainties, delays, and costs that lower its productive capacity without providing offsetting benefits to society in general." *Id. See id.* at 110 (statement of Sen. Harrison Schmitt): "The United States has taken no . . . steps toward improving its position in self-sufficiency and seems to disregard this as a matter of national priority relative to other circumstances. In fact, the U.S. tax and regulatory policies have been directly counter to domestic mineral exploration and production." *See also* Doe, *Access, RARE II, and Other Fables*, 25 ROCKY MTN. MIN. L. INST. 10-1, 10-13 (1979). "The cumulative effect of these [regulatory] laws is now bursting upon the mining industry, and indeed upon the economy of the United States." *Id.*

16. *National Materials Policy, H.R. 2743*, *supra* note 1, at 112 (statement of Dr. James Boyd, former chairman of the National Advisory Commission to the Office of Technology and Assessment). According to Dr. Boyd, "[O]ur materials policy is a jungle of uncoordinated elements." *Id.* The United States has "a national mineral policy that lacks form, substance, and coordina-

the nation's mineral policies, it is a growing control by the federal government of all aspects of mineral exploration and development that tends to further aggravate industry problems.[17] While the Reagan administration's goals are more consistent with those of the minerals industry than were the goals of previous administrations, political realities limit the ability of any one administration to unilaterally implement long-lasting reform.[18]

*Federal Land Policies*

Perhaps the most intrusive of all federal policies on the future potential of the minerals industry is the withdrawal of vast amounts of public land from practical mineral exploration and development. It is an uncontroverted fact that "free access for exploration and development is the basis of all mineral activity."[19] Yet, of the mineral rich one-third of the nation's land mass that is federally controlled,[20] a large proportion has been withdrawn from mineral access. While the exact percentage of federal lands which have been withdrawn from mineral access is unknown, a reasonable estimate is seventy percent.[21] Mineral development may not

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tion." U.S. MINERALS VULNERABILITY, *supra* note 1, at 45. There is "absolutely no federal policy-level advocate for minerals." *Id.* at 40. This last problem has been partially alleviated by the National Materials and Minerals Policy, Research and Development Act of 1980, 30 U.S.C. §§ 1601-1605 (Supp. IV 1980). *See infra* notes 121-28 and accompanying text.

17. U.S. MINERALS VULNERABILITY, *supra* note 1, at 1.

> [T]he United States is promoting its dependence upon foreign sources at the very time the security of many of those sources are [sic] becoming less certain. Actions and decisions of government, while seemingly unrelated to minerals adequacy, are subtly moving this nation in a direction where the federal government has an overriding ability to determine when, where, and if we shall mine our own minerals.

*Id. See* James Santini, *The Growing Crisis in the Strategic Critical Minerals of the United States*, 7 J. LEGIS. 66 (1980). "This governmental myopia and the absence of coordinated department and agency efforts to obtain insight into the problems of mining, or to accept responsibility, precludes innovation and even hinders government support of domestic mineral resource development." *Id.*

18. Because of the transitory nature of any one administration, a minerals policy should not be entirely dependent upon the whims of a particular executive.

19. *National Materials Policy, H.R. 2743*, *supra* note 1, at 89 (statement of Richard Barrett, Dresser Industries). See also *id.* at 85, where Howard L. Edwards of Anaconda and the American Mining Congress states the denial of access in Alaska has prevented mining operations and mineral discoveries. More than exploration crews are needed to find reserves. Access to public land, and "primarily the mineral-rich public land" that is becoming increasingly scarce, is necessary. *See* U.S. MINERALS VULNERABILITY, *supra* note 1, at 68.

20. L. MALL, PUBLIC LAND AND MINING LAW v (2d ed. 1981). The 90% of the public lands that are in the western United States contain most of its minerals. *See* PUBLIC LAND LAW REVIEW COMM'N, *supra* note 6, at 121-22.

21. U.S. MINERALS VULNERABILITY, *supra* note 1, at 71. In 1977, the Department of Interior estimated that 42% of the public land was closed to mineral development, 16% severaly restricted, and 10% moderately restricted, for a total of 68% restricted. *Id.*; *Sagebrush Rebellion*, *supra* note 7, at 75-76 (statements of Rep. Ray Kogovsek; Charles Callison, Public Lands Institute; and Jim Pisot, Utah Audubon Society). Estimates are that from 5% to 68% of the public lands are closed to mining, with the latter figure seen as a floor in light of the recent Alaskan land withdrawals. *Id.*; Marsh & Sherwood, *Metamorphosis in Mining Law: Federal and Regulatory Amendment and Supplementation of the General Mining Law Since 1955*, 26 ROCKY MTN. MIN. L. INST. 307-08 (1980) [hereinafter cited as Marsh & Sherwood, *Metamorphosis*]. *See Sagebrush Rebellion*, *supra* note 7, at 154-55 (statement of John Baden, Director of the Center for Political Economy and Natural Resources, Montana State University). Public land access is especially important to the nation's mineral supply because 90% of the nation's nonfuel minerals are located on public lands. *Id. See Critical Minerals*, *supra* note 9, at 7 (statement of James Watt, Secretary of the Interior) (70% of public land is significantly restricted to mineral exploration); *Nonfuel Minerals, Pt. II*, *supra* note 11, at 108, 130 (statement of Howard L. Edwards, Anaconda) (70% of public land is withdrawn).

even occur on lands that are not subject to mining restrictions, due to the threat of potential governmental interference.[22]

Although the Public Land Law Review Commission stated that "mineral exploration and development should have a preference over some or all other uses on much of our public lands,"[23] actual policy has been to the contrary. "[A] functional bias exists at the federal level, in favor of preservation and against development of resources on the federal lands."[24] Indeed, "federal land use planning does not recognize the unique and essential nature of mineral development."[25]

*Federal Environmental Regulations*

While no responsible member of the minerals industry disputes that environmental regulations are necessary, the tremendous cost they impose cannot be ignored in an assessment of the health of the minerals industry. For example, the competitiveness of U.S.-produced copper is significantly reduced because between ten and fifteen cents of the current price of eighty cents per pound[26] is spent on pollution controls.[27] These environmental costs represent a contributing factor in the trend toward growing reliance on foreign smelters.[28] Also troubling is the perception by those working in the minerals industry that environmental regulations are cre-

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*See also* Snow & MacKenzie, *The Environment of Exploration: Economic, Organizational, and Social Constraints*, in ECONOMIC GEOLOGY SEVENTY-FIFTH ANNIVERSARY VOLUME 894 (B.J. Skinner ed. 1981) [hereinafter cited as ECON. GEOL. 75TH ANNIV.].

> A largely uncoordinated but nonetheless insidious program to withdraw public land from access by the mining industry has been in effect in the United States since the early 1960s. The effects of these withdrawals are devastating to the exploration industry. By the end of 1980, about 411 million acres, or about 55% of the public domain, had been withdrawn; mineral leasing on public land is prevented or discouraged in an area equal in size to all of the states east of the Mississippi River except Maine.

*Id. See generally* Honkala & Kornblock, *A Cartographic Look at Constraints to Mineral Exploration and Development*, MINING CONGRESS J., Feb. 1980, at 55-62.

22. *Sagebrush Rebellion*, *supra* note 7, at 58, 160-61 (statement of Gordon L. Pine of Conoco). Conoco has refrained from acquiring properties close to a restricted wilderness area, and "many . . . potential deposits will never be fully evaluated." *Id.* at 161.

23. PUBLIC LAND LAW REVIEW COMM'N, *supra* note 6, at 122.

24. Peck, *"And Then There Were None," Evolving Federal Restraints on the Availability of Public Lands for Mineral Development*, 25 ROCKY MTN. MIN. L. INST. 3-13 (1979).

25. *National Materials Policy, H.R. 2743*, *supra* note 1, at 188 (statement of G.A. Barber, Anaconda vice-president of exploration and development).

26. ENGINEERING & MINING J., Jan. 1982, at 21.

27. *See National Materials Policy, H.R. 2743*, *supra* note 1, at 186 (statement of G.A. Barber, Anaconda). Newmont's Magma Copper Co. lost 8.1% of its production capacity in 1977 and 5.1% in 1978 due to pollution control. A total of $41.8 million was spent by Magma in 1978 and $45 million in 1979 on pollution control, or about 10-15¢ per pound of copper produced. *Id.* Between 1972 and 1978 the copper industry spent $1.8 billion for environmental controls and $1 billion for maintenance. *Id.* at 78 (statement of Richard W. Banghart of Kennecott, *quoting* A. Little Inc., Economic Impact of Environmental Regulations on the United States Copper Industry) (submitted to U.S. Environmental Protection Agency, Contract 68-01-2842, Jan. 1978). An additional $1 billion in costs is expected by 1987. *Id.* Moreover, two or three of the country's 13 copper smelters have shut down due to environmental controls. *Id.* at 79. *See* Ridinger, MINING CONG. J., Feb. 1980, at 42. The regulatory impact on the copper industry between 1974 and 1987 will cause a 30% loss in production capacity and a 30% employment loss. *Id.* at 43. See also U.S. MINERALS VULNERABILITY, *supra* note 1, at 64, for a graphic representation of the effect of environmental legislation on mineral policy; and *id.* at 65-66 for cost estimates.

