Hardrock Mining and the Environment: Issues of Federal Enforcement and Liability

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Hardrock mining has caused significant harm to the environment, particularly in the West. Mining laws enacted in the 19th Century sought to encourage mineral production and the transfer of mineral lands to private interests and were largely unconcerned with environmental protection. Federal regulation of hardrock mining, although increasingly effective in recent decades in mitigating the environmental effects of mining, remains heavily influenced by these laws and unable to fully prevent degradation of western watersheds. Federal land managers often have resorted to their authorities under CERCLA to recover response costs or compel cleanup at contaminated mining sites nation-wide. Mining companies have, in turn, sought contribution from the United States arguing that federal ownership of lands subject to hardrock mining, and federal regulation of hardrock mining sites, make it a responsible party and liable for clean-up. Courts have, in the main, rejected these arguments, looking to the history of hardrock mining and comparing the broad rights and interests granted to mining companies with the more circumscribed rights retained by the United States. CERCLA litigation, however, is expensive, retrospective, and fruitless at many "orphaned" sites where viable corporate entities no longer can be found. Statutory and regulatory reforms to the regulation of hardrock mining are necessary to more effectively protect public health and the environment.

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INTRODUCTION

Mining of minerals such as gold, silver, copper, lead, iron, and uranium has been an integral part of the economy of the United States—particularly in the West—since the mid-1800s.1 Laws passed by Congress during the nineteenth century to promote the exploration and development of such “hardrock” minerals on public lands remain in effect today much as originally enacted.2 They grant to miners broad rights to extract minerals from public lands and impose significant constraints on the authority of the United States to limit access to those lands, extract royalties or other fees from mining companies, or prevent physical disturbance to the lands that is an unavoidable consequence of such mining.3


3. This article addresses only environmental issues arising from the mining of hardrock or “locatable” minerals. “Locatable” minerals are those acquired through the Mining Law of 1872, as amended. 30 U.S.C. §§ 22-54, 161-62, 661 (2000 & Supp. I 2001). Locatable minerals are the base and precious metal ores, ferrous metal ores, and certain classes of industrial minerals.
It is not surprising, then, that the free access principles embodied in the public mining laws have been subject to both high praise and severe criticism. Some describe the laws as antiquated relics of an age in which unrestricted mining was considered a western birthright and when extraction of minerals from remote, arid, public lands was commonly viewed as the highest and best use.\textsuperscript{4} They maintain that those laws, even as revised during the latter part of twentieth century, fail to ensure economic equity to the public owners of the lands and minerals or adequately address growing concerns about the adverse environmental consequences of hardrock mining.\textsuperscript{5} Others, however, maintain that the resilience and longevity of the public mining laws are themselves evidence of their success in promoting efficient mining while simultaneously protecting environmental values. They believe that the rights to free and open access to minerals on public lands embodied in the public mining laws are as appropriate today as when first granted, in light of a hardrock mining industry that continues to be characterized by high capital costs, long time horizons for returns on investments, uneven and quickly changing market conditions, and frequent commercial failure.\textsuperscript{6} They also argue that, although some environmental degradation inevitably results from any earth-disturbing activity, the public mining

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\textsuperscript{4} More than ten years ago, former Interior Secretary Bruce Babbitt commented that he "find(s) it astounding that the basic principles of the Mining Law have remained largely intact for 121 years, and still govern hard rock mining and exploration on millions of acres of our federal land. I believe that this law no longer serves the public interest and that we, as stewards on federal lands, must act responsibly and definitively to accomplish reform." \textit{Hardrock Mining Reform Act of 1993: Hearings Before the Subcomm. on Mineral Resources Development and Production of the Senate Comm. on Energy and Natural Resources}, 103d Cong. 43 (1993).

\textsuperscript{5} CHARLES F. WILKINSON, CROSSING THE NEXT MERIDIAN: LAND, WATER, AND THE FUTURE OF THE WEST 17 (1992) (arguing that throughout the West "natural resource policy is dominated by the lords of yesterday, a battery of nineteenth-century laws, policies and ideas that arose under wholly different social and economic conditions, but that remain in effect due to inertia, powerful lobbying forces, and lack of public awareness"); JAMES S. LYON, THOMAS J. HILLIARD, \& THOMAS N. BETHELL, BURDEN OF GILT 10-11 (1993); Daphne Werth, \textit{Where Regulation and Property Rights Collide: Reforming the Hardrock Act of 1872}, 65 U. COLO. L. REV. 427 (1994).

\textsuperscript{6} Andrew P. Morriss, Roger E. Meiners \& Andrew Dorchak, \textit{Homesteading Rock: A Defense of Free Access Under the General Mining Law of 1872}, 34 ENVTL. L. 745, 752-755 (2004) (arguing that the mining law represents a model for privatizing public resources, particularly for an industry that is capital intensive and subject to unpredictable fluctuations in commodity prices); H. Byron Mock, \textit{Mining Law Trends}, 54 DENV. L. J. 567, 568 (1977) (stating that the longevity of public mining law is proof that "it reflects national needs and concerns that are worth preserving"); Donald P. Hodel, \textit{Introduction} to \textit{THE MINING LAW OF 1872: A LEGAL AND HISTORICAL ANALYSIS} xii (National Legal Ctr. for the Public Interest 1989) [hereinafter \textit{THE MINING LAW OF 1872}].

Examples of locatable minerals are gold, silver, platinum, copper, lead, zinc, magnesium, nickel, tungsten, and uranium. Issues associated with the mining of "leasable minerals" such as oil, gas, potash, and phosphate, which are governed by the Mineral Leasing Act (30 U.S.C. §§ 181-287 (2000)), coal, which is subject to the Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. §§ 1201-1328 (2000)), and other minerals are beyond the scope of this article.
laws, together with contemporary state and federal environmental laws, ensure that modern hardrock mining is conducted so as to minimize adverse effects on the environment.\(^7\)

Although the need for reform of the public mining laws remains the subject of spirited debate among academics and policymakers, there is little dispute that the historic operation of those laws has bestowed on the West a legacy of environmental contamination.\(^8\) Tens of thousands of un-reclaimed hardrock mining sites, abandoned generations ago, litter the landscape. Many of those sites constitute sources of substantial acid mine drainage to streams and rivers, release large quantities of toxic metals into sensitive watersheds, emit pollutants to the air surrounding nearby towns and cities, and otherwise present significant threats to public health and the environment.\(^9\)

For decades, state and federal regulators have struggled to understand the nature and scope of the environmental threats associated with hardrock mining and to develop strategies to address them.\(^10\)

\(^{7}\) See David Gerard, The Mining Law of 1872: Digging a Little Deeper, Policy Series Issue PS-11 12-15 (Political Economy Research Ctr. 1997); Jerry L. Haggard, Public Land-Use Planning and the Mining Law System, in The Mining Law of 1872, supra note 6, at 99-126 (arguing that the Mining Law of 1872 has been supplemented by multiple-use land planning requirements, and other laws, that adequately protect public lands from degradation); Kenneth D. Hubbard, Brian R. Hanson & Steven G. Barringer, Environmental Balance, in The Mining Law of 1872, supra note 6, at 127-162.


\(^{10}\) See, e.g., Michael S. Giannotto & David Katz, EPA's Developing Strategy for Increased Regulation and Oversight of the Hardrock Mining Industry, 43 Rocky Mtn. Min. L. Inst. 14-1 (1997) (describing EPA's efforts over many years to develop a greater role for the agency in the regulation and oversight of hardrock mining); EPA, National Hardrock Mining Framework (1997) (outlining EPA's multi-media, multi-statute approach to address environmental contamination at mining sites). More recently, EPA established a National
active mines, contemporary state and federal land use laws provide some authority to regulate hardrock mining and require that miners undertake measures to reclaim and restore mining sites and to prevent and mitigate environmental contamination. Environmental statutes enacted during the past twenty-five years to address water and air pollution, and the management of solid waste, also provide to federal and state environmental agencies some authority to regulate hardrock mining sites, and to impose environmental controls on mining activities that pose a risk of environmental harm.

Many hardrock mining sites, however, have been abandoned or have been inactive for long periods and thus cannot easily be regulated under the public mining laws or the pollution control laws directed at currently operating facilities. Even state-of-the-art hardrock mines, designed and

Advisory Council for Environmental Policy and Technology (NACEPT) to help advise it on issues of environmental policy, including how best to address environmental contamination at large mega-sites such as hardrock mines. In its final report, the NACEPT failed to reach consensus recommendations to improve the cleanup of mega-sites, except to advise EPA to “bring focused and sustained management attention” to them. FINAL REPORT, SUPERFUND COMMITTEE OF THE NATIONAL ADVISORY COUNCIL FOR ENVIRONMENTAL POLICY AND TECHNOLOGY 71 (April 12, 2004) [hereinafter NACEPT FINAL REPORT].

11. Both Interior and the U.S. Department of Agriculture (Agriculture) United States Forest Service (Forest Service), have promulgated regulations, authorized under land-managing statutes, to regulate activities at hardrock mines on public lands. See, e.g., 43 C.F.R. subpt. 3809 (2003) (surface mining regulations of the Bureau of Land Management (BLM)); 36 C.F.R. pt. 228 (2004) (regulations of the Forest Service addressing hardrock mining activities). Many states also have enacted laws governing hardrock mining and those laws apply to public lands provided they do not prohibit mining entirely. See ANN KERSTEN & SUSAN LYNN, A REVIEW OF HARDROCK MINE RECLAMATION PRACTICES IN WESTERN STATES (1992) (summarizing hardrock reclamation laws in 13 western states). See also JAMES MCELFISH, JR. ET AL., HARDROCK MINING: STATE APPROACHES TO ENVIRONMENTAL PROTECTION 352 (1996) (cautioning that, although most hardrock mining states have enacted laws regulating active hardrock mining activities, such regulation is “highly variable,” and does not constitute “a comprehensive or mature regulatory system” but one that “in many ways has been cobbled together from bits and pieces of regulatory programs and jurisdictions”).


constructed to comply fully with contemporary land use and environmental laws, can cause significant harm to the environment. To address contamination at both active and inactive hardrock mining sites, federal regulators often exercise their authorities under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, often referred to as the "Superfund" law). Using CERCLA authorities, the U.S. Environmental Protection Agency (EPA) has added some of the largest and most seriously contaminated mining sites to the National Priorities List (NPL)—its inventory of sites scheduled for long-term remedial action. EPA also has used its CERCLA authorities to persuade or order mining companies to address contamination at or migrating from hardrock mining sites. Agencies of the United States responsible for management of public lands, such as the Department of the Interior (Interior) and the Department of Agriculture (Agriculture), increasingly are exercising their authorities under CERCLA to conduct or compel cleanups of hardrock mines on public lands. States also have expressed concern about contamination caused by hardrock mining and are addressing some sites using their own authorities.

Although not the only tool available, CERCLA has significant advantages over other statutory schemes in addressing contamination at

14. See, e.g., EPA, DAMAGE CASES AND ENVIRONMENTAL RELEASES FROM MINES AND MINERAL PROCESSING SITES (1997) (presenting studies of more than 60 active mining and mineral sites in which environmental damage was caused by ongoing extraction/processing/beneficiation operations).
16. See EPA, MINING AND MINERAL PROCESSING SITES ON THE NPL (1997). Nearly all of the more than 60 such sites then listed on the NPL were, in whole or in part, for the extraction, processing, or beneficiation of hardrock minerals. Id. at 1-2.
18. Most states also have enacted laws, much like the federal CERCLA, that give them the authority to clean up contaminated sites, such as abandoned mines. Although states have increased their response and enforcement capabilities in recent years, they have limited resources and typically look to EPA to address large sites without viable responsible parties. See KATHERINE N. PROBST & DAVID M. KONISKY, SUPERFUND'S FUTURE: WHAT WILL IT COST? 93-97 (Resources for the Future 2001) [hereinafter PROBST & KONISKY]; U.S. GEN. ACCOUNTING OFFICE, REP. NO. GAO-03-850, SUPERFUND PROGRAM: CURRENT STATUS AND FUTURE FISCAL CHALLENGES 2 (2003). States also have enacted laws, such as water-quality and solid-waste laws, which provide authority to address some environmental hazards associated with mining sites. See generally EPA, MINING WASTE STATE REGULATORY PROGRAMS (1990); McELFISH ET AL., supra note 11.
hardrock mining sites. Its strict, retroactive, joint and several liability scheme allows the United States to recover its response costs from one or all of those responsible parties falling within several broadly-defined categories, without regard to the parties' negligence or whether the activities giving rise to the contamination were lawful, or even consistent with best management practices existing at that time.20 Under CERCLA section 106, EPA can issue administrative orders to responsible parties, directing that they clean up sites where there is "an imminent and substantial endangerment to the public health or welfare or the environment" because of an actual or threatened release of a hazardous substance.21 EPA has exercised this authority at numerous mining and mineral processing facilities nationwide.22

For abandoned mining sites at which no viable responsible parties exist ("orphan" mines), EPA can use monies from the Hazardous Substances Trust Fund (the Trust Fund)—an account managed by EPA and, until recently, financed principally by taxes imposed on the petroleum, chemical, and other industries—to pay for remediation of sites on the NPL.23 An additional advantage of the statute is that, unlike most environmental laws, CERCLA is not limited to a particular environmental medium such as surface water, but applies to all media.24 CERCLA's breadth is particularly important at mining sites, where contamination commonly extends to soils, sediments, groundwater, surface water, and air. For all of these reasons, EPA has long used CERCLA to mitigate the ecological and public health risks presented by the releases of hazardous substances from hardrock mining sites.

CERCLA enforcement at mining sites presents immense challenges, however. The costs of cleaning up hardrock mining sites can be enormous. At mining sites such as the Bunker Hill Mining and Metallurgical Superfund Site in Idaho, Midnite Mine in the State of

22. See EPA, CERCLA IMMINENT HAZARD MINING AND MINERAL PROCESSING FACILITIES (1997) (summarizing information from more than 40 abatement actions taken pursuant to CERCLA section 106 since 1985 at mineral extraction, beneficiation and processing sites).
24. The Clean Water Act, for example, is largely directed at the discharge of pollutants from point sources into the waters of the United States. 33 U.S.C. § 1342 (2000). EPA has cautioned, in addition, that the Clean Water Act is "difficult to adapt to mining situations" because of its rigorous technical standards and limited flexibility. EPA, NATIONAL HARDROCK MINING FRAMEWORK C-13 (1997).
Washington, or the Tar Creek Superfund Site in Oklahoma, regulators and responsible parties have already spent tens of millions of dollars and will expend hundreds of millions more to address pervasive surface-water and sediment contamination within large and diverse watersheds. At many contaminated hardrock mining sites, massive quantities of waste rock, tailings, and other materials often must be covered with impermeable soil, or even excavated, transported, and disposed of in carefully engineered repositories. Acid mine drainage or other surface water contamination at mining sites may require the installation and perpetual operation of sophisticated storm water and wastewater treatment systems. At some sites, full restoration of the environment may be unattainable at any cost.

Financing the cleanup of mining "mega-sites," as EPA frequently refers to them, can be exceedingly difficult. Many of these sites are no longer active and the former owners and operators no longer exist, or do not have assets sufficient to satisfy the potential environmental liabilities. Although EPA can use monies from the Trust Fund to pay for a remedial

25. See GEN. ACCOUNTING OFFICE, REP. NO. GAO-01-431R, EPA'S EXPENDITURES TO CLEAN UP THE BUNKER HILL SUPERFUND SITE 4 (2001) (reporting that EPA has incurred, through fiscal year 2000, more than $200 million to address contamination at the Bunker Hill Superfund Site in the Coeur d'Alene River Basin). EPA has proposed an "interim action that consists of the first increment of cleanup" for certain areas of the Basin at an estimated cost of more than $470 million. EPA, COEUR D'ALENE BASIN PROPOSED PLAN 8-2 (Oct. 29, 2001). At the Tar Creek Superfund Site in Oklahoma, for example, EPA incurred millions of dollars to address surface water contamination in local water bodies caused by decades of subsurface lead and zinc mining. Despite these expenditures, EPA concluded that degradation of groundwater and surface water continues largely unabated. EPA, FIVE-YEAR REVIEW TAR CREEK SUPERFUND SITE, OTTAWA COUNTY, OKLAHOMA v-vi (April 2000).

26. See, e.g., Idaho v. M.A. Hanna Mining Co., 699 F. Supp. 827, 831 (D. Idaho 1987) (environmental impact statement prepared for the Blackbird Mine in Idaho noted that "although a return to pre-mining water quality can be postulated, the methods of achieving such a goal are either unknown or economically infeasible at this point in time"); EPA, SUPERFUND RECORD OF DECISION - IRON MOUNTAIN MINE, CALIFORNIA, EPA ID No. CAD980498612 15, 25-27 (Oct. 1986) (preferred remedy in Record of Decision was to remove all sources of contamination as well as sediments in receiving waters at an estimated cost of $1.4 billion; because of extraordinarily high costs, the preferred remedy was not chosen).

27. See, e.g., EPA, OFFICE OF INSPECTOR GENERAL, CONGRESSIONAL REQUEST ON FUNDING NEEDS FOR NON-FEDERAL SUPERFUND SITES 10 (Jan. 7, 2004) (noting, for example, that "high cost sites," in particular, "will continue to pose significant funding challenges for EPA" in light of Trust Fund shortfalls). See also PROBST & KONISKY, supra note 18, at 87. In this recent and thoughtful review of the Superfund program, the authors warn that the average cleanup cost of a mega-site, such as a large hardrock mine, is $140 million -- more than an order of magnitude greater than the average cleanup cost of $12 million for more traditional Superfund sites, such as recycling facilities or industrial landfills. Both state and federal governments often defer such sites from their cleanup programs simply to conserve funds. Id. at 87-92. The NACEPT convened recently by EPA was charged with examining, among other things, the findings of Probst & Konisky and considering whether CERCLA is the most appropriate program to address mega-sites. Characterizing their views on this issue as "widely divergent," the NACEPT could not reach consensus on whether mega-sites warranted a fundamentally different cleanup approach. NACEPT FINAL REPORT, supra note 10, at vi.
action at an abandoned mining site located on private lands, the Trust Fund balance has declined significantly in recent years because the business tax on which the Trust Fund historically has relied expired years ago. In fact, during 2004, appropriation of general revenue funds from the Treasury was the principal source of funds for the CERCLA program. For remediation of hardrock mines on public lands, the Fund is unavailable. The costs of cleaning up thousands of hardrock mines on public lands must be allocated among the responsible mining companies, if they exist and have substantial assets, or in the absence of viable private parties, be borne by the taxpayer.

CERCLA enforcement at mining sites on public lands presents even greater challenges. Most of the nation's hardrock minerals are found in twelve western states, and many hardrock mines are located, at least in part, on public lands. Although EPA is the principal response authority for CERCLA cleanups on private lands, the President has delegated the greatest share of his CERCLA response authorities on public lands not to EPA, but to the federal land manager with jurisdiction, custody, or control over those lands. At the same time, CERCLA waives the federal government's sovereign immunity to suit under CERCLA and makes

28. The Trust Fund is authorized in 42 U.S.C. §§ 9611(a), (b) (2000). Until 1995, when Congress let the taxes expire, the Fund received about $1.5 billion annually. Although the Fund continues to receive revenue from interest accrued on the unexpended invested balance, recoveries of cleanup costs from responsible parties, and collections of fines and penalties, Congress' failure to renew the corporate tax significantly affects the pace and quality of CERCLA cleanups. See, e.g., Eric Pianin, EPA Stops Money for Cleanup at 7 Sites, WASH. POST, October 31, 2002, at A3; GRANT COPE, CAN SUPERFUND CONTINUE TO PROTECT PUBLIC HEALTH? 13-14 (U.S. PIRG Education Fund 2002) (noting that, when the Superfund tax expired in 1995 with a surplus of $3.6 billion, taxpayers paid only about 18% of the Superfund's budget; in 2003 the Trust Fund held only $28 million, while taxpayers paid 54% of Superfund's budget).


30. The Trust Fund may not be used to conduct remedial action at "federally owned facilities." 42 U.S.C. § 9611(e)(3) (2000).

31. Major hardrock mining states are: Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Oregon, Washington and Wyoming. In Alaska, for example, public lands managed by BLM and the Forest Service constitute approximately 30% of the total acreage of the State. In Idaho and Nevada, the two agencies manage public lands making up more than 60% of lands. NRC REPORT 1999, supra note 12, at 17-18. Together, BLM and the Forest Service manage about 38% of the total area of the western United States. Id. at 1.

32. CERCLA section 115 authorizes the President to delegate and assign any duties and powers imposed on him under CERCLA. 42 U.S.C. § 9615. The President has delegated his CERCLA response authorities to various federal agencies in two Executive Orders. See supra note 17.
federal agencies liable in the same manner and to the same extent as any non-governmental entity. Thus, federal agencies—like private entities—can be found liable for cleanup costs under CERCLA if they are "owners," "operators," or parties who "arrange for disposal" of hazardous substances at a facility.

This mix of delegated response authority and potential liability creates tension in CERCLA enforcement at mining sites on public lands. A federal land manager can exercise CERCLA authority to address contamination at a hardrock mining site only if it has jurisdiction, custody, or control over the property. If an agency exercises its delegated CERCLA authority, however, it often will elicit a contribution action by mining companies alleging that, at a minimum, such "jurisdiction, custody, or control" is sufficient to vest the United States with liability as a site "owner." Similarly, where EPA initiates an enforcement action under CERCLA against private operators of a hardrock mine located on commingled private/public lands, mining operators will often file third-party actions against the United States, arguing that federal land managers are liable as co-owners of a mining "facility," or as "operators" or "arrangers" at the facility because of their regulatory activities with respect to mining activities.

Mining companies have, for example, filed contribution actions under CERCLA, arguing that federal agencies such as Interior and Agriculture are liable for contamination caused by hardrock mining activities on public lands because they manage lands, on behalf of the United States, on which commercial hardrock mining is taking or has taken place. They also have alleged that, by virtue of their regulation of private mining activities or their involvement in encouraging wartime production of strategic minerals, federal agencies are liable under CERCLA as "operators" of mining facilities or as parties that "arranged for" the disposal of hazardous substances at the facility.

34. § 9607(a).
The United States has opposed such claims by highlighting the limited property interest it retained in public lands subject to hardrock mining under the early public mining laws and the modest authority it possessed, as the custodian of the lands on behalf of the public, to prevent environmental contamination caused by such mining. Given the largely unfettered rights granted to miners to extract hardrock minerals under those laws, together with the inability of the United States to prevent such mining or to derive rents, fees, or royalties from mineral production, many officials within land managing agencies have viewed the miners’ claims as rooted more in hubris than in law. To require the United States not only to open its lands to commercial mining and forego any profits from that mining, but also to absorb cleanup costs caused by environmental contamination over which it had little or no control, strikes many charged with managing public lands on behalf of the public as compounding an inequity.\footnote{In hearings held in 1993 on the “Hardrock Mining Reform Act of 1993,” then Interior Secretary Babbitt said that the lack of any royalty provision in hardrock mining law was “especially troubling to me, since the Department of the Interior is now a defendant in several lawsuits seeking to hold the government liable for the cost of cleaning up toxic residue from defunct mining operations carried out throughout the West under the Mining Law of 1872 . . . . After over a century of making publicly owned minerals available for nothing, the taxpayers may face cleanup costs running into the billions of dollars. I do not believe it fair to leave the public holding the bag.” Hardrock Mining Reform Act of 1993: Hearings Before the Subcomm. on Mineral Resources Development and Production of the Senate Comm. on Energy and Natural Resources, 103d Cong. 44 (1993).} 

Mining operators are quick to respond that, in enacting CERCLA, Congress intended to cast a wide net of liability for environmental contamination and expressly omitted from the statute traditional tort law limiting principles such as fault, responsibility, or causation.\footnote{See Timothy C. Davis, Jr. & Timothy McCrum, Environmental Liability for Federal Lands and Facilities, 6 Nat. Resources & Env't, Summer 1991, at 31 [hereinafter Davies & McCrum] (attorneys for the mining industry maintain that the United States should be liable under CERCLA as holder of title to lands subject to historic mining in the west); Roger L. Freeman & Pamela S. Sbar, Cleanup on the Federal Lands Meets the Private Sector, 44 Rocky Mt. Min. Inst. 14-1, 14-18 to 18-19 (1998) (noting that industry association has encouraged mining companies to assert counterclaims against the United States under CERCLA where mining activities took place on public lands under the 1872 Mining Law); Elizabeth H. Temkin & Kristin Tita, Multiparty Issues: CERCLA Mining and Energy Sites, 35 Rocky Mt. Min. Inst. 6-1, 6-26 (1989) (“mining site PRPs [potentially responsible parties] have sought to name the federal government as a PRP based on its ownership interest in unpatented mining claims” as well as its policies of encouraging mining activities on public lands, particularly during wartime); WGA Study 1991, supra note 13, at 69 (raising question whether federal government may be a responsible party for cleanup costs incurred at hardrock mines on public lands).} They view the argument that the United States should not be liable for historic mining contamination at hardrock mines as, at best, ambiguous in light of the government’s possession of title to public lands and the role it frequently played in encouraging mineral exploration and development.\footnote{Davies & McCrum, supra note 38, at 31.}
They view that argument, at worst, as hypocritical, in light of the longstanding position of EPA and other federal enforcement entities that CERCLA must be construed to achieve broad remedial goals, and thus to impose liability on parties who have not engaged in any waste disposal activities and who have only the most attenuated and formal relation to the harm. They also maintain that, if the involvement of the United States in hardrock mining is as nominal as the federal government insists, its share of response costs should be proportionately modest under contribution principles commonly applied in CERCLA actions.

This article considers some of the legal and policy implications raised by CERCLA enforcement at hardrock mining sites. First, this article reviews the scope of the hardrock mining problem, which entails thousands of sites and billions of dollars in potential cleanup costs. Second, this article reviews how the problem came to be, as a legacy of the early hardrock mining laws and the persistence, even today, of the free and open access principles enshrined in those laws more than a century ago. Third, it explores some of the legal issues raised by the use of CERCLA to protect the environment at hardrock mining sites. Although the United States faces potential CERCLA liability for harm arising from hardrock mining, courts generally have refused to impose such liability. After examining the relative rights and interests possessed by the United States and private hardrock miners, courts have reasoned that the rights of federal agencies in public lands used for hardrock mining differ markedly from those possessed by private "owners" of land, who can determine the uses to which lands can be put, prohibit some activities entirely, and exclude those who, in their judgment, will not manage the lands responsibly. Courts also have viewed the regulatory activities of the United States at hardrock mines as those of a sovereign, seeking to secure an adequate supply of minerals for national defense and economic development—not those of an "operator" of a mining facility, or an entity that has "arranged for the disposal" of hardrock mining waste. Regardless of liability, the United States has a responsibility to address the serious environmental and public health threats presented by hardrock mining sites, and the article examines some recommendations for reform in this area.

I. THE SCOPE OF THE PROBLEM

No one knows how many abandoned and inactive hardrock mining sites are scattered across the lands of the west. The agency within Interior responsible for management of the bulk of public lands—the Bureau of Land Management (BLM)—reports that more than three million hardrock mining claims were recorded on public lands from 1976, when reporting of hardrock mining claims was first required, through fiscal year
2003. Of these claims, however, fewer than 200,000 can be considered "active"—sites that have complied with current federal laws governing the recording and maintenance of claims. For those sites located and abandoned before the imposition of the notification requirement in the Federal Land Policy and Management Act of 1976 (FLPMA), no comprehensive list or inventory of sites exists and many old mining sites have not as yet been surveyed. Perhaps as many as six million mining claims have been filed since record keeping began in the nineteenth century.

A. Hardrock Mine Sites in the West

The most thorough undertaking to inventory inactive and abandoned mines on lands in the West—both public and private—was conducted in 1991 by the Western Interstate Energy Board on behalf of the Western Governors' Association's (WGA) Mine Waste Task Force. The four-volume WGA report involved numerous state and federal agencies and was commissioned to provide policymakers with a quick picture of the scope of the environmental, public health and safety problems presented by inactive and abandoned "non-coal" mines. The WGA initially reported data for thirty-two states. The next year, the Interstate Mining Compact Commission summarized data from the remaining states. In conducting their surveys, the sponsors did not


41. Active claims are not necessarily those on which ore is being currently mined. Rather, such claims are defined by BLM as those that are "in good standing under the recording, maintenance, and assessment work statutes. It does not refer to any potential activity upon the land contained within the claim or site." BUREAU OF LAND MGMT., PUBLIC LAND STATISTICS 2003, at 138 tbl. 3-22 (2004). From 1996 through 2003, BLM received nearly 5500 notices for new or amended operations causing a cumulative surface disturbance of less than 5 acres per calendar year. Id. at 140 tbl. 3-23. The number of such claims has declined markedly, however, from nearly 1200 in 1996 to fewer than 400 in 2003. During 1996-2003, BLM received more than 1300 plans of operation for mining on public lands where the cumulative surface disturbance will exceed 5 acres per calendar year. Id. at 141 tbl. 3-23.


43. WGA STUDY 1991, supra note 13. The Western Interstate Energy Board prepared the study pursuant to an agreement with the WGA and the Interstate Mining Compact Commission (IMCC), under a cooperative grant agreement with EPA.

44. The WGA Study was not limited to hardrock mines. The authors defined "non-coal" mines to include, in addition to hardrock minerals subject to mining under the 1872 Mining Act, minerals such as phosphates that are regulated under the Mineral Leasing Act as well as industrial and construction materials such as cement, clay, sand and gravel. Id. at 23.

45. INTERSTATE MINING COMPACT COMMISSION, VOL. IV: INACTIVE AND ABANDONED NONCOAL MINES: A SCOPI NG STUDY (1992) (this volume also was prepared in cooperation with the WGA and is referred to hereinafter as WGA STUDY 1992).
attempt to define "inactive" or "abandoned," and state officials reported sites by using their own definitions of "inactive" and "abandoned" mines, which varied considerably among jurisdictions.46 Nevertheless, the WGA attempted to survey all sites that had been left or abandoned in an unreclaimed or inadequately reclaimed condition, and that were not part of an active mining operation.

The WGA concluded that "[t]he data submitted by states show significant IAM [inactive/abandoned mine] problems,"47 with one state alone (Nevada) estimating that more than 300,000 abandoned mines sites existed within the state, of which 50,000 posed significant hazards.48 Arizona estimated that 80,000 inactive/abandoned sites were present within state boundaries, covering more than 130,000 acres and polluting 200 miles of state waters.49 Colorado reported more than 20,000 abandoned mine openings and nearly 1,300 miles of polluted streams.50 In numerous western states, officials responsible for overseeing mining activities reported large numbers of such mining sites, with correspondingly significant environmental problems.51

The WGA could not, however, estimate the overall number of abandoned and inactive non-coal mining sites nationwide because many states had not conducted field surveys of mining sites but instead relied on databases derived from industry or other sources.52 States' data were not comparable because of different definitions and assumptions used by regulators to identify mining sites and a lack of consistency in the way states classified sites as inactive and abandoned.53 WGA cautioned that

46. Under current federal law, abandoned sites are those at which the operators have failed to comply with BLM requirements for filing claims, to pay maintenance and location fees, or to satisfy other requirements of the law resulting in forfeiture of the claim. 43 C.F.R. subpt. 3833 (2003). States, in contrast, have developed many different definitions of inactive and abandoned sites. WGA STUDY 1991, supra note 13, at 23–57.
47. WGA STUDY 1991, supra note 13, at vii.
48. Id. at 32.
49. Id. at 24.
50. Id. at 26.
51. Id. Montana reported a total of 19,751 mines, 1,183 millsites, and 1,057 smelters. Id. at 31. California estimated "at least 2,484 inactive and abandoned mines, 1,685 mine openings, 587 miles of polluted water, 171 mine dumps, and 36 millsites" on state lands. Id. at 25. New Mexico estimated more than 7,000 abandoned mines on state lands. Id. at 33.
52. WGA STUDY 1991, supra note 13, at 16. With its request for information, the WGA supplied to states references to known national databases containing data bearing on the likely presence of inactive/abandoned non-coal mines. The WGA further encouraged states to supplement the information and to provide the best data available using all possible information sources.
53. Id. A subsequent study conducted by the U.S. Bureau of Mines (BOM) and Colorado Center for Environmental Management (CCEM) found that, where states rely on common databases such as the BOM Minerals Availability System (MAS), the Minerals Industry Location System (MILS), or the U.S. Geological Survey (USGS) Mineral Resource Data System (MRDS), they seriously underestimate the number of mining sites, and such estimates, therefore, have "an overall low level of confidence." BOM/CCEM, INACTIVE AND ABANDONED
any conclusions drawn from the data must be highly qualified in light of the "wide variability among the states in the quantity and quality of information on IAMs, which ranged from states with on-the-ground inventories to states with little information beyond that found in national mining information data bases."\textsuperscript{54}

Although the WGA concluded that the data were imprecise and inconsistent, they nevertheless confirmed that "significant environmental impacts on land and water from IAM" existed in virtually all reporting states.\textsuperscript{55} It went on to contrast the environmental problems associated with coal mines nationwide with those found at hardrock mines and concluded that noncoal IAM sites also presented "an extremely severe impact."\textsuperscript{56}

In 1998, the WGA, in cooperation with the National Mining Association, released another report on the status of abandoned hardrock and non-coal mines in the United States.\textsuperscript{57} The authors reviewed state and federal databases of mining sites and other sources and counted more than 250,000 abandoned hardrock mine sites in thirteen states. Four states alone—Arizona, California, Nevada, and New Mexico—identified an aggregate total of 200,000 abandoned mining sites.\textsuperscript{58} The WGA cautioned, however—as it had in its earlier report—that the quality of the data in the databases varied significantly among states, and the data elements themselves were also not consistent among states.

Marked inconsistencies in the data reported by the WGA in 1991 and 1998 underscore the poor quality of the data available on hardrock mining sites. Some states reported far more sites in 1998 than they had in

\textsuperscript{54} WGA STUDY 1991, supra note 13, at 2.
\textsuperscript{55} Id. at 3.
\textsuperscript{56} WGA STUDY 1992, supra note 45, at 11–12. BOM/CCEM sought to inventory inactive and abandoned noncoal mines on public and private lands within 19 western states known to be responsible for the bulk of the nation's hardrock mining. Like the WGA report, the BOM/CCEM STUDY also cautioned that the quantity and quality of the available data, together with inconsistent methodologies applied by regulators and different field survey techniques used in various jurisdictions, showed that no "comprehensive, integrated overview of non-coal IAMs [inactive and abandoned mines] [existed] that would give policy makers a consistent basis for realistically assessing the dimensions of the problem." BOM/CCEM STUDY, supra note 53, at 7. It concluded, however, that best available estimates put the number of such sites into the hundreds of thousands and warned that those "sites pose major, widespread safety hazards and public health and environmental impacts across the country, particularly in the West." Id. at 29. The study confirmed, in addition, that the vast majority of mining sites were developed for the extraction of hardrock ores -- rather than extraction of phosphates and other types of minerals. Id. at 7.
\textsuperscript{57} WGA, CLEANING UP ABANDONED MINES: A WESTERN PARTNERSHIP (1998) [hereinafter WGA REPORT 1998].
\textsuperscript{58} Id. at 4 tbl. 1.
1991. For example, in 1991, as part of the original WGA study, California estimated about 2,500 abandoned/inactive mine sites within its borders. In 1998, California reported that 20,000 sites were present within the State.\(^5\) Similarly, in 1991, New Mexico reported approximately 7,000 abandoned mining sites. In 1998, it counted 20,000 sites.\(^6\)

Some states, on the other hand, reported far fewer abandoned mine sites in 1998 than they had in 1991. Montana, for example, reported nearly 20,000 abandoned mine sites in 1991. In 1998, however, it estimated that only 6,000 abandoned hardrock mines were present in the state.\(^6\) Texas had identified, in 1991, more than 20,000 abandoned mine sites on state lands although its inventory had not yet been completed. The 1998 WGA study, however, reported only 11,900 sites within the state of Texas.\(^6\) The significant discrepancies in the figures provided by the most informed knowledgeable state regulators underscores the cautionary statements, found in all of the surveys conducted to date, that data collection in this area is highly variable and inconsistent.\(^6\)

Not surprisingly, given the state of knowledge regarding abandoned mining sites generally, no reliable estimate exists of the number of hardrock mining sites present on public lands. Currently, BLM is responsible for managing approximately 260 million acres of land in the West, of which about 90% is open to hardrock mining.\(^6\) The Forest Service manages more than 160 million acres of lands in the West, and approximately 80% of those lands are subject to hardrock mining.\(^6\) More than fifteen years ago, the General Accounting Office (GAO) warned

59. Id. at 4. Of these sites, California reported that three had been reclaimed. Id. In the 1994 BOMICCEM STUDY, California used an estimate, provided by the Forest Service, of more than 35,000 mining properties in the state. BOMICCEM STUDY, supra note 53, at 35. The California Division of Mines and Geology, in contrast, had identified 10,806 mining sites statewide. Id.

60. WGA REPORT 1998, supra note 57, at 4 tbl. 1.

61. Id.

62. Id. As states modernize and update their databases and begin to conduct field surveys, the reliability of their estimates of hardrock mining sites is expected to improve.

63. Other entities have derived similarly rough estimates of the number of hardrock mining sites present in the western United States. Using historical databases such as the MAS and MILS maintained by the USGS, as well as water quality assessment reports submitted by states under the Clean Water Act, EPA estimated that more than 200,000 abandoned mine sites are present on lands throughout the western United States. EPA, ABANDONED MINE CHARACTERIZATION AND CLEANUP HANDBOOK 4.2 (2000). More recently, EPA estimated that between 200,000 and 500,000 abandoned mining sites likely are present nationwide. Data on Abandoned Mine Risks May Force More Superfund Listings, INSIDE EPA’S SUPERFUND REPORT, June 10, 2002, at 6. Relying on information derived from the WGA study, as well as interviews with state and federal officials and mining engineers, the Mineral Policy Center, a non-profit organization devoted to reform of the public mining laws, estimated in 1993 that more than 550,000 abandoned non-coal mining sites were present on lands nationwide. LYON ET AL., supra note 5, at 3, 13–24.

64. NRC REPORT 1999, supra note 12, at 1.

65. Id.
that the federal government had failed to identify the number and type of waste sites, including former mining operations, on lands subject to its jurisdiction. In a second report, issued a year later, the GAO examined in greater detail the abandoned mine land problem on public lands. Examining federal databases, the GAO concluded that more than 420,000 acres of public lands within eleven western states were not reclaimed, and would require substantial investments to re-contour the lands and reduce safety risks.

In 1991, Interior's Inspector General (IG) reported on his review of BLM's management of abandoned hardrock mines on public lands. The IG found that BLM had not conducted an inventory of hardrock mining sites on public lands or established a mechanism to establish risk-based priorities for the reclamation of such lands. He expressed his belief that such an inventory was necessary to (1) evaluate the extent of the reclamation problem; (2) identify the magnitude of the hazards to health and the environment; (3) ensure that the most critical areas are reclaimed; and (4) make recommendations to Congress about the need for reform of the public mining laws to ensure that Interior has sufficient authority to address the problem.

One year later, the IG reported similar findings. He again pointed out that BLM had not conducted an inventory of mining sites on public lands, and did not know, therefore, the extent of contamination on public lands subject to its jurisdiction. Also in 1992, the National Research Council (NRC) complained that BLM had not inventoried its hazardous waste sites, including abandoned mining sites on public lands, and that the lack of such an inventory hindered the agency's efforts to evaluate its programs, set priorities, identify inconsistencies in program operations,

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68. Id. The GAO cautioned that the data found in existing databases likely underestimated the extent of un-reclaimed public lands because the databases included only mining claims active since 1976 and did not include all states in which substantial hardrock mining had taken place.

69. Dep't of the Interior Inspector General, Office of Surface Mining Reclamation and Enforcement, Final Audit Report On Noncoal Reclamation, Abandoned Mine Land Reclamation Program 11 (Sept. 9, 1991) [hereinafter Noncoal Reclamation]. Interior's Office of Surface Mining (OSM) disagreed with the findings of the IG and said that the conduct of an inventory of non-coal environmental problems "would be a diversion of scarce resources from actual on-the-ground reclamation." Memorandum from the Director, Office of Surface Mining Reclamation and Enforcement, to the Assistant Inspector General for Audits 3 (July 1991).

70. Dep't of the Interior Inspector General, Hardrock Mining Site Reclamation, Bureau of Land Management (March 1992).
and prepare budget requests.\textsuperscript{71} It recommended that BLM develop a "systematic, accurate, and periodically updated inventory" of all of known sites with a potential for environmental contamination.\textsuperscript{72}

In 1996, the GAO reexamined the efforts of the federal land managers to inventory abandoned hard rock mines and repeated its complaint that, despite the existence of thousands of abandoned mines on federal lands with a significant risk of safety hazards and environmental contamination, "[n]o definitive inventory is available of the number of abandoned hard rock mines located on federal lands."\textsuperscript{73} The GAO also cautioned that, although federal land management agencies had begun to conduct field surveys of mining sites and develop overall estimates of the scope of the abandoned mine land problem, the data they reported still were not comparable or consistent among agencies because of different definitions and assumptions made in identifying mining sites.\textsuperscript{74} In a report issued two years earlier, the GAO had also emphasized that "Interior's Office of the Inspector General had earlier described overall progress in the agency as 'inordinately slow' and estimated that Interior's site identification process remains 'years from completion.'\textsuperscript{75}

Federal agencies managing public lands have, to be sure, generated some estimates of the number of mining sites on public lands. Nearly all of the public lands in the United States open to hardrock miners are administered by two land managing agencies—Interior's BLM and Agriculture's United States Forest Service (Forest Service).\textsuperscript{76} Both agencies participated in the studies conducted by the WGA. In response to the WGA inquiry, BLM estimated that BLM-managed property contained 65,000 abandoned mining sites within fifteen western states.\textsuperscript{77} Interior's National Park Service estimated at that time that more than 1,500 abandoned mine sites were located on property managed as part of the Park System, and the Forest Service estimated that 20,000 abandoned mine sites were present on lands within the national forests.\textsuperscript{78}

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  \item \textsuperscript{71} NRC REPORT 1992, supra note 8, at 81–83.
  \item \textsuperscript{72} Id. at 83.
  \item \textsuperscript{73} U.S. GEN. ACCOUNTING OFFICE, REP. NO. GAO/RCED-96-30, FEDERAL LAND MANAGEMENT: INFORMATION ON EFFORTS TO INVENTORY ABANDONED HARD ROCK MINES 1 (1996). Interior expressed its opinion that a comprehensive inventory of mining sites on public lands would require a large investment of resources and divert scarce funding away from needed remediation. Id. at 11.
  \item \textsuperscript{74} Id. at 1. See also NRC REPORT 1999, supra note 12, at 6 (warning that the consistent lack of useful information on mining on federal lands made it difficult to manage federal lands properly and ensure that the public and its interests were protected).
  \item \textsuperscript{75} U.S. GEN. ACCOUNTING OFFICE, REP. NO. GAO/RCED-94-73, FEDERAL FACILITIES: AGENCIES SLOW TO DEFINE THE SCOPE AND COST OF HAZARDOUS WASTE SITE CLEANUPS 6 (1994).
  \item \textsuperscript{76} NRC REPORT 1999, supra note 12, at 17–18.
  \item \textsuperscript{77} WGA REPORT 1998, supra note 57, at 4 tbl. 1.
  \item \textsuperscript{78} Id.
\end{itemize}
The 1996 GAO report summarized the efforts of the land managing agencies to update and refine their inventories of hardrock mining sites on public lands. BLM, which indicated that it had begun its inventory in 1994, had by 1996 not yet generated an overall estimate of the number of abandoned mine sites on Interior lands. In cooperation with the State of Nevada, however, BLM's Nevada State Office had begun to conduct some field surveys. The Office projected 400,000 mine openings, structures, and other individual components of mining operations in Nevada alone, on federal, state and private lands. Based on preliminary data then available in Utah, the BLM state office estimated that as many as 17,000 to 20,000 abandoned mine sites may be present on public and private lands within the state.

In response to inquiries from the GAO, the National Park Service reported in 1996 that more than 2,500 abandoned mine sites existed on park lands and the Fish and Wildlife Service counted approximately 240 abandoned hardrock mine sites within the National Wildlife Refuge System. In a response to a Congressional request for information about sites containing hazardous materials on Interior-managed lands, Interior's U.S. Geological Survey (USGS) estimated that about 88,000 abandoned hard rock mines existed on Interior lands managed by entities other than BLM. More recently, the Forest Service estimated that approximately 39,000 abandoned mine sites existed on public lands subject to its management.

Despite numerous efforts to identify hardrock mine sites (abandoned, inactive, and active) nationwide, the existing information can only be characterized as sketchy at best. Neither federal nor state regulators have standardized terminology for describing mining site features, or definitions of active, inactive, or abandoned mines. Nor have they coordinated efforts to fully understand the national problem, conduct field surveys, and locate, map, and characterize sites. Best estimates of the number and acreage of inactive and abandoned mine

80. Id.
81. Id.
82. Id. The GAO cautioned, however, that this estimate may be subject to substantial error, because different field personnel used different definitions to define sites. For example, some units of the National Park Service (NPS) defined a single mine opening (i.e., adit) as a site, while others defined groupings of mine-related features within an integrated mine operation as a single site. Id.
83. Id. at 5.
lands, therefore, remain exceedingly rough and incomplete. Despite the deficiencies in the data, however, at least several hundred thousand abandoned mine sites are present in the western states, and a substantial proportion of such sites are located on federal lands.

B. Hardrock Mining Sites Posing Threats to Human Health or the Environment

The state of knowledge regarding hardrock mining sites that may threaten public health or the environment is no better. Based on field sampling on public lands subject to its management, together with data from the Bureau of Mines (BOM) and the USGS, BLM estimated in 1996 that about 4%-13% of abandoned mining sites on public lands—a range of 2,800 to 39,000 sites (based on its then-estimate of 70,000 to 300,000 abandoned mining sites on public lands)—may present a risk to human health and the environment and require a regulatory response to mitigate environmental conditions. The Forest Service estimated in 1999 that, of approximately 39,000 abandoned mine sites then documented on its lands, about 5%—approximately 1,800 sites—were a high priority for cleanup because they are releasing or threatening to release hazardous substances into the environment.

Based on its experience with mining sites, EPA estimated broadly that about 10% of sites that were actively mined on private and public lands would present significant health hazards. Using EPA’s estimate of several hundred thousand mine sites as a base, approximately 20,000 such sites may thus present a problem. After categorizing by type and magnitude the risks associated with the half million abandoned mining sites it had counted, the Mining Policy Center estimated that about 15,000 hardrock mine sites eventually would require cleanup to prevent surface and groundwater contamination or other significant environmental harm.

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85. INVENTORY GUIDING PRINCIPLES GROUP, GUIDING PRINCIPLES FOR INVENTORYING INACTIVE AND ABANDONED HARDROCK MINING SITES (June 1996) (advocating integration of existing databases and a focus on the worst areas rather than spending money on a new inventory).

86. SUPERFUND: PROGRESS, supra note 84, at 36. BLM has also estimated that about 5% of abandoned hardrock mine sites exist in watersheds where significant environmental damage could occur. BUREAU OF LAND MGMT., FREQUENTLY ASKED QUESTIONS (2002).

87. SUPERFUND: PROGRESS, supra note 84, at 30.

88. EPA, ABANDONED MINE SITE CHARACTERIZATION AND CLEANUP HANDBOOK 4.2 (2000). More recently, EPA mining experts reported that 5%-10% of the then-estimated 200,000 to 500,000 abandoned mines across the country “may present real environmental and health risks.” Data on Abandoned Mine Risks May Force New Superfund Listings, INSIDE EPA’S SUPERFUND REPORT, June 10, 2002, at 6.

89. LYON ET AL., supra note 5, at 31.
These estimates, however, are best described as rudimentary and only precise within an order of magnitude. Absent a careful and thorough inventory that identifies the universe of sites and a shared definition of the relative hazards presented at such sites, any attempt to estimate the number of sites that presents a significant risk will necessarily be speculative. Nevertheless, a rough consensus seems to have emerged that a relatively small percentage of hardrock mining sites is likely to present a significant risk to public health and the environment. Given the large number of such sites nationwide, however, even a small percentage of "environmentally significant" sites translates into thousands of mine sites that likely will need cleanup to protect the public.

C. Hardrock Mine Cleanup Costs

Given the incomplete nature of the inventories and spotty understanding of the scope of environmental contamination at abandoned mining sites, it is not surprising that estimates of cleanup costs are also tentative and incomplete. As part of the WGA study, WGA asked states to estimate remediation costs based on "best engineering practice" for reclamation and cleanup. Some states could not estimate costs because of the poor quality of the data and the difficulty inherent in estimating cleanup costs where even the universe of mining sites remained largely a matter of guesswork. For those states that were able to generate them, cleanup estimates ranged up to $1.3 billion—with most reporting states estimating costs in the hundreds of millions of dollars. The WGA cautioned, however, that the estimates were not comparable among states and that some states had estimated only the costs of correcting mine safety hazards, not the costs of environmental remediation.

In its 1992 Study, the WGA attempted to provide a gross estimate of the costs of reclaiming abandoned and inactive non-coal mines nationwide. Using United States Department of Agriculture (USDA) Soil Conservation Service estimates that about 1.6 million acres of unreclaimed land were then present nationwide, and using an estimated reclamation cost of $1000/acre, it derived a rough estimate of cleanup costs of $1.6 billion. Looking at Montana's estimate for reclamation

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90. The states were requested to provide costs based not on "Superfund standards," but on engineering practices commonly used to reclaim mining sites. WGA STUDY 1991, supra note 13, at 12.

91. WGA STUDY 1991, supra note 13, at 13–15. Arizona, for example, estimated more than $650 million in remediation costs; Colorado, $244 million; Idaho, $315 million; and Montana, $912 million.

92. Id. at 12, 16.

93. WGA STUDY 1992, supra note 45, at 12.
costs of more than $900 million, Missouri’s estimate of more than $1.3 billion, and Tennessee’s estimate of more than $54 million, it said that “it is probable that the noncoal reclamation is a multibillion dollar undertaking.”

In 1988, the GAO estimated the cost of reclaiming approximately 281,000 acres of public lands mined under the hardrock mining laws in eleven western states at about $284 million. It cautioned, however, that the estimate likely understated the real reclamation costs because it did not include all states in which hardrock mining occurred, and because the databases on which it relied contained only mining claims active since 1976. GAO’s estimates also included only the costs of surficial reclamation (re-vegetation, land re-contouring) and did not include cleanup costs such as remediation of surface water and groundwater contamination—easily the most expensive components of hardrock mining site cleanups.

Relying on the data generated in the WGA studies, as augmented by additional data generated in 1993, the 1994 BOM/CCEM study also examined cleanup/reclamation costs for inactive and abandoned non-coal mines. It too found that the quality of cost data was often poor because relatively few cleanups had been undertaken to date and because state regulators used very different assumptions to identify sites, define the nature of the environmental problems, and select technologies to address environmental problems. The BOM/CCEM study estimated the cost of remedying “safety/environmental” problems in eleven states—primarily in the West—to be $2.6 billion.

The authors also cautioned that few states had significant experience in addressing environmental contamination at mining sites and that any cost estimates were therefore subject to significant error. They observed, however, that states like Texas and South Carolina, with a relatively small number of hardrock mines and where the climate allowed for extensive natural re-vegetation “have relatively small estimated total reclamation costs ($3-65 million).” States such as Colorado, Arizona, and Montana, with large numbers of hardrock mines and extensive acid mine drainage affecting broad watersheds, derived much higher estimates ($200-800

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94. Id.
96. See, e.g., WGA Study 1991, supra note 13, at 12. Montana reported reclamation costs for adits and shafts at $700 to $2,000, remediation costs for polluted waters at $1,000,000 per mile, and remediation costs for mine dumps at $30,000 per acre.
98. Colorado and Missouri used values in the range of $30,000 to $100,000 per mile as estimated remediation costs for polluted surface water. Montana, Idaho, and Arizona, however, had used estimates of $50,000 to $1 million per mile for stream cleanups. Id. at 24.
99. Id. at 27.
million). Although the report was careful to say that the estimates should be used with caution because of the questionable inventories and cost estimating techniques, it concluded that "total nationwide reclamation will cost billions of dollars." 101

In 1991, Interior reported a best available estimate of $11 billion to reclaim abandoned non-coal mines nationwide. 102 It generated this estimate by applying an average reclamation cost of $5,000 per acre to an estimated 2.2 million acres of mined land. 103 In 1996, the GAO noted that Interior estimated a "worst-case" cost of cleaning up abandoned mine sites on federal lands at between $4 billion and $35 billion. 104 In its follow-up report issued in 1999, the GAO referenced a BLM estimate of the cost of conducting short-term removal actions at sites subject to its jurisdiction, custody and control at between $112 million to $1.5 billion, with long-term remedial actions costing in the billions. 105

In 1996, the Forest Service estimated the total cost to reclaim abandoned mine sites on both federal and private lands within the National Forests to be $4.7 billion. 106 In 1999, the Forest Service expressed, as a goal, its intent to address all of its "high-priority" hazardous waste sites at a cost of approximately $2 billion. 107 The Mining Policy Center has estimated that the cost of remediating abandoned hardrock mine sites on private, state and federal lands, including cleanup of surface and groundwater contamination associated with the mine sites, to be between $32 and $71 billion. 108 EPA has not estimated the costs for cleanups of mining sites nationwide, but it has projected that it will cost about $20 billion to clean up the 67 sites currently on the NPL. 109 More

100. Id. at 27-28.
101. Id. at 29.
102. NONCOAL RECLAMATION, supra note 69, at 4.
103. Interior's OSM reportedly had reclaimed about 20,000 acres of abandoned non-coal mines for $101 million, or approximately $5,000 per acre. Id. at 8.
104. U.S. GEN. ACCOUNTING OFFICE, REP. NO. GAO/RCED-96-30, FEDERAL LAND MANAGEMENT: INFORMATION ON EFFORTS TO INVENTORY ABANDONED HARD ROCK MINES 10 (1996). The estimate was based on the assumption that 10,450 sites could require cleanup. Id.
105. SUPERFUND: PROGRESS, supra note 84, at 36.
106. U.S. GEN. ACCOUNTING OFFICE, REP. NO. GAO/RCED-96-30, FEDERAL LAND MANAGEMENT: INFORMATION ON EFFORTS TO INVENTORY ABANDONED HARD ROCK MINES 9 (1996). The estimate included $2.5 billion to clean up approximately 2,500 sites with hazardous substances contamination and an additional $2.2 billion to restore water quality and address safety hazards at another 22,500 sites. Id.
107. SUPERFUND: PROGRESS, supra note 84, at 31.
108. The Mineral Policy Center based its estimate principally on data contained in the WGA Study, as well as interviews conducted with state and federal regulators. LYON ET AL., supra note 5, at 3.
109. EPA, OFFICE OF INSPECTOR GENERAL, EPA CAN DO MORE TO HELP MINIMIZE HARDROCK MINING LIABILITIES 2 (June 11, 1997) [hereinafter EPA CAN DO MORE]. EPA also has attempted to estimate cleanup costs associated with modern (post-1980) mine sites. The agency collected data from 24 such sites. The total estimate was $85 million, for an average site
recently, EPA's Office of Inspector General identified 156 hardrock mining sites nationwide likely to result in costs of at least $1 million to the Superfund Trust Fund, and concluded that cleanup at these sites potentially could cost between $7 billion and $15 billion.\textsuperscript{100}

Estimates of cleanup costs depend, fundamentally, on accurate and complete inventories of mining sites and on sound and reliable methods to identify those sites that present real human health or ecological risks. Reliable estimates also must rest on a firm foundation of experience with cleanup technologies. No such data exist, however.\textsuperscript{111} Inventories are incomplete and regulators are just beginning to develop tools to characterize mining risks and prioritize sites for attention. Cleanup of hardrock mines is in its infancy, moreover, and no state or federal regulator has developed much experience with remediation technologies at hardrock mining sites. Nevertheless, a number of entities have made good-faith efforts to estimate the costs of addressing health and environmental risks at hardrock mine sites, although the estimates are always and appropriately heavily caveated. Whatever the deficiencies in the underlying data, both private and public entities have concluded that the effort to clean up hardrock mines in the western states will be a massive one, costing billions of dollars.

\textbf{D. Environmental Problems At Hardrock Mine Sites}

Attempting to inventory sites, catalog their risks, and estimate cleanup costs is difficult because of the large number of hardrock mines operated over the past 150 years, their location in remote areas of the West, and poor historical records. The task is also complicated by the diversity of mining sites, the varied contamination problems emanating from such sites, and the difficulty in reliably segregating benign sites from those that present, or could in the future present, significant environmental risks.\textsuperscript{112}

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\item cost of $3.5 million, although EPA noted tremendous variability in costs from site to site. EPA, \textit{Costs of Remediation at Mine Sites} tbl. 4.1 (1997).
\item EPA, \textit{Office of Inspector General, Nationwide Identification of Hardrock Mining Sites} i (March 31, 2004).
\item See id. at iv. ("We learned early in our work that EPA does not have a consistently used method for calculating cost estimates for hardrock mining sites, nor one that has been demonstrated to be more or less reliable than another.").
\item After an active mine is abandoned, environmental problems may not become manifest for decades. When a mine closes, de-watering activities generally cease. Underground mines often fill and mine water then may be released to both surface water and groundwater through adits, fractures in the bedrock, or other conduits. Similarly, engineering controls directed at preventing storm water run-off (diversion channels and drainage systems) can fail over time. Tailings piles, settling ponds, and dikes holding large quantities of mine waste, can fail and release huge quantities of waste into watersheds. Erosion of land surfaces disturbed by mining eventually may carry sediments, together with chemical pollutants, into neighboring streams,
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Hardrock mining prior to 1970 entailed limited awareness of, or interest in, the environmental consequences of mineral extraction. Mines frequently located tailings ponds, ore dumps, and waste rock repositories at the lowest convenient point in the mining area, which often was in or adjacent to a streambed. Milling reagents, chemical solutions, and other liquid wastes commonly flowed into the nearest water body. Miners and regulators viewed particulate emissions from uncontrolled piles of tailings or smelting operations as potential nuisances, but they poorly understood the long-term health hazards associated with such pollutants, particularly those contaminated with high levels of lead and other heavy metals. Mining was a "transitory" activity, and thus mining lands were used and abandoned with little thought to the long-term consequences of mineral extraction.

The small scale of historical hardrock mining mitigated much of its adverse environmental consequences. Early hardrock mining targeted easily accessible, rich ore bodies. Miners excavated little, and machine separation of ores was uncommon. Thus, early hardrock mining involved a low waste-to-ore ratio, with less tailings and other waste and a smaller reliance on chemical extraction processes, milling, and beneficiation techniques. Because of the modest scale of their production and waste operations, older hardrock mining sites often particularly during severe storm events and high snow melt periods. See generally, EPA, ABANDONED MINE SITE CHARACTERIZATION AND CLEANUP HANDBOOK 3-1 to 3-8 (2000).

113. See, e.g., EPA, COEUR D'ALENE BASIN PROPOSED PLAN 2-1 (Oct. 29, 2001) (reporting that extensive mining had taken place within the Basin for more than 100 years and that "[u]ntil 1968, most tailings were discharged directly into the South Fork or its tributaries.").


115. See F. K. Allgaier, Environmental Effects of Mining, in MINING ENVIRONMENTAL HANDBOOK: EFFECTS OF MINING ON THE ENVIRONMENT AND AMERICAN ENVIRONMENTAL CONTROLS ON MINING 132 (Jerrold J. Marcus ed. 1998) (pointing out that early hardrock miners "usually did not worry about land reclamation or the quality of surface and ground waters as a result of mining"); Charles C. Dietrich, Mined Land Reclamation in the Western United States, 16 ROCKY MTN. MIN. L. INST. 143, 201 (1971) (mining executive commenting that "It has not been the practice of the mining industry in the western United States to reclaim its land. This has been in accordance with the historical concept of the free use of resources [endorsed by the public mining laws]."); JAMES PAONE, JOHN L. MORNING & LEO GIORGETTI, LAND UTILIZATION AND RECLAMATION IN THE MINING INDUSTRY, BUREAU OF MINES INFORMATION CIRCULAR NO. 8642, at 16 tbl. 8 (1974) (from 1930 to 1971 only eight percent of the area in the United States disturbed by metal mining was reclaimed).

presented a relatively low potential for serious, long-term environmental risks.\(^\text{117}\)

In recent decades, in contrast, the amount of waste material produced during extraction, processing, and beneficiation of minerals has increased markedly as companies have learned how to profitably mine formerly inaccessible and low-grade ore bodies. Many modern hardrock mines create large open pits, tailings ponds, and waste rock dumps.\(^\text{118}\) The huge quantity of waste rock and tailings from such mines increases oxidation of metal sulfide minerals in rocks and the rate of acid mine drainage.\(^\text{119}\) It also increases proportionately the amount of waste rock, tailings, and other materials released into the environment through air emissions, or surface water or groundwater contamination.\(^\text{120}\) Indeed, in recent years the hardrock mining industry reported much larger releases of toxic substances (principally metals) into the environment than any other industry.\(^\text{121}\) Mining companies now often locate waste beneficiation and smelting operations centrally to serve a large number of individual

\(^{117}\) One exception to the generally modest scale of early mining was "hydraulic mining," under which huge quantities of water under pressure extracted gold ore from mountainsides. This practice gave rise to the first serious criticisms of mining practices. Woodruff v. North Bloomfield Gravel Min. Co., 18 F. 753, 772–75 (C.C.D. Cal. 1884) (enjoining hydraulic mining where it constituted a public nuisance to other users of state waters).