28. *See supra* note 3.

ated without sufficient consideration being given either to rational environmental requirements or industry needs.[29] As long as this perception exists, industry decisionmakers will have a disincentive to explore for and develop new sources of domestic minerals because of a fear that arbitrary and costly controls will unduly reduce a facility's profitability.[30]

*Inadequacies in the National Defense Stockpile*

The National Defense Stockpile[31] is totally inadequate to provide a cushion against any significant supply disruptions.[32] Among the failings

29. *National Materials Policy, H.R. 2743*, *supra* note 1, at 101 (statement of Dr. Templeton, Kennecott). When the Environmental Protection Agency (EPA) decides to promulgate new regulations, its officials have "already decided how they want the [regulatory] process to go and the inputs we make are merely a formality to satisfy the administrative procedures." *Id.* *See* Bunker Hill Co. v. EPA, 572 F.2d 1286, 1305 (9th Cir. 1977) (court remanded to the EPA its imposition of a costly and untested pollution control scheme); Texas v. EPA, 499 F.2d 289, 298 (5th Cir. 1974) (EPA "does not contend that the [EPA pollution rollback] model is an accurate representation of reality. . . ."), *cert. denied*, 427 U.S. 905 (1976); Kennecott Copper Corp. v. EPA, 462 F.2d 846, 848 (D.C. Cir. 1972) (EPA promulgated standards for sulphur dioxide without providing a basis for such standards); ENGINEERING & MINING J., Mar. 1981, at 11 (EPA used flawed data to set air quality standards for sulfur dioxide and related particulates).

*See also* Kennecott Copper Corp. v. Train, 526 F.2d 1149 (9th Cir. 1975), *cert. denied*, 425 U.S. 935 (1976). In *Train*, the court agreed with the EPA that intermittent pollution control techniques were disallowed by the Clean Air Act, 42 U.S.C. §§ 7401-7642 (1976 & Supp. IV 1980). 526 F.2d at 1159-60. Intermittent controls would have reduced emitted pollutants by the same amount as EPA's continuous reduction plan. *Id.* at 1151. The only rationale for disallowing such intermittent controls was that Kennecott could not be trusted: "[E]nforceability of such controls [is] questionable." *Id.* at 1155. Thus, in an excess of zeal the EPA and the Ninth Circuit misinterpreted and needlessly went beyond the intent of the Clean Air Act as expressed in its preamble "to protect and enhance the quality of the Nation's air resources." 42 U.S.C. § 1857 (1976). In order to consolidate its position, the EPA in 1977 persuaded Congress to outlaw intermittent controls. *See* 48 U.S.C. § 7423(a)(2), (b) (Supp. IV 1980). This case shows that reasonable and relatively inexpensive pollution control techniques are often unreasonably disallowed.

While the current administration of the EPA may or may not be less zealous in its enforcement of environmental regulations, the underlying problem remains: that is, the Clean Air Act provides little in the way of a formal mechanism for industry to participate meaningfully in the promulgation of environmental regulations. *See Can Industry Persuade Congress to Materially Alter the Clean Air Act?*, ENGINEERING & MINING J., Mar. 1981, at 9-10. Industry desires to reduce margins of safety, take costs into consideration in setting health standards, subject EPA's scientific data to an independent scientific body, set nationwide rather than regional standards in order to reduce the "stifling" of industrial growth, and review the non-degradation policy in "clean" air regions). *Id.*

30. *See, e.g.*, *Nonfuel Minerals, pt. II*, *supra* note 11, at 131 (statement of Howard Edwards of Anaconda.)

31. *See Critical Minerals*, *supra* note 9, at 68 (statement of Robert Trimble, Acting Deputy Undersecretary of Defense for Acquisition Policy).

> The stockpile consists of 93 minerals, metals, and other industrial materials stored at 122 locations in the United States. The aggregate value of the stockpile as of March 1980 was $13.6 billion . . . . The basic law covering the stockpile is the Strategic and Critical Materials Stockpiling Act [50 U.S.C. § 98 (1976 & Supp. III 1979)].
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> The amounts of materials held in the stockpile are determined by estimating the difference between the quantities needed in a major war and the quantities available.

*Id.*

32. *Id.* at 8 (statement of James Watt, Secretary of Interior). "[O]f the 62 basic materials stockpiled, only 21 are stockpiled in sufficient quantity to meet national security requirements." *Id.* "The result of the absence of long-range [mineral] planning has been a tendency to rely upon the already inadequate national strategic and critical stockpile." Santini, *The Growing Crisis in the Strategic and Critical Minerals of the United States*, 7 J. LEGIS. 66. *See* U.S. COMPTROLLER GENERAL, REPORT TO CONGRESS: THE STRATEGIC AND CRITICAL MATERIALS STOCKPILE WILL BE DEFICIENT FOR MANY YEARS, 95TH CONG., 2d SESS. 1-19 (1978).

of the stockpile system are shortfalls in quantities,[33] questionable quality and grade of the quantities that do exist,[34] and an administrative body, the Federal Emergency Management Agency, that is apparently unable to recognize the system's shortfalls and relate the problems to Congress.[35] The most serious failure of the stockpile system, however, is that it has been manipulated for short-term political goals at the expense of long-term security considerations. For example, sales of stockpiled materials have frequently been used to ease budget deficits.[36] Stockpile sales not only reduce strategic quantities of materials but also act as a price depressant on stockpiled commodities, reducing the impetus for the minerals industry to produce.[37] The inadequacy of the stockpile makes the decline of the domestic

33. *See supra* note 32. "The stockpile of strategic and critical materials is woefully inadequate to meet the requirements of the defense industrial base." HOUSE ARMED SERVICE COMMITTEE, THE AILING DEFENSE INDUSTRIAL BASE: UNREADY FOR CRISIS 24 (1980). The cobalt stockpile is reportedly short by more than 70 million pounds. *See National Materials Policy, H.R. 2743*, *supra* note 1, at 270 (statement of Dr. Raymond Smith, American Society of Metals). "For 23 of the 61 materials contained in the strategic stockpile the quantity available falls at least 50 percent short of the goals." *Strategic Minerals and Materials: Hearing Before the Subcomm. on Commerce, Science, Technology, and Space of the Senate Comm. on Commerce, Science, and Transportation*, 97th Cong., 1st Sess. 3 (1981) (statement of Malcolm Baldridge, Secretary of Commerce) [hereinafter cited as *Strategic Minerals]*. "Our stockpiles are far below what our national policy originally conceived as necessary." *Nonfuel Minerals, Pt. III*, *supra* note 9, at 9 (statement of Alexander Haig, United Technologies).

34. *National Materials Policy, H.R. 2743*, *supra* note 1, at 203 (statement of Rep. Don Fuqua). "The material now in the strategic stockpile is of questionable quality and grade. Much of it is not considered of commercial quality and it would be difficult if not impossible to process." *Id.* "Both government and American industry are concerned with the quality and usefulness of even those . . . needed materials now in the stockpile." *Strategic Minerals, supra* note 33 (statement of Malcolm Baldridge). "[T]he stockpile holdings of today of some important commodities is neither adequate in quantity or quality." U.S. MINERALS VULNERABILITY, *supra* note 1, at 86.

35. For example, see *Critical Minerals*, *supra* note 9, at 25, where Dr. Ernest Ambler reports to Congress that there exists a three-year stockpile of manganese ore. Likewise, the FED. EMERGENCY MGMT. AGENCY STOCKPILE REPORT TO CONGRESS, Apr.-Sept. 1980, at 16, reports that the metallurgical and chemical grade manganese stockpile consists of 106% of the 1980 goal. What neither report mentions is that most of the manganese is of no strategic worth. *See Nonfuel Minerals, Pt. III, supra* note 9, at 38 (statement of Robert L'Esperance of United States Steel). The stockpiling program of manganese consists of a scattering of different grades of manganese that could be only of limited value because the United States has no significant capacity to produce ferromanganese and no technology to process the domestic reserves. *Id.* This capacity has been transferred overseas and industry would need an eight-year lead time to exploit domestic supplies. *Id.*

36. *Nonfuel Minerals, Pt. III*, *supra* note 9, at 9 (statement of Alexander Haig, United Technologies). The stockpile is inadequate because stockpile reductions have been made due to short-term budgetary rather than national defense considerations. *Id.* Despite an official policy, the strategic stockpiles have been manipulated "to solve immediate economic problems." *National Materials Policy, H.R. 2743*, *supra* note 1, at 135 (statement of Dr. James Boyd). Stockpiles can be manipulated despite legislative policy. *Strategic Minerals*, *supra* note 33, at 18 (statement of Malcolm Baldridge).

37. *See Strategic Minerals*, *supra* note 28, at 17 (statement of Sen. Harrison Schmitt). "[T]he existence of a stockpile . . . does, in fact, prevent the market forces from moving in accordance with demand. It is a psychological threat. If the prices go too high, the government will start dumping that on the market." *Id.* Unless a policy to prevent stockpile manipulations is adopted, stockpiles will be "depressants on the market." *National Materials Policy, H.R. 2743*, *supra* note 1, at 135 (statement of Dr. James Boyd).