\(^{118}\) "According to one calculation, about 252 acres of surface area are required in order to excavate, by open-pit methods, a 23-acre disseminated copper deposit where the overburden is 400 feet thick. Several thousand additional acres might be needed for tailings disposal and related needs." LESHY, supra note 1, at 439 (citing J.B. Knaebel, Land Acquisition for Mining Development, in SYMPOSIUM ON AMERICAN MINERAL LAW RELATING TO PUBLIC LAND USE 61, 70–71 (1966)).

\(^{119}\) Acid mine drainage can damage native vegetation and can threaten wildlife, fish and other aquatic life. A 1993 survey conducted by the Forest Service found more than 1,500 western mining sites causing significant acid mine drainage on the Forest Service lands. FOREST SERVICE & BUREAU OF MINES, ACID DRAINAGE FROM MINES ON THE NATIONAL FORESTS: A MANAGEMENT CHALLENGE (PROGRAM AID 1505) 3 (March 1993).

\(^{120}\) EPA has observed that many significant releases of hazardous substances occur when large tailings dams or ponds fail and release formerly impounded process water and other pollutants to the environment. EPA, DAMAGE CASES AND ENVIRONMENTAL RELEASES FROM MINES AND MINERAL PROCESSING SITES 1–2 (1997).

\(^{121}\) EPA, 2001 TOXIC RELEASE INVENTORY REPORT EXECUTIVE SUMMARY ES–5 (July 2003) (releases reported by metal mining facilities for 2001 accounted for 45 percent of all releases on-and off-site nationwide; Nevada, followed by Utah, Arizona and Alaska, reported the largest total toxic releases). The mining industry has long criticized EPA’s toxic release reporting requirements for mining wastes under the Emergency Planning & Community Right-to-Know Act (EPCRA), arguing that the industry’s management of large quantities of waste rock and tailings containing trace quantities of minerals inappropriately distorts the industry’s actual contribution to environmental contamination. Its criticisms were recently vindicated, in part, when a court ruled that the mining industry need not report trace amounts of naturally-occurring metals contained in certain tailings and waste rocks. See Barrick Goldstrike Mines, Inc. v. Whitman, 260 F. Supp. 2d 28 (D.D.C. 2003). In 2002, releases from metal mining accounted for only 26 percent of releases on and off-site nationwide, a decrease of 43 percent. EPA, 2002 TOXICS RELEASE INVENTORY (TRI) PUBLIC RELEASE REPORT (2004). EPA attributed the reduction largely to the Barrick Goldstrike decision. Id.
mines and thus concentrate waste management within a single area. Widespread use of heap leaching to extract precious metals from ores also presents new environmental risks. Because of their scale, and their heavy reliance on chemical processes, modern hardrock mines present a significant threat to public health and the environment.

Mining practices at modern hardrock mines have been, of course, informed by the tremendous growth in scientific knowledge about the potential health and ecological effects of mining. And modern miners are far more likely to have implemented modern best-management practices for storm water and wastewater control, and advanced techniques to minimize waste produced by milling and beneficiation operations. Active mines also typically need National Pollutant Discharge Elimination System (NPDES) permits for wastewater and storm water discharges. Operators often have implemented measures to minimize discharges and to ensure that irreducible mine water discharges are not exposed to ore or waste materials for sufficient time to generate much acid mine drainage or dissolve large concentrations of metals.

EPA studies confirm, however, that active hardrock mines continue to present significant risks to the environment. In examining the sites listed on the NPL, EPA found that more than half had been active at some point during the previous decade, causing the agency to conclude that “at least some of the problems [at the mining sites] are attributable

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123. *Id.* at 26.
124. The most serious hardrock mining problems often are associated not with rock removal, but with the type and amount of chemicals used in the processing of the mineral resources into saleable commodities (milling, smelting, refining). EPA has pointed out, for example, that “[t]he environmental contamination found at the Summitville NPL site clearly shows how a relatively small gold cyanide mine can cause long term environmental damage.” *EPA, RISKS POSED BY BEVILL WASTES* 12 (1997). BLM similarly reported that much of the pollution problem on federal lands derives from small “notice-level” operations (involving less than five acres) — not from large mining sites. *Mining Claims Under the General Mining Laws: Surface Management*, 65 Fed. Reg. 69,998, 70,007 (Nov. 21, 2000) (citing a 1999 survey of BLM field offices which showed over 500 abandoned operations where BLM was left with reclamation responsibility — “most of these were notice-level operations”).
126. Section 402 of the Clean Water Act requires permits for all discharges from point sources to waters of the United States. 33 U.S.C. § 1342 (2000). Permit limits typically contain a combination of technology-based effluent standards and water quality-based limits. Enforcement of Clean Water Act requirements depends, to a significant degree, on the resources of the permit writer. EPA's Inspector General has noted, however, that in at least one state in which EPA administers the NPDES program, EPA staff do not always fully evaluate the site-specific factors required to establish appropriate permit conditions at hardrock mining sites because of a lack of resources. *EPA CAN DO MORE*, supra note 109, at 15.
Similarly, EPA's review of the number and kinds of environmental violations at active facilities confirmed that mining sites frequently present significant environmental threats. Nearly 20% of the mining sites inspected by EPA and state regulators during the period 1990-1995, for example, were subject to enforcement actions for releases of pollutants to the environment, or for non-compliance with Clean Air Act or Resource Conservation and Recovery Act (RCRA) requirements.

The large percentage of RCRA violations at mining sites is particularly noteworthy because, under the Bevill Amendment of 1980, many mining wastes are exempt from the strict regulation of hazardous waste treatment, storage, and disposal facilities under RCRA Subtitle C. Periodically, EPA has considered the effect of the Bevill exemption on the nature and kinds of risks arising at mining sites. In one recent study, for example, the agency concluded that Bevill-exempt waste "poses a broad range of environmental risk." According to EPA, "some currently operating Bevill mining and mineral processing wastes continue to contaminate groundwater and surface water, often through leaking surface impoundments, runoff from piles, wind blown dust, contaminated soil, and failure of dams. Further, the environmental consequences of mining and mineral processing may not be realized until long after cessation of operations." EPA's IG similarly noted in 1997 that, although the agency reported to Congress in 1985 that mining continued to cause significant environmental damage, and announced its intent soon thereafter to develop a regulatory mining program, EPA still had not done so and "[t]he serious mining environmental damages identified in the 1985 report... continue to this day."

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127. EPA, RISKS POSED BY BEVILL WASTES 4 (1997) ("Currently, there are over 60 NPL sites where the source of contamination is primarily caused by practices that continue today.").

128. EPA, NATIONAL HARDROCK MINING FRAMEWORK 2 (1997). See also EPA CAN DO MORE, supra note 109, at 17.

129. 42 U.S.C. §§ 6921(b)(3) & 6982(p) (2000). The Bevill Amendment places certain wastes outside the universe of hazardous wastes for purposes of EPA regulation under Subtitle C of RCRA. EPA is authorized to regulate under Subtitle C wastes at mining facilities that are not "uniquely associated" with mining or beneficiation, including solvents and other chemical wastes. In general, wastes from extraction and beneficiation (separating and concentrating the mineral value from the ores) are exempt under the Bevill Amendment. Mineral processing wastes (processes that cause a significant physical or chemical change to the ore), on the other hand, are non-exempt unless specifically identified by EPA as exempt. For a review of the application of the Bevill Amendment to wastes from hardrock mining see Steven R. Barringer, The RCRA Bevill Amendment: A Lasting Relief for Mining Wastes?, 17 NAT. RESOURCES & ENV'T, Winter 2003, at 155.

130. EPA, RISKS POSED BY BEVILL WASTES 4 (1997).

131. Id.

132. EPA CAN DO MORE, supra note 109, at 15.
Whatever uncertainties plague the data, it is clear that a large though poorly inventoried universe of hardrock mining sites in the United States significantly threatens public health or the environment. The estimates to remediate these sites, although variable and of indeterminable validity, range into the billions of dollars. Moreover, each year, scores of new releases of hazardous substances from both active and abandoned mining sites are reported to state and federal authorities. Sites long reclaimed and thought to be benign can experience a catastrophic failure through the breaching of a tailings impoundment or other structure, and cause serious damage to the environment. Active mining sites too, operated in compliance with federal and state environmental and land use laws, cause significant environmental pollution. The health and environmental problems arising from hardrock mining are increasingly apparent as scientific knowledge increases, and the adverse environmental and public health threats associated with mining waste are documented.

At the same time that new toxicity data is identifying new hazards or lower thresholds for previously known hazards, increasing numbers of families are moving into formerly remote areas for recreation and for housing, and a conservation ethic based on a growing awareness of environmental issues has caused the public to become far less tolerant of degraded lands and watersheds. All of these factors suggest that public concern about contamination at hardrock mining sites is likely to grow, and will inspire those responsible for the public lands to continue their efforts to balance resource development and environmental protection.

II. REGULATION OF HARDROCK MINING ON PUBLIC LANDS

Environmental contamination at mining sites in the West today is, in part, the inevitable product of activities that disturb the land, particularly when understanding of such problems as acid mine drainage, mercury poisoning, and cyanide leaching was incomplete or non-existent. But it is also the result of an unambiguous policy of the United States, embodied in the early public mining laws, to dispose of federal lands as quickly as possible and to deem the federal ownership interest not as long-term and proprietary, but transient and custodial. Laws passed in the mid-nineteenth century to dispose of public lands reflected the consistent and firmly held belief that the interest of the federal government in western public lands was temporary and to be relinquished as soon as those lands could be transferred to private parties.133 Consistent with this policy, the public mining laws were designed to encourage exploration and development of public lands while held by the United States, and to

provide miners with security of tenure in their claims until full title could be transferred to them.\textsuperscript{134}

Responding to public criticism and growing concern about the long-term consequences of unregulated mineral extraction, Congress eventually revised the public land laws, amended the public mining laws, and enacted new environmental statutes to better balance resource development and environmental goals. Even today, however, federal land managers continue to construe their statutory authorities in light of competing and barely reconcilable policy goals— to ensure adequate mineral resources for future generations and to protect the public lands from degradation.

This history has influenced how courts have interpreted the scope of United States liability under CERCLA. Examining the relative rights and interests possessed by federal land managers and mining companies under the early mining laws, courts concluded that the United States retains an insufficient number of the “bundle of sticks” constituting ownership and dominion of public lands subject to hardrock mining to justify CERCLA liability.\textsuperscript{135} Indeed, even after amendments to public mining laws late in the twentieth century granted federal land managers authority to regulate some hardrock mining activities, mining companies continued to hold extensive possessory interests in lands, and federal agencies still could not easily bar persons from entering public lands to conduct hardrock mining, charge rents or extract royalties on hardrock production, or in many cases prevent environmental harm that is inherent in such mining.\textsuperscript{136} The statutorily circumscribed rights and responsibilities of federal agencies with respect to hardrock mining on public lands have caused courts to look skeptically at claims that the United States should be liable under CERCLA for pollution arising, even in the modern era, from private hardrock mining.\textsuperscript{137}

A. The General Mining Law of 1872

The principal law governing hard rock mining on public lands—the Mining Law of 1872—remains in effect today virtually as originally enacted.\textsuperscript{138} It is entitled an act “to promote the Development of the mining Resources of the United States” and provides that “all valuable

\textsuperscript{134} Unlike the other public land statutes enacted during this period with a similar goal to “dispose” of public lands— the Homestead Act of 1862, the Preemption Act of 1841, the Desert Land Act of 1877, the Pacific Railway Act of 1862, the Timber Culture Act of 1873, among numerous others— the public mining laws have never been repealed.

\textsuperscript{135} See infra § III.B.2.b.

\textsuperscript{136} See infra § II.E.

\textsuperscript{137} See infra note 517 and accompanying text.

mineral deposits in lands belonging to the United States... shall be free and open to exploration and purchase." The law codified long-standing claim staking and other recordation practices that miners themselves developed during the early days of the western frontier.

After the Gold Rush, Congress enacted the public mining laws—the Lode Law of 1866, the Placer Act of 1870, and the Mining Law of 1872—to ratify the rules developed by the miners themselves. These rules understandably emphasized the broad possessory rights miners claimed to the lands and minerals, and their interests in protecting their claims. They thus legitimized claims already established in practice and authorized the miners to continue to appropriate lands in the same way they always had. In enacting the laws, Congress believed that the United States was best served by promoting private mineral development, which, in turn, would stimulate western development and the nation's economic growth. At the same time, Congress acknowledged the practical reality that the federal government had virtually no presence in mining areas of the West. The overwhelming majority of hardrock mining then— as now—took place in arid, remote, mountainous areas of the western states where there were few competing public uses.

Under the Mining Law, claimants may enter the public lands to locate and patent lode and placer claims, as well as millsites. "Location" is the act of appropriating a parcel of land for hardrock mining, by posting a location notice on the mining claim or millsite, recording the notice as required by state law or local mining districts, and marking the site boundaries on the ground. In general, a "lode" claim is a location made upon a vein of rock-bearing mineral such as gold, silver, tin or

139. 30 U.S.C. § 22 (2000). The Mining Law applies only to lands in the public domain, and that have not been withdrawn from mineral location. The phrase "public domain" is a term of art, traditionally referring to lands that have remained in federal ownership since first obtained by the United States from another sovereign (through treaty, purchase, or conquest) or through relinquishment to the federal government by one of the original thirteen colonies. "Acquired lands" are those that once were in non-federal ownership and later were acquired by the United States by purchase, condemnation or gift. See Thompson v. United States, 308 F.2d 628, 631 (9th Cir. 1962).


141. The Lode Law of 1866, ch. 252, 14 Stat. 251 (1866) catered to "lode" miners. Lode claims are staked upon veins or lodes of quartz or other rock in place. Subsequently, Congress extended the same rights of free entry and self-initiated mining to "placer" claims— all forms of deposit other than lode deposits. In general, lode deposits are those confined by rock where they were originally formed, while placer deposits are former lode deposits that have been broken down, transported, and redeposited in sediments. Placer Act of 1870, ch. 235, 16 Stat. 217 (1870).


copper. A placer claim embraces other forms of deposit. Millsites are non-mineral lands located near mineral deposits and used for tailings impoundments, processing facilities, the storage or disposal of waste rock and other purposes. Millsites are limited to five acres, although a claimant may locate any number of millsites for each mining claim, provided the claimant needs the land for mining or milling purposes. In essence, mining claims are located on federal lands that contain valuable mineral deposits for the purpose of extracting minerals from those lands. Millsites are located on lands that do not contain valuable deposits, for purposes of supporting mineral extraction and processing operations.

Under the 1872 Mining Law, "no location of a mining claim shall be made until the discovery of the vein or lode within the limits of the claim located." "Discovery" of "valuable mineral deposits" fundamentally alters the rights of the miner and the United States and is the key to the miner's obtaining a secure property interest in the lands. Prior to discovery, miners are deemed to possess "pedis possessio" rights to conduct exploration and location activities. This judicially-created doctrine entitles a miner to hold possession against others while in possession and diligently working toward discovery. After discovery, the claimant acquires an "unpatented" claim to the land and the mineral

Environmental groups maintain that Interior's new millsite opinion fails to protect the public health because large areas of public lands may continue to be used for waste disposal for each mining claim. See Bush Administration Mining Reversal May Further Strain Superfund, INSIDE EPA'S SUPERFUND REPORT, Oct. 13, 2003, at 24. The mining industry, on the other hand, praised the new opinion, arguing that the now-superseded opinion virtually brought hardrock mining to a halt, because modern hardrock mines cannot be developed if miners are limited to one five-acre millsite claim for each placer or lode claim. DOI: 1872 Mining Law Doesn't Limit the Number of Mill Sites, 28 PUBLIC LANDS NEWS 1-2 (Oct. 17, 2003).

144. § 23. 145. § 35. 146. § 42(a). 147. § 42(a) (for lode claims); § 42(b) (for placer claims). Recently, Interior concluded that "the mill site provision does not categorically limit the number of mill sites that may be located and patented to one for each mining claim," and endorsed the Department's long-standing practice of not applying a numerical limitation for millsites. Memorandum from Roderick E. Walston, Deputy Solicitor, Dep't of the Interior, to the Secretary of the Interior, Mill Site Location and Patenting Under the 1872 Mining Law 2 (Oct. 7, 2003) (M-37010). See also Locating, Recording, and Maintaining Mining Claims or Sites, 68 Fed. Reg. 61,046, 61,054-55 (Oct. 24, 2003). In a prior memorandum, Interior had concluded that the Mining Law limits claimants to locating and patenting of five acres of nonmineral land for each mining claim, allowing that more than one millsite may be located for each claim provided the aggregate acreage of the millsites does not exceed five acres. As a practical matter, the opinion limited claimants to one millsite for each associated claim. Memorandum from John O. Leshy, Solicitor, Dep't of the Interior, to the Director of the Bureau of Land Mgmt., Limitations on Patenting Mill Sites Under the Mining Law of 1872, at 2 (Nov. 7, 1997) (M-36988).Environmental groups maintain that Interior's new millsite opinion fails to protect the public health because large areas of public lands may continue to be used for waste disposal for each mining claim. See Bush Administration Mining Reversal May Further Strain Superfund, INSIDE EPA'S SUPERFUND REPORT, Oct. 13, 2003, at 24. The mining industry, on the other hand, praised the new opinion, arguing that the now-superseded opinion virtually brought hardrock mining to a halt, because modern hardrock mines cannot be developed if miners are limited to one five-acre millsite claim for each placer or lode claim. DOI: 1872 Mining Law Doesn't Limit the Number of Mill Sites, 28 PUBLIC LANDS NEWS 1-2 (Oct. 17, 2003).

deposits. A miner with an unpatented claim is entitled to the exclusive right, possession, and enjoyment of the land, good against all parties, including the United States.

Although the United States retains title to lands subject to unpatented mining claims, the owner of the mining claim has the exclusive right of possession and enjoyment of all surface areas, as well as all "veins, lodes, and ledges throughout their entire depth" which have apexes within the mining claim. The claim owner can extract minerals without having to pay royalties or rent to the federal government. As between the locator and the United States, therefore, the law considers the mining claimant as the holder of the beneficial estate, with the government holding the fee in trust.

A claimant with a perfected unpatented mining claim has a protected possessory interest, which is a "property right in the full sense, unaffected by the fact that the paramount title to the land is in the United States...." The interest is limited to mining purposes. For instance, the land cannot be used for logging operations or for other commercial operations, unless such activities are necessary for mining purposes. Although an unpatented mining claim is property, it has been described as a "unique form of property" on which Congress may place

151. What constitutes the "discovery" of a valuable mineral deposit is not defined in the statute, but courts have established what has been called the "prudent person" test: "Where minerals have been found and the evidence of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success, in developing a valuable mine, the requirements of the statute have been met." Castle v. Womble, 19 L.D. 455, 457 (1894). [Reda: spacing? New paragraph below.]

In determining whether a miner has a "reasonable prospect" that he can develop his claim into a "valuable mine," Interior has further refined the prudent person test with the concept of "marketability." Pursuant to this standard, approved by the Supreme Court, the claimant must show that the deposit can be mined and the ores marketed at a profit, using existing technology, and taking all costs (extraction, processing, marketing, transportation, financing, compliance with environmental laws) into consideration. United States v. Coleman, 390 U.S. 599, 600 (1968). See also Great Basin Mine Watch, 146 IBLA 248, 250 (1998); United States v. Kosanke Sand Corp., 12 IBLA 282, 299 (1973).


153. 30 U.S.C. § 26 (2000) (lode claims). The miners' subsurface rights extend throughout the entire depth of lodes with apexes within the claim, even if the lode extends beyond the side lines of a location and under adjacent lands.


156. Locke, 471 U.S. at 104 (quoting Best v. Humboldt Placer Mining Co., 371 U.S. 334, 335 (1963)).
conditions. For example, Congress can require a miner to maintain the claim by performing labor or paying a fee.

Although the Mining Law vests broad rights in holders of unpatented mining claims, the United States has removed a number of minerals from the scope of the law entirely. In addition, both Congress and the Executive Branch have withdrawn large tracts of land from entry under the public mining laws to protect non-mineral resources or to reserve the lands for specified public uses. Withdrawal revokes the mining industry’s right to explore and develop mines on the withdrawn parcel of federal lands, provided the withdrawal occurs before valuable mineral deposits have been discovered.

Because the rights of exclusive possession and enjoyment of the lands attach only upon the discovery of a valuable mineral deposit, Interior can challenge the validity of an unpatented mining claim at any time up to the passage of legal title. Such challenges are extremely rare. The test for discovery is exceedingly difficult to apply in practice, given the fluctuation in costs and mineral prices over the expected life of

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157. Id. (upholding requirement in FLPMA that holder of unpatented mining claim must record its claim with the local BLM office within three years of enactment of FLPMA, or have the claim deemed to be abandoned).


159. Certain widely-occurring minerals such as sand, stone, gravel, clay and pumice are subject to the Common Varieties Act of 1947 and 1955, 30 U.S.C. §§ 611-615 (2000). Other minerals, such as phosphate, sodium, potassium, oil, and gas are subject to the Mineral Leasing Act, 30 U.S.C. §§ 181-287 (2000).

160. See 43 U.S.C. § 1702(j) (2000) (“withdrawal” means withholding an area of Federal land for the purpose of limiting activities in order to preserve other values, or reserve the area for a particular purpose).

161. See Swanson v. Babbitt, 3 F.3d 1348, 1352 (9th Cir. 1993). Until relatively recently, no statute expressly conferred on the President the authority to withdraw lands. The Supreme Court found, however, that Congressional awareness of the long history of Executive withdrawals reflected its acquiescence in Executive withdrawals. United States v. Midwest Oil Co., 236 U.S. 459, 471-72 (1915). The President’s withdrawal power is now authorized in statute, subject to congressional review, under FLPMA. 43 U.S.C. § 1714 (2000).


163. See Patrick Garver & Mark Squillace, Mining Law Reform − Administrative Style, 45 ROCKY M. MIN. L. INST. 14-1, 14-22 (1999) (“Historically, neither BLM nor the Forest Service required validity determinations in connection with plans of operations, except in cases where the land in question had been withdrawn from mineral location.”); Memorandum from John O. Leshy, Solicitor, Dep’t of the Interior, to the Secretary, Dep’t of the Interior, Use of Mining Claims for Purposes Ancillary to Mineral Extraction 14 (Jan. 18, 2001) (M-37004) (where lands are open to location, BLM does not scrutinize the validity of mining claims because such contests “may be an empty exercise” and a claimant can simply locate new claims on the land).
a mine.\textsuperscript{164} In addition, the government can terminate a claim only by initiating a contest action, which invariably is time-consuming and expensive.\textsuperscript{165} Even if the government prevails, relief may only be temporary, because the mining claimant can simply relocate on the same or contiguous lands. Indeed, before enactment of FLPMA in 1976, the government rarely had notice of the existence of an unpatented mining claim and thus could not contest a claim prior to a patent application.\textsuperscript{166} In practice, compliance with location procedures creates a presumption that a claim has been perfected through discovery.\textsuperscript{167}

A mining claimant may obtain a patent for the property after satisfying the requirements for maintenance and development by paying a modest fee per acre.\textsuperscript{168} Although a patent confers upon the claimant full fee title to the land, it does "nothing to enlarge or diminish the claimant's rights to [the land's] locatable mineral resources."\textsuperscript{169} Patenting does, however, divest the United States of full title and permits the patentee to

\textsuperscript{164} See OFFICE OF TECHNOLOGY ASSESSMENT, MANAGEMENT OF FUEL AND NON-FUEL MINERALS IN FEDERAL LANDS 125 (1979) [hereinafter OTA REPORT]; see also Note, The 1872 Mining Law: A Statute By-Passed by Twentieth Century Technology and Public Policy, 1981 UTAH L. REV. 575, 591 (arguing that a stringent discovery test is an awkward method of exercising control over federal lands because it can inhibit legitimate mining operations and "imperil both the fledgling and marginal mining operations").

\textsuperscript{165} OTA REPORT, supra note 164, at 202-03. See also DAVID GERARD, THE MINING LAW OF 1872: DIGGING A LITTLE DEEPER, Policy Series Issue PS-11, at 6 (Political Economy Research Ctr. 1997) (validity challenges are costly and lengthy; administrative decisions can be appealed to Interior's Board of Land Appeals and to the federal courts; and "mining claimants can hold their claims for years through this process"); TERRY S. MALEY, MINING LAW: FROM LOCATION TO PATENT 525 (1985) (noting that "fewer than several hundred claims are examined for validity in a single year" and most arise when the claim is included in a withdrawn area such as a national park, or where the claimant is living on the claim but is not actively mining); see generally U.S. GEN. ACCOUNTING OFFICE, REP. NO. GAO/RCED-90-111, FEDERAL LAND MANAGEMENT: UNAUTHORIZED ACTIVITIES OCCURRING ON HARDROCK MINING CLAIMS (1990).

\textsuperscript{166} See CHARLES F. WILKINSON, CROSSING THE NEXT MERIDIAN: LAND, WATER, AND THE FUTURE OF THE WEST 45-46 (1992) (commenting that a constitutionally protected property right is created under the mining law at the moment of discovery, which "is almost necessarily a solitary, anonymous event unattended by any formal recording or evaluation procedures").

\textsuperscript{167} See Clayton J. Parr, Self-Initiation Under the Federal Mining Law, in THE MINING LAW OF 1872, supra note 6, at 49, 55 (arguing that "under today's exploration practices, claims are located and maintained for long periods without a legally sufficient discovery . . ." and "persist because of the legal presumption that a discovery exists absent proof that it does not").

\textsuperscript{168} 30 U.S.C. § 29 (2000) (lode claims); 30 U.S.C. § 37 (2000) (placer claims). The patent fee is $2.50 per acre for placer claims and $5.00 per acre for lode claims. These fees have always been dwarfed by the administrative costs of processing a patent application. See Michael McCloskey, The Mining Law of 1872, in THE MINING LAW OF 1872, supra note 6, at 1.

sell the land at its then present market value. Moreover, a patentee need never mine the land and may make any use of it. Most holders of unpatented mining claims do not seek patents, however, since a patent does nothing to affect the claimant's right to extract locatable mineral resources, and patented land is subject to state and local taxes. In addition, patenting would require the holder to demonstrate actual discovery of a valuable mineral deposit.

Not surprisingly, given its historical antecedent in the codes of mining districts, the Mining Law of 1872 contained no language dealing with environmental protection. Moreover, the sole purpose of the law was to further the disposal policies then in ascendance and to encourage the commercial production of minerals. In its management of the public lands subject to hardrock mining, the federal government was not concerned with how private parties conducted themselves on lands that

170. Issuance of a patent when the applicant has met all patenting requirements is a non-discretionary ministerial act. In South Dakota v. Andrus, the court found that the granting of a mineral patent is not a major federal action within the meaning of the National Environmental Policy Act (NEPA) and therefore an environmental impact statement is not required because, once the claimant satisfies the requirements for patenting under the mining laws, the issuance of a patent is mandatory. 614 F.2d at 1194–95.

171. The number of new mineral patents issued by Interior has dropped from 167 in 1960 to 7 in 2003. Cf. Dept. of the Interior, Statistical Appendix to the Annual Report of the Director Bureau of Land Management for the Fiscal Year Ended June 30, 1960 at 81 (1960); Bureau of Land Mgmt., Public Land Statistics 2003 at 137 (2004). In 1994, Congress approved a moratorium on new patents, and has extended the moratorium each year since then. Pub. L. No. 103-332, § 112-13, 108 Stat. 2499, 2519 (1994). Interior reviews a few patent applications each year, however, because some applications were pending prior to the imposition of the moratorium and are thus "grandfathered" and continue to be processed.

172. See 3 Coggins & Glicksman, supra note 8, at § 25.04[5][d], 25–39 ("The overriding reality in hardrock mining law is that few locators can meet the profitability test for 'valuable mineral deposits.' Locators therefore typically avoid any contests that could raise the question. This explains why so few unpatented mine claim holders ever even apply for a patent."); Peter L. Strauss, Mining Claims on Public Lands: A Study of Interior Department Procedures, Utah L. Rev. 185, 192 (1974) (few miners apply for patents because of the expense and inconvenience of the application process and because "[u]nder well established policy, the Department does nothing to challenge the validity of claims unless they are presented for patent or the government immediately needs the lands involved").

173. See California Coastal Comm'n v. Granite Rock Co., 480 U.S. 572, 582 (1987) (the Mining Law of 1872 as originally enacted "expressed no legislative intent on the then rarely contemplated subject of environmental regulation"); United States v. Richardson, 599 F.2d 290, 293 (9th Cir. 1979) (concluding that not one reported case between 1872 and 1979 was brought by the federal government to curb or control mining uses of a mining claim), cert. denied, 444 U.S. 1014 (1980); United States v. Locke, 471 U.S. 84, 86 (1985) ("From the enactment of the general mining laws in the nineteenth century until 1976, those who sought to make their living locating and developing minerals on federal lands were virtually unconstrained by the fetters of federal control."); Topaz Beryllium Co. v. United States, 649 F.2d 775, 776 (10th Cir. 1986) ("From 1872 until 1976, these unpatented mining claims were governed largely by state statutory schemes. The federal government did not exercise any significant authority over unpatented claims and was not even entitled to notice of such claims until the patent process was begun."); see also H.R. Rep. No. 94-1163, at 221 (1976) (separate views of Morris Udall, Member House Comm. on Interior & Insular Affairs).
would soon be privatized. Nor did the law effectively permit, even if the authority to regulate environmental activities could be found within the Mining Law or other laws, the exercise of such authority. As noted above, the early public mining laws did not require miners to notify the federal government of the existence of an unpatented mining claim. Although the United States could, prior to issuance of a patent, protect the land and the surface resources from trespass, waste, and uses unrelated to mining, it had little opportunity to exercise even these modest residual rights. Moreover, federal land managers deemed the broad rights vested in miners under the Mining Law of 1872, coupled with the lack of concern with environmental issues that has long characterized hardrock mining, to reasonably reflect Congress’s intent to grant miners’ a largely unconstrained right to use public lands for hardrock mining.

B. The Surface Resources and Multiple Use Act of 1955

 Courts had long interpreted the rights to possess the surface of an unpatented mining claim to require some reasonable relationship to

174. As noted in 1992 by the NRC, BLM viewed its authority through the prism of historical use and precedent. “BLM had two principal missions, inherited from its predecessor agencies: to arrange for the orderly transfer of public lands to non-federal ownership for public and private purposes and to encourage commodity uses—particularly grazing, mining, and logging—on lands within its jurisdiction.” NRC REPORT 1992, supra note 8, at 2.

175. Although the General Land Office was established by Congress in 1812 to administer the public domain, its mission was to encourage settlement and development of lands in the West through homesteading, mining, grazing, timber, and railroad use. It had no authority to plan or manage uses of those lands, nor any staff to administer mineral policy. See Christopher McGrory Klyza, Reform at a Geologic Pace, in WESTERN PUBLIC LANDS AND ENVIRONMENTAL POLITICS 97 (Charles Davis ed.,1997).

176. See, e.g., United States v. Rizzinelli, 182 F. 675, 684-85 (D. Idaho 1910) (holding that the United States holds a valid estate in mining claim, which it is entitled to protect from trespass and waste, and claimant cannot use unpatented mining claim for a saloon); Teller v. United States, 113 F. 273, 279-80 (8th Cir. 1901) (finding that the Mining Law confers right to work the claim for its minerals, but confers “no right to take timber, or otherwise make use of the surface of the claim, except so far as it may be reasonably necessary in the legitimate operation of mining”). Although the United States could act to prevent waste of surface resources, miners traditionally have been granted broad rights to develop the subsurface of a mining claim and to use the surface for mining purposes. Under the common law, for example, miners possessed the right to deposit tailings on their lands as well as the right to dump waste rock and tailings on unoccupied public domain lands. See John R. Jacus & Thomas E. Root, The Law of Mine Wastes: A Primer, Mine Waste from Agricola to CERCLA and Beyond, 35 ROCKY MT. MIN. INST. 9-1, 9-23 (1990).

177. See, e.g., Clayton J. Parr, Self-Initiation Under the Federal Mining Law, in THE MINING LAW OF 1872, supra note 6, at 55, 62 (emphasizing that the rights of self-initiation and free access are central tenets of the mining law because they “begin[] the process from a position of tenure rather than from the powerless stance of a supplicant”); 2 AMERICAN LAW OF MINING, § 36.03[3] at 36-17 (2003) (“Actually and practically the incidents of ownership possessed by a mining locator amount to an unrestricted property estate which is good against the whole world so long as its validity is maintained.”); DUANE A. SMITH, MINING AMERICA: THE INDUSTRY AND THE ENVIRONMENT, 1800–1980 23 (1987).
HARD ROCK MINING AND THE ENVIRONMENT

The federal government nevertheless found that large numbers of hardrock mining claims were not, in fact, being located for mining purposes, but rather to enable the locators to remove timber or other surface resources, or to build residences, summer camps, taverns and other commercial establishments. To address these abuses, Congress enacted the Surface Resources and Multiple Use Act of 1955 (Surface Use Act), to give to federal land managers express statutory authority to regulate how the surface of a mining claim might be used.

The Surface Use Act clarified the scope of federal and private rights to public lands subject to hardrock mining and discouraged fraudulent use of mining claims for commercial purposes unrelated to mining. Like the Mining Law, however, nothing in the Surface Use Act addressed the environmental regulation of mining activities. Section 4(a) of the Act provided, in addition, that "[a]ny mining claim hereafter located under the mining laws of the United States shall not be used, prior to issuance of patent therefor, for any purpose other than prospecting, mining or processing operations and uses reasonably incident thereto."

Not surprisingly, therefore, BLM regulations to implement the Surface Use Act did not establish environmental controls or other restrictions on hardrock mining activities. Rather, they paraphrased the

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181. The Surface Use Act applied only to locations made after July 23, 1955 and did not apply at all to lands that had gone to patent. Id.
183. § 612(b).
184. Id. The Act's legislative history showed a marked solicitude to mining claimants. The Report of the House Committee on Interior and Insular Affairs stated that the legislation must provide for multiple use of the surface "compatible with unhampered subsurface resource development." H.R. REP. NO. 730, at 2, 8 (1955), reprinted in 1955 U.S.C.C.A.N. 2474, 2480. The Committee said that it had crafted language prohibiting material interference with mining, or uses reasonably incident thereto. Id. at 10.
185. 21 Fed. Reg. 7619 (Oct. 4, 1956), codified at 43 C.F.R. § 185.120 and recodified at 43 C.F.R. pt. 3710 (2003). BLM's regulations for surface use and occupancy were later revised and re-promulgated, and authorized under a number of laws, including the Mining Law of 1872, the
statutory language and cautioned locators that claims can be used only for prospecting, mining, or processing of minerals. BLM said, for example, that “the locator of an unpatented mining claim subject to the act is limited in his use of the claim to those uses specified in the act, namely prospecting, mining, or processing operations and uses reasonably incident thereto. He is forbidden to use it for any other purposes, for example, as for filling stations, curio shops, cafes, tourist, or fishing and hunting camps.”

The Surface Use Act thus authorized federal land managers to eject claimants who used mining claims for residential and other non-mining purposes. In United States v. Richardson, however, the Ninth Circuit construed the scope of the Surface Use Act more broadly in an action, brought by the Forest Service, to enjoin certain hardrock mineral exploration on national forest lands. In that case, the Forest Service argued that the mining claimants’ use of heavy equipment and blasting to explore an ore deposit excessively and unnecessarily damaged surface resources. Because the Secretary of Agriculture had not promulgated regulations under its Organic Act addressing the use and occupancy of lands subject to mining activities, the court looked to the language of the Surface Use Act to determine whether the Forest Service was entitled to injunctive relief to prevent environmental damage to national forest surface resources. The court first examined Interior’s rule implementing the Surface Use Act and concluded that “insofar as BLM lands are involved, any activity is permissible which is directly related to mining or prospecting.” It nevertheless found that, even though the Forest Service had not promulgated regulations implementing either its Organic Act or the Surface Use Act, the Surface Use Act authorized the agency to regulate the methods of prospecting and mining activities on public lands where such methods were “unnecessary and were unreasonably destructive of surface resources and damaging to the environment” and thus not “reasonably incident” to mining within the meaning of the law.

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Surface Use Act, and FLPMA. 61 Fed. Reg. 37,116, 37,118 (July 16, 1996). See also Whether Authority to Condition Mining Activities Is Supplied by the Classification and Multiple Use Act of September 19, 1965, 74 I.D. 187, 190 (1967) (noting that authority granted to Interior did not include the power to impose restrictions or conditions on mining activities to protect other land values).

186. 43 C.F.R. § 185.122(b), recodified at 43 C.F.R. § 3712.1(b) (2003).
187. United States v. Allen, 578 F.2d 236, 237 (9th Cir. 1978); United States v. Cruthers, 523 F.2d 1306, 1307 (9th Cir. 1975).
188. 599 F.2d 290 (9th Cir. 1979), cert. denied, 444 U.S. 1014 (1980).
189. Organic Administration Act of 1897, ch.2, 30 Stat. 35 and 36, 16 U.S.C. §§ 478, 551 (granting to the Secretary the power to make “rules and regulations” to regulate [the] occupancy and use” of the national forests).
190. United States v. Richardson, 599 F.2d 290, 294 (9th Cir. 1979).
191. Id. at 295.
The *Richardson* decision was criticized by industry. Indeed, the Forest Service did not rely on the Surface Use Act as authority when it promulgated its surface use regulations for national forest lands. Although the Forest Service had, in its initial proposal, referenced the Surface Use Act as part of the authority for its regulations, it did not invoke that authority subsequently or in its final rule. Thus, the regulations issued by federal land managers addressing surface use and occupancy of mining claims reflected considerable uncertainty on their part whether the Surface Use Act alone empowered them to regulate the method of hardrock mining on public lands, where the activities were indisputably related to bona fide mining exploration and development.

The Act, in light of its legislative history, does at least allow the federal government to manage the non-mineral surface resources where such management does not interfere with mining operations, and to ensure that site activities are reasonably incident to mining. As discussed below, however, questions regarding the scope of the Surface Use Act became less important when, during the mid-1970s, the agencies obtained (in the case of Interior) and exercised (in the case of Agriculture) authority under broad organic laws to protect public lands from degradation caused by hardrock mining activities.

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192. *See* William R. Marsh and Don H. Sherwood, *Metamorphosis in Mining Law: Federal Legislative and Regulatory Amendment and Supplementation of the General Mining Law Since 1955*, 26 ROCKY MTN. MIN. L. INST. 209, 228 (1980) (arguing that *Richardson* would purport to change the purpose of the Surface Use Act from regulation of activities which are not authorized by the Mining Law, to regulation of activities which are authorized by the law "and would permit the United States to substitute its judgment concerning appropriate methods of exploration for the judgment of the prospector"); John C. Miller, *Surface Use Rights Under the General Mining Law: Good Faith and Common Sense*, 28 ROCKY MTN. MIN. L. INST. 761, 786 (1982) (stating that the *Richardson* decision was one "based on new legislation aimed really at curing other abuses").

193. 38 Fed. Reg. 34,817 (Dec. 19, 1973) (referring to various statutes as authority for its surface management regulations, including the Surface Use Act, but stating that “[p]rimary authority for these regulations is found in the Organic Administration Act of 1897 ...”).


195. *See* Bruce W. Crawford, 86 IBLA 350 (1985) (distinguishing the “incident to mining” standard under the Surface Use Act from the “unnecessary and undue degradation” standard under FLPMA discussed *infra*, and concluding that the former “inquires into the type of activities occurring to determine whether they can be reasonably related to the development of the mineral deposit,” while the latter “examines the impacts of the mining and associated activities on other surface values to determine whether possible adverse impacts can be ameliorated, and, if so, whether the failure to ameliorate has resulted in unnecessary or undue degradation”). *Id.* at 396 n.39.
C. The Public Land Law Review Commission Report and Other Criticisms of the Mining Laws

The inadequacies of the laws governing hardrock mining on public lands, particularly in the realm of environmental protection, periodically became a target of Congressional reform. In 1964, Congress appointed a Public Land Law Review Commission (Commission) to study the adequacy of the public land laws. In 1970, the Commission issued its report and identified a host of shortcomings, including the lack of any "means by which the Government can effectively control environmental impacts" from hardrock mining. Nearly 100 years after enactment of the public mining laws, the Commission observed, federal powers over hardrock mining on the public land remained extraordinarily limited.

It noted, for example, that the United States did not act as an owner of lands subject to mining claims because it viewed its interest in the lands as temporary and subordinate to private economic interests:

BLM's authority is generally inadequate to control environmental degradation caused by mining activity under the General Mining Law of 1872. The 1872 Act creates rights in eligible persons to prospect and develop claims. Access rights are also afforded. The United States does not act as if it were an owner of its lands subject to these rights; at best it functions as a regulator much as a local zoning authority does in relation to privately-owned land. This is an inefficient means to protect environmental values and leads to all sorts of environmental problems: surface is scarred, destroyed and misused; claims are worked and abandoned; water is polluted; access routes are ill-constructed; and the like. Tools exist to confront some of these problems. But they are based on a regulatory rather than a proprietary view, and they are slow, unwieldy, and require investments in time and personnel for minimal return.

Reviewing numerous case studies, the Commission documented significant damage caused by hardrock mining conducted in full compliance with the Mining Law. Commenting on Interior's inability to prevent or minimize environmental degradation at one modern large-scale open-pit mining site in Arizona, for example, the Commission found that mining operations had generated huge amounts of waste rock, tailings and slag. Common mining techniques using low-grade ore and large-scale equipment had resulted in "a total destruction of the terrestrial desert ecosystem where the waste is deposited or where the pit...

is developed."198 After considering the regulatory options available to mitigate these impacts, the authors concluded that "[e]ssentially, the hands of the Federal government are tied by the 1872 law."199 Similarly, in its analysis of environmental contamination arising at another hardrock mine—a large open pit uranium mine in Shirley Basin, Wyoming—the Commission documented a host of potential environmental problems on- and off-site and blamed the Mining Laws of 1872.200 The public mining laws, it concluded, "are generally vague and have proven to be largely ineffective in seriously influencing the mining industry."201

After reviewing these case studies, the Commission recommended, among a host of other measures directed at improving the environmental stewardship of federal land managers, that "[t]hose who use the public lands and resources should in each instance, be required by statute to conduct their activities in a manner that avoids or minimizes adverse impacts, and should be responsible for restoring areas to an acceptable standard where their use has an adverse impact on the environment."202 With respect to mineral resources in particular, it recommended that, when activities degrade public lands, "Congress should require that the land be restored or rehabilitated after a determination of feasibility based on a careful balancing of the economic costs, the extent of environmental impacts, and the availability of adequate technology for the type of restoration, rehabilitation, or reclamation proposed."203

During the early 1970s, Interior also reiterated its long-standing concern about its authority to prevent environmental harm on lands subject to mining claims. In a letter to the Council on Environmental Quality, Interior's Deputy Solicitor complained that "[t]he so-called location and settlement laws leave BLM without authority to consider environmental factors in their administration.... A similar situation arises throughout the United States under the mining laws [the Mining Law of 1872]. The Department has no control over entries made pursuant to these laws and the basic statutes under which the entries are made do not

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199. Id. at V–23.
200. Id. at IV–14. The authors concluded that the environmental contamination was caused, in part, by "the almost total lack of legal constraints on the mining companies during claiming, exploring and mining activities" together with the economic needs of the State of Wyoming, which had produced a "political climate favorable to unrestricted mining." Id. at IV–16.
201. Id. at IV–19.
203. Id. at 127.
admit of environmental consideration." He stated further that "[n]ew legislation is required, and the Department has consistently recommended such legislation."\footnote{204} 

Motivated in part by these harsh and repeated criticisms of the adequacy of the public mining laws to protect environmental values, members of Congress periodically introduced legislation to enhance the authority of federal land managers over extractive activities on public lands.\footnote{206} Although efforts to rewrite the public mining laws foundered in the face of industry opposition, Congress undertook more modest initiatives to enhance federal powers to manage public lands generally. Bills introduced during the early 1970s sought to allow Interior to establish environmental safeguards applicable to hardrock mining on public lands. Legislative debate about the need for reform repeatedly highlighted the Secretary's inability, under current law, to fully address environmental problems on public lands. Senator Floyd Haskell of Colorado, in introducing the National Resource Lands Management Act, complained that "[t]he only management tools available to the BLM remain some 3,000 public land laws which have accumulated over the last 170 years... when the disposal policy prevailed. Not unexpectedly, therefore, these laws are often conflicting, sometimes truly contradictory, and certainly incomplete and inadequate...."\footnote{207} Congressman Morris Udall of Arizona similarly remarked that "the 1872 Mining Law which, in effect, ratified the claim-staking practices that were developed in the western mining camps in the last century, does nothing to limit or control..."

\footnote{204}{Letter from Interior Deputy Solicitor to Chairman, Council on Environmental Quality (July 1, 1971), \textit{quoted in United States v. Kosanke Sand Corp.}, 12 IBLA 282, 288–89 (1973).}

\footnote{205}{\textit{Id.} During the 1970s, the Comptroller General also undertook an examination of the public mining laws and concluded that hardrock mining activities, conducted on public lands in full compliance with existing law, had caused significant environmental damage. He recommended that the federal land managing agencies be authorized to establish environmental controls on mining operations on public lands and ensure that such controls are enforced. \textit{COMPTROLLER GENERAL OF THE UNITED STATES, MODERNIZATION OF 1872 MINING LAW NEEDED TO ENCOURAGE DOMESTIC MINERAL PRODUCTION, PROTECT THE ENVIRONMENT, AND IMPROVE LAND MANAGEMENT} 24–30 (1974). He further recommended that Congress enact laws under which mining companies would be required to submit exploration plans before beginning mining which would, among other things, identify those measures necessary to minimize environmental damage and to reclaim the land after mining operations were concluded.}

\footnote{206}{In 1971, for example, Senator Henry Jackson of the State of Washington proposed to repeal the public mining laws, and subject hardrock mining to a leasing system similar to that in place for oil and gas, and "leasable" minerals. Remarks of Senator Henry Jackson, Chairman of Senate Committee on Interior and Insular Affairs, introducing the Public Domain Lands Organic Act of 1971, 117 \textit{CONG. REC.} 3558 (Feb. 23, 1971). \textit{See also} Statement of Senator Jackson, pointing out that, under the Mineral Leasing Act, the Secretary has "authority and discretion to provide environmental safeguards .... He has virtually none under the mining law". 117 \textit{CONG. REC.} 31,213 (Sept. 9, 1971).}

\footnote{207}{121 \textit{CONG. REC.} 1846–47 (Jan. 30, 1975). \textit{See also} S. REP. NO. 94–583, at 65 (1974).}
the environmental impacts of mining for hard rock minerals such as gold, silver, zinc, copper, uranium or others. He said further that "the simple fact is that the mechanism of 'withdrawal' of public lands from mineral entry is currently the only defense we have against mining activity on the public domain."

Interior also supported legislation that would grant it express authority to address environmental impacts from hardrock mining. Interior Secretary Stewart Udall wrote to the members of the Commission stating:

After 8 years in office, I have come to the conclusion that the most important piece of unfinished business on the Nation's natural resource agenda is the complete replacement of the Mining Law of 1872... No private owner would countenance a system whereby he extends a continuing invitation to others, regardless of his own needs, to come onto his land without even notice, to search for and take out minerals, to leave it despoiled, and to pay nothing. Commenting on legislative proposals pending before Congress in the early 1970s, Interior Secretary Rogers Morton urged that "protection of the environment should be a major concern of any legislation to reform the mining laws." He supported amendments to the public mining laws that would empower Interior to require miners to file operating plans where their activities might cause a significant disturbance of the environment. He also urged Congress to authorize land managers to issue regulations requiring compliance with air and water quality standards and to require reclamation of lands affected by hardrock mining.


In 1976, with enactment of FLPMA, Congress remedied some of the shortcomings of the public mining laws. FLPMA directed that the

209. 122 CONG. REC. 23,436 (July 22, 1976). See also remarks of Congresswoman Patsy Mink (Hawaii) 122 CONG. REC. 23,438 (July 22, 1976). See also BUREAU OF LAND MGMT., FINAL ENVIRONMENTAL IMPACT STATEMENT: SURFACE MANAGEMENT OF PUBLIC LANDS UNDER THE U.S. MINING LAWS, 43 CFR § 3809 1-6 (Aug. 1980) (noting that "[i]n the absence of regulations, withdrawal procedures have provided an 'all or nothing' management tool to control mining operations authorized under the 1872 Mining Law.").
212. Id. As one federal study noted "[t]he miner's right, under the Mining Law, to enter without advance notice or permission, onto land containing Federal minerals leaves the surface owner or manager with no voice in the timing of mineral activities, and with little or no chance to mitigate surface impacts resulting from initial entry." OTA REPORT, supra note 164, at 205.
public lands be maintained for multiple use and sustained yield and "in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values."\textsuperscript{214} At the same time, however, Congress reiterated its longstanding policy that "the public lands be managed in a manner which recognizes the Nation's need for domestic sources of minerals..."\textsuperscript{215} With respect to the continuing effectiveness of the public mining laws, Congress was careful to state that "no provision of... [FLPMA] shall in any way amend the Mining Law of 1872 or impair the rights of any locators or claims under that Act..."\textsuperscript{216} Although FLPMA broadly preserved the miners' rights under the public mining laws, it granted to Interior, for the first time, express authority to prevent "unnecessary or undue degradation" of lands subject to mining claims.\textsuperscript{217} Section 302(b) of the Act directed that the Secretary "shall by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands."\textsuperscript{218}

Late in its consideration of FLPMA, Congress added the "undue or unnecessary degradation" language, and the legislative history is sparse and un-illuminating.\textsuperscript{219} Statements made during markup by the Subcommittee on Public Lands of the House Committee on Interior and Insular Affairs indicate, however, that Congress crafted the phrase to resolve longstanding uncertainty about the scope of Interior's authority to prevent environmental harm at hardrock mining sites. During those sessions, Subcommittee members considered whether the proposed law should expressly authorize the Secretary to regulate mining claims to prevent environmental degradation.\textsuperscript{220} Some members felt that such authority was inappropriate and might be inimical to mining interests because it might permit Interior to interfere with legitimate mining activities.\textsuperscript{221} Others believed that Interior needed clear authority in this area, given the confusion regarding the scope of the Secretary's authority

\begin{itemize}
  \item 214. 43 U.S.C. § 1701(a)(8).
  \item 215. \textit{Id.} at § 1701(a)(12).
  \item 216. \textit{Id.} at § 1732(b).
  \item 217. \textit{Id.}
  \item 218. \textit{Id.}
  \item 220. \textit{Public Land Policy and Management Act of 1975: Hearing Before the Subcomm. on Public Lands of the House Comm. on Interior and Insular Affairs, 94th Cong. (June 17, 1975).}
  \item 221. Representative Don Young of Alaska warned that when "you give the Secretary that power and somebody in the department doesn't like mining, and he wants to keep the area pristine, you are asking for trouble." \textit{Id.} at 93. Representative Jim Santini of Nevada also cautioned that some formulations of the Secretary's express authority to prevent degradation during hardrock mining "invite[] all kinds of pernicious and imaginative restrictions on mining activity." \textit{Id.} at 94.
\end{itemize}
under the public mining laws. Ultimately, the Committee recommended, and Congress adopted, the "unnecessary and undue degradation" language now found in the Act.

Soon after passage of FLPMA, Interior began to develop regulations to implement its new authorities. BLM approached its task cautiously and, in its initial proposed rule, reiterated that "[i]t is the policy of this Department to encourage the development of the mineral resources under its jurisdiction where mining operations are authorized. Under the 1872 Mining Law, prospectors, locators, claimants and miners have a statutory right consistent with Departmental regulations, to go upon open (unappropriated and unreserved) public domain lands for the purpose of [mining]...." BLM did not attempt to define the phrase "unnecessary or undue degradation," but rather directed that mining operations must "include adequate and reasonable measures to avoid, minimize, or control damage to the environment and to avoid, minimize, or control hazards to the public health or safety."

BLM received more than 5,000 comments on the proposed rule and in March 1980 issued a new proposal that reflected its further consideration of Congress's intent. In its revised proposal, BLM announced that, "[u]nder the 1872 Mining Law... a person has a statutory right, not a mere privilege, consistent with Departmental regulations, to go upon the open (unappropriated and unreserved) public lands for the purpose of extracting." BLM went on to propose that, with respect to its authority to address environmental contamination arising from hardrock mining

222. Representative Sam Steiger of Arizona, expressing both candor and frustration, warned the Subcommittee that, with respect to the goal of putting to rest the long dormant yet contentious issue of the scope of the Secretary's authority to address contamination on public lands arising from hardrock mining, the status quo could no longer be tolerated. He insisted that some standard governing this issue was inevitable and emphasized that "[y]ou are going to eat some language, no matter what... I will simply tell you that before this bill comes out, you are going to eat some language. It had better be the best possible language. I will simply tell you that there is no way to hold the gate on this one...." Id. at 97. Representative Young replied, "I know the gentleman has been on the ranch longer than I have, and I have learned something, and you don't open the gate and let a little bull go through." Id.

223. See OTA REPORT, supra note 164, at 194 (noting, three years after FLPMA's enactment, that "[i]n the absence of any regulations [under FLPMA], BLM is unable to prevent unnecessary surface impacts on the public domain caused by mineral activities under the Mining Law.").


225. Id.


227. Id. at 13,960.
activities, the phrase "undue or unnecessary degradation" means "impacts greater than those that would normally be expected from an activity being accomplished in compliance with current standards and regulations and based on sound practices including use of the best reasonably available technology." 228

During the public comment period on its re-proposal, BLM received hundreds of comments, including complaints that its proposed definition of "undue or unnecessary degradation" was ambiguous and provided little practical guidance to miners or the public and also went "beyond a reasonable interpretation of the law." 229 BLM ultimately deleted the best available technology language proposed earlier and instead defined "unnecessary or undue degradation" to mean:

Surface disturbance greater than would normally result when an activity is being accomplished by a prudent operator in usual, customary, and proficient operations of similar character and taking into consideration the effects of operations on other resources and land uses, including those resources and uses outside the area of operations. Failure to initiate and complete reasonable mitigation measures, including reclamation of disturbed areas or creation of a nuisance may constitute unnecessary or undue degradation. Failure to comply with applicable environmental protection statutes and regulations thereunder will constitute unnecessary or undue degradation. Where specific statutory authority requires the attainment of a stated level of protection or reclamation, such as in the California Desert Conservation Area, Wild and Scenic Rivers, and other such areas, that level of protection shall be met. 230

In its environmental impact statement (EIS) prepared to accompany the rulemaking, BLM further explained its understanding of its authority to prevent or mitigate environmental contamination caused by hardrock mining:

The general management standard under FLPMA is to prevent unnecessary or undue degradation... [U]nder [that] standard, the Secretary is authorized and required to take some steps to prevent or minimize those environmental impacts due to mining activity that are avoidable. However, it does not go so far as to authorize him to take steps to prevent any and all impacts. This is evidenced by the use of the word "unnecessary." This implies that he may permit some necessary impacts which can not be prevented because steps necessary to prevent those impacts are too expensive (to the point of making an entire operation uneconomic), technologically impossible,
or highly impractical. He can only hope to minimize those impacts. This is evident by the environmental standards in the [1980] proposal which require, in those areas where the Secretary is not constrained by other mandatory environmental laws (e.g., air, water, solid waste, endangered species) that the operator “control or minimize” impacts and “prevent” only where practicable. An alternative to this approach would be to seek legislation which would give the Secretary the authority to impose environmental standards in all areas (air, water, visual resource, reclamation, wildlife etc.) which require prevention of any or all impacts and require the highest possible standard of reclamation.231

As originally promulgated, the regulations became effective on January 1, 1981, and required that all operations must prevent unnecessary or undue degradation of the public lands and comply with state and federal environmental laws.232 They required hardrock miners to notify BLM if their mining activities would disturb less than five acres in a calendar year and include a certification that the claimant would reclaim all disturbed areas and undertake reasonable mitigation.233 The notice was not subject to BLM approval, although BLM could monitor the operations.234 For mining operations disturbing more than five acres, the regulations required claimants to submit a plan of operations to BLM for approval. The plan was required to describe the operations, their

231. BUREAU OF LAND MGMT., FINAL ENVIRONMENTAL IMPACT STATEMENT: SURFACE MANAGEMENT OF PUBLIC LANDS UNDER THE U.S. MINING LAWS, supra note 209, at 8-5 to 8-6.

232. 45 Fed. Reg. 78,902, 78,913. (Nov. 26, 1980). BLM identified, as one source of authority for its new regulations, the 1872 Mining Law, which provides that miners are to conduct their operations under “regulations prescribed by law.” 43 C.F.R. § 3809.0-3(a) (1981). Interior had not previously looked to the Mining Law for authority to regulate the environmental effects of hardrock mining, and industry criticized Interior’s “discovery” of this new source of authority. See Don H. Sherwood, Recordation and Prospecting Under the Federal Land Policy and Management Act of 1976, 23 ROCKY MTN. MIN. L. INST. 1, 9-10 (1977) (arguing that, while FLPMA grants Interior express regulatory authority for certain purposes, no law grants to Interior general regulatory authority with respect to the maintenance and use of mining claims); See also SEN. COMM. ON ENERGY AND NATURAL RESOURCES, 95th Cong. 13, REVISION OF THE MINING LAW OF 1872 (Comm. Print 1977) (noting that Mining Law provides that mining operations must be conducted pursuant to “regulations prescribed by law” and suggesting that the phrase looks to actual legislation on the subject, not the power of the Executive to prescribe regulations) (citing Exline v. S.P. Smith, 5 Cal. 112 (1855)). Others, however, noted that the phrase “regulations prescribed by law” “tantalizes the imagination” and might have authorized at least some environmental regulation of hardrock mining. See LESHY, supra note 1, at 190–191. More recently, Interior indicated that it is the Mining Law and FLPMA which, “[t]aken together . . . clearly authorize the regulation of environmental impacts of mining through measures such as mitigation.” Mining Claims Under the General Mining Law; Surface Management, 65 Fed. Reg. 69,998, 70,012 (Nov. 21, 2000).