Problems with stockpile mismanagement have not disappeared with the Reagan administration. *See National Defense Stockpile: Hearings on H.R. 2603, H.R. 2784, H.R. 2912, and H.R. 3364 Before the Seapower and Strategic and Critical Materials Subcomm. of the House Comm. of the Armed Services*, 97th Cong., 1st Sess. 7-8 (1981) [hereinafter cited as *National Defense Stockpile*]. The Reagan administration recently proposed massive silver sales in order to purchase some other materials and raise capital. *Id.* See *id.* at 7 for the text of H.R. 2912, 97th Cong., 1st Sess. (1981).

minerals industry a cause for great concern because a disruption in supply could not be compensated for by dipping into the stockpile supplies.

*Resource Evaluations*

An effective national minerals policy cannot be implemented without a basic understanding of what constitutes a mineral resource and what resources are available. Rational decisions affecting mineral resources must take into consideration a meaningful appraisal of the potentially available quantities of those affected resources.[38] The failure to understand and the tendency to simplify resource assessments often lead to erroneous assumptions upon which sound policy cannot be built.[39] Furthermore, the tendency to rely on mineral resource assessments which are either

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This proposed sale has been labeled as "counter to the intent" of the Strategic and Critical Materials Stockpiling Act by Rep. Charles Bennett. *Id.* at 2. This silver selloff might be strategically unwise, according to Rep. Larry McDonald. *Id.* at 34-38. Because the silver sales "could not have come at a worse time for the mining industry in northern Idaho," Congress has moved to halt the silver sales until a complete review of the silver stockpile is completed by President Reagan. ENGINEERING & MINING J., Jan. 1982, at 13-15.

38. *See* DeYoung, *The Lasky Cumulative Tonnage-Grade Relationship—A Reexamination*, 76 ECON. GEOLOGY 1067, 1067 (1981). "Today, resource appraisal is increasingly important for economic planning, including policy formulation on trade restrictions, stockpiling, and use of Federal lands." *Id.* "Errors in resource assessment could lead to costly planning mistakes such as reactors without fuel or unnecessary use of breeder reactors." Nash, *Uranium Geology in Resource Evaluation and Exploration*, 73 ECON. GEOLOGY 1401, 1401 (1978); *see also id.* at 1401-02.

*See generally* Harris & Agterberg, *The Appraisal of Mineral Resources*, in ECON. GEOLOGY 7TH ANNIV., *supra* note 21, at 897.

> [A] statement on mineral resources is also a statement on relevant economic and technological circumstances and a statement about the state of nature. An understanding of the many facets of mineral resources is necessary for a proper perspective of resource estimates, such an understanding is absolutely essential for an appreciation of the appraisal task.

*Id.* at 898. *See also*, Bailly, *The Problems of Converting Resources to Reserves*, 28 MINING ENGINEERING 27, 27-28 (Jan. 1976).

> Most mineral-resource appraisals constitute two components: an extrapolation of all known results of previous mineral production and mineral exploration activity, and a theoretical estimation of minerals in existence in the ground. After all, reserves can be inventories, but undiscovered resources cannot; they can only be guessed at. . . . There are no once-and-for-all resource estimates.

*Id.*

39. Zwartendyk, *Economic Issues in Mineral Resource Adequacy and in the Long Term Supply of Minerals*, 76 ECON. GEOLOGY 999, 1000-01.

> The pressure for simplification felt by journalists and politicans has had many unfortunate results. For instance, all the resource categories beyond reserves that—for good reasons—were reported separately by the source may end up being summed; what is worse, the sum total may be referred to as ultimate resources, a quantity that has aptly been called unknown, unknowable, and uninteresting. Ultimate resources is a deceptive notion that raises the spectre of the end of civilization as we know it.

*Id. See* DeYoung & Singer, *Physical Factors that Could Restrict Mineral Supply*, ECON. GEOLOGY 75TH ANNIV., *supra* note 21, at 941:

> The spector of nations moving through time toward an import-dependent state elicits questions about the possibility of 'running out' of mineral resources. . . . In order to make cogent plans and provisions for advanced stages in the cycles of production of a particular commodity, planners need to understand the effect that the physical properties of mineral resources and mineral deposits have on the stages of mineral production [or the ability of mineral producers to economically mine a given region for a given mineral under certain conditions]. . . . Such an understanding would be important in addressing questions about the nature of a mineral resource on a regional, national, or global scale.

oversimplified or not understood by the user of the assessments has led to, among other things, "[p]ublications [that] litter the landscape with numbers that defy comprehension."[40]

Even if policymakers are able to competently understand a resource appraisal or assessment and its limitations, it still will be difficult to produce meaningful resource appraisals. Geologists entrusted with the task of estimating mineral endowments have a tendency to underutilize geological analysis because of a lack of training, time and information, as well as the limited ability of the science of geology and geologists to synthesize all the data.[41] Such limitations have often led to imprecise and exaggerated estimates of mineral endowment.[42] "This result may be a bit disturbing to policy makers, for it suggests that some previously made geologic descriptions of mineral resources may understate considerably the uncertainty which actually exists about the magnitude of these resources."[43]

The complexity of the task of mineral assessment seems to call for sufficient expertise in the United States Bureau of Mines and the United States Geological Survey. The Geological Survey under former Interior Secretary Cecil Andrus'[44] direction has been called "shellshocked,"[45] and the Geological Survey's program in geological research has "evaporated" in the face of numerous other mandated duties.[46] Indeed, the basic function of geological mapping by the Survey has been virtually wiped out.[47] Lacking a data base upon which to build policy has not, however, deterred Congress from implementing sweeping policy changes.

## LEGISLATIVE IMPACTS

There has been no shortage of legislation affecting the minerals industry.[48] To understand the current plight of the industry, it will be necessary to examine how congressional legislation, and the implementation of such

40. Zwartendyk, *supra* note 39, at 1001.

41. Harris & Agterberg, *supra* note 38, at 907. Of these factors perhaps the "capability of geoscience is the most critical." *Id.* Thus, even if there were more data, the inability of the geosciences to translate it into useful estimates of quality and quantity is a limiting factor. *Id.*

42. Harris & Carrigan, *Estimation of Uranium Endowment by Subjective Geological Analysis—A Comparison of Methods and Estimates for the San Juan Basin, New Mexico*, 76 ECON. GEOLOGY 1032, 1054 (1981). "An interpretation of this statement is that the combined effects of control on hedging, mitigating of heuristic bias, and pressure for comprehensive and consistent geologic analysis are a larger expected value and a larger variance of mineral endowment." *Id.*

43. *Id.*

44. Cecil Andrus was Interior Secretary from 1977-81.

45. *National Materials Policy, H.R. 2743, supra* note 1, at 158 (statement of Dr. Leon Silver, California Institute of Technology). Dr. Silver calls for "a very specific continuing resource assessment on the critical nonfuel minerals." *Id.*

46. *Id.* The Bureau of Mining has put a majority of its resources into safety and environmental studies. *See* U.S. MINERALS VULNERABILITY, *supra* note 1, at 68.

47. *National Materials Policy, H.R. 2743, supra* note 1, at 168 (statement of Dean William Dresher, University of Arizona College of Mines). But see ENGINEERING & MINING J., Mar. 1982, at 13-15, for the statement that a newly reorganized United States Bureau of Mines has been revitalized and will form the base of future minerals policy decisions. This is the result of a new emphasis on mining placed on the Department of the Interior by its Secretary, James Watt. Congressional action to cement this reform permanently into place has not yet occurred, however.

48. See Marsh & Sherwood, *Metamorphosis, supra* note 21, at 209-313 for a review of relevant legislation. *See generally* Doe, *supra* note 15, at 10-1 to -41.

legislation, has affected mineral development. Furthermore, to alleviate the industry's problems legislative reforms must be considered.

*The Mining Law of 1872*

The Mining Law of 1872[49] provides "the chief means of acquiring mining rights in the federal lands."[50] Unlike any other system of acquiring mining rights, it places the initiative of locating and developing a valuable mineral on the prospector rather than the government.[51] Although a plethora of laws since 1872 has regulated the exercise of mining rights acquired under the law, the 1872 legislation remains a viable source of new rights.[52] The law allows a prospector to locate and patent[53] one or more claims for a valuable mineral deposit on federal lands not reserved for other purposes.[54] Such a claim also gives attendant rights of access across federal lands to the claim and the right to mine valuable ore from the claim.[55] The law has been strongly attacked by commentators who are opposed to mining on public lands.[56] Whatever validity criticisms of the Mining Law of 1872 may once have had no longer exists, due to the more than adequate regulatory zeal imposed on every phase of the minerals industry by Congress in the past twenty years.[57]

*The Multiple Surface Use Act of 1955*

In response to abuses of the Mining Law of 1872, Congress passed the Multiple Surface Use Act of 1955.[58] This Act severed the surface estate from the mineral estate on federal lands. Specifically, the Act reduced the permissible uses of federal land under the Mining Law of 1872 by providing that all claims located after the 1955 Act could be used only for "prospecting, mining, or processing operations and uses reasonably incident

49. 30 U.S.C. §§ 21-54 (1976).
50. L. MALL, *supra* note 20, at 157.
51. *Id.*
52. *Id.*
53. A location occurs when a person discovers a valuable mineral deposit on certain federal lands and stakes a claim over that deposit. When that person can satisfy the government that the discovery constitutes an ore deposit that can be profitably mined, title may be passed to the prospector from the government in the form of a patent. For a review of the restrictions and requirements for locations and patents, see generally L. MALL, *supra* note 20, at 157; LINDLEY ON MINES tits. V, VI & VII (3rd ed. 1914).
54. 30 U.S.C. §§ 22-31 (1976). *See* L. MALL, *supra* note 20, at 157; Marsh & Sherwood, *Metamorphosis*, *supra* note 21, at 209-313.
55. The activity is subject to a variety of environmental regulations. *See* Marsh & Sherwood, *Metamorphosis*, *supra* note 21, at 268-309.
56. For such a commentary, see Noble, *Environmental Regulation of Hardrock Mining on Public Lands: Bringing the 1872 Law Up To Date*, 4 HARV. ENVTL. L. REV. 145-63 (1980). Noble has actively worked to stop development of Amax's Mt. Emmons molybdenum mine near Crested Butte, Colorado. *Id.* at 145.
57. *See* Marsh & Sherwood, *Metamorphosis*, *supra* note 21, at 268-309. Marsh and Sherwood point out that abuses such as land acquisition for non-mining uses and inadequate environmental safeguards are now effectively curtailed by recent legislation. *Id.* at 302-04, 309.
58. 30 U.S.C. §§ 601, 603, 611-15 (1976). The Act served to present such practices as filing phony claims in order to harvest timber or build vacation cabins. H.R. REP. No. 730, 84th Cong., 1st Sess. 6, *reprinted in* 2 U.S. CODE CONG. & ADMIN. NEWS 2478-79 (1955); *see* United States v. Curtis-Nevada Mines Inc., 611 F.2d 1277, 1282 (9th Cir. 1980).

thereto."[59] The Act granted the government the right to manage vegetative and other surface resources "except mineral deposits subject to location under the mining laws."[60]

The Department of the Interior's implementation of this Act has been criticized by commentators[61] and the United States Senate.[62] For example, the Department has used this Act as a pretext for regulation of the manner in which a claim could be developed. Despite clear statutory language to the contrary, the United States Court of Appeals for the Ninth Circuit endorsed the Department's regulation in *United States v. Richardson*.[63] In *Richardson*, a prospector employed the common practice of trenching[64] to evaluate his claim.[65] The Department decided his methods were overly detrimental to the surface and obtained an injunction enjoining Richardson from performing further work.[66] The court wholeheartedly agreed with the Department, and in what it termed "poetic justice"[67] allowed the injunction to stand because Richardson's methods were not "reasonably incident" to prospecting.[68] The court made only a superficial examination of what was a "reasonable" prospecting technique[69] and completely ignored the Act's caveat that there could be no management of surface resources for "mineral deposits subject to location."[70]

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59. 30 U.S.C. § 612(a) (1976).

60. *Id.* § 612(b).

61. *See* Marsh & Sherwood, *Metamorphosis*, *supra* note 21, at 217-29.

62. *Id.* at 221, 222.

63. 599 F.2d 290 (9th Cir. 1979), *cert. denied*, 444 U.S. 1014 (1980).

64. "Trenching" involves the use of a backhoe to dig trenches in a mineralized area to remove vegetation and soil in order to expose fresh rock samples. This method is often imperative in areas where little outcrop is exposed and the mineral target is either too shallow or inhomogeneous for drilling to be effective or financially feasible. *See* PETERS, EXPLORATION AND MINING GEOLOGY 290-91 (1978).

65. 599 F.2d at 290.

66. *Id.*

67. *Id.*

68. *Id.* at 293. The statute declares that the use of the surface resources by the United States "shall be such as not to endanger or materially interfere with prospecting . . . or uses reasonably incident thereto." 30 U.S.C. § 612(b) (1976). From this wording the Department appears to have reached the highly questionable interpretation that it has the power to regulate mining operations so that they will be "reasonably incident," to mining. Marsh & Sherwood, *Metamorphosis*, *supra* note 21, at 224-29.

69. 599 F.2d at 290. The court relied on a government geologist's report, which stated that "small area excavations are virtually meaningless for this type of problem." *Id.* at 291. By accepting this report without analysis as sufficient evidence supporting the Interior Department's actions, the court has implicitly acquiesced to the notion that the Act gives the Department the broad authority to define what activities are "reasonably incident" to prospecting without subjecting such findings to any guidelines or review processes. The potential for abuse of such authority is manifest and is exemplified by the plight of Richardson in this case. The technique of trenching is fairly widespread, see PETERS, *supra* note 64, and while it may be environmentally objectionable, the decision that it is not "reasonably incident" to a particular prospect rationally should rest upon something more than a conclusory opinion of a government employee.

70. 30 U.S.C. § 612(b) (1976) states that the United States has the "right . . . to manage other surface resources thereof (*except mineral deposits subject to location . . .*)." (Emphasis added.) See Marsh & Sherwood, *Metamorphosis*, *supra* note 21, at 224-29, for further criticism of this decision.

*The Wilderness Act*

Prior to 1964, Congress passed several public land management acts that gave non-mineral interests significant weight in land management policies.[71] But in that year the Wilderness Act[72] for the first time removed the dominant status that nonfuel mineral exploration had enjoyed in much of the national forest system.[73] Under the Wilderness Act, selected portions of the national forest meeting certain criteria can be withdrawn as wilderness areas.[74] It was the apparent intent of Congress, however, to disqualify from withdrawal any forest land with valuable mineral potential.[75] Although Congress did allow "reasonable regulation"[76] of such mineral land, that regulation has been enacted with an unyielding vengeance that effectively precludes all mineral development activity in or near wilderness areas.[77]

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71. Examples include the Multiple Use-Sustained Yield Act, 16 U.S.C. §§ 528-531 (1976 & Supp. III 1979), and the Classification and Multiple Use Act of 1964, 43 U.S.C. §§ 1411-1418 (1976). *See* Marsh & Sherwood, *Metamorphosis*, *supra* note 21, at 245-50.

72. 16 U.S.C. §§ 1131-1136 (1976). The Act became law in 1964.

73. Marsh & Sherwood, *Metamorphosis*, *supra* note 21, at 250.

74. 16 U.S.C. § 1131(c) (1976) defines wilderness as possessing "primeval character" and "solitude."

75. *Id.* § 1133(d)(2) reads in part: "Nothing in this chapter shall prevent within national forest wilderness areas any activity, including prospecting . . . if such activity is carried on in a manner compatible with the preservation of the wilderness environment."

*Id.* § 1133(d)(3) reads in part: "[U]ntil midnight December 31, 1983, the United States mining laws . . . shall . . . extend to . . . 'wilderness areas'; subject however to . . . reasonable regulations . . . consistent with the use of the land for mineral location and development and exploration, drilling, and production."

Two United States District Court of Wyoming decisions have recently affirmed that mineral development is contemplated by the Act. In Rocky Mountain Oil & Gas Ass'n v. Andrus, 500 F. Supp. 1338 (D. Wyo. 1980), *rev'd*, 696 F.2d 734 (10th Cir. 1982), the court in overturning the Interior Department's policy to deny mineral leases in BLM wilderness review areas under FLPMA, *see infra* notes 95-107 and accompanying text, noted that "Wilderness Act itself has provisions for mineral development." *Id.* at 1346. As this Note was going to press the Tenth Circuit reversed the district court's interpretation of FLPMA but did not mention the Wilderness Act. 696 F.2d at 750.

In Mountain States Legal Found. v. Andrus, 499 F. Supp. 383 (D. Wyo. 1980), District Judge Clarence Brimmer opened up an area subject to wilderness review which contained huge potential oil and gas reserves. *Id.* at 387. He reasoned that, among other things, the "legislative history of the Wilderness Act of 1964 also shows that mineral development has always been a primary concern of Congress, even in designated wilderness areas." *Id.* at 393.

76. 16 U.S.C. § 1133(d)(3) (1976).

77. *See* 36 C.F.R. §§ 252.15, 293 (1981). On their face these regulations seem to allow limited mineral activity in wilderness and primitive areas. For example, *id.* § 252.15(b) reads in part: "Operations shall be conducted so as to protect National Forest surface resources." However, the regulations give a priority to wilderness over mineral uses. In fact, the regulations may preclude the expansion of a mining claim into a mine unless the region is already filled with mines (in which case it would not be a wilderness area under 16 U.S.C. § 1131 (1976)). That can be seen from *id.* § 252.15(c), which reads: "Persons with valid mining claims . . . shall be permitted access . . . by means . . . which have been or are being customarily used with respect to other such claims." Thus, new roads to new claims have been precluded. Similarly, in Utah v. Andrus, 486 F. Supp. 995, 1006 (D. Utah 1979), the district court held that while *actual* existing uses of wilderness land for mineral development could be continued, there was no right to commence new uses otherwise allowed by the Mining Law of 1872. *Id.* Because of the "restrictive nature with which governmental lands in wilderness areas or buffer zones outside wilderness areas are regulated," mining companies have refrained from acquiring properties near wilderness areas. *Sagebrush Rebellion*, *supra* note 7, at 58, 160-61 (statement of Gordon L. Pine of Conoco). See *Nonfuel Minerals, Pt. II*, *supra* note 11, at 127-29, in which Howard Edwards said: "Since the Wilderness Act passed in 1964 . . . there has been no meaningful mineral exploration in any wilderness area in

The Wilderness Act also calls for a review of roadless areas larger than 5,000 acres, roadless areas within wildlife refuges, areas contiguous to wilderness areas, and areas previously classified as "primitive" by the Department of Agriculture.[78] The review is intended to determine the suitability of an area for its ultimate withdrawal as a wilderness area. The forest service has not yet completed its review,[79] and in the meantime these "wilderness study areas" are subject to the same regulations as wilderness areas.[80]

As further assurance that areas with significant mineral potential would not be closed to mineral exploration through wilderness withdrawals, Congress called for the Interior Department to assess the mineral potential of wilderness study areas.[81] Unfortunately, these evaluations have been inadequate because of a lack of departmental resources and inherent difficulties in making any reasonable resource assessment.[82] Even if the surveys were adequate, their validity is, at best, ephemeral due to ever-changing market demands and extraction technology.[83] It can thus be seen that the enforcement of the Wilderness Act has not only been contrary to mineral production, but also to the Act itself.