234. No notification to BLM was required for “casual use,” which was defined as activities ordinarily resulting in only negligible disturbance of the federal lands and resources. 43 C.F.R. § 3809.0-5(b) (1981).
location, and the measures to be taken to prevent unnecessary or undue degradation and to reclaim disturbed land.\textsuperscript{235} Operating plans were also required to contain provisions for saving and reapplying topsoil, controlling erosion, isolating or removing toxic materials, and re-vegetating disturbed areas.\textsuperscript{236} The regulations also specified that mining operations were subject to federal and state laws, including laws relating to air and water quality, and the management of solid wastes.\textsuperscript{237}

BLM's construction of the legislative mandate to prevent "unnecessary or undue degradation" came to be known as the "prudent operator" standard. The phrase did not, in Interior's view, allow the agency to prohibit mining entirely where the mine operator had complied with relevant statutory and regulatory requirements, and acted prudently—even where mining activities might cause harm to the environment.\textsuperscript{238} Stated differently, the "prudent operator" standard acknowledged that some environmental degradation was inherent in hardrock mining and that BLM would prevent only disturbance "greater than would normally result" from an operation conducted with due care.\textsuperscript{239} In essence, this standard imposed on the operator the obligation, in light of then-existing management standards and technical practicality, to undertake reasonable measures to prevent and mitigate environmental harm. If the miner acted prudently and complied with otherwise applicable laws, BLM had no authority to prevent those mining activities, even though some harms were irreducible and therefore contaminated the environment. Such residual harm would not be "unnecessary or undue" within the meaning of FLPMA.\textsuperscript{240}

\begin{itemize}
\item \textsuperscript{235} Id. at § 3809.1-5 (1981).
\item \textsuperscript{236} Id. at §§ 3809.1-5(c)(5); 3809.1-3(d) (1981). Operators of such "plan-level" operations were also required to post bonds to ensure compliance with reclamation measures. Id. at § 3809.1-9(b)(1981).
\item \textsuperscript{237} Id. at § 3809.2-2 (1981). With respect to waste management, for example, the regulations directed that operators must comply with RCRA.
\item \textsuperscript{238} In the preamble to its final regulations, BLM stated that several commenters had correctly observed that even mining operations in areas of critical environmental concern "cannot be precluded because of potential irreparable damage." 45 Fed. Reg. 78,902, 78,906. As discussed above, BLM invokes the National Environmental Policy Act process to evaluate whether a proposed mine could cause significant effects on the environment, and whether mitigation measures are required to prevent unnecessary or undue degradation on the public lands. 43 C.F.R. § 3809.2-1 (1981). See, e.g., Kendall's Concerned Area Residents, 129 IBLA 130, 137-38 (1994); United States v. Lee Jesse Peterson, 125 IBLA 72, 85-86 (1993); Department of the Navy, 108 IBLA 334, 336 (1989).
\item \textsuperscript{239} See Bruce W. Crawford, 86 IBLA 350, 397 (1985) (BLM's definition of unnecessary or undue degradation "presumes the validity of the activity but asserts that [unnecessary or undue degradation] results in greater impacts than would be necessary if it were prudently accomplished.").
\item \textsuperscript{240} See Utah v. Andrus, 486 F. Supp. 995, 1005 n.13 (D. Utah 1979) (quoting with approval a brief from the American Mining Congress under which "[a] reasonable interpretation of the
E. Post-FLPMA Developments

Enactment of FLPMA, although granting to land managers some authority to address environmental conditions on lands subject to the public mining laws, did not resolve questions about the extent of Interior’s authority to regulate hardrock mining or whether additional authority was necessary.\(^{241}\) Both Interior staff and congressional representatives recognized that the regulations represented a necessary first step in hardrock mining regulation but that additional reforms may be needed. During the 1980s and 1990s, both Interior and Congress inquired into the need for additional reform. When legislative initiatives foundered, however, Interior proposed additional reforms through rule-makings. These reforms, too, stalled as Congress restricted Interior’s regulatory authority. Ultimately, through both rule-makings and legal opinions issued by Interior’s Solicitor, Interior developed new interpretations of its authority to regulate the environmental effects of hardrock mining.\(^{242}\) Recently, a court upheld these interpretations.\(^{243}\)

After FLPMA’s enactment, critics of hardrock mining on the public lands continued to complain that public lands subject to hardrock mining often were not reclaimed.\(^{244}\) The GAO recommended, for example, that Interior require reclamation whenever significant land disturbance was likely to result from hardrock mining and require mine operators to post bonds large enough to cover the estimated costs of reclamation. Two years later, the GAO reported that hundreds of thousands of acres of federal lands subject to hardrock mining were not reclaimed, and that taxpayers ultimately could be forced to bear hundreds of millions of dollars in cleanup costs.\(^{245}\)

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\(^{241}\) See NRC REPORT 1992, supra note 8, at 19 (despite the enactment of FLPMA, “the extent to which BLM is authorized to regulate activities that might jeopardize the environment (such as mineral production) on public lands is unclear”); 3 COGGINS & GLICKSMAN, supra note 8, at §§ 25.25, 25-55 (“The questions whether and to what extent the federal land management agencies can regulate mining claims or mining operations on the federal land, procedurally or substantively, have long been disputed.”).


During the late 1980s, in response to growing concerns about environmental contamination on the public lands, the House Committee on Governmental Operations held hearings to examine the extent to which BLM was addressing such issues on lands subject to its jurisdiction.246 Congress passed an appropriations bill that required BLM to contract with the National Academy of Sciences for a review of BLM’s hazardous materials program.247 The NRC’s Board on Environmental Studies and Toxicology studied the BLM programs and in 1992248 recommended that BLM revise its mining regulations “to promote environmental protection by ensuring that hazardous materials used or generated in the course of activities conducted under the Mining Law of 1872 are properly used, disposed of, and cleaned up.”249 The NRC also recommended that, if necessary, BLM seek additional legislation granting it full legal authority to enforce its regulations, including “authority to review, place conditions on, and approve or disapprove these activities.”250

In 1991, Interior’s Inspector General examined the effectiveness of the agency’s efforts to correct health and safety and environmental problems associated with abandoned non-coal mines.251 The IG said that “less than 2 percent of the estimated $11 billion of health, safety, and environmental problems at noncoal mine sites” had been reclaimed.252 He warned that “[w]ithout an effective regulatory program, the abandoned mine problems will continue to increase in severity, and the costs to reclaim the sites will be higher than those associated with concurrent reclamation and may become the taxpayers’ responsibility.”253 In response, Interior proposed a rule expanding the scope of its bonding requirements.254 A district court invalidated the rule because Interior did not comply with certain requirements of the Regulatory Flexibility Act.255

During the late 1990s, Interior considered reviewing its surface mining management regulations to assess their continued effectiveness. It hoped, however, that Congress would comprehensively reform mining

246. NRC REPORT 1992, supra note 8, at 4.
247. Id.
248. Id.
249. Id. at 68.
250. Id.
251. NONCOAL RECLAMATION, supra note 69.
252. Id. at 16.
253. Id. at 16–17.
254. Dep’t of the Interior, Mining Claims Under the General Mining Laws; Surface Management, 56 Fed. Reg. 31,602 (July 11, 1991). The final rule was promulgated at 62 Fed. Reg. 9093 (Feb. 28, 1997). The rule expanded the existing bonding requirement to persons engaged in casual use, or notice level operations.
law and thus deferred regulatory action. Ultimately, however, Interior came to doubt Congress's willingness or ability to undertake reform and announced that it would review its surface mining regulations in anticipation of rulemaking. Expressing concern about the future rulemaking, Congress in 1998 directed the NRC to review the regulatory framework applicable to hardrock mining on federal lands and to recommend how environmental, reclamation, and other programs could be coordinated to better attain environmental protection and other statutory goals. Congress prohibited Interior from concluding its rulemaking until after the NRC issued its report.

Opportunities to construe the scope of Interior's authority to regulate hardrock mining also arose outside of formal rulemaking. In 1999, Interior's Solicitor examined the nature and scope of the agency's authority to prevent unnecessary or undue degradation in responding to a mining claimant's proposal to develop an open-pit, heap-leach, gold mine on public lands in the California desert. Native American tribes had objected to the mine because of its potential adverse effects—even if constructed and operated consistent with best management practices—on features of cultural importance to the tribes. The Solicitor concluded that protection of Native American cultural and historic resources fell within the ambit of the unnecessary or undue degradation standard. He reasoned that the conjunction "or" between "unnecessary" and "undue" reflected Congress's intent to empower Interior to prohibit activities or practices that the agency finds are unduly degrading, even though incontestably "necessary' to mining."

According to the Solicitor, Interior was authorized to impose standards of control on hardrock mining in particularly sensitive areas, even if existing technology could not meet those standards, effectively barring mining there altogether. He noted that Interior's current construction of the phrase "unnecessary or undue degradation" only prevented harm outside the range of degradation caused by the customary and proficient operator using reasonable mitigation measures, but the agency nevertheless had the authority—albeit unexercised—to

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259. Id.


261. Id. at 7.
deny a plan of operations if the impairment arising from operations was "undue" and no reasonable measures were available to reduce the harm.

In late 1999, the NRC also issued its report, entitled *Hardrock Mining on Federal Lands*. The NRC noted that Interior staff were themselves often confused about the extent of their authority under the "unnecessary or undue degradation" standard to protect resources not otherwise protected under other laws.\(^{262}\) In November 2000, after reviewing the NRC's report, Interior promulgated revised surface management regulations applicable to hardrock mining activities.\(^{263}\) Although retaining much of the language and structure of the 1980 regulations, the new rules rejected prior interpretations of the scope of Interior's authority to prevent environmental degradation on public lands. Interior now believed—consistent with the reasoning set forth in the Solicitor's opinion—that the phrase "unnecessary or undue degradation" granted the Secretary broad authority to prevent "degradation" that is necessary to mining but nevertheless undue or excessive in light of its potential impact on site conditions and resources.\(^{264}\) Although Interior acknowledged that it was not authorized to prevent, nor could it practically prevent under any reasonable regulatory regime, all adverse impacts from mining, it did not agree that the "prudent miner" standard captured the full extent of the agency's authority to prevent unnecessary or undue degradation.\(^{265}\)

Under the new regulations, Interior expanded the definition of "unnecessary or undue degradation" to encompass conditions, activities, or practices that fail to comply with newly-promulgated performance standards, the terms and conditions of a plan of operations, and other federal and state laws related to environmental protection and protection of cultural resources; are not "reasonably incident to" prospecting, mining or processing operations; fail to attain certain reclamation requirements established under other laws; or occur on mining claims or millsites located after October 21, 1976 (or on unclaimed lands) and result in substantial irreparable harm to significant scientific, cultural, or

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\(^{263}\) Mining Claims Under the General Mining Laws, Surface Management, 65 Fed. Reg. 69,998 (Nov. 21, 2000). In proposing the new regulations, Interior referred to "a series of developments that collectively had the effect of focusing increased attention on Federal minerals management under the mining laws and on mining law reform in general." These developments included the critical GAO reports, as well as increasing use of cyanide leaching to extract gold from ores, and widespread evidence of ecological harm arising from modern gold mining. Mining Claims Under the General Mining Laws; Surface Management, 64 Fed. Reg. 6422, 6423 (Feb. 9, 1999).

\(^{264}\) 65 Fed. Reg. at 70,001.

\(^{265}\) *Id.* at 70,017–18.
environmental resource values of the public lands that cannot be effectively mitigated.\textsuperscript{266}

Under the "substantial irreparable harm" portion of the rule, Interior believed it had the power to disapprove a proposed plan of operations to protect significant resource values and thus prohibit mining entirely on some public lands otherwise open to location. Interior emphasized that this new authority only applied when the agency determined that (1) important resources had been identified, (2) mining will in fact cause substantial irreparable harm to those resources, and (3) the harm cannot be effectively mitigated.\textsuperscript{267} The new regulations did, however, declare for the first time that some effects from mining may be impermissible, even though they may be necessary to mining and conducted in full compliance with customary and prudent practices and other laws.

The revised interpretation of Interior’s authority to regulate mining activities, which became effective in January 2000, generated considerable controversy and was promptly challenged in court by a variety of interests.\textsuperscript{268} Industry critics argued that the new regulations essentially granted “mine veto” powers to Interior in derogation of the agency’s longstanding deference to the broad rights of self-initiation and secure tenure established in earlier laws.\textsuperscript{269} They also argued that Interior’s interpretation of the scope of its powers violated FLPMA, because Congress did not grant Interior the authority to prevent all damage to public lands arising from hardrock mining activities, but only damage beyond that caused by a prudent miner.\textsuperscript{270} Environmental

\footnotesize{266. \textit{Id.} at 70,015–18
267. 65 Fed. Reg. at 70,017. In addition to its new and broader construction of the authority to prevent "undue or unnecessary degradation," Interior established specific and prescriptive performance standards for hardrock mining operations. Among other things, the regulations established general performance standards for environmental compliance as well as detailed operational performance standards dealing with the management of toxic materials; the design, construction, and operation of tailings impoundments, leach pads and other solution-holding facilities; the location, design and operation of waste rock, tailings, and leach pads; reclamation of pits and other land disturbances; and solid waste management generally. 43 C.F.R. § 3809.420. The rule also required that miners establish financial guarantees for both notice and plan-level operations to ensure the completion of reclamation. 43 C.F.R. § 3809.500.
270. \textit{Id.}.}
advocacy organizations, on the other hand, maintained that the new regulations were not sufficiently stringent.271

On March 23, 2001, following a change in administrations, Interior proposed to suspend the new surface mining management regulations, to review them in light of the lawsuits, and also to reinstate the original regulations.272 On October 23, 2001, Interior’s new Solicitor issued a memorandum rejecting the broad interpretation of the scope of the “unnecessary or undue degradation” standard articulated by his predecessor and embodied in the most recent regulations.273 He emphasized that the “unnecessary or undue degradation” standard established in FLPMA must be interpreted in light of its goal to preserve “the Nation’s need for domestic sources of minerals,” as well as the goals of the Minerals Policy Act of 1970, which “reflect longstanding congressional intent to support the development of minerals that are critical to the Nation.”274

Finding that FLPMA does not contemplate the disapproval of an otherwise allowable mining operation because of the possibility of “substantial irreparable harm,” the Solicitor first reviewed the history and purpose of the public mining law which “provides mining claimants with considerable rights to conduct operations to extract minerals from the public lands.”275 Construing the word “or” in the phrase “unnecessary or undue degradation,” in light of this history, he suggested that “unnecessary” and “undue” are equivalent terms to be applied as a whole—not disjunctive alternatives to be applied separately. For this reason, the Secretary was “not authorized to prevent degradation caused by mining that is necessary and due.”276 A more restrictive definition that “prevents degradation that would be caused by an operator who is using accepted and proper procedures in accordance with applicable federal and state laws and regulations when such degradation is required to develop a valuable mineral deposit—would inappropriately amend the Mining Law and impair the rights of the locator.”277

The Solicitor also explained that FLPMA authorized Interior to take only those actions that are “necessary” to prevent unnecessary and undue

276. Id. at 10-11.
277. Id. at 12.
degradation and that Interior could meet FLPMA's mandate to protect public lands—as it had for generations—without the substantial irreparable harm criterion. In particular, he emphasized that Interior's authority under other laws—including the Endangered Species Act, the Archaeological Resources Protection Act, its withdrawal authorities, and its authority to establish areas of critical environmental concern during its land planning processes, provided ample means to protect important resources on public lands from irreparable damage.²⁷⁸

On October 30, 2001, Interior issued revised regulations revoking the "substantial irreparable harm" prong of the "unnecessary or undue degradation" definition in the 2000 regulations. The rule referred to the recent Solicitor's opinion and repeated that Interior already was empowered to protect cultural and environmental resource values on public lands.²⁷⁹ Interior also sought further comment on the definition of "unnecessary or undue degradation" and on whether the agency should continue to exclude the "substantial irreparable harm" element from the rule.²⁸⁰ Interior did, however, retain other provisions of the 2000 regulations, such as requirements for financial guarantees for reclamation of mining sites; requirements for plans of operation for all mining activities other than "casual use" or "exploration"; and some of the new performance standards.

In November 2003, the District Court for the District of Columbia issued a memorandum opinion in Mineral Policy Center v. Norton, in which several nonprofit conservation organizations challenged Interior's removal of the "substantial irreparable harm" prong of the "unnecessary or undue degradation" standard set forth in the 2000 regulations.²⁸¹ The court agreed with plaintiffs' contention that the 2001 Solicitor's opinion misconstrued the scope of Interior's authority to mitigate the environmental consequences of hardrock mining on the public lands. It concluded that the conjunction "or" in the phrase "unnecessary or undue degradation" indicated that Congress intended to impose two separate statutory mandates and held that "FLPMA, by its plain terms, vests the Secretary of the Interior with the authority—and indeed the obligation—to disapprove of an otherwise permissible mining operation because the operation, though necessary for mining, would unduly harm or degrade the public land."²⁸²

²⁷⁸ Id. at 15.
²⁸² Id.
The court refused, however, to invalidate the 2001 regulations. Although holding that Congress had charged Interior with preventing both unnecessary and undue degradation of the public lands, the court concluded that under *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, plaintiffs must show that Interior's interpretation of the statutory mandate was unreasonable to prevail. Pointing out that the words "unnecessary" and "undue" were themselves undefined and ambiguous, the court reasoned that Congress vested Interior with broad discretion to prevent unnecessary or undue degradation and that plaintiffs failed to demonstrate that the regulations did not carry out congressional intent.

The court also concluded that Interior's new surface management regulations did not rest solely or even principally on the legal analysis contained in the recent Solicitor's opinion, but were supported by evidence that the agency had other available means to protect the environment. The court viewed the regulations as a reasonable interpretation of FLPMA in light of the Secretary's authority to approve mining plans; new requirements for financial guarantees for reclamation; new performance standards; the agency's authority to withdraw lands from mining; its authority to designate areas of critical environmental concern; and its enforcement of other independent authorities, such as the Endangered Species Act, the Clean Water Act, and CERCLA.

The court then considered plaintiffs' arguments that the new rule violated FLPMA in that it did not expressly recognize BLM's discretion under FLPMA to manage such lands subject to the principles of multiple use and sustained yield, its authority to prevent permanent impairment of the lands, or its authority to require fair market value for use of the lands. Because the rights of possession granted under the Mining Law vest only upon discovery, plaintiffs argued Interior had discretion—not circumscribed by the unnecessary or undue degradation standard—on unclaimed lands and lands subject to invalid mining claims. In agreeing with the plaintiffs that "greater rights" are granted to those who hold a valid mining claim, the court quoted with approval a Solicitor's opinion: "When reviewing a proposed plan of operations involving mining claims or mill sites that are not valid (or when unclaimed public lands are involved)... the Secretary has broader discretion, because there are no rights under the Mining Law that must be respected."

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285. *Id. at 44.
286. *Id. at 48, quoting from Memorandum from John O. Leshy, Solicitor, Dep't of the Interior, to the Secretary, Dep't of the Interior, Use of Mining Claims for Purposes Ancillary to Mineral Extraction 11 (Jan. 18, 2001) (M-37004).
While agreeing with plaintiffs’ premise, the court nevertheless rejected the bulk of their claims. The plaintiffs did not show that BLM’s regulations failed to integrate its general FLPMA multiple-use and land planning responsibilities for unclaimed or invalidly claimed lands, or to fulfill its overall obligation to manage the public lands without “permanent impairment of the productivity of the land and the quality of the environment.”

Rather, the court found that the surface management regulations themselves incorporated FLPMA’s multiple use policies by expressly including a performance standard requiring that such operations be managed in accordance with applicable land use plans.

The court did, however, accept plaintiffs’ claim that Interior had not complied with FLPMA’s directive that the United States “receive fair market value of the use of the public lands and their resources unless otherwise provided for by statute.” Because Interior balanced the various policy goals and values in FLPMA under the “erroneous assumption that it did not need to attempt to obtain fair market value for mining operations conducted on unclaimed lands,” the agency’s judgment was not entitled to deference. The court remanded the regulations and directed Interior to consider, while reviewing mining operations on unclaimed lands or lands subject to invalid claims, Congress’s requirement that the agency obtain fair market value for the use of the lands and their resources.

In its decision, the court acknowledged the difficulty faced by Interior in construing a statute imposing conflicting obligations and requiring a balancing of diverse goals. Although suggesting that Interior may not have yet have achieved the optimal balance between mineral production and environmental protection, the court nevertheless viewed plaintiffs’ challenge as an attack on the wisdom, rather than legal propriety of Interior’s action. Acknowledging the practical difficulty faced by land managers in reconciling competing legislative mandates,

290. Id.
291. The Solicitor’s Millsite Opinion significantly lessens the effect of the remand, because under that opinion, mining operators are not limited in the number of millsites they can locate and therefore will not be operating on unclaimed lands. Memorandum from Roderick E. Walston, Deputy Solicitor, Dep’t of the Interior, to the Secretary of the Interior, Mill Site Location and Patenting under the 1872 Mining Law (Oct. 7, 2003) (M-37010).
293. Id.
the court properly accorded deference to the majority of the agency's regulations.294

F. Forest Service Regulation of Hardrock Mining

As on the lands managed by Interior, lands of the national forests on which hardrock mining activities are conducted also are subject to the public mining laws. Unlike Interior, however, which obtained its "organic" authority to regulate hardrock mining activities on the public lands only with the passage of FLPMA in 1976, Agriculture had long operated under a broad statute—the Organic Administration Act of 1897 (Organic Act)—which authorized the Secretary of Agriculture to promulgate regulations for the administration of the national forests.295 Section 551 of the Organic Act provides, for example, that "[the Secretary of Agriculture] may make such rules and regulations and establish such service as will insure the objects of such [forest] reservations, namely, to regulate their occupancy and use and to preserve the forests thereon from destruction."296 The Organic Act provides further that "[n]othing in section[.]... 551 of this title shall be construed as prohibiting... any person from entering upon such national forests for all proper and lawful purposes, including that of prospecting, locating, and developing the mineral resources thereof."297

Like Interior, Agriculture had the task of managing surface resources while simultaneously allowing activities such as mining and logging. Agriculture's construction of its conflicting obligations caused it, like Interior, to doubt its ability to regulate hardrock mining in the National Forests.298 Not until 1973 did the Secretary of Agriculture rely on the Organic Act to propose "Surface Management Regulations" intended to ensure that hardrock mining operations were conducted "so as to minimize adverse environmental impacts on National Forest Service

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296. Id. at § 551. Under FLPMA, the Secretary of Agriculture is granted the powers, "with respect to lands within the National Forest System, [to] promulgate rules and regulations to carry out the purposes of this Act." 43 U.S.C. § 1740 (2000).
298. See Stanley Dempsey, Forest Service Regulations Concerning the Effect of Mining Operations on Surface Resources, 8 NAT. RES. LAW. 481, 482 (1975) ("For many years the Forest Service took the position that it had no statutory authority to regulate prospecting and mining activities on National Forest Service lands."); Jerry L. Haggard, Regulation of Mining Law Activities on Federal Lands, 21 ROCKY MTN. MIN. L. INST. 349, 361 (1975); Randy Parcel, Federal, State, and Local Regulation of Mining Exploration, 22 ROCKY MTN. MIN. L. INST. 405, 408 (1976) ("From the time the Organic Act was enacted, the Forest Service felt that it lacked authority to regulate prospecting activity; its 1908 regulations specifically exempted mineral prospecting from permit requirements."); LESHY, supra note 1, at 194–195.
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surface resources." In its proposal, Agriculture made reference to the increased mining of low-grade surface deposits by hardrock miners and acknowledged that "[r]egulation of surface use of National Forest lands has not been adequate to achieve uniform protection of the environment."300

Mining interests opposed the proposed regulations and doubted the Department's authority to regulate mining on public lands. The Chairman of the House Subcommittee on Public Lands of the House Interior and Insular Affairs Committee, John Melcher, questioned Agriculture's powers and said that the "1897 Act clearly cannot be used as authority to prohibit prospecting, mining, and mineral processing in the National Forests."301 Nevertheless, he recognized that the "Forest Service is charged with protecting the National Forests from unnecessary damage from whatever source" and recommended that the proposed regulations be revised to ensure that they "not be so restrictively applied as to effectively foreclose mineral development in the National Forest."302

In 1974, the Forest Service promulgated its surface management regulations.303 The Forest Service acknowledged, as Interior had done, concerns of both mining companies and Congress about potential "unreasonable enforcement" of its surface mining regulations. It responded to those concerns by emphasizing "that prospectors and miners have a statutory right, not mere privilege, under the 1872 mining law and [the Organic Act] to go upon and use the open public domain lands of the National Forest System for the purposes of mineral exploration, development and production. Exercise of that right may not be unreasonably restricted."304

Like the regulations of Interior, the regulations of the Forest Service strove to balance its obligation to protect public lands with the broad rights and privileges granted to miners under the public mining laws.305 In

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300. Id.
302. Id.
304. Id. The regulations were initially codified at 33 C.F.R. pt. 252 and are now found in 36 C.F.R. pt. 228.
305. In its initial manual to staff regarding enforcement of the regulations, the Forest Service emphasized that

"The prospector and miner have a statutory right . . . to enter upon the National Forests for prospecting and mining. Their rights to do this cannot be unreasonably restricted or made excessively burdensome. The objectives in administering the . . . regulations are to . . . [a]void materially endangering or interfering with prospecting,
determining whether a regulation unreasonably restricts mining operations, for example, the Forest Service considers the "economics of operations."

The regulations provide that "where feasible," operations must minimize adverse environmental impacts on the National Forest surface resources. For example, operators must remove or dispose of solid wastes "so as to minimize, so far as is practicable, its impact on the environment and the forest surface resources." The regulations also provide that operators must "where practicable" reclaim the surface disturbed by mining by preventing or controlling on-site and off-site damage to the environment and forest surface resources.

In 1981, a court upheld Agriculture's authority to promulgate surface mining regulations in United States v. Weiss. In that case, the holders of unpatented hardrock mining claims refused to file an operating plan, or submit a bond as required by the Forest Service's regulations. Although acknowledging that Agriculture had never before relied on its 1897 Organic Act to regulate the surface management of the public lands, the court said that "[t]he fact that these regulations have been promulgated many years after the enactment of their statutory authority does not destroy the Congressional authorization given." The court noted that "mining has been accorded a special place in our laws relating to public lands" but that Agriculture had, at the same time, "been given the responsibility and the power to maintain and protect our national forests exploration, mining and mineral processing operations, as well as uses reasonably incident to such uses.


308. Id. at § 228.8 (e).
309. Id. at § 228.8(g). For lands not subject to valid mining or mill site claims, hardrock miners must obtain special use permits or other authorizations to support ancillary operations. Recently, the Forest Service determined that special use permits may "not involve disposal of solid waste or disposal of radioactive or other hazardous substances." 63 Fed. Reg. 65,950, 65,965 (Nov. 30, 1998).

310. 642 F.2d 296, 299 (9th Cir. 1981). See also United States v. Doremus, 888 F.2d 630, 633 (9th Cir. 1989) (upholding Forest Service permit requirement for mining activities because the requirement did not materially interfere with mining operations), cert. denied, 498 U.S. 1046 (1991); Skaw v. United States, 740 F.2d 932, 941 (Fed. Cir. 1984) (nothing in Forest Service regulations allows the agency to encroach impermissibly upon rights of miners by curtailing their activities in a way that effectively bans their actions), cert. denied, 488 U.S. 854 (1988); Siskiyou Reg'l Educ. Project v. Rose, 87 F. Supp. 2d 1074, 1086 (D. Or. 1999) ("Although the Forest Service cannot categorically deny a reasonable plan of operations, it can reject an unreasonable plan and prohibit mining activity until it has evaluated the plan and imposed mitigation measures.").

311. 642 F.2d at 299.
and the lands therein.” Although the court did not examine the regulations themselves or pass on their reasonableness, it did endorse Agriculture’s power to enact regulations, provided they respected miners’ rights to use the land for mining purposes.

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Throughout the history of mining in this country, Interior and the Forest Service have taken remarkably similar approaches to the management of public lands subject to hardrock mining claims. During the early days of mining—when the goal of a young and growing nation was to dispose of the public lands and encourage their commodity use—neither agency viewed its powers as extending to environmental regulation of hardrock mining activities. It was not until the modern environmental era that environmental protection became a national public policy goal and Congress enacted a host of environmental laws to safeguard the quality of the nation’s land and water. At the same time, federal land managers began to develop land use planning processes and promulgate surface mining regulations to place restrictions on hardrock mining on the public lands to protect the environment.

Even with such regulation, however, the extent of federal land managers’ authority to prevent pollution associated with hardrock mining operations has been uncertain. Indeed, it was not until very recently—more than 25 years after FLPMA’s enactment—that a court construed the “unnecessary or undue degradation” standard. The uncertainty derives, in part, from the Mining Law of 1872, which remains the law and which had long been viewed as granting to hardrock miners an untrammeled right to extract minerals from the public lands without payment to the United States. The uncertainty also arises from the nature of hardrock mining itself, which inevitably disturbs the land. Recent legislation adds to the uncertainty by articulating a concern for the environment while continuing to designate the public lands as open to mining and even directing federal agencies to promote the production of minerals on the public lands. Balancing these concerns can be particularly difficult in light of the principles of free access and self-initiation that have long characterized hardrock mining.

III. CERCLA AND HARDROCK MINING SITES

Although CERCLA has its own ambiguities and complexities, it is, when compared to the public mining laws, a modern statute with light historical baggage. Enacted in 1980 in response to environmental

312. Id.

313. See, e.g., LESHY, supra note 1, at 255 (“A hallmark of the administration of Mining Law has been a deep solicitude for any and all activities carried out under the statute, which has stubbornly remained embedded in practice as the statute has matured.”).
problems discovered at Love Canal, New York, and similar sites, CERCLA empowers federal agencies to clean up inactive and abandoned hazardous waste facilities. Liability under CERCLA is strict, joint and several, and retroactive. Thus, a responsible party may be liable for cleanup costs regardless of fault or negligence. If the harm at a site is indivisible, parties deemed “responsible” under the statute are jointly and severally liable for the entire cost of cleanup. Those parties then must resort to contribution actions to apportion liability among themselves. Responsible parties are those who “own or operate” a facility; “owned or operated” a facility at the time of disposal of a hazardous substance; or arranged for disposal of hazardous substances at a facility. Such responsible parties may be liable for releases of hazardous substances that occurred prior to the law’s enactment, even if the actions that led to the contamination were lawful at the time or even were consistent with best management practices for the waste or activity at issue.

A. Enforcement of CERCLA at Hardrock Mining Sites

CERCLA’s broad scope is complemented by powerful enforcement tools. As enacted in 1980 and as significantly amended in 1986 by the Superfund Amendments and Reauthorization Act (SARA), CERCLA permits EPA as the President’s principal delegate to clean up contaminated sites either by ordering responsible parties to do so, or by doing so itself and then recovering its costs from responsible parties. CERCLA section 104 authorizes EPA to respond to a release or substantial threat of release into the environment of (a) any hazardous substance; or (b) any pollutant or contaminant that may present an imminent and substantial danger to the public health or welfare. Under those authorities, EPA can investigate site conditions and conduct either “removal” or “remedial actions.” Removal actions generally are focused, short-term measures designed to address immediate threats to public health and the environment. Remedial actions are long-term,

317. § 9604(a)(1).
318. § 9601(23); 40 C.F.R. § 300.5 (2004). Such actions frequently include measures such as fencing to limit site access, arranging for alternative water supplies, and monitoring. However, remediations also can include actions taken to remove a source of contamination or treat or dispose of contaminants. Agencies have considerable discretion whether to conduct removals or remediations, limited largely by the availability of the Fund and whether they can show that the removal will “contribute to the efficient performance of any long term remedial action . . . .” 42 U.S.C. § 9604(a)(2).
permanent solutions to environmental contamination.\textsuperscript{319} Under CERCLA section 107, EPA can recover all costs of removal or remedial action incurred by the United States not inconsistent with the National Oil and Hazardous Substances Contingency Plan.\textsuperscript{320}

CERCLA also authorizes the EPA to issue administrative orders or seek judicial relief to compel responsible parties to abate a release or threatened release of a hazardous substance that presents an “imminent and substantial endangerment to the public health or welfare or the environment.” \textsuperscript{321} EPA’s section 106 powers provide considerable incentive to a responsible party to address contaminated sites because, to justify its refusal to comply with an order, the party must demonstrate that it had “sufficient cause” to do so. Failure to comply with a 106 order without sufficient cause can result in civil fines.\textsuperscript{322} In addition, if EPA conducts a response action where the responsible party has refused without adequate cause to do so, it can recover an award of treble damages (three times the costs incurred by the Trust Fund).\textsuperscript{323}

Despite the substantial powers vested in EPA under CERCLA sections 104, 106, and 107 and embodied in EPA’s “enforcement first” policy,\textsuperscript{324} effective enforcement depends largely on responsible parties possessing both the financial wherewithal and the technical expertise to conduct complex and expensive cleanups. At hardrock mining sites, however, responsible parties often cannot be found or have assets that are dwarfed by their potential liabilities. Thus, EPA often is unable to compel responsible parties to use their own funds to address mining-related pollution. From the time EPA articulated its enforcement-first policy in 1991 through fiscal year 1999, the percentage of enforcement-lead remedial actions in mining cases (of the total number of mining cases being addressed by EPA) was less than 40%—far lower than for any other category of site.\textsuperscript{325} Even in EPA’s enforcement cases, the Trust Fund supplemented monies available from responsible parties and paid for a substantial share of site costs at most hardrock mining sites.\textsuperscript{326}

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\textsuperscript{319} 42 U.S.C. § 9601(24); 40 C.F.R. § 300.5.
\textsuperscript{320} 42 U.S.C. § 9607(a). The National Oil and Hazardous Substances Contingency Plan (NCP), promulgated at 40 C.F.R. pt. 300, is a detailed regulatory blueprint for the conduct of CERCLA removals and remediations.
\textsuperscript{321} 42 U.S.C. § 9606(a) (2000).
\textsuperscript{322} § 9606(b).
\textsuperscript{323} § 9607(c)(3).
\textsuperscript{324} Memorandum from the Assistant Administrator, U.S. Environmental Protection Agency, to Regional Administrators, Enforcement First for Remedial Action at Superfund Sites 1 (Sept. 20, 2002) (reiterating EPA’s “longstanding policy to pursue ‘enforcement first’ throughout the Superfund cleanup process” and encouraging the exercise of section 106 authorities at all appropriate sites).
\textsuperscript{325} PROBST & KONISKY, supra note 18, at 43.
\textsuperscript{326} See EPA, CERCLA IMMINENT HAZARD MINING AND MINERAL PROCESSING FACILITIES (1997) (summarizing information for 40 mining sites at which EPA has taken action}
For abandoned and orphan sites on private lands, EPA is able to exercise its section 104 response authorities and access the Trust Fund. For example, EPA can use the Trust Fund to conduct removal actions, provided those actions are less than twelve months and do not exceed $2 million. Although EPA can exceed these limits under some circumstances, the short term of removal authority makes it unwieldy at many large hardrock mining sites. Thus, EPA staff have complained that the agency's removal authority at mega-sites often require it to “take[ ] a ‘band-aid approach’ to cleanup, “doing the minimum and stretching the action over many years.” In particular, EPA officials have questioned the adequacy of EPA’s removal program at mining sites.