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the United States." *Id.* at 129. Under the Wilderness Act, "commercial uses [are] . . . almost completely denied despite the contrary provisions written into the Act." L. MALL, *supra* note 20, at 125. "In practical terms, however, the 1964 Act effectively closed wilderness areas to mineral entries upon its adoption in 1964. . . . The regulations similarly restrict those who would make locations of mining claims." *Id.* at 126-27.

78. *See* 16 U.S.C. § 1132(b), (c) (1976). *See also* L. MALL, *supra* note 20 at 127. Sixty-two million acres are under study.

79. The initial review, labeled RARE I (Roadless Area Review and Evaluation) was rejected by the forest service after criticism in 1973. L. MALL, *supra* note 20, at 127. A more complete review, RARE II, concluded in 1978 that more than 15 million acres should be added to the wilderness system. *Id.* at 128. It may take 10 years for Congress to decide on wilderness additions, and litigation may prolong the status of potential wilderness as wilderness study areas. *Id.*

80. *See id.* at 127-28. *See also National Materials Policy, H.R. 2743, supra* note 1, at 87, 89 (statement of Richard Barrett of Dresser Industries). In wilderness study areas, "mining exploration is, in fact, impossible during the very time that has been set aside to determine whether or not the properties even qualify for wilderness under the enabling legislation." *Id.* at 89.

81. *See* 16 U.S.C. § 1133(d)(2) (1976), which reads in part: "Furthermore . . . such areas shall be surveyed by the Geological Survey and the Bureau of Mines to determine the mineral values, if any, that may be present."

82. For a discussion of the difficulties of making resource assessment, see *supra* notes 38-47 and accompanying text. Resource assessments of RARE II areas involve only a bare minimum of exploration activity. *See Sagebrush Rebellion, supra* note 7, at 57, 160 (statement of L. Gordon Pine of Conoco). "The mineral potential of an area has not been fully appraised until it has undergone grid drilling to obtain subsurface samples. . . . United States Geological Survey and Bureau of Mines . . . appraisals have been from surface indications only. . . . The mandate [of the Wilderness Act] has been inadequately fulfilled." *Id.* at 57, 160.

A rating system giving assessments based on incomplete data less credibility has been used to compensate for the uncertainty and paucity of the data. *See* Harris & Agterberg, *supra* note 38, at 905. This, however, begs the question, for the appraisal is still inadequate.

83. *See* Bailey, *supra* note 38, at 27-28. "Any . . . appraisal is in a constant state of dynamic flux, changing with geologic knowledge and economic conditions. There are no once-and-for-all resource assessments." *Id. See also supra* note 38. "[W]e will never have a conclusive inventory of our mineral resources, because minerals are hidden and as exploration and extraction technology improves, previously unpromising areas must be reevaluated." *National Materials Policy, H.R. 2743, supra* note 1, at 188 (statement of G.A. Barber of Anaconda).

*The Mining and Minerals Policy Act of 1970*

The Mining and Minerals Policy Act of 1970[84] declares that the federal government's official policy is to promote a domestic minerals policy carried out by the Secretary of Interior.[85] This is certainly a laudable act and one that would seem to support the establishment of a rational national minerals policy. Unfortunately, the Act has proved to be nothing more than a toothless old bear. For at least the first decade of the Act's existence it has been ignored by the Department of the Interior with impunity.[86] This lack of compliance with the Act prompted Congress in the Federal Land Policy and Management Act of 1976[87] to state: "The Congress declares that it is the policy of the United States that . . . the public lands be managed in a manner which recognizes the nation's need for domestic sources of minerals . . . [including] implementation of the Mining and Minerals Policy Act of 1970."[88] The National Materials and Minerals

84. 30 U.S.C. § 21a (1976). The Act reads in part:

> The Congress declares it is the continuing policy of the Federal Government in the national interest to foster and encourage private enterprise in . . . the development of economically sound and stable domestic mining, minerals, metal and mineral reclamation industries . . . .
>
> . . . .
>
> It shall be the responsibility of the Secretary of the Interior to carry out this policy when exercising his authority under such programs as may be authorized by law other than this section.

*Id.*

85. *Id.*

86. *See National Materials Policy, H.R. 2743, supra* note 1, at 188 (statement of G.A. Barber of Anaconda):

> In September of 1979 [Secretary of Interior] Andrus reported [on] . . . his stewardship under the Mines and Mineral Policy Act of 1970. Every action listed by the Secretary as supporting the Mineral Policy Act has, in fact, tended to delay or limit the domestic production of minerals. [The Secretary's letter] is, in fact, a public affirmation of the abject failure and unwillingness of the Secretary to implement the [Act].

"[A]fter the passage of the Act, Congress and the administration completely ignored the directives contained in the Act. Since that time the national mineral policy has continued to be ignored and slighted." *Id.* at 169 (statement of T.S. Ary, President, Kerr McGee Minerals Exploration Division). *See* U.S. MINERALS VULNERABILITY, *supra* note 1, at 4:

> Notwithstanding the clarity of the statutory language of the Mining and Minerals Policy Act of 1970, and the fundamental purpose of its accompanying legislative history, the Department of Interior has chosen, for a full decade, to abdicate its assigned role and responsibility. . . .
>
> In the face of an unequivocal Congressional directive to do so, the Interior Department has made no effort to develop a system for identifying, quantifying, and evaluating the impact of proposed federal actions on the Nation's nonfuel mineral resources.

Unlike his actions under the National Environmental Policy Act, 42 U.S.C. §§ 4321-47 (1976), which contains language very similar to the Mining and Minerals Policy Act, the Secretary of Interior claimed he is without authority to enforce the Minerals Act, or make a minerals impact statement. U.S. MINERALS VULNERABILITY, *supra* note 1, at 29. *See also* Marsh & Sherwood, *Metamorphosis*, *supra* note 21, at 261.

The Act calls for yearly reports to Congress. 30 U.S.C. § 21(a) (1976). The reports submitted toward the end of the Carter administration, however, have been characterized as being of "uneven" quality and having "degenerated to the point of being nearly useless." U.S. MINERALS VULNERABILITY, *supra* note 1, at 30.

In all fairness, it should be pointed out that Charles Eddy, Assistant Secretary for Energy and Materials of the Department of the Interior during the Carter administration, testified before Congress that the Act *has* affected policy. *National Materials Policy, H.R. 2743, supra* note 1, at 239.

87. 43 U.S.C. §§ 1701-1784 (1976 & Supp. III 1980); *see* Marsh & Sherwood, *Metamorphosis*, *supra* note 21, at 261.

88. 43 U.S.C. § 1701(a)(12) (1976).

Policy, Research and Development Act of 1980[89] repeats this directive.[90] Despite these acts, the Carter administration continued to ignore the Minerals Policy Act.[91] Although Interior Secretary James Watt[92] has been more concerned with the development of an effective minerals policy than his predecessors, the deficiencies in the law and failure to provide an adequate enforcement mechanism raise the possibility that Watt's successor may once again ignore the mandates for a strong minerals policy.[93] The courts have also been reluctant to enforce the spirit of the Act.[94]

*Federal Land Policy and Management Act*

When Congress passed the Federal Land Policy and Management Act[95] (FLPMA) in 1976 it did so to coordinate and modernize more than a century of outdated and conflicting legislation and to impose systematic land use planning on federal lands.[96] While a complete discussion of FLPMA is beyond the scope of this Note,[97] two important aspects are particularly relevant to mineral development. First, section 1732(b) states that, other than recordation requirements, no provision "of this Act shall in any way amend the Mining Law of 1872 or impair the rights of any locators of claims under that Act."[98] The section continues, however, that "the Secretary shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands."[99] Additionally, the Act requires management of land within the jurisdiction of the Bureau of Land Management (BLM) so as not to impair its suitability as potential wilderness.[100] These requirements have spawned a set of BLM regulations that preserve potential wilderness areas as wilderness,[101] not

89. 30 U.S.C. §§ 1601-1605 (Supp. IV 1980).

90. *See infra* note 123 and accompanying text.