Remedial actions, in contrast, are more permanent, long-term response activities and, for private sites listed on the NPL, are eligible for funding out of the Trust Fund. For a hardrock mining site on private lands, NPL listing may be the only way in which EPA can secure sufficient funds to address the problem. Although NPL listing is commonly viewed as a neutral, risk-based and largely quantitative measure of the potential harm associated with a site, the listing process is in fact often highly politicized. Factors influencing EPA's listing decisions include “budgetary concerns, the political costs and benefits of listing, the capacity of the state to undertake cleanup,... the likely response of responsible parties to proposed listings,” and the availability of other cleanup alternatives generally. In a recent report issued by the GAO, the agency recited similar factors weighed by EPA in deciding whether to propose sites for the NPL, the most prominent of which “are the availability of alternative federal or state programs that could be used

under section 106, most of which used funds from state and federal sources, as well as responsible parties).

328. The time limit and monetary limits on the use of Funds for removal actions can be exceeded if the President concludes that continued response actions are immediately necessary to prevent an emergency, or a continued response action is otherwise appropriate and consistent with the remedial action to be taken. 42 U.S.C. § 9604(c)(1).
329. PROBST & KONISKY, supra note 18, at 30.
330. Id. at 29.
331. Removal actions at non-NPL sites must be funded out of EPA’s separate removal budget, which is modest. With respect to EPA’s northwest region (Alaska, Washington, Oregon, Montana and Idaho), one source reported that the entire removal budget for 2001 was $3.5 million and one relatively small mine consumed nearly half the region’s annual removal appropriations. THE IDAHO CONSERVATION LEAGUE AND BOULDER-WHITE CLOUDS COUNCIL, HARDROCK AND PHOSPHATE MINING IN IDAHO: A REPORT 39 (March 2002).
333. Id.
to clean up the sites, the status of responsible parties associated with the sites, and the cost and complexity of the cleanup.\textsuperscript{334}

In recent years, EPA expressed great concern about the costs of adding more Fund-led mega-sites such as hardrock mines to the NPL because of the potential for "breaking the bank."\textsuperscript{335} The Trust Fund has decreased significantly since 1996, even with EPA's deferral of many of the more complex expensive waste sites to conserve the Fund.\textsuperscript{336} Trust Fund revenues from all sources (taxes, cost recoveries, interest, fines, and penalties) decreased from more than $2 billion in 1995 to less than $370 million in fiscal year 2002, measured in constant 2002 dollars.\textsuperscript{337} Increases in appropriations from the general revenue fund have somewhat offset the loss of tax revenues. Nevertheless, using general Treasury receipts instead of tax monies to address orphan sites may be unsustainable, particularly for large complex sites such as abandoned hardrock mines.\textsuperscript{338} Unfunded liabilities at active hardrock mines (liabilities not covered by reclamation bonds or other sources) often are tens of millions of dollars.\textsuperscript{339} Declining Trust Fund revenues, together with the growing number of sites that may need to be addressed, greatly complicate the already difficult question about how to address mining sites under CERCLA and, in particular, whether such sites should be added to the NPL in greater numbers.


\textsuperscript{335} PROBST & KONISKY, supra note 18, at 89. The GAO reported that the cost of implementing the Superfund program will be approximately $1.5 billion annually through fiscal year 2009 "even as EPA predicts the program's historical source of funding will be depleted at the end of fiscal year 2003." U.S. GEN. ACCOUNTING OFFICE, REP. NO. GAO-03-850, SUPERFUND PROGRAM: CURRENT STATUS AND FUTURE FISCAL CHALLENGES 23 (2003). Subsequent GAO reports requested by the Senate Committee on Environment and Public Works confirmed that, in fiscal year 2004, revenues from the tax-supported portion of the Superfund Trust were exhausted and thus the appropriation from the general revenue fund (together with revenues from cost recoveries, interest, and fines and penalties) were the only sources of funds for the Superfund program. U.S. GEN. ACCOUNTING OFFICE, REP. NO. GAO-04-787R, SUPERFUND PROGRAM: BREAKDOWN OF APPROPRIATIONS DATA (2004).

\textsuperscript{336} See, e.g., EPA Claims Federal Sites Also Contribute to Superfund Slowdown, INSIDE EPA'S SUPERFUND REPORT, April 29, 2002, at 3 (explaining reason for slowdown in cleanups conducted under Superfund program as due, in large part, to the fact that the remaining sites are complex - such as mining sites - and thus much more difficult to address).


\textsuperscript{338} See EPA, OFFICE OF INSPECTOR GENERAL, CONGRESSIONAL REQUEST ON FUNDING NEEDS FOR NON-FEDERAL SUPERFUND SITES (Jan. 7, 2004).

\textsuperscript{339} See, e.g., IDAHO CONSERVATION LEAGUE AND BOULDER-WHITE CLOUDS COUNCIL, HARDROCK AND PHOSPHATE MINING IN IDAHO: A REPORT 6-7 (March 2002) (state bonds for mining sites, in particular, do not reflect the real costs of closure).
Indeed, even before the Superfund tax expired, listing mining sites on the NPL was rare.\textsuperscript{340} EPA's reluctance to add such sites to the NPL may result from (1) the inherent difficulty in identifying responsible parties given the complexity of site ownership; (2) the unlikelihood that most or all responsible parties will have funds to clean up the site, in which case the huge costs must be borne by the Superfund; and (3) the possibility that long-term operation and maintenance also will be hugely expensive, in which case states may oppose listing because they would need to pay both 10\% of the remedial costs at private sites, and 100\% of operation and maintenance costs in perpetuity.\textsuperscript{341} EPA staff are protective of the Trust Fund, and worry that a single hardrock mega-site could exhaust funds in a single region.\textsuperscript{342}

Despite the obvious impediments of cost and numbers, other factors increase the likelihood that EPA will add more hardrock mining sites to the NPL in the next decades. "With increasing numbers of people moving to the West and with more second-home construction in rural areas," the human health risk presented by hardrock mining sites may increase markedly in the years to come.\textsuperscript{343} At the same time, states faced with achieving Total Maximum Daily Load (TMDL) requirements to comply with the Clean Water Act often find that mining sites present the most significant sources of contaminants to many sensitive water bodies.\textsuperscript{344} Inevitably, they will look to CERCLA and to federal authorities to help control water pollution arising from hardrock mining. In the absence of any other effective regulatory program, and in the face of changing demographics in the West, state and federal regulators may have little choice but to list more mega-sites—including hardrock mining sites—on the NPL to protect human health and the environment.

Although EPA is the federal agency principally responsible for enforcing CERCLA on private lands, the bulk of the President's CERCLA authorities have been delegated to federal land managing agencies with respect to lands within their jurisdiction, custody, and control. Under Executive Order 12,580, federal land managers such as

\textsuperscript{340} According to one recent study, only 42 mining sites have been added to the NPL since its inception. PROBST \& KONISKY, supra note 18, at 91. EPA has derived various estimates of the number of mining sites on the NPL. In 1997, for example, EPA indicated that 60 mining and mineral processing sites were listed on the NPL. EPA, MINING AND MINERAL PROCESSING SITES ON THE NPL (1997). The discrepancy in the numbers likely derives from different definitions used to describe mining and processing sites, and the likelihood that some sites may include industrial facilities and are, therefore, listed in "other" or "miscellaneous" categories.

\textsuperscript{341} PROBST \& KONISKY, supra note 18, at 91-92.

\textsuperscript{342} See EPA Eyes Sweeping Superfund Listing Changes Due to Funding Woes, INSIDE EPA'S SUPERFUND REPORT, May 27, 2002, at 4; NACEPT Panel Rejects Funding As Basis for Superfund Listings, INSIDE EPA'S SUPERFUND REPORT, June 9, 2003, at 3.

\textsuperscript{343} PROBST \& KONISKY, supra note 18, at 92.

\textsuperscript{344} Id.
Interior and Agriculture possess the President's section 104 response authority to address releases or threatened releases of hazardous substances on or from facilities under their "jurisdiction, custody or control" at facilities not listed on the NPL, and for removal actions (other than emergencies). Thus, for the vast majority of CERCLA responses at mining sites on the public lands it is the federal land manager on whose land mining activities have occurred—and not EPA—that is the principal response authority.

Like EPA, federal land managers can issue orders under CERCLA section 106 (with EPA concurrence) for releases or threatened releases from facilities subject to their jurisdiction, custody or control. Under Executive Order 13,016, which amended Executive Order 12,580, the President delegated his section 106 authority to federal land managers with respect to a release or threat of a release "affecting (1) natural resources under [the federal land manager's] trusteeship or (2) a vessel or facility subject to their custody, jurisdiction, or control." Thus, federal land managers can exercise the full range of CERCLA response authorities on public lands in virtually the same way EPA exercises such authority on private lands. Using these authorities, federal land managers have initiated CERCLA actions at mining sites nationwide.

345. See supra note 17. In addition, EPA can undertake a non-emergency removal action at a site not on the NPL at the request of the federal agency. The federal agency must, however, reimburse EPA for response costs. Id. See generally Casey Scott Padgett, Responding to Hazardous Substances Released on Federal Public Lands: Civilian Federal Agency Authority to Protect Public Land Using CERCLA, 7 ENVTL. LAW. 1, 15-30 (2000).


347. CERCLA section 120 also establishes a process by which "federal facilities" are inventoried and included on a Federal Facilities Hazardous Waste Compliance Docket (Docket) and ultimately considered for listing on the "federal facility" portion of the NPL. Unlike the "delegated" authorities under CERCLA §§ 104 and 106, § 120 is a direct grant of authority to EPA. See Fort Ord Toxics Project, Inc. v. California Envtl. Prot. Agency, 189 F.3d 828 (9th Cir. 1999). If a federal facility is added to the NPL, agencies that "own or operate" such facilities must enter into an agreement with EPA for the "expeditious completion" of a remedial action. 42 U.S.C. § 9620(e)(2) (2000). The federal land managers have long maintained that public lands subject to their jurisdiction are not "federal facilities" for purposes of Docket or NPL listing. See, e.g., FOREST SERVICE, FOREST SERVICE GUIDE TO CERCLA 18-3 (Jan. 1996). With one exception, EPA has not added hardrock mines located on public lands on the federal facility NPL. See 40 C.F.R. pt. 300, App. B tbl. 2 "Federal Facilities" Fremont National Forest Uranium Mine, Lakeview, Oregon. Even this site—a mixed ownership involving substantial federal lands—has not been, to date, subject to the provisions of CERCLA section 120. Rather, the relationship between the federal facility and EPA has closely followed the process at private NPL sites. The private mining company— not the Forest Service—has undertaken initial work under an administrative order on consent (AOC) issued by EPA. See EPA, WHITE KING/LUCKY LASS SUPERFUND SITE RECORD OF DECISION: FREMONT NATIONAL FOREST, LAKEVIEW, OREGON 1-3, 2-2 (2001). With respect to "mixed ownership" sites generally, EPA has issued a policy in which it expressed its belief that "mixed ownership mine or mill sites created as a result of the [Mining Law of 1872] should not be included on the published list of federal facilities which have been reported to the Docket." EPA, POLICY ON LISTING MIXED OWNERSHIP MINE OR MILLSITES CREATED AS A RESULT OF THE GENERAL MINING LAW OF
Federal land managers face obstacles identical to those confronted by EPA when exercising their response authorities at hardrock mining sites. For enforcement actions under CERCLA section 106, the agency must first identify viable responsible parties. The history of mining site ownership/operation is complex at many hardrock mining sites, however, and federal land managers can incur substantial costs simply conducting searches for responsible parties. Indeed, until an environmental problem becomes apparent, possibly long after the miners have left, federal land managers sometimes are not even aware of the nature or magnitude of mining that had occurred in the area. Hardrock mining claims made prior to 1976 may have been recorded with state or local officials, but generally were not filed with the land manager. Even when responsible parties are found, they often do not have sufficient funds to conduct a cleanup.

Federal land managers also face obstacles not encountered by EPA. For orphan sites, federal land managers do not have access to the Trust Fund to offset cleanup costs. CERCLA provides that "no money in the Fund shall be available to pay for remedial action... with respect to federally owned facilities." Thus, in the absence of responsible parties, the agency itself must pay for cleanups of mining sites on public lands. Dedicated agency appropriations for hazardous waste cleanups, both at Interior and Agriculture, are limited and cannot begin to address the backlog of contaminated hardrock mining sites.

A second difficulty is the agencies' status as managers of the public lands. Unlike EPA, Interior and Agriculture not only possess delegated response authority but, as the managers of public lands held by the United States, may be potentially responsible parties. This joint status complicates federal enforcement in several ways. Federal land managers have, for example, entered into a memorandum of understanding (MOU) governing the exercise of their section 106 authority. The MOU

1872 ON THE FEDERAL AGENCY HAZARDOUS WASTE COMPLIANCE DOCKET 2 (June 24, 2003). EPA reviewed the rights and responsibilities allocated to the United States and to miners under the law, noted that the contamination typically is the result of private activities, and concluded that "treating these sites as private facilities will foster the most effective use of CERCLA response authorities. Id. at 3.

348. See supra note 175 and accompanying text.

349. See EPA, OFFICE OF THE INSPECTOR GENERAL, NATIONWIDE IDENTIFICATION OF HARDROCK MINING SITES, supra note 110, at ii, iv (questioning the ability of mining companies to fund mega-site cleanups).


352. Memorandum of Understanding between the Environmental Protection Agency, U.S. Coast Guard, Dep't of Commerce, Dep't of the Interior, Dep't of Agriculture, Dep't of Defense, Dep't of Energy, and Dep't of Justice Concerning the Exercise of Authority Under Section 106
HARD ROCK MINING AND THE ENVIRONMENT acknowledges that some federal agencies may be potentially responsible parties at a site, yet may seek to exercise their section 106 authorities to address a release of hazardous substances at facilities subject to their jurisdiction, custody or control. In that event, the federal agency cannot issue a unilateral order "to avoid responsibility for its likely equitable share of response costs" and also cannot "seek to shift responsibility among PRPs in a manner that results in unfairness." For these reasons, a federal land manager seeking to exercise section 106 authority at some sites might confront arguments by responsible mining companies that its proposed order violates the language and spirit of the MOU. Where a federal land manager anticipates that the recipient of a section 106 order will argue that the land manager is not complying with the prudential limitations set forth in the MOU, the agency must obtain the concurrence of the Department of Justice before issuing the order.

Most importantly, however, CERCLA enforcement often gives rise to contribution actions in which private mining companies allege that the United States is a liable party by virtue of its holding of title to lands subject to unpatented mining claims. Although the United States, as a sovereign, cannot be subject to suit unless it has expressly and unambiguously waived its sovereign immunity, Congress amended CERCLA in 1986 to provide that "[e]ach department, agency, and instrumentality of the United States... shall be subject to, and comply with, this chapter in the same manner and to the same extent, both procedurally and substantively, as any non-governmental entity, including liability under section 107 of this title." Relying on this language, private mining companies that find themselves the target of EPA or land manager CERCLA actions have alleged that the United States, through the actions of the land managers, is liable under CERCLA as the "owner" of the property by reason of the federal agencies' management of public lands on behalf of the United States. They also have alleged that federal agencies are liable as "operators" or parties that "arranged for the disposal" of waste at mining sites because of their peacetime or wartime regulatory activities with respect to hardrock mining. These issues are discussed below.

353. Id. at 8. Under that MOU, federal land managers agreed not to exercise their 106 authority to respond to a release of hazardous substances "directly and primarily attributable to the operations or activities of the [land manager], other than the exercise (or failure to exercise) regulatory authority." Id.

354. Id. at 9.

B. The Liability of the United States for Contamination at Hardrock Mining Sites

The United States has vigorously defended CERCLA contribution actions filed against it at hardrock mining sites. In doing so it has frequently argued, as a threshold matter, that the ownership interest of the federal government in, and the activities of federal agencies at, hardrock mining sites are uniquely governmental, with no private counterpart, and thus fall outside CERCLA's waiver of sovereign immunity. Looking to the broad language of CERCLA section 120(a), the majority of courts have rejected this argument, finding that the government's regulatory activities—no less than its proprietary ones—can give rise to CERCLA liability. It may be argued, however, that these decisions fail to apply fairly the maxim that waivers of sovereign immunity are to be construed narrowly, or to confront frankly the difficult inquiry into issues of separation of powers implicated by claims of federal sovereign immunity.

Although it has often failed to persuade courts to grant it sovereign immunity, the government has fared far better with its argument that, in light of the unique nature of the public mining laws and the extensive possessory interests granted to mining companies under those laws, CERCLA does not impose "owner" liability on the United States for environmental contamination caused by hardrock mining. After considering how the "bundle of sticks" constituting property interests in lands subject to hardrock mining claims has been distributed between the federal land managers and mining companies, the majority of courts have refused to find that those few "sticks" retained by the United States justify its exposure to liability under CERCLA.

Indeed, even after amendments to public mining laws late in the twentieth century granted federal land managers some authority to regulate hardrock mining activities, mining companies continued to hold broad rights in the land. Federal agencies still could not easily bar persons from mining the public lands, charge rents or extract royalties on mine production, or in many cases prevent environmental harm that is inherent in mining. The statutorily circumscribed rights and responsibilities of the federal agencies with respect to hardrock mining on public lands led at least one court to conclude that federal liability under CERCLA, even in the modern era, should be correspondingly limited.

For similar reasons, courts also have agreed that the United States should not be deemed an "operator" or "arranger" within the meaning of CERCLA for its routine or wartime regulatory activities at hardrock mining sites. The authority of the United States over and involvement in hardrock mining does not constitute such control over mine production or waste management as to give rise to operator or arranger liability.
Courts also have viewed the wartime activities of the United States as those of a sovereign seeking to ensure an adequate supply of critical and strategic minerals by mobilizing the private mining industry in the national interest—not those of an "operator" of a mining facility or an entity that has "arranged for the disposal" of hardrock mining waste.

I. Sovereign Immunity Under CERCLA

a. General Principles of Sovereign Immunity Under CERCLA

The United States has, on occasion, sought to dismiss contribution actions arising from contamination at hardrock mining sites by arguing that the sovereign immunity waiver contained in CERCLA section 120(a), although express, has important language of limitation. Emphasizing that Congress has waived the sovereign immunity of the United States only to the same extent "as any nongovernmental entity," the government has argued that, although it may be treated like a private party for purposes of CERCLA liability when its actions have a private counterpart, it is not liable for actions that are uniquely governmental and that cannot be conducted by private parties. Relying on the general maxim of statutory construction that waivers of sovereign immunity must be both "unequivocal" and narrowly construed in favor of the government, the United States has argued that CERCLA's waiver of sovereign immunity does not extend to its unique interest in lands subject to hardrock mining claims, or to its regulatory activities with respect to private hardrock mining.

Courts have at times distinguished between regulatory and proprietary actions in construing the scope of the sovereign immunity waiver under CERCLA, especially where the federal entity—typically EPA—acts in its remedial capacity to clean up a hazardous waste site. Those courts have expressed a consistent and almost visceral dislike for contribution actions brought by private responsible parties against EPA and other regulators under "owner," "operator," or "arranger" theories for actions taken by those agencies to clean up contaminated sites. Frustrated by the absence of a clear statutory exemption in CERCLA from the waiver of sovereign immunity where a federal agency

356. See infra § III.B.1.b.
357. See id.
undertakes response activities at the site, they have crafted such an exemption judicially. In so doing, they frequently have held that the government's waiver of sovereign immunity under CERCLA is limited to proprietary or business-like activities of the United States and does not include those activities that are inherently regulatory.

Outside the remediation context, however, courts typically have refused to distinguish broadly between governmental acts undertaken by the sovereign to protect the public on the one hand, and proprietary functions that substitute for or supplement a traditionally private enterprise on the other. In FMC Corp. v. United States Department of Commerce, for example, the court considered the extent of the federal government's sovereign immunity under CERCLA in an action involving the cleanup of a manufacturing facility in Front Royal, Virginia that the United States ordered converted into a facility to produce high-tenacity rayon during World War II.

During the War, when the United States had lost access to nearly its entire supply of crude rubber, the War Department found that it needed additional high-tenacity rayon to manufacture tires and other war-related products. Various agencies of the United States directed American Viscose—the owner of the plant—to stop making regular rayon and start producing high-tenacity rayon. The government set the amount and type of rayon produced as well as the selling prices; owned equipment used in the plant to make the rayon and also owned a plant used to make raw materials; supervised production through the development of product specifications and placement of on-site supervisors and inspectors; possessed the power to dismiss employees or seize the plant if necessary; was aware that generation of waste was inherent in


361. 29 F.3d 833 (3d Cir. 1994) (en banc).

362. Id. at 836.

363. Id. at 836–37.
production, was aware of the methods of disposal of the waste, and provided equipment needed for waste disposal.\textsuperscript{364}

The FMC court rejected the government's argument that, despite its involvement in the facility, it was not liable under CERCLA because the waiver of sovereign immunity did not embrace federal regulatory actions that a non-government entity cannot take. According to the court:

the relevant sovereign immunity question under CERCLA is not whether the government was acting in a regulatory capacity, but whether its activities, however characterized, are sufficient to impose liability on the government as an owner, operator, or arranger. Hence, we consider both the government's regulatory and non-regulatory activities with respect to the facility during the war and determine whether these activities taken in \textit{toto} were of the type commonly associated with being an operator or arranger under CERCLA and are the type of activities in which private parties could engage.\textsuperscript{365}

In rejecting the government's argument, the court found instructive the Supreme Court decision \textit{Indian Towing Co. v. United States}.\textsuperscript{366} There, the Court construed language in the Federal Tort Claims Act (FTCA), providing that the United States shall be liable in the same manner and to the same extent as a private individual under like circumstances, to waive sovereign immunity even with respect to activities that private persons do not perform. The Court found that the United States could be liable under the FTCA for the actions of the Coast Guard in managing a lighthouse, since "all Government activity is inescapably 'uniquely governmental' in that it is performed by the Government."\textsuperscript{367} The FMC court also held that a waiver of sovereign immunity was inconsistent with the broad Congressional goal, embodied in CERCLA, of making those responsible for environmental problems bear the cost of cleanup. Thus, the FMC court ruled that if the United States—even as a regulator—operates a hazardous waste facility or arranges for the treatment or disposal of solid wastes, it should be liable for cleanup costs just as any

\textsuperscript{365} FMC Corp., 29 F.3d at 842.
\textsuperscript{366} 350 U.S. 61 (1955).
\textsuperscript{367} Id. at 67. The court in \textit{FMC Corp. also distinguished the line of decisions that had insulated agencies such as EPA from liability under CERCLA when they engage in remedial activities by pointing to CERCLA, section 107(d)(2), which exempts state and local governments from liability for actions taken in response to an emergency. According to the court, Congress intended to treat the federal government in the same manner as state and local governments, and the specific Congressional exemption for cleanup activities reflected a special concern for that narrow category of remedial regulatory actions and not support for a broader governmental regulatory immunity. 29 F.3d at 841.
private business would be, to encourage sound environmental stewardship.\textsuperscript{368}

In a dissent joined by two other judges, Chief Judge Dolores Sloviter disagreed with the court’s analysis of the government’s sovereign immunity under CERCLA. She accepted the distinction the government had drawn between activities engaged in during the operation of government-owned facilities and “a sovereign’s purely regulatory activities in connection with the operations of a private, for-profit entity.”\textsuperscript{369} Looking, as the majority had, to the FTCA for guidance on this issue, Judge Sloviter noted that the waiver of sovereign immunity in the FTCA too “does not extend to the exercise of regulatory power because there are no private analogs to the government’s regulatory powers over its citizens.”\textsuperscript{370} Agreeing with the majority that there may be some governmental activities that “may fairly be included within the rubric of regulation that can be performed by private parties, [such as] the operation of a lighthouse [by the Coast Guard],” she nevertheless emphasized that some regulatory activities are reserved exclusively to the federal government and Congress did not waive sovereign immunity under CERCLA when the federal government engages in such actions.\textsuperscript{371}

Referring to the majority’s reference to CERCLA’s broad remedial goal to encourage parties to internalize the cost of waste cleanups during their operations, Judge Sloviter highlighted countervailing policy considerations. According to Judge Sloviter, “[t]o permit courts to extract money damages from the government for its regulatory activities would ‘necessarily involve a very substantial, if not prohibitive, social cost not only in terms of the imposed liability itself, but also in terms of the constraining effect of that liability on the decisions of governmental policymakers.”\textsuperscript{372} In the absence of compelling evidence that Congress sought to impose CERCLA costs on the federal government where it acts as a regulator, Judge Sloviter concluded the district court erred in imposing liability on the United States.

The Ninth Circuit recently endorsed the reasoning of the \textit{FMC} majority in \textit{United States v. Shell Oil Co.},\textsuperscript{373} a case involving the alleged CERCLA liability of the federal government as an arranger for certain petroleum waste disposed of during at the McColl Superfund Site in Fullerton, California during World War II. During the War, the War Production Board, the Petroleum Administration for War, and other

\textsuperscript{368} 29 F.3d at 841-42.
\textsuperscript{369} Id. at 847.
\textsuperscript{370} Id. at 847 n.5 (citations omitted).
\textsuperscript{371} Id. at 847.
\textsuperscript{372} Id. at 850 (quoting Sea-Land Service, Inc. v. United States, 919 F.2d 888, 890 (3d Cir. 1990)).
\textsuperscript{373} 294 F.3d 1045 (9th Cir. 2002), \textit{cert. denied}, 537 U.S. 1147 (2003).
agencies oversaw the production of high octane aviation fuel—called “avgas”—by establishing a nationwide priority system to facilitate its production; making policy decisions regarding the construction of new facilities and the allocation of raw materials; issuing production orders to refineries; entering into long-term purchase contracts; offering low-cost loans to refineries to help finance the construction of avgas-producing plants; and assisting the companies in their efforts to exchange and blend avgas components to maximize production.\footnote{The government also undertook various actions to help alleviate the problem of waste disposal.\footnote{Nevertheless, the companies constructed their own facilities, maintained private ownership of the facilities, managed their own refinery operations, and entered into disposal contracts with the owners of the McColl site.\footnote{Eventually, the government detected substantial contamination at the Site and undertook a cleanup at an eventual cost of approximately $100 million.\footnote{When the United States and the State of California sued companies that had arranged for the disposal of waste at the site, those parties filed counterclaims against the United States alleging that, through its wartime regulation of the petroleum industry, the federal government had “arranged for disposal” of hazardous substances at the Site.\footnote{The Ninth Circuit acknowledged that the United States did not itself dispose of waste at the site, but rather exercised general regulatory powers to ensure the production of a strategic material during wartime. The court nevertheless rejected the proprietary/regulatory distinction urged by the government, and found that the government is subject to CERCLA even when it is engaged in regulatory activities, provided that those activities fall within the scope of liability otherwise imposed under CERCLA section 107.\footnote{b. Sovereign Immunity Under CERCLA at Hardrock Mining Sites}

As in matters involving manufacturing facilities summarized above, the government has asserted sovereign immunity, largely unsuccessfully, in defense of contribution actions arising from hardrock mining. In East Bay Municipal Utility District v. United States Department of Commerce,\footnote{As in matters involving manufacturing facilities summarized above, the government has asserted sovereign immunity, largely unsuccessfully, in defense of contribution actions arising from hardrock mining. In East Bay Municipal Utility District v. United States Department of Commerce, the court referenced with approval the defense in CERCLA section 107(d)(2) immunizing state and local governments from liability for actions taken in response to a release of hazardous substances, together with the statement in the FMC case that such a defense should apply to the cleanup activities of the federal government as well. Id. at 1053–54.}}}}
the District of Columbia circuit court rejected the government's argument that its activities at an abandoned zinc mine in northern California during and shortly after World War II were, because of their regulatory nature, outside the scope of CERCLA's waiver of sovereign immunity.379 The court agreed that section 120(a)(1) was ambiguous and could be read broadly to waive sovereign immunity not enjoyed by any private party that is otherwise liable under CERCLA section 107, or narrowly to waive sovereign immunity only where the United States acts in a proprietary or commercial capacity.380 It concluded, however, that section 120(a) did not contain a regulatory exemption and that "CERCLA's strong tendency to focus on the substance of the government's (or any entity's) activities, rather than their form, cuts against the government's view."381 Thus, according to the court, even such activities as price and labor controls, regulatory incentives to encourage the wartime production of minerals, federal assistance for mine rehabilitation efforts, and similar actions must be examined to determine whether, in their entirety, they rise to the level of ownership, operation, or arranging for disposal.

The court also highlighted practical difficulties inherent in the government's reading of the statute. Referring to the rejection of similar arguments in the context of the FTCA, the court repeated the Supreme Court's admonition that it is "'hard to think of any governmental activity on the operational level,... which is 'uniquely governmental,' in the sense that its kind has not at one time or another been, or could not conceivably be, privately performed."382 The court also found the converse to be true—"it is hard to imagine any act that might lead to a finding of government 'operator' liability that could not be recharacterized at a higher level of abstraction as a uniquely governmental activity."383

In United States v. Iron Mountain Mines, Inc.,384 a district court in California also addressed the scope of the sovereign immunity waiver under CERCLA section 120 in considering whether the United States could be held liable for response costs associated with the release of acid mine drainage from an inactive hardrock mine in California, where the Bureau of Reclamation (Reclamation) had constructed and operated

379. 142 F.3d 479 (D.C. Cir. 1998).
380. Id. at 482.
381. Id. at 482–83.
382. Id. at 483 (quoting Indian Towing Co. v. United States, 350 U.S. 61, 68 (1955)).
383. 142 F.3d at 483. The court cautioned that it did not want to "overstate this point; the special treatment of state government's proprietary activities under the negative commerce clause... appears to have proven workable." Id. (citations omitted). [Reda: spacing of ellipses?]
several dams that allegedly concentrated acid mine drainage and
aggravated the pollution problem. The court rejected the government's
argument that (1) Reclamation had not waived its sovereign immunity
under CERCLA because one of the purposes of the dams was to control
acid mine damage and thus Reclamation's actions were protected by the
line of authority immunizing the United States from CERCLA liability
for activities that are remedial in nature; and (2) although other dams in
the watershed had not been constructed for remedial purposes, they were
nevertheless protected by a more general "regulatory" exception to
CERCLA liability based on the federal government's need to construct
and operate water projects.\footnote{385}

The court read section 120(a) to express an "unequivocal waiver of
sovereign immunity"\footnote{386} and said that although CERCLA provides an a
narrow exception from liability for those who act in a remedial capacity
and are not otherwise liable under CERCLA, the statute as a whole
"suggests rather powerfully that there is no overarching, unexpressed
remedial immunity for state and federal agencies."\footnote{387} According to the
court, "[w]here a governmental entity's regulatory or remedial activities,
of whatever nature, bring the entity within the definition of the terms
owner, operator, arranger, or transporter, as those terms are applied to
private parties, the government will be liable."\footnote{388}

In a subsequent decision in \textit{Iron Mountain}, mining companies sought
contribution from the United States under the theory that, as the holder
of title to some parcels of land at the site, the federal government was
liable under CERCLA section 107 as an owner.\footnote{389} The court considered
the federal government's argument that when the United States provided
miners with use of public lands for mining under the Mining Law of 1872,
it was not acting as any nongovernmental entity and therefore had not
waived its sovereign immunity under CERCLA.\footnote{390} The court observed,
however, that the lands at issue were not currently subject to unpatented
hardrock mining claims but rather had been abandoned by the
claimants.\footnote{391} Because the United States had conceded that the parcels
were no longer subject to unpatented mining claims, and the United
States held full legal title and possessory rights, the court held, "the

\footnotesize{385. Id. at 1442 n.12.}
\footnotesize{386. Id. at 1442.}
\footnotesize{387. Id. at 1444.}
\footnotesize{388. Id. at 1448. The court rejected the line of decisions holding that the United States is
immune under CERCLA for its remedial activities and instead said that such liability is
governed by CERCLA section 107(d), which insulates persons from strict liability where they
undertake care, assistance, and advice in accordance with the NCP. Id. at 1443.}
\footnotesize{390. Id. at 1272–73 n.20.}
\footnotesize{391. Id.}
United States would not be shielded by sovereign immunity from § 9607(a)(1) liability for its current ownership of the parcels. 392

In United States v. Atlantic Richfield Co., 393 a magistrate judge similarly rejected the government's claim that it was protected, under the doctrine of sovereign immunity, from owner/operator liability under CERCLA at a hardrock mining site. That case involved a CERCLA action to clean up hazardous substances left by more than a century of hardrock mining for various minerals in the Upper Clark Fork River drainage of Montana. The principal defendant, Atlantic Richfield, counterclaimed against the United States and its agencies alleging that they were liable under CERCLA because they held title to lands subject to unpatented mining claims, and because of their hardrock mining regulatory activities.

Finding the analysis of the majority decision in FMC to be "both relevant and persuasive," the magistrate denied the government's motion to dismiss on grounds of sovereign immunity and concluded that section 120(a)(1) of CERCLA expresses an intent "that the United States is to be treated the same as any other party in a CERCLA action." 394 According to the magistrate, "the analysis used to determine 'owner' 'operator,' and 'arranger' liability subsumes the analysis used to determine if sovereign immunity applies. If the government engaged in the type of activity that normally would cause a private party to be liable as an 'owner,' 'operator,' or 'arranger for disposal,' then sovereign immunity does not apply." 395

Finally, in Coeur d'Alene Tribe v. ASARCO Inc., 396 a court addressed claims by mining companies that the United States shared liability for response costs associated with the cleanup of decades of hardrock mining within the Coeur d'Alene Basin, in Idaho. As it had in prior suits, the United States argued that the government's historical acquisition of land from foreign governments to build a nation and the transfer of those lands to its citizenry for settlement and the development of natural resources, was one of the most sovereign of all governmental functions, and thus fell outside CERCLA's narrow waiver of sovereign immunity. With respect to operator and arranger allegations, the United States argued that the activities of the BOM and other federal agencies at hardrock mining sites represented a broad governmental regulatory initiative to mobilize the nation's economy in time of war and likewise
fell outside the scope of the sovereign immunity waiver. The court rejected both arguments, however, cited with approval the three appellate decisions that had addressed this issue, and concluded that section 120 did not insulate the regulatory activities of agencies from CERCLA liability.\textsuperscript{397}

In one case, however, a district court dismissed a CERCLA contribution claim that prior mine owners asserted against the United States, ruling that the government had not waived its sovereign immunity.\textsuperscript{398} Because some of the mining and waste disposal had taken place on lands currently and formerly managed by the Forest Service, the mining companies alleged that the United States was liable as a current and past owner.\textsuperscript{399} They also alleged that, by virtue of the Forest Service's regulatory activities over hardrock mining, the Forest Service was liable for response costs as an arranger and operator.\textsuperscript{400} Finally, the mining companies alleged further that other federal defendants, including BOM and USGS, were liable as operators and arrangers because of their activities, both during World War II and subsequently, to encourage the production of ores.\textsuperscript{401}

The United States first moved to dismiss the claim of owner liability asserted against the Forest Service. The government pointed to the limited waiver of sovereign immunity in CERCLA section 120, the unique form of property created by the 1872 Mining Law, and the lack of any private analog to the government's nominal property interest in lands subject to unpatented mining claims. According to the government, its management of land and minerals on behalf of the United States is a uniquely sovereign function. It also argued that, with respect to some mining claims that companies had recently abandoned, the United States can not waive sovereign immunity under CERCLA for property acquired involuntarily.

As for the contribution claims based on the regulatory activities of the Forest Service, including its issuance of special use permits for the maintenance of a tailings flume and power distribution line and the

\begin{itemize}
  \item \textsuperscript{397} \textit{Id.} at 1125.
  \item \textsuperscript{398} Idaho v. M.A. Hanna Mining Co., No. 83-4179, slip op. (D. Idaho Dec. 13, 1994); Idaho v. M.A. Hanna Mining Co., No. 83-4179, slip op. (D. Idaho Aug. 24, 1995). \textit{Hanna Mining Co.} dealt with the Blackbird Mine Superfund Site, an inactive hardrock mine consisting of about 830 acres of patented land and 10,000 acres of unpatented mining claims. The extraction of cobalt and copper ore from underground and open pit workings over many years had generated millions of tons of waste rock and mill tailings. Some of the tailings were deposited in the local watershed. Acid rock drainage and leachate from mine tunnels, waste piles and tailings had seriously contaminated local streams.
  \item \textsuperscript{399} Motion for Partial Summary Judgment Against United States by the M.A. Hanna Co. at 4-6, Idaho v. M.A. Hanna Mining Co., No. 83-4179 (D. Idaho Feb. 11, 1994).
  \item \textsuperscript{400} \textit{Id.}
  \item \textsuperscript{401} \textit{Id.} at 6-20.
\end{itemize}
excavation of tailings in an effort to clean up the site, the United States also argued that it had not waived its sovereign immunity because the plaintiffs wrongly sought contribution based on the federal government's exercise of its regulatory authority—not based on its proprietary interest as an owner. Thus, the United States argued, the Forest Service cannot be liable under CERCLA as an operator or arranger.

The mining companies opposed the motion by insisting that the government's interest in lands subject to unpatented mining claims was not, in fact, as nominal as the United States portrayed it to be. Rather, the United States retained the underlying fee title to lands subject to unpatented mining claims and was empowered to protect the surface resources from trespass and waste. The United States also allegedly held full possessory interest and all right and title to abandoned mining claims. The extensive activities of the Forest Service at the site, together with its title interest in the lands themselves, should be sufficient, in the view of the companies, to vest it with both owner/operator and arranger liability.

In a brief order issued in December 1994, the district court granted the federal government's motion to dismiss. Regarding the Forest Service's administration of unpatented mining claims, the court ruled that "the United States is not liable as an owner under CERCLA by reason of its ownership of lands subject to unpatented mining claims, either during the period the mining companies owned the unpatented mining claims, or after the mining companies abandoned those claims." 402 The court also found that the "United States is not liable as an operator or arranger by reason of the Forest Service's activities at the Mine." 403

Ruling in favor of the government on the remaining issues relating to the liability of BOM and USGS, the court referred to Chief Judge Sloviter's dissent in FMC Corp. and concluded that the "United States has not waived sovereign immunity under CERCLA for those activities it undertook with regard to the Mine that cannot be conducted by private parties." 404 The court noted that, pursuant to the Critical Materials Stock Piling, the Defense Production Act, and other laws, federal agencies had engaged in a variety of activities directed at facilitating and encouraging the production of minerals, including sharing technical information and expertise; promoting mineral development through grants and loans for exploration and development; entering into procurement contracts and purchase guarantees; providing housing at the request of the mining companies; and building roads to serve the Mine. The court found sovereign immunity protected some of these activities.

403. Id.
and held that the United States was not an owner or operator within the meaning of CERCLA by reason of any of its activities.\textsuperscript{405}

The court acknowledged that the government's own investigative/exploratory activities of the mine that generated waste, even for a regulatory purpose (encouraging discovery of strategic minerals)—"may" fall outside the scope of the waiver if those activities constituted "operation" or "arranging" for disposal of waste. Yet even assuming that sovereign immunity did not insulate such activities, the court held that those activities had generated a negligible amount of waste and the United States was therefore entitled to an allocation of zero.\textsuperscript{406}

c. Revisiting Sovereign Immunity Under CERCLA

The majority of courts that have addressed the issue have held that the waiver of immunity contained in CERCLA section 120(a) is co-extensive with the substantive liability standards set forth in section 107. The United States is liable like any person under CERCLA if any of its activities, whether regulatory, sovereign, proprietary or commercial, either alone or in combination, cause it to be an owner, operator or arranger. For these courts, the question is not whether the United States is immune from liability when it acts in a sovereign capacity under section 120(a), but whether its activities—however characterized—cause it to fall within CERCLA's definition of an owner, operator, or party that has arranged for disposal of hazardous substances.

Rejecting the government's sovereign immunity arguments, courts generally prefer to review the facts to determine whether the United States may be deemed an owner, operator, or arranger. In practice, courts have nevertheless distinguished between regulatory and proprietary activities in imposing CERCLA liability under the substantive standards in section 107.\textsuperscript{407} Courts' virtually unanimous conclusion that the United States should not be liable for its remedial activities rests not on any express language in CERCLA, but on policy considerations rooted in the Executive's need to formulate and implement policies directed at preserving public health and safety without incurring a risk of CERCLA liability.

\textsuperscript{405} Id. at 23.

\textsuperscript{406} Id. at 23. The court also dismissed the mining companies' claim for contribution and indemnity under the Clean Water Act, ruling that "[t]he United States has not waived sovereign immunity under the CWA . . . . for those activities it undertook with regard to the Mine that cannot be conducted by private parties." Id. at 24 (citing 33 U.S.C. § 1323).

\textsuperscript{407} See infra § III.B.3.a. & b; see also Steven G. Davison, Governmental Liability Under CERCLA, 25 B.C. ENVTL. AFF. L. REV. 47, 54–55 (1997) ("The courts uniformly have held, following a totality of the circumstances approach similar to that applied in FMC Corp., that a governmental entity cannot be held liable as a PRP under section 107 solely on the basis of governmental regulation of private business activities.") (emphasis in original).
It is unclear, moreover, whether the courts' approach to assessing the CERCLA liability of the federal government does justice either to the language of CERCLA, or to the prudential concerns underlying sovereign immunity generally. Courts have acknowledged an ambiguity in the scope of the waiver of sovereign immunity in section 120 but, even after reciting the general maxims that sovereign immunity waivers must be narrowly construed and doubts resolved in favor of the government, have refused to grant immunity. The language of section 120—which makes the United States liable under CERCLA "in the same manner and to the same extent... as any nongovernmental entity"—certainly permits, although it does not compel, the construction the government urged.

The placement of the waiver of sovereign immunity in section 120 of the statute, entitled "Federal facilities," supports the government's argument. Furthermore, its legislative history demonstrates Congress's focus on typical federal installations such as military bases and nuclear installations when it amended CERCLA to make the liability provisions expressly applicable to the federal government. Nothing in CERCLA, on the other hand, evinces an intent to impose liability on government agencies for their regulation of private commercial activities.

Much of the courts' reluctance to accept the government's claim of sovereign immunity in CERCLA cases appears to derive from the Supreme Court's construction of similar language under the FTCA and its decision in Indian Towing Co. However, the waiver of sovereign immunity under the FTCA uses similar but not identical language to that in CERCLA. The FTCA waiver states that the "United States shall be liable... in the same manner and to the same extent as a private individual under like circumstances." It does not render the United States liable, as in CERCLA, "in the same manner and to the same extent... as any nongovernmental entity." Indeed, the Court in Indian Towing found

408. See E. Bay Mun. Util. Dist. v. Dep't of Commerce, 142 F.3d 479, 481-82 (D.C. Cir. 1998) (recognizing a "potential ambiguity" in the language of CERCLA section 120(a) but declining to resolve that ambiguity in the government's favor).


410. The House Committee on Energy and Commerce proposed section 120 in recognition that "there have been significant problems caused by hazardous substances releases at many federal facilities such as Tinker Air Force Base, Oklahoma; Rocky Mountain Arsenal, Colorado; the Feed Materials Production Center, Fernald, Ohio; and Air Force Plant # 44, Tucson International Airport, Arizona." H.R. CONF. REP. 99-253, at 95 (1985). See also Remarks of Rep. Snyar, 132 CONG. REC. 29,735 (Oct. 8, 1986); Remarks of Rep. Fazio, 132 CONG. REC. 29,735 (Oct. 8, 1986).

411. See, e.g., E. Bay Mun. Util. Dist., 142 F.3d at 483; FMC Corp., 29 F.3d at 840.


the precise language of the statute important: "the Government reads that statute as if it imposed liability to the same extent as would be imposed on a private individual 'under the same circumstances.' But the statutory language is 'under like circumstances'". Thus, the FTCA language directs courts, in evaluating the scope of sovereign immunity, to analogize the government activities at issue to private ones. Under CERCLA, in contrast, the court must consider whether a nongovernmental entity could undertake the activities in question.

Moreover, the courts' reluctance to define the boundaries of the waiver of sovereign immunity and to recognize a distinction between regulatory and proprietary activities appears to be rooted, in part, in the fear expressed by the Indian Towing court that such an interpretation would plunge the judiciary into the "'non-governmental'-'governmental' quagmire that has long plagued the law of municipal corporations." Sovereign immunity analysis by its nature, however, requires courts to undertake what are admittedly difficult inquiries into the nature of the Executive's decisions, the relative competencies of the Executive and the judiciary, and the separation of powers generally. As noted by one commentator, "the dominant justification for sovereign immunity must be that we trust Congress, unlike any other entity, to set the rules for [of] the game. That insight derives from the general political accountability of Congress, both to the public and to the President. Congress may not always resolve the waiver issue wisely; nevertheless, the Constitution vests that decision in majoritarian hands..." Thus, questions of sovereign immunity ask whether Congress intended to subject its delegates in the Executive Branch, and who formulate policy and implement broad government programs, to potential liability. In answering such questions, courts must determine whether Congress intended to protect the government's activities from second-guessing by the judiciary.

415. See Doe v. United States, 58 F.3d 494, 497 (9th Cir. 1995).
416. 350 U.S. at 65. Longstanding Supreme Court precedent has distinguished, in various contexts however, between governmental entities acting as administrators or regulators and governmental entities acting as market participants. See, e.g., White v. Mass. Council of Constr. Employers, Inc., 460 U.S. 204 (1983) (distinguishing state activities as regulator from those as market participant); Jefferson County Pharm. Ass'n v. Abbott Labs, 460 U.S. 150 (1983) (granting state immunity where it acts as market regulator, rather than market participant).
418. Tort liability would likely not be imposed against the government for its activities in overseeing commercial hardrock mining on public lands, or its regulatory activities generally with respect to hardrock mining. Under the FTCA, of course, the government has not waived sovereign immunity for strict liability at all. In addition, pursuant to the discretionary function exemption to the FTCA, the government is not liable for any claim based on the exercise or performance of a discretionary duty. 28 U.S.C. § 2680(a) (2000). Under the "analogous private
The government has maintained that the legal title retained by the government in hardrock mining claims is unique, nominal, temporary, and markedly different from the ownership interests held by non-governmental entities. The management of its lands, and their ultimate disposition to private parties under the Mining Law are quintessentially sovereign functions. The government’s residual interest in such lands, and the government’s regulatory activities in their administration have always been subject to broad and long-standing Congressional policies regarding access and free use, which in turn, reflect a careful balance of federal/private authority and control.\footnote{19} Congress repeatedly has limited executive powers over hardrock mining, and federal agencies cannot derive rents or royalties from mineral production, or otherwise recover the costs of environmental protection.\footnote{20} For all of these reasons, Congress, in providing that the United States shall only be liable in the same manner and to the same extent “as any nongovernmental” entity, did not intend to make the United States liable under CERCLA as an owner of lands subject to hardrock mining claims.\footnote{21} The social costs of

activity” prong of the FTCA, the government may be held liable only under circumstances that would bring private liability into existence. § 1346(h)(1). Together, these provisions broadly protect government regulatory actions from tort liability where they involve policy decisions about how to best carry out a congressional directive. See, e.g., Myers v. United States, 17 F.3d 890, 898–99 (6th Cir. 1994); Daigle v. Shell, 972 F.2d 1527, 1538 (10th Cir. 1992). Although CERCLA does not contain an express discretionary function exemption, the concept embodied by that exemption is one of “substantial historic ancestry in American law” and is inherent in sovereign immunity analysis. See Dalehite v. United States, 346 U.S. 15, 34 (1953) (referring to testimony from the Department of Justice on the FICA that the discretionary function exemption was intended to avoid any possibility that the waiver of sovereign immunity would extend to suits for damages for acts of a regulatory nature).

\footnote{419} See generally supra § II.

\footnote{420} Id.

\footnote{421} The courts’ general opposition to the government’s claims of sovereign immunity under CERCLA contrasts sharply with their receptivity to similar arguments advanced under the Clean Water Act – an act which preceded CERCLA and uses virtually identical language to waive the government’s immunity to suit. The Clean Water Act provides that any agency having jurisdiction over any property or facility, or engaged in any activity resulting or that may result in the discharge of pollutants shall be subject to the Act “in the same manner, and to the same extent, as any nongovernmental entity.” 33 U.S.C. § 1323(a) (2000). Nevertheless, in interpreting the scope of the waive under the Clean Water Act, courts have not imposed liability on the United States for its ownership interest alone, or for its regulatory decisions. See, e.g., City of Olmsted Falls v. EPA, 233 F. Supp. 2d 890, 897 (N.D. Ohio 2002) (United States’s regulatory permitting activities do not expose it to suit under Clean Water Act); Colorado Wild, Inc. v. United States Forest Service, 122 F. Supp. 2d 1190, 1194–95 (D. Colo. 2000) (Clean Water Act does not waive federal sovereign immunity where United States does not itself operate a federal facility, or conduct activities giving rise to a discharge). Thus, under the Clean Water Act, courts have honored the government’s claim of sovereign immunity where the alleged violation derives not from its operation of a federal facility, but its regulation of private conduct. See also Dep’t of Energy v. Ohio, 503 U.S. 607, 615 (1992) (referring to Clean Water Act’s “federal facilities section,” and noting that waivers of sovereign immunity must be unequivocal, and construed strictly in favor of the sovereign).
such liability would be substantial, with the social benefits—imposing the costs on those who benefited from commerce involving hazardous substances—accruing to the wrong party.

With respect to the government’s regulation of the activities of third parties conducting hardrock mining, whether in wartime or not, the same calculus applies. Those decisions too implement broad Congressional policies to promote mineral development and to provide for the national defense and have no private counterpart. The claim of sovereign immunity presumably would be greatest in the area of public health and safety, where the sovereign’s responsibility to protect the public health is uniquely governmental and where the social costs of imposing liability on government actors would be greatest. On the other hand, where the government engages in activities such as geophysical exploration and investigation in furtherance of its commercial interests and generates wastes in doing so, the government’s activities are more likely analogous to private, proprietary activities, making the case for sovereign immunity less compelling.422

2. Owner Liability Under CERCLA

CERCLA section 107(a) imposes liability on both past and current owners.423 For most of its history, courts have construed CERCLA’s owner liability provisions broadly. Courts traditionally interpreted the statute to impose liability on virtually any person who possesses or possessed title to real property—even if that party did not cause or contribute to the harm. In recent years, however, both Congress and the courts have begun to express discomfort with what they viewed to be the harsh effects of strict, retroactive and joint and several liability when applied to “innocent” owners. In recent years Congress has, for example, amended CERCLA to provide new defenses for parties who, in its view, should not bear the costs of cleaning up property in which they hold an interest. Congress enacted new defenses to owner liability for secured creditors,424 fiduciaries,425 bona fide prospective purchasers,426 and contiguous property owners,427 among others.

At the same time, courts have increasingly expressed concern about the effects of broad CERCLA liability for those who hold interests in real

424. § 9601(20)(E).
425. § 9607(n).
426. § 9601(40).
427. § 9607(q).
property, and have begun to look more carefully at whether a property owner can be said to have some responsible relation to the harm. This concern has arisen most often when several parties hold interests and a court must determine whether one may fairly be deemed liable as owners. It also has been evident in the courts' consideration of whether, in light of the relative rights and responsibilities allocated to the United States and to hardrock miners under prevailing law, the federal government should be fairly deemed an "owner" of hardrock mining sites.

a. General Principles of Owner Liability Under CERCLA

CERCLA section 107(a) imposes liability on "... the [current] owner" of a facility and on any person who "at the time of disposal" owned any facility at which hazardous substances were disposed of.\(^{428}\) CERCLA defines owner, unhelpfully, as "... any person owning...such facility."\(^{429}\) The legislative history of CERCLA also provides little guidance into the meaning of "owner." The House Report on CERCLA indicates only that "owner" is defined to include not only those persons who hold title to a...facility, but those who in the absence of holding title, possess some equivalent evidence of ownership."\(^{430}\)

Nor does the term "owner" have any intrinsic meaning in the law of property generally. The Restatement of the Law of Property simply defines "owner" as "the person who has one or more interests" in property.\(^{431}\) The word "interest" in the Restatement refers to varying aggregates or "rights, powers, privileges, and immunities."\(^{432}\) The Restatement does, however, endorse the "bundle of sticks" concept that has become the dominant metaphor for property ownership.\(^{433}\) Thus,
"complete property" constitutes "the totality of [these] rights, powers, privileges, and immunities" which it is legally possible for a person to have with regard to a given piece of land.434

In general, courts construing the term for purposes of CERCLA liability have not grappled with metaphors or undertaken philosophical journeys into the meaning of "owner." Rather, they look to the word's ordinary meaning.435 Numerous courts have held or assumed that any entity holding legal title to property is liable as a current owner.436 They have not typically analyzed, in examining the "owner" liability of various entities, whether those entities exercised control over site activities, or could be deemed "responsible"—in a causative sense—for the contamination found on their property. In the vast majority of cases, moreover, the purported "owner" indisputably holds sufficient rights and interests to support CERCLA liability. Indeed, some courts have concluded that, even in the absence of title ownership, an entity with sufficient possessory rights in property can be an "owner" under CERCLA because its interest in the property is equivalent to that held by one with legal title.437

435. See, e.g., Long Beach Unified Sch. Dist. v. Godwin, 32 F.3d 1364, 1368 (9th Cir. 1994) (circularity in the definition of "owner" for purposes of CERCLA "strongly implies ... that the statutory terms have their ordinary meanings, rather than unusual or technical meanings"); Grand Trunk W. R.R. Co. v. Acme Belt Re coating, Inc., 859 F. Supp. 1125, 1131 (W.D. Mich. 1994) (quoting Black's Law Dictionary definition of "owner" as requiring dominion over or a proprietary interest in property).
436. Western Props. Serv. Corp. v. Shell Oil Co., 358 F.3d 678, 688 (9th Cir. 2004) (holding landowner who did not contribute to contamination nevertheless liable for cleanup costs); Canadyne-Georgia Corp. v. Nationsbank, 183 F.3d 1269, 1275 (11th Cir. 1999) (holding that CERCLA imposes liability on individuals "not based on their causing the release of hazardous substances, but based solely on their prior or current relationship to the polluted property"); Nurad, Inc. v. William E. Hooper & Sons Co., 966 F.2d 837, 846 (4th Cir. 1992) ("The trigger to liability under CERCLA section 107(a)(2) is ownership or operation of a facility at the time of disposal, not culpability or responsibility for the contamination."); cert. denied, 506 U.S. 940 (1992); United States v. A & N Cleaners & Launderers, Inc., 788 F. Supp. 1317, 1332 (S.D.N.Y. 1992) ("Mere ownership of the property on which the release took place is sufficient to impose liability under § 107(a), regardless of any control or lack of control over the disposal activities."); Lincoln Props. v. Higgins, 823 F. Supp. 1528, 1533 (E.D. Cal. 1992); United States v. Monsanto Co., 858 F.2d 160, 168 (4th Cir. 1988) (holding passive owner liable under CERCLA because "traditional elements of tort culpability on which site-owners rely simply are absent from the statute"); cert. denied, 490 U.S. 1106 (1989); Cadillac Fairview/California v. Dow Chem. Co., 840 F.2d 691, 693 (9th Cir. 1988) (finding that CERCLA section "107(a)(2)(B) expressly creates a private claim against any person who owned ... a facility at the time hazardous substances were disposed of at the facility"); New York v. Shore Realty Corp., 759 F.2d 1032, 1043-44 (2d Cir. 1985) (site owner liable under CERCLA section 107(a), even though he did not contribute to the release of hazardous substances). [Reda: order of citations?].
More recently, however, some courts have acknowledged that CERCLA does not "automatically assign liability to every party with any connection to a contaminated facility" and have begun to interpret "owner" liability under CERCLA by the common law "bundle of rights" approach. Recognizing that the word "owner" is undefined and that the entire notion of ownership of property itself has "limited inherent content" and applies to all of the interests that may be held in property, the Second Circuit in Commander Oil Corp. v. Barlo Equipment Corp. considered, whether a lessee/sublessor of contaminated property could be liable under CERCLA as an "owner." The court noted that, although the notion of "ownership" defies easy definition, it is at the very least "relational" and represents a "priority of rights and claims.

Examining the common law doctrine of ultrahazardous activities that underlies CERCLA's strict liability statute, the court decided that "owner" liability should impose the costs of abnormally dangerous activities on the beneficiaries of those activities. Ordinarily, strict liability for owners can be justified on the grounds that all owners—even passive lessors, for example—derive benefits from the activities conducted on their property. The court refused, however, to impose owner liability on the lessee/sublessor, which neither possessed such common rights, benefits, and obligations as the right to determine how the property was to be used, nor was responsible for such matters as structural integrity and repairs.

Other courts also have concluded that possession of legal title is not necessarily dispositive of "owner" liability and have examined whether a title holder may be deemed an owner under CERCLA where it possesses few of the rights, obligations, and responsibilities normally associated with ownership. In Nestle USA-Beverage Division v. D.H. Overmyer Co., the court examined the relative rights and responsibilities retained by a site owner, and those delegated to a master lessee under a sale-leaseback arrangement, to determine whether the lessee should be liable

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439. Id.
440. Id. at 329.
441. Id. at 330. The court referenced legislative history, from the report of the Senate Committee on Environment and Public Works, in support of this proposition. S. REP. NO. 96-848, at 13 (1980).
under CERCLA as an "owner." The court found that the lessee "had control which under the common sense meaning of the word is equivalent to ownership of the site."\textsuperscript{445}

Important to the court's determination were lease terms under which (1) the lessee leased the site for 20 years, subject to a right of extension; (2) the parties included a non-terminability clause; (3) the lessee paid for all taxes and assessments, for insurance, for structural and other repairs, and for operation and maintenance; and (4) the landlord was required to accept all reasonable alterations made by the lessee above a certain threshold.\textsuperscript{446} According to the court, "[t]hese provisions so change the nature of the landlord-tenant relationship that [the lessee] must be considered the owner for purposes of CERCLA."\textsuperscript{447}

In a line of cases that has become known as the Illinois land trust decisions, courts construing state common law property principles in Illinois insulated trustees, although holders of title interests in property, from CERCLA "owner" liability because of the limited nature of those interests. In \textit{United States v. Petersen Sand & Gravel, Inc.}, for example, EPA sought to recover its response costs from site operators.\textsuperscript{448} The operators filed a third-party complaint against a local bank, which held title to the land as trustee under Illinois law.\textsuperscript{449} The court refused to impose liability against the bank, reasoning that the nominal title vested in the trustee under state law, in the absence of any rights or authority vested in the bank to control the property, was insufficient to confer liability.\textsuperscript{450} These cases illustrate that, in construing CERCLA, a number of courts have refused to equate "owner" with the holding of legal title.\textsuperscript{451} Rather, "owner" liability necessarily requires consideration of the full range of interests that together constitute the bundle of rights and interests in real property.\textsuperscript{452}

\textsuperscript{445} \textit{Id.} at 1926.
\textsuperscript{446} \textit{Id.}
\textsuperscript{447} \textit{Id.}
\textsuperscript{448} 806 F. Supp. 1346, 1348 (N.D. Ill. 1992).
\textsuperscript{449} \textit{Id.} at 1348, 1358.
\textsuperscript{450} \textit{Id.} at 1358-59.
\textsuperscript{451} \textit{See, e.g. id.; Castlerock Estates v. Estate of Markham, 871 F. Supp. 360 (N.D. Cal. 1994) (the ability to sell and convey the property is one of the most basic elements of ownership, as is management and operation of an estate); United States v. N.L. Indus., 36 Env't Rep. Cas. (BNA) 1372, 1374 (S.D. Ill. 1992) (although CERCLA's concept of "owner" liability is broad, it nevertheless requires "some level of control over the land or the receipt of some benefit from the land" and does not impose liability on trustee of an Illinois land trust); Premium Plastics Inc. v. La Salle Nat'l Bank, No. 92 C 413, 1992 U.S. Dist. LEXIS 16119 (N.D. Ill. Oct. 21, 1992); United States v. Wedzep Enters., 809 F. Supp. 646, 653 (S.D. Ind. 1992) (equitable title held by land contract vendee may be sufficient to establish ownership, where under state law all incidents of ownership accrue to the vendee).}
\textsuperscript{452} \textit{Id.}
b. Owner Liability at Hardrock Mining Sites

For hardrock mining sites, the United States has argued that, in light of the broad property rights granted to miners under the General Mining Law, the government does not possess the requisite property interests to make it an owner under CERCLA. Although agreeing that it will be liable under CERCLA where it holds title to real property like any other private party—such as its ownership of a military base or nuclear facility—the United States has not agreed that title necessarily equates to ownership for CERCLA purposes. Analogizing to those decisions that have refused to impose CERCLA liability on trustees and other holders of limited interests in property, the government has emphasized that its interest in lands subject to unpatented mining claims is limited and does not rise to the level of "owner" within the meaning of the statute.