91. Marsh & Sherwood, *Metamorphosis*, *supra* note 21, at 261. The 1970 Act had, for example, no effect on the creation of a 56 million acre national monument in Alaska. *See National Materials Policy, H.R. 2743, supra* note 1, at 81 (statement of H. Edwards of Anaconda).

92. Watt's service as Secretary began in 1981.

93. See *The Interior Department's View of Energy and Minerals Under the Reagan Administration*, ENGINEERING & MINING J., Apr. 1982, at 78-87, for a summary of the administration's commitment to a strong minerals policy and the Mining and Minerals Policy Act of 1970.

94. *See* State *ex rel.* Andrus v. Click, 97 Idaho 791, 799, 554 P.2d 969, 977 (1976) (the Idaho Supreme Court quoted the full text of the Act and proceeded to ignore it by allowing state restrictions on a mining operation). In Krueger v. Morton, 539 F.2d 235 (1976), a suspension of coal prospecting permits was allowed for the purpose of creating a "more 'orderly' development" of coal reserves. *Id.* at 237. This was held to be "consistent" with the Mining and Minerals Policy Act of 1970. *Id.* at 240. Thus, the court allowed the Interior Department to halt mining activity in order to promote mining. *Id.*

95. 43 U.S.C. §§ 1701-1782 (1976 & Supp. III 1980).

96. *See generally* Schwartz, *A Capsule Examination of the Legislative History of the Federal Land Policy and Management Act of 1976*, 21 ARIZ. L. REV. 285 (1979).

97. *See generally Symposium—The Federal Land Policy and Management Act*, 21 ARIZ. L. REV. 265 (1979).

98. 43 U.S.C. § 1732(b) (1976).

99. *Id.*; *see* Ray & Carver, *Section 603 of the FLPMA: An Analysis of the BLM's Wilderness Study Process*, 21 ARIZ. L. REV. 373, 385-94 (1979); Doe, *supra* note 15, at 10-8, 10-29.

100. 43 U.S.C. § 1732(b) (1976).

101. 43 C.F.R. pt. 3802 (1981). The regulations are quite restrictive. They provide for the interim management of roadless areas of 5,000 acres or more and of "roadless islands," *see id.*, § 3802.0-5(c), until a particular roadless area is either declared wilderness or non-wilderness. *Id.* The interim management essentially allows for continuation of mineral activity only in the same

unlike the RARE II[102] Wilderness Study Area regulations,[103] and provide for BLM supervision of all but "casual use" of areas lacking wilderness potential.[104] While the intent of these regulations is admirable, it is conceivable that the Interior Department may someday step beyond Congressional intent in FLPMA and unduly restrict the ability of mineral operators on public lands, as it has done with the Wilderness Act[105] and the Mining and Minerals Policy Act of 1970.[106] Indeed, the Interior Department has already been accused of gross mismanagement to the detriment of mineral development.[107]

A second troubling element of FLPMA's implementation involves section 1714(e), which allows for "emergency" temporary three-year withdrawals of public lands when either the Secretary of Interior or the Committee on the Interior and Insular Affairs of either the House or the Senate declares that an "emergency" exists.[108] This section allowed former Secretary Andrus to withdraw 110 million acres of federal land in Alaska in 1978.[109] The United States District Court in Alaska held in *Alaska v. Carter*[110] that this withdrawal was permissible despite the lack of an environmental impact statement, apparently required by the National Environmental Policy Act.[111]

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"manner and degree" as defined in § 3802.0-5(j), without "undue and unnecessary degradation" as defined in § 3802.0-(5)(*l*). While the general concept embodied in these regulations appears to be reasonable, the specific definitions might serve to inhibit virtually all mining activity. The "manner and degree" requirement in § 3802.0-5(j) will not allow the logical progression from surface sampling to drilling or from drilling to mining. See Utah v. Andrus, 486 F. Supp. 995, 1006 (D. Utah 1979); *supra* note 77, for a discussion of similar regulations. Finally, the "undue and unnecessary degradation" requirement is seen to require the "best reasonably available technology," 43 C.F.R. § 3802.0-5(*l*) (1981), a criterion that may well preclude traditional exploration methods and require techniques unavailable to the average prospector.

102. *See supra* note 79.

103. Compare these regulations with those cited *supra* note 77.

104. 46 Fed. Reg. 47,180, -197 (1981) (to be codified at 43 C.F.R. pt. 3800).

105. 16 U.S.C. §§ 1131-1136 (1976). *See supra* notes 75, 77 and accompanying text.

106. 30 U.S.C. § 21a (1970). *See supra* note 86 and accompanying text.

107. U.S. MINERALS VULNERABILITY, *supra* note 1, at 69:

> When Congress passed [FLPMA] it did so in order to achieve the maximum benefits . . . of multiple use and sustained yield. Instead, land managers have utilized administrative planning policies or misinterpretation of statute to administer the lands on an ad hoc decision basis, prohibiting mineral exploration and development or inhibiting such use through time consuming and costly regulations.

See also Utah v. Andrus, 486 F. Supp. 995 (D. Utah 1979), where the court upheld the BLM's authority to regulate roadbuilding in Wilderness Study Areas which had the potential to impair wilderness value. *Id.* at 1007. The court further held that language in the act guaranteeing mineral development in "the same manner and degree" as previously existed referred only to actual existing uses, not statutory rights. *Id.* at 1007, 1011. See also *Nonfuel Minerals, Part II supra* note 11, at 129-30, for criticism of Wilderness Study Area Management by Howard Edwards.

108. 43 U.S.C. § 1714(e) (1976) reads in part: "When the Secretary determines, or when the Committee on Interior and Insular Affairs of either the House of Representatives or the Senate [now Senate Committee on Energy and Natural Resources] notifies the Secretary that an emergency situation exists . . . the Secretary . . . shall immediately make a withdrawal. . . ."

109. *See* L. MALL, *supra* note 20, at 122. Fifty-six million acres of these withdrawals were permanently withdrawn by President Carter under a liberal use of the Antiquities Act of 1906, 16 U.S.C. §§ 431-433 (1976). L. MALL, *supra* note 20, at 122. Much of the remainder of the land was permanently withdrawn via the Alaska National Interest Lands Conservation Act, 16 U.S.C. §§ 3101-3223 (Supp. IV 1980).

110. 462 F. Supp. 1155 (D. Alaska 1978).

111. 43 U.S.C. §§ 4321-4361 (1976). In order for a governmental agency to commence "major federal actions," 42 U.S.C. § 4332 (1976) requires an environmental impact statement. The *Carter*

A similar dispute has been brewing over Montana's Bob Marshall Wilderness Area where, between 1970 and 1981, 340 oil and gas lease applications were filed but none granted by the Bureau of Land Management.[112] Shortly after James Watt became Secretary of the Interior, the House Committee on Interior and Insular Affairs withdrew the Bob Marshall Wilderness Area and two other areas from leasing pursuant to section 1714(e) of FLPMA.[113] Watt complied with the order, although he questioned the constitutionality of the withdrawal and the reality of the "emergency."[114] The Pacific Legal Foundation has argued that the Secretary may revoke this withdrawal after a reasonable period of time.[115] The constitutionality of the withdrawal and the Secretary's power to revoke an emergency withdrawal have been upheld twice by a federal district court in Montana.[116] Meanwhile, a number of legislative proposals have been introduced to make this withdrawal permanent.[117]

This dispute over the Bob Marshall Wilderness Area illustrates several problems with federal land management. First, the failure to grant any of the leases for a twelve-year period illustrates the tendency of federal land managers to violate the policy in favor of mineral exploration that is embodied within the Wilderness Act.[118] Second, the extraordinary power of a House subcommittee to mandate a withdrawl in response to an emergency which may not exist, and which may be in violation of statutory policies,[119] demonstrates that FLPMA is subject to unwarranted abuse. Finally, the controversy exposes a certain degree of ignorance about mineral exploration in wilderness areas harbored by those opposed to the leasing. If exploration actually may occur in the Bob Marshall Wilderness Area it must comply with the stringent regulations which more than adequately protect the environment.[120]

### *The National Materials and Minerals Policy, Research and Development Act of 1980*

Cognizant of the dangers to the nation inherent in an uncoordinated and counterproductive minerals policy, Congress passed the National Materials and Minerals Policy, Research and Development Act of 1980.[121] Unfortunately, the Act is only a number of well-phrased platitudes that

court decided that a requirement for an environmental impact statement would frustrate the intent of FLPMA. 462 F. Supp. at 1161. See DeStefano, *The Federal Land Policy and Management Act and the State of Alaska*, 21 ARIZ. L. REV. 417, 419-22 (1979), for criticism of the court's decision.

112. Pacific Legal Found. v. Watt, 529 F. Supp. 982, 985 (D. Mont. 1982). *See also* Pacific Legal Found. v. Watt, 539 F. Supp. 1194, 1201 (D. Mont. 1982).

113. *See* Pacific Legal Found. v. Watt, 529 F. Supp. 982, 986 (D. Mont. 1982).

114. *Id.* at 986-87.

115. *Id.* at 998.

116. *Id.* at 1000, 1004-05; Pacific Legal Found. v. Watt, 539 F. Supp. 1194, 1201 (D. Mont. 1982).

117. 529 F. Supp. at 988-89.

118. *See supra* note 75 and accompanying text.

119. *Id.*

120. *See supra* note 76 and accompanying text.

121. 30 U.S.C. §§ 1601-1605 (Supp. IV 1980). For a broad discussion of the weaknesses in minerals policy which promoted Congress to pass this Act, see *National Materials Policy, H.R. 2743*, *supra* note 1, at 1-469.

encourage interagency coordination in data-gathering, recommendations, and reporting to Congress.[122] Section 1605 of the Act once again calls for the implementation of the Minerals Policy Act of 1970.[123] The inherent problem with the Act, and section 1605 in particular, is that neither this Act nor the Minerals Policy Act of 1970 has any enforcement mechanism. Therefore, the repeated calls by Congress for implementation of a pro-minerals policy[124] can have little effect on governmental agencies lacking concrete guidelines for a policy with which they may fundamentally disagree.[125] The Act will be complied with, of course, if the responsible agencies ever change their priorities, but a more forceful act with an enforcement mechanism could go a long way toward the implementation of a national minerals policy. To its credit, the Act has stimulated some action; for example, the Department of Commerce has set up the Minerals and Materials Task Force to study the problem of shortages of critical materials in relation to the aerospace industry.[126] Additionally, the Act has led to consideration of whether to revive Title III of the Defense Production Act,[127] which would provide price support and economic assistance to exploration and development of specified strategic minerals.[128] Despite the positive results achieved with the 1980 Act, it alone cannot remedy all of the government-created problems in the mining industry. Further legislation is still required that would both coordinate the diverse federal policies that effect mining and minimize the needless adverse impact some of these policies have on the mining industry.

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122. 30 U.S.C. § 1601 (Supp. IV 1980) consists of findings that there are problems with our national materials policy. Section 1602 is a declaration of a policy to "promote an adequate and stable supply of materials necessary to maintain national security, economic well-being and industrial production . . . . [T]he President shall . . . coordinate the responsible departments and agencies . . . ." *Id.* § 1602. Section 1603 is the so-called "implementation" section, calling for recommendations and informational data-gathering. *Id.* § 1603. Section 1604 calls for yet another report to Congress. *Id.* § 1604.

123. *Id.* § 1605. This section is another cry in the wilderness for implementation of the Mining and Minerals Policy Act of 1970, 30 U.S.C. § 21a (1976). It reads in part: "Nothing in this chapter shall be interpreted as changing in any manner or degree the provisions of and requirements of [the Mining and Minerals Policy Act of 1970]." 30 U.S.C. § 1605 (Supp. IV 1980). Furthermore, the section instructs the President to direct the Secretary of the Interior "to act immediately . . . to attain the goals contained in [the Act of 1970]." *Id. See supra* notes 84-94 and accompanying text.

124. *See supra* note 88 and accompanying text.

125. *See supra* notes 14-17 and accompanying text.

126. *Strategic Minerals*, *supra* note 33, at 6 (statement of Malcolm Baldridge, Secretary of Commerce).

127. *Id.* at 25 (statement of I. Baird, Office of Industrial Mobilization). Title III of the Defense Production Act (50 U.S.C. §§ 2091-2094 (1976)) may be used to provide price supports for guayule (rubber). *Id.* See Fine, *Mineral Policy Issues*, ENGINEERING & MINING J., Oct. 1981, at 15, for assertion that Title III also is being considered as a way to promote domestic cobalt production.

128. *See* Fine, *supra* note 124. Title III was successfully used to counter mineral shortages during the Korean War and spawned domestic production of chromite, manganese, and titanium supplies. *Id.* One factor weighing against the implementation of Title III is philosophical opposition by "free market" economists in the Reagan administration. *Id.*; *see also* Fine, *Cheers and Groans for Reagan Minerals and Materials Plan*, ENGINEERING & MINING J., May 1982, at 15.

## PROPOSALS TO REVITALIZE THE EXPLORATION AND DEVELOPMENT OF DOMESTIC MINERAL RESOURCES

To be successful, a coherent federal minerals policy that will effectively promote and revitalize the domestic minerals industry must provide both the incentive and ability to explore and develop domestic mineral resources. While it is likely that no policy can completely satisfy all the competing environmental and developmental interests in this nation's public resources, the implementation of a sound and coherent policy should advance both areas of interest. It can do so by safeguarding areas deemed worthy of protection and by recognizing that environmental protection policies should not unduly hinder development where such development would not adversely affect the environment. Furthermore, a sound policy should stress compatibility rather than incompatibility of these competing interests.

### *Agency Coordination*

Because various agencies and departments of the executive branch are designed to promote competing interests in the use of public resources, a lack of coherence in the federal minerals policy has developed.[129] It is imperative that there be coordination within the executive agencies responsible for implementing the congressional acts affecting minerals development. One possible solution is an executive office with the responsibility of overseeing actions of the various federal agencies to ensure a coordinated minerals policy and compliance with congressional mandates such as the Mining and Minerals Policy Act of 1970.[130]

Title II of the proposed National Minerals Security Act of 1981 (H.R. 3364),[131] introduced into the 97th Congress by Representative James Santini of Nevada, would establish within the executive branch the "Council on Minerals and Materials."[132] The council would coordinate all activity within the executive branch affecting mineral and material resources and would advise the President and appropriate agencies on compliance with prior mineral legislation.[133] Furthermore, section 202 of the Act would place responsibility for carrying out its policies with the heads of all federal agencies whose actions may have an impact on the domestic mining, minerals, or materials industry.[134] Such a provision perhaps would ensure some degree of accountability for implementing the Act.

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129. *See supra* note 15 and accompanying text.

130. *See supra* notes 84-94 and accompanying text.

131. H.R. 3364, 97th Cong., 1st Sess. (1981). For text of the Act, see *National Defense Stockpile*, *supra* note 37, at 9-23. The purpose of the Act would be "to implement the mineral policy expressed by Congress in the Mining and Minerals Policy Act of 1970 and the National Materials and Minerals Policy Research and Development Act of 1980, both of which have been ignored by the Executive branch." ENGINEERING & MINING J., May 1981, at 15. Title I of the Act states that one purpose is "to develop and implement a national minerals and materials policy for a secure and continued supply of minerals and materials." The Act consists of nine titles, each of which addresses and attempts to correct a specific shortfall in the current policy.

132. H.R. 3364, 97th Cong., 1st Sess. § 201(a) (1981).

133. *Id.* § 201(b).

134. *Id.* § 202.

*Resource Assesments*

A second major area in which reform must be made is that of mineral resource assessment. Adequate mineral resource assessments must be made before an area is withdrawn from mineral exploration and development or before a land use plan is made pursuant to FLPMA.[135] In keeping with the Mining and Minerals Policy Act of 1970,[136] such land use plans should consider mining as the dominant use of the land.[137] If that were done, the government might avoid restrictions on development operations based on judgments that the surface use is dominant, such as those upheld in *Richardson*.[138] Any mineral resource assessment should be performed by an agency with the staff and resources to perform an adequate job.[139]

Section 302 of Title III of H.R. 3364[140] would require such mineral resource assessments, with mineral development considered a dominant use, in areas subject to land use plans under FLPMA. This section might prevent the withdrawal of areas from mineral development before the mineral potential of the area has been evaluated. To ensure a sufficient level of expertise, Title IV would authorize the Bureau of Mines to coordinate information-gathering on mineral activities.[141]

*Land Withdrawls*

Legislative reform should address the issue of withdrawals of public land from mining activity. For example, to develop an overall policy for the management of federal lands, it would be useful to know with reasonable precision how much public land has actually been withdrawn from mineral development.[142] Section 303 of H.R. 3364 instructs the Secretary of the Interior to determine for the first time exactly how many acres of

135. 43 U.S.C. § 1712 (1976).

136. 30 U.S.C. § 21a (1976). *See supra* notes 85-86 and accompanying text.

137. Mining as a dominant use on federal lands existed from the enactment of the Mining Law of 1872 until the passage of the Wilderness Act of 1964 and FLPMA. Marsh & Sherwood, *Metamorphosis*, *supra* note 21, at 245-50, 269. *See supra* notes 71-73 and accompanying text.

138. 599 F.2d 290 (9th Cir. 1979), *cert. denied* 444 U.S. 1014 (1980); *see supra* notes 63-70 and accompanying text. When the *Richardson* court held that the BLM could regulate prospecting activity to preserve the surface, it was giving the surface use a dominant status compared to the mineral estate. If Congress mandated that the mineral estate was dominant, it is less likely a court would hold that the BLM could so regulate in the absence of a specific and unambiguous congressional directive.

139. *See supra* notes 38-47 and accompanying text. The "Council on Minerals and Materials," discussed *supra* notes 131-33 and accompanying text, might help ensure or urge that adequate resources are provided to the Geological Survey for this task.

140. H.R. 3364, 97th Cong., 1st Sess. (1981).

141. By concentrating all such mineral information and policy review in one department, the government could develop an agency with expertise and an awareness of all the problems inherent in resource assessments. *See supra* notes 38-47 and accompanying text. Such a department could make wise policy recommendations on a sound factual and theoretical basis. The Bureau of Mines would use this expertise to cooperate with the Council on Minerals and Materials in "formulating and recommending to the President national policies designed to improve conditions affecting the mineral and material needs and resources of the nation." H.R. 3364, 97th Cong., 1st Sess. § 401(c)(3) (1981). Thus, there would be a significant likelihood that governmental mineral policy would be firmly rooted in a body cognizant of what issues actually confront the minerals industry. *See supra* notes 14-17 and accompanying text.

142. *See supra* note 21 and accompanying text.

federal lands are "classified, restricted, or closed to mineral location or leasing."[143] This section would clarify the impact federal land policies have on mineral development.

Lands withdrawn from mineral exploration represent a significant portion of the mineral resource potential of the nation.[144] While the withdrawals may reflect a legitimate policy goal of preserving America's wilderness for future generations, a mechanism should be available to reassess some of these policy decisions in the event of any potentially exigent circumstances. Furthermore, because of changing demand and value of mineral resources there is a continuing need for an ability to reevaluate areas for their mineral potential.[145]

To achieve these goals, industry must have a continuing ability to explore in wilderness areas to determine their mineral potential. Thus, an extension for exploration beyond the current 1983 deadline is required.[146] As the current Wilderness Act indicates,[147] such exploration can be compatible with an area's wilderness value. This, of course, should not mean overly harsh and restrictive regulation designed to prevent exploration in wilderness areas and their surroundings,[148] but regulations to minimize the impact of exploration.

Section 306 of H.R. 3364 would extend the 1983 deadline for mineral exploration in national forest wilderness areas for ten years. H.R. 5603, introduced into the 97th Congress and authored by Interior Secretary Watt,[149] would bar all drilling and mining activities in wilderness areas until the year 2000.[150] Before the year 2000, the President could open an area to development upon a finding of "urgent national need," such action subject to a legislative veto.[151] After 2000, Congress would have the authority to reopen an area to development.[152]

Neither of the proposed bills, however, provides a mechanism for a continuing means to evaluate an area for mineral potential. Without this, there would be no satisfactory way of determining whether an area had any minerals at all to meet such an "urgent national need."[153] Furthermore, the wilderness exploration provisions of these bills are unlikely to be passed by Congress in light of its overwhelming support for H.R. 6542, the

143. H.R. 3364, 97th Cong., 1st Sess. § 303(a) (1981).

144. *See supra* notes 19-21 and accompanying text.

145. *See supra* note 38 and accompanying text.

146. 16 U.S.C. § 1133(d)(3) of the Wilderness Act of 1964 allows mineral exploration until 1983. *See supra* notes 75-77 and accompanying text.

147. *See supra* note 76 and accompanying text.

148. See discussion of current regulations at *supra* notes 21-22 and accompanying text.

149. See Koch, *Congress Wary of Fine Print in Watt's Wilderness Plan*, CONG. Q. WEEKLY REP., Feb. 27, 1982, at 462. *See Watt's New Wilderness Bill—the compromise that nobody likes*, ENGINEERING & MINING J., Apr. 1982, at 15-17. The bill was introduced by Representative Manuel Lujan of New Mexico. *Id.*

150. CONG. Q. WEEKLY REP., *supra* note 149.

151. *Id.*

152. *Id.*

153. The discovery of a new mineral deposit is not only highly speculative but also takes years of intensive exploration and the development of a deposit into a mine takes still longer. *See generally* W. PETERS, EXPLORATION AND MINING GEOLOGY (1978). Thus, it would take many years before a finding of "urgent national need" and the completion of a mine to satisfy that need.

"Wilderness Protection Act of 1982" which would disallow mineral leasing in certain wilderness areas.[154]

Therefore, an alternative solution might be authorization for the government, industry, or both to carry out nondestructive exploration[155] for commodities determined to be vitally or strategically important and in critically short supply.[156] If evidence is found supporting a reasonable conclusion that a target orebody exists, then drilling and development would be permitted, after an appropriate hearing designed to weigh the relative merits of development or continued wilderness preservation.[157]

Section 304 of H.R. 3364 provides that if sufficient interest were generated in the mineral potential of a particular wilderness or other withdrawn area, and the Secretary of the Interior determined that mineral activity would not interfere with the wilderness or other purpose of the withdrawal, then prospecting and mining would be permitted in that wilderness area. In anticipation of objections from parties interested in wilderness preservation, the bill provides for public participation in the decisionmaking process.[158] Furthermore, the Act would not overrule the purposes of the Wilderness Act of 1964.[159] Therefore, anyone conducting mineral activity would have to ensure that the particular area would retain wilderness characteristics as defined by Section 1131(c) of the Wilderness Act.[160] Specifically, the affected area would have to remain a place where "man himself is a visitor who does not remain. . . . retaining its primeval character and influence, without permanent improvements or human habitation . . . with the imprint of man's work substantially unnoticeable . . . [and which] has outstanding opportunities for solitude . . . ."[161] It is uncertain, however, what effect section 304 of H.R. 3364 could actually have on mineral development if the existing management of wilderness areas is not modified to allow for exploration as originally intended when the Wilderness Act was first enacted.[162] Furthermore, little mining could be carried out if an area were to remain strictly wilderness. But, under section 304, an area might at least be explored. Then legislation could open the area to development if Congress determines that the value of development outweighs that of wilderness preservation.

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154. H.R. 6542, 97th Cong., 2d Sess. (1982) was passed by the House by a substantial majority in August 1982. *See* 128 CONG. REC. No. 110 (1982). For text of the bill, see WITHDRAWING CERTAIN LANDS FROM MINERAL LEASING, AND FOR OTHER PURPOSES, H.R. REP. NO. 97-638, 97th Cong., 2d Sess. 1 (1982).

155. Nondestructive exploration would include aerial and ground geophysics, geochemical sampling, and geologic mapping.

156. When a substantial percentage of a strategic mineral is imported from a vulnerable source nation, then it would be in critically short supply.

157. Such a system would establish a balancing mechanism for assessing the merits of mineral development in wilderness areas rather than the all or nothing approach of the other proposals.

158. H.R. 3364, 97th Cong., 1st Sess. § 304(d) (1981).

159. *See supra* notes 72-83 and accompanying text. Section 304(e) states that any activity must be "carried on in a manner compatible with . . . the purposes of the withdrawal or classification." *Id.* § 304(e).

160. 16 U.S.C. § 1131(c) (1976).

161. *Id.*

162. *See supra* note 75 and accompanying text.

*Stockpiling*

The proposed National Minerals Security Act of 1981 includes reformation of the nation's strategic stockpiling system and the Critical Materials Stock Piling Act[163] by insulating the stockpile from removals to alleviate short-term economic needs.[164] This would make any shortcomings in the domestic production capacity of a strategic mineral less worrisome. The proposed National Minerals Security Act of 1981 includes other needed reforms as well.[165]

## SUMMARY AND CONCLUSIONS

The United States currently has a confusing, contradictory and counterproductive minerals policy. This has led to an alarming dependence on unreliable foreign sources for minerals and materials critical to the economic health of the nation. The domestic stockpiling system is in a state of disarray and would be of little use in the event of an emergency. Government policymakers are unable to make rational decisions as to what the minerals policy is because they lack the expertise to evaluate mineral resource assessments. Various pieces of legislation passed by Congress to encourage domestic minerals development have been frustrated by the federal agencies responsible for administering the acts. The Department of the Interior's obstructionism has been especially egregious. Legislative reform is needed to put the nation's minerals industry back into a position to satisfy domestic minerals requirements. Such reform should achieve three results. First, it should centralize all activities relating to mineral development within one executive body, and require that all land use plans and policies be developed only after a truly adequate assessment of an area's mineral resources is completed. Second, it should restore mineral production as a dominant use of federal lands where Congress has not expressly found another use to be dominant. Finally, it should provide a continuing mechanism for reevaluating lands withdrawn or restricted from mineral exploration to meet national security requirements when those needs are found to outweigh other uses of federal lands. The proposed National Minerals Security Act of 1981, which incorporates many of these changes, is a step in the right direction.

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163. The 1981 Act would amend § 98h(b) of the Critical Materials Stock Piling Act, 50 U.S.C. §§ 98a-98h (Supp. IV 1980). *See supra* notes 31-37 and accompanying text.

164. H.R. 3364, § 702(b) would require that all revenues generated from stockpile sales be used only for the purpose of purchasing other materials for the stockpile. H.R. 3364, 97th Cong., 1st Sess. § 702(b) (1981). *See National Defense Stockpile, H.R. 2743*, *supra* note 37, at 66 (statement of R. Donnelly, Department of Defense): This would "effectively place the stockpile transaction fund outside budgetary control, limiting the authority of Congress and the Executive in this area."

165. Title V, §§ 501-502, of the proposed Act would allow tax-exempt financing for air and water pollution control facilities with a one-month amortization period. Title VI, § 601, would reform the Administrative Procedure Act, 5 U.S.C. §§ 551-706, by requiring consideration of lower cost alternatives to proposed rules and expanding fact-finding for disputed issues. Title VIII, § 801, would establish a review of antitrust laws to study their effects on the mineral processing industry. Finally, Title IX, §§ 901-902, would centralize the data-gathering of all information on foreign mineral supplies in the Bureau of Mines.