In several decisions construing the interest of the federal government in lands subject to unpatented mining claims, courts have agreed with this argument. In Atlantic Richfield Co., for example, EPA brought an action against mining companies to recover response costs incurred in cleaning up wastes deposited by more than a century of hardrock mining in the Upper Clark Fork River drainage of Montana.\textsuperscript{453} Atlantic Richfield filed counterclaims against the United States, alleging that the government was jointly and severally liable for cleanup as an "owner" at the time of disposal because Interior, BLM, and the General Land Office held title to those lands when the lands were subject to mining under the public mining laws.\textsuperscript{454} Atlantic Richfield argued further that "the BLM, acting as the agency charged with administering the lands, had full authority to control mining activities, thus making it an 'owner' under CERCLA."\textsuperscript{455}

Dismissing Atlantic Richfield's counterclaim, a United States magistrate examined the relative rights and responsibilities of the United States and mining claimants under the public mining laws and concluded that "[g]iven the historical context within which the government operated and the nature and extent of the title held by the government,... the United States was not an 'owner' for purposes of CERCLA liability."\textsuperscript{456} The law prescribed a miner's rights to locate and mine hardrock minerals on public land and "left the United States with a reversionary interest that did not allow any control over mining operations."\textsuperscript{457}

\begin{footnotes}
\footnotetext{454.} \textit{id.} at 10.
\footnotetext{455.} \textit{id.}
\footnotetext{456.} \textit{id.} at 11.
\footnotetext{457.} \textit{id.} at 13.
\end{footnotes}
The public mining laws, he observed, granted to miners broad rights to occupy the public lands, including exclusive possessory rights. Once perfected, the mining claim vested in the miner possessory rights equivalent to fee title, and the property was subject to taxation. No notice of the claim was required to the United States until patenting; the United States could not obtain rents or royalties; and "the United States could take no affirmative action affecting mining operations on these lands to which it held title. It could only act to prevent non-mining activities on these lands." The magistrate further found that "the rights and authority retained by the United States under the Mining Law vested very little control over lands subject to unpatented claims." Among other things, the court observed that the "United States had no authority under the 1872 Mining Law to control, restrict, or regulate mining activities, including activities that resulted in harm to the environment." Rather, such regulation was left to the states and local mining districts.

Although Atlantic Richfield attempted to depict the relationship between the mining claimant and the United States as that of a conventional landlord/tenant in order to analogize to those cases in which courts found a lessor liable as an owner, the magistrate found the analogy unpersuasive:

To show that the government-claimant relationship is analogous to a landlord-tenant relationship, ARCO would have to show that the landlord entered into leaseholds without an agreement with—or even notice from—the tenant; without rent or payment of any kind for the use of the property; and without the ability to prevent the tenant from converting the leasehold to full title at the tenant's option for a small fee. ARCO cannot and has not made such a showing. First, mining claimants unilaterally obtained the claim without any ability of BLM to refuse or control the claim [and] without notice or payment to the government. Second, claimants paid no rent or royalties of any kind to the government. Third, claimants could convert the claim to full title for a small fee without any right of the government to prevent claimant from obtaining full title.

The magistrate concluded, "[g]iven the government's status with regard to the title held to those lands, it is simply fallacious to find the
government's interest in the lands subject to unpatented mining claims an ownership interest under CERCLA.\textsuperscript{465}

Significantly, Atlantic Richfield had introduced evidence that the United States held more than bare title to the lands, had encouraged mining-related activities, and was involved in pollution abatement and environmental regulation activities. The activities of the United States included the regulation of pollution from a smelter through the Smoke Commission; federal grants for sewer systems; a regulatory decision by EPA to classify a receiving water to accept wastes; knowledge and encouragement by land managers of disposal of mining wastes into local waters; and advice given by the Forest Service concerning construction of a tailings pond.\textsuperscript{466} Despite these allegations, and evidence of regulatory involvement in and oversight over mining activities on the part of the government, the magistrate refused to impose "owner" liability.\textsuperscript{467} Rather, the rights, obligations, and responsibilities of the federal government at the mining sites, including both the residual interest held by the United States and the government's regulatory and mining related activities at the site, considered as a whole—did not vest the United States with "owner" liability.

More recently, in Coeur d'Alene Tribe v. ASARCO, Inc.,\textsuperscript{468} the government also asserted, in addition to its claim of sovereign immunity discussed infra, that the United States' interest in unpatented mining claims was unique, limited in nature, without private counterpart, and therefore insufficient to vest it with owner liability under CERCLA. Analogizing its interest to those of common law trustees on whom courts have frequently refused to impose liability, the United States argued that its interest was even more limited, in that common law trustees have

\textsuperscript{465.} Id. at 16. As an alternative ground for its holding, the magistrate found that, with respect to lands that had been patented by private entities, the United States was not liable as a past owner because holders of such claims are deemed to own the land beginning on the date on which the mining claims were first located. See Creede & Cripple Creek Mining & Milling Co. v. Unita Tunnel Mining & Transp. Co., 196 U.S. 337, 353-54 (1905). Under this "relation-back" doctrine, courts treat location and patenting of a claim as a single transaction occurring on the date the claim is first perfected; the "patent holder, not the government, should be treated as the owner for the period during which the claim was unpatented. In sum, the relation-back doctrine operates to extend a patented mining owner's property rights back to the time the claim was located." United States v. Atlantic Richfield Co., No. 89-39-BU-PGH, slip op. at 15 (D. Mont. Nov. 1, 1994). Accordingly, even if the United States could otherwise be deemed an owner at the time of disposal for hazardous substances released from unpatented mining claims, the patenting of such claims causes ownership to relate back to the date of the original claim, thus extinguishing the interest of the United States.

\textsuperscript{466.} United States v. Atlantic Richfield Co., No. 89-39-BU-PGH, slip op. at 17; see also United States' Brief in Support of Its Partial Motion to Dismiss ARCO's Counterclaims at 25-32, No. 89-39-BU.

\textsuperscript{467.} United States v. Atlantic Richfield Co., No. 89-39-BU-PGH, slip op. at 16.

\textsuperscript{468.} 280 F. Supp. 2d 1094 (D. Idaho 2003).
notice of their status as fiduciaries; can refuse to serve as fiduciaries; and can sell or convey property for fair value. The United States, in contrast, often has no notice that other parties have acquired significant interests in public lands; has no right to refuse the use of its land for hardrock mining; receives no payment for its trusteeship; and could not—at least prior to the imposition of the patent moratorium—refuse to transfer the fee to the mining company for a de minimis sum.

The court agreed with the government, finding that "the United States' interest in lands subject to unpatented mining claims does not make it an 'owner' of such mining claims under CERCLA." The court also concluded that the United States was not liable as an owner for abandoned mines—mines no longer subject to unpatented mining claims, and for which full right and title had passed back to the United States. According to the court, "the United States does not become an 'arranger' or 'owner' for purposes of CERCLA for mining activities done by defunct mining companies." Even if the United States were an owner or arranger, "the quantity of any releases from the abandoned mines and unpatented mining claims are so minimal, that a zero allocation would be applied by the court if the United States was in any way liable for such actions."

Like Atlantic Richfield, the ASARCO case involved allegations that the United States was significantly involved in mining activities. The court found that the United States was aware of the generation of mining tailings and the disposal methods used for the tailings; regulated hardrock mining during World War II to encourage the production of minerals; conducted or encouraged metal exploration; and engaged in or facilitated other activities related to mining. Nevertheless, these activities, even when viewed in light of the United States' overall "responsibility for certain undisputed abandoned mines and unpatented mining claims located in the Basin" did not give rise to federal "owner liability" for purposes of CERCLA.

c. Application of the Third-Party Defense at Hardrock Mining Sites

One court has insulated the government from liability as an owner of lands subject to hardrock mining claims on other grounds—finding that the United States properly claimed the third-party defense in CERCLA § 107(b)(3). A party is not liable as an owner if it can show

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470. Id. at 1133.
471. Id. at 1134.
472. Id. at 1108.
473. Id.
474. Id.
that (1) the release or threat of release was caused solely by the act or omission of a third party; (2) the act or omission did not occur in connection with a contractual relationship, existing directly or indirectly, with the defendant; and (3) it took precautions against foreseeable acts or omissions of the third party, and the consequences that could foreseeably result from those acts or omissions.475

In United States v. Iron Mountain Mines, Inc.,476 a mining company sought contribution from the United States for certain costs it incurred in addressing contamination at the Iron Mountain Mine in California. The company argued that the United States was liable under CERCLA as an owner because it held title to certain parcels of land within the Site. In granting the government’s third-party defense under CERCLA § 107(b)(3), the court ruled that the sole cause element of the third-party defense incorporates the concept of “proximate or legal cause,” under which the United States would not be liable if its actions or inactions were indirect and insubstantial in the chain of events leading to the release.477

Applying this test, the court found it undisputed that the mining company, and not the United States, had created the conditions that caused the releases.478 Although the mining company had argued that the United States caused the releases by opening its land to mining and failing to regulate mining to control its environmental effects, the court viewed the public mining laws as requiring the United States to open public lands to mineral exploration and mining and as granting to the miner a right of exclusive possession.479 The court also found that the United States could not actively control the mining operations on such lands; received no rent or royalties from hardrock mining; and could not prevent miners from acquiring full title to the lands. In light of all these factors, the action of the United States in “permitting miners to enter and mine lands owned by the United States is too indirect to constitute the proximate cause” of the contamination.480

The court also rejected the company’s argument that the government’s omissions in failing to regulate mining so as to control environmental contamination were a legal cause of the contamination. Quoting from the government’s brief, the court said that:

It could always be said to be ‘foreseeable’ that laws... retarding industrial activity will... decrease pollution in the aggregate, and that

479. Id. at 1274.
480. Id.
any particular release... might have been prevented or reduced with the passage of [a law].... However, that cannot be the threshold for legal or proximate cause. If it were, the United States would be one of the “causes” of contamination in every CERCLA action because the federal government always could have enacted legislation regulating industrial activity.481

With respect to the second element of the “third party” defense—the absence of a contractual relationship—the court dismissed the plaintiff’s argument that the government’s rights under the Mining Law should be viewed in contract terms like leases and other agreements.482 Even if the Mining Law or the administrative regulations could be deemed contracts, they were not contracts for the mining at the site or for the generation of acid mine drainage.483 Finally, the court found that contracts between public corporations and the mining companies for the purchase of ores also did not vitiate the defense, because under those contracts the public corporations (Metals Reserve Company and Reconstruction Finance Co.) acted as entities separate from the government as sovereign.484

With respect to the final element of the defense, the court found that the United States had exercised due care and had not failed to take the precautions against foreseeable acts. Although the plaintiff argued that the United States was aware of the extensive hardrock mining throughout the mining region, the court noted the standard of care under section 107(b)(3) was that of a reasonable and prudent person in light of all the relevant facts and circumstances.485 The court observed that:

throughout this period the United States was the title holder to millions of acres of Western land, much of it occupied and mined by prospectors and mining companies. Moreover, under the provisions of the Mining Act, states and local mining districts, not the United States, regulated mining operations on those lands. Given the extent of the United States' holdings and its lack of actual control over mining operations, it would be unreasonable to expect the United States to have discovered that [acid mine drainage] was being released from the... parcels on Iron Mountain.486

481. Id.
482. Id. at 1275 (citing Clawson v. United States, 24 Cl. Ct. 366, 370 (1991)).
483. Id. at 1273. The court cited with approval the decision of the Second Circuit in Westwood Pharmaceuticals v. National Fuel Gas Distribution Corp., 964 F.2d 85, 89 (2d Cir. 1992) for the proposition that a landowner is precluded from raising the third-party defense only if the contract between the landowner and the third-party is connected with the handling of hazardous substances. See also United States v. Cordova Chem. Co., 113 F.3d 572, 583 (6th Cir. 1997); New York v. Lashins Arcade Co., 91 F.3d 353, 359 (2d Cir. 1996).
Dismissing the mining company's claim that the United States should have enacted legislation to better regulate the environmental impacts of mining, the court said that "that is not what the due care requirement contemplates.... The due care requirement does not set a standard for legislative activity."\footnote{487}

Once the environmental problem at the mine became known, the United States had undertaken measures to minimize its effects. Thus, the government capped one parcel to prevent further acid mine drainage and constructed several dams, in part, to mitigate the environmental threat to the watershed.\footnote{488} The court also ruled that, even if § 107(b)(3) did not constitute an absolute defense to liability, it would not allocate any response costs to the federal government based solely on its "fortuitous ownership of the two parcels."\footnote{489}

Another court, however, has opined that the government may be liable for some of the contamination caused by private mining activities at a hardrock mining site located, in part, on public lands.\footnote{490} \textit{Mobil v. United States} involved contamination caused by tungsten, antimony and gold mining at the Stibnite Mine, a large inactive mine near Yellow Pine, Idaho. Much of the historical mining activity occurred on lands managed by the Forest Service and subject to unpatented mining claims.\footnote{491} In particular, a prior operator deposited a large tailings pile, over which successor operators deposited coarse spent ore. Surface water transported tailings from the pile into several creeks and streams.\footnote{492} Downstream sediment, algae, and fish samples contained elevated concentrations of heavy metals and cyanide.\footnote{493}

contemplates some degree of awareness by the defendant of the potential for release of a hazardous substance," since foreseeability necessarily requires awareness).\footnote{487}


\textit{Id.} at 1276 n.24. In \textit{Coeur d'Alene Tribe v. ASARCO, Inc.}, 280 F. Supp. 2d 1094 (D. Idaho 2003), the United States successfully invoked the third-party defense in § 107(b)(3) in arguing that it was not liable under CERCLA as an owner of lands on which no mining activities took place, but which had been contaminated by the deposition of wastes generated on other lands and which had migrated to federal lands. The court found that the United States is not liable under CERCLA as an owner for downstream lands where "hazardous substances have come to be located due to the government's failure to require that landowners protect their land from tailings flowing onto their property." \textit{Id.} at 1135.

\textit{Id.} at 1277 n.25. In \textit{Coeur d'Alene Tribe v. ASARCO, Inc.}, 280 F. Supp. 2d 1094 (D. Idaho 2003), the United States successfully invoked the third-party defense in § 107(b)(3) in arguing that it was not liable under CERCLA as an owner of lands on which no mining activities took place, but which had been contaminated by the deposition of wastes generated on other lands and which had migrated to federal lands. The court found that the United States is not liable under CERCLA as an owner for downstream lands where "hazardous substances have come to be located due to the government's failure to require that landowners protect their land from tailings flowing onto their property." \textit{Id.} at 1135.

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\textit{Id.} at 1277 n.25. In \textit{Coeur d'Alene Tribe v. ASARCO, Inc.}, 280 F. Supp. 2d 1094 (D. Idaho 2003), the United States successfully invoked the third-party defense in § 107(b)(3) in arguing that it was not liable under CERCLA as an owner of lands on which no mining activities took place, but which had been contaminated by the deposition of wastes generated on other lands and which had migrated to federal lands. The court found that the United States is not liable under CERCLA as an owner for downstream lands where "hazardous substances have come to be located due to the government's failure to require that landowners protect their land from tailings flowing onto their property." \textit{Id.} at 1135.

\textit{Id.} at 1277 n.25. In \textit{Coeur d'Alene Tribe v. ASARCO, Inc.}, 280 F. Supp. 2d 1094 (D. Idaho 2003), the United States successfully invoked the third-party defense in § 107(b)(3) in arguing that it was not liable under CERCLA as an owner of lands on which no mining activities took place, but which had been contaminated by the deposition of wastes generated on other lands and which had migrated to federal lands. The court found that the United States is not liable under CERCLA as an owner for downstream lands where "hazardous substances have come to be located due to the government's failure to require that landowners protect their land from tailings flowing onto their property." \textit{Id.} at 1135.

\textit{Id.} at 1277 n.25. In \textit{Coeur d'Alene Tribe v. ASARCO, Inc.}, 280 F. Supp. 2d 1094 (D. Idaho 2003), the United States successfully invoked the third-party defense in § 107(b)(3) in arguing that it was not liable under CERCLA as an owner of lands on which no mining activities took place, but which had been contaminated by the deposition of wastes generated on other lands and which had migrated to federal lands. The court found that the United States is not liable under CERCLA as an owner for downstream lands where "hazardous substances have come to be located due to the government's failure to require that landowners protect their land from tailings flowing onto their property." \textit{Id.} at 1135.
EPA, together with the Forest Service, became concerned about the effect of the releases of heavy metals on downstream ecology. Accordingly, they negotiated an administrative order on consent (AOC) with Mobil Oil—as the successor to an entity that had operated the site during the 1980s. Under the AOC, Mobil agreed to carry out a removal action directed at stabilizing the tailings/spent ore disposal site.

Mobil completed the work under the AOC and filed a contribution action against the United States, alleging that the Forest Service was liable for contamination as the holder of title to some lands subject to unpatented mining claims during the period of disposal, and as the current owner of some National Forest Service lands in the area generally. Mobil also alleged that the activities of various federal agencies encouraging mineral production at the mine during and after World War II gave rise to “operator liability.” With respect to the “owner” allegation, Mobil moved for summary judgment, arguing that the United States held title to portions of the lands during the period of disposal. Mobil further argued that the United States was not simply a passive or nominal owner, because it not only held legal title to the property but had engaged in a variety of activities to encourage and facilitate mining within the site and the area generally.

The Forest Service maintained that it had no liability as an owner and claimed the protection of CERCLA’s third-party defense. With respect to the first element of the defense, the Forest Service pointed out that mining companies had conducted all of the mining at issue. Although Mobil maintained that the United States was a “cause” of the contamination through its wartime activities in promoting the mining of strategic minerals and other activities undertaken by the government at the site, the United States argued as it had in other cases—that these activities encouraged the mining of strategically-important minerals, were regulatory in nature, limited in scope, and too far removed in the casual chain from mining and disposal to constitute a legal cause of the contamination.

The Forest Service also argued that none of the alleged acts or omissions of the mining companies had occurred in connection with a

494. Id. at 1-2.
495. Id. at 11. [Reda: spacing?].
499. Id. at 22–25.
500. Id.
contract with the United States. A land patent issued for some of the lands could not constitute such a contract because, under the public mining laws, private parties first acquired unpatented mining claims without the involvement of federal land managers. Once the minimal requirements for patenting are satisfied, the United States has a mandatory, ministerial duty to issue a patent. There is no bargaining between the United States and a mining claimant, no agreement on terms, and none of the other prerequisites to a "contract." Even if the patent could reasonably be viewed as a contract, it was not a contract for the unrelated disposal of tailings on the unpatented lands at issue.

The Forest Service also argued that certain agreements between prior mining companies and a government corporation (the Metals Reserve Company) for the purchase of ores did not invalidate the third-party defense because the corporation was an independent entity, separate and distinct from the United States. Finally, the Forest Service maintained that a special use permit issued by it to a prior operator for the storage of mill tailings on certain lands subject to unpatented mining claims did not vitiate the third-party defense, because such permits also did not constitute contracts within the meaning of § 107(b)(3). With respect to the final element of the third-party defense—the due care requirement—the Forest Service argued that it had exercised such care as reasonably might be expected from the federal government in light of the limited rights possessed by it under the mining laws and the huge number of both patented and unpatented mining claims scattered throughout the West. It pointed out, in addition, that it had acquiesced in the operator's request for a special use permit for the storage of tailings at the site to safeguard the environment and to secure the impoundment of the tailings and prevent their release to the environment.

On April 28, 2000, the court indicated in chambers that it had "decided in this case that summary judgment ought to be granted against

501. Id. at 25–27.
502. Id. at 26.
504. See also Iron Mountain Mines, 987 F. Supp. at 1275–76 (ruling that contracts between mining companies and Metals Reserve Corporation and the Reconstruction Finance Corporation were not contracts with the United States because those corporations were acting in a capacity separate from the United States as sovereign).
507. Id. at 28–29.
the Government, making them (sic) responsible as an owner involved in some of the mining that went on there."

The court provided no rationale for its decision other than to say that the responsibility relates "to the time that the metals were discovered there by the Bureau of Mines and the mining increased substantially, which was part and parcel of what the Government wanted to do... It is clear to me that once the Bureau of Mines found the materials they were interested in, started encouraging the production of them, that the Government ought to be responsible. Before that, I have some question."

The court did not address the issues briefed by the parties, including the elements of the § 107(b)(3) defense. Indeed, the brief exchange suggests that the court focused on the activities of the United States during wartime to encourage the production of strategic minerals, and was unconcerned with the putative ownership interest of the Forest Service and its activities—particularly post-War—in managing lands subject to hardrock mining. Presumably, the court concluded that the activities of the United States during wartime were a contributing cause to the contamination at the site, and thus the federal government should be liable as an owner under CERCLA § 107 for hardrock activities.

The court's brief statement in Mobil is at odds with all of the courts that have examined this question—Hanna Mining Co., Atlantic Richfield, ASARCO, and Iron Mountain Mines. In each of these cases, courts rejected the argument, apparently credited by the Mobil court, that the United States' titular ownership of lands subject to unpatented mining claims, in combination with agency initiatives to encourage private mining in connection with the war effort, vests the United States with owner liability under CERCLA. More fundamentally, by expressing a concern about the government's activities during wartime in encouraging production of strategic minerals, the Mobil court endorsed a view of the federal government's responsibility for environmental harm caused by private industry that has been rejected in virtually every case in which it has been raised.

Although public policy during the war sought to encourage private economic activity to advance the national defense, it

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509. Id. at 2.
511. See infra § III.B.3.d.
also respected private decision-making and preserved industry's choices regarding investments, production methods, and facility management.\textsuperscript{512}

d. Owner Liability of the United States Post-FLPMA

To date, no court has considered whether the United States should be liable as an owner of lands subject to unpatented mining claims where it held title to the lands after the enactment of FLPMA. Courts might be more willing to entertain such liability in light of the greater involvement of the government in hardrock mining following FLPMA's enactment. The few courts that have considered the issue have intimated that they might consider the regulatory scheme in effect at the time of mining as relevant to whether the federal government might share CERCLA liability. At the same time, however, the decisions reflect a marked unwillingness on the part of the courts to consider post-FLPMA implications of hardrock mining, and the difficult legal and factual distinctions such an inquiry presumably might require.

In \textit{Atlantic Richfield},\textsuperscript{513} for example, the companies alleged that the United States was the owner, at the time of disposal, of lands subject to unpatented mining claims. In response to the government's argument that its title ownership represented a unique species of property right that should not support CERCLA liability, the mining companies pointed out that some of the mining claims at issue were not only subject to the Mining Law of 1872, but to FLPMA because some mining activities took place after 1976.

The magistrate acknowledged that BLM had received authority to regulate mining activities with the passage of FLPMA and that FLPMA "gave to BLM, for the first time, authority to prevent 'unnecessary or undue degradation' of lands, including lands on which unpatented claims were located."\textsuperscript{514} The magistrate found FLPMA to be irrelevant to the issue of the CERCLA liability of the United States, however, because the United States asserted that to its knowledge "little if any of the waste-creating activities at issue took place on unpatented mining claims."\textsuperscript{515} In \textit{ASARCO} too, the court dismissed defendants' allegations that some of the contamination arose from lands subject to regulation under FLPMA, noting only that "[d]efendants have failed to establish that after 1976, the BLM failed to regulate the mining activities or arranged for the disposal of tailings from unpatented mining claims."\textsuperscript{516}

\textsuperscript{512} \textit{See} Lichter v. United States, 334 U.S. 742, 766 (1948).
\textsuperscript{514} \textit{Id.} at 13 n.12.
\textsuperscript{515} \textit{Id.}
In the recent decision of a district court judge in United States v. Friedland, however, the court found that the Forest Service could not be liable under CERCLA as an owner of a site on which hardrock mining had occurred during the 1980s and 1990s—long after the Forest Service had promulgated regulations under its Organic Act to regulate hardrock mining activities on forest lands. Friedland suggests that the United States may not be deemed an owner under CERCLA of lands contaminated by hardrock mining, even in the modern era during which land managers began to exercise some authority over mining activities.

In Friedland, the EPA attempted to recover response costs it had incurred to address extensive environmental contamination at the Summitville Mine Site located in Del Norte, Colorado. The mine produced gold from low-grade ores using cyanide heap leaching, a method by which the ore pile is sprayed with water containing cyanide which dissolves the minute gold grains. Leakage of cyanide-bearing solutions from the heap leach pad into the surrounding environment threatened the local ecology. In 1992, the mine’s operator declared bankruptcy and abandoned the site. In 1994, EPA added the site to the NPL and sought to recover its costs against the current and past operators of the mine.

The mining companies filed contribution actions against the United States and moved for summary judgment, arguing that the federal government was liable under CERCLA for response costs by virtue of the Forest Service’s ownership of lands subject to unpatented mining claims. As they had in other hardrock mining cases, the mining companies alleged that because CERCLA has no culpability requirement, owner liability under CERCLA should require no more than a showing that the United States held bare legal title to the property. They argued, in addition, that the United States’ interest in the property went well beyond bare legal title.

Emphasizing that the Forest Service had the duty to regulate the environmental effects of mining operations on public lands under its Organic Act, the mining companies introduced evidence showing that the
Forest Service had required the companies to submit operations plans prior to beginning work; reviewed all such plans to ensure that they appropriately minimized environmental impacts; required that a bond be posted; and was responsible, with the State of Colorado, in overseeing reclamation activities.\textsuperscript{526} They also maintained that certain exploration contracts between the mine owners and agencies of the United States further demonstrated that the federal government exercised a high level of control over mining activities related to releases of hazardous substances.\textsuperscript{527}

The United States argued, in contrast, that it did not become an "owner" under CERCLA of lands subject to unpatented mining claims because its rights under the public mining laws remained circumscribed—even during recent decades—and it could not, for example, either prevent miners from entering the land for mining purposes, reap any economic benefits from mining, or even retain title to the land if the mining companies sought a patent.

In evaluating these arguments, the court analyzed in detail the relative rights and responsibilities of the parties under the public mining laws. Neither CERCLA nor the common law had established any clear or consistent guidance as to what aggregation of property rights constitutes ownership.\textsuperscript{528} The court emphasized that issues of "control" could not be the touchstone for "owner" liability, because such reasoning would inappropriately conflate "owner" and "operator" liability.\textsuperscript{529} Instead, the court concluded, considerations of ownership require a comparative analysis of the rights and responsibilities of the party holding title, and the entity with possessory interests.\textsuperscript{530}

The court agreed with the government's claim that the interests of the United States in lands subject to hardrock mining claims differed significantly from those held by owners of real property.\textsuperscript{531} It emphasized that the Mining Law "permits private parties to acquire exclusive possessory interests in federal lands for mining purposes, interests which entitle claim holders to extract and sell minerals without paying royalties to the Government."\textsuperscript{532} Such claims constitute "property" protected by the Fifth Amendment against uncompensated takings; the claimants

\textsuperscript{526} Id.; Defendant's Reply Memorandum in Support of Combined Motion for Summary Judgment on Third Counterclaim for Relief and for Summary Judgment on the United States' Claims for Relief at 15-18, Friedland, 152 F. Supp. 2d 1234 (No. 96-N-1213) (Nov. 12, 1999).
\textsuperscript{527} 152 F. Supp. 2d at 1244.
\textsuperscript{528} Id. at 1244-46.
\textsuperscript{529} Id. at 1243.
\textsuperscript{530} Id. at 1242.
\textsuperscript{531} Id. at 1244.
\textsuperscript{532} Id. at 1245.
enjoyed a valid, equitable possessory title, subject to taxation, transferrable by deed or devise and otherwise possessing the incidents of real property. In contrast to these broad rights, the United States receives no financial benefit from its lands, lacks the power to retain title to its land if the claimant seeks title, and is unable to set the boundaries of the conveyance, or establish the terms of a sale based on the land’s value.\textsuperscript{533} For these reasons, the court ruled, it is “inappropriate to deem the United States an ‘owner’ for purposes of CERCLA liability.”\textsuperscript{534}

Significantly, the court acknowledged that the United States retained some rights and interests in lands subject to unpatented mining claims and said that, until a patent issues, “the United States retains paramount rights and interests in the federal lands under the claim, and maintains the authority to regulate the uses of those lands.”\textsuperscript{535} The court also made note of the general powers of the United States to establish terms and conditions under which the public lands can be used.\textsuperscript{536} Nevertheless, the court found that in light of the broad property rights granted to claimants, and the government’s limited powers to regulate activities in the national forests to protect surface resources, owner liability was unjustifiable.\textsuperscript{537}

e. Owner Liability Revisited

The decisions in Hanna Mining Co., ASARCO, Atlantic Richfield, and Iron Mountain Mines reflect courts’ marked and consistent reluctance to impose owner liability on the United States for environmental contamination arising from mining activities where the United States was required by law to make the land available for mining, derived no royalties or other revenue from the use of the land, and had limited regulatory authority over the mining claims themselves. The Friedland decision, and other decisions issued to date, also suggest that courts are unwilling to impose owner liability on the United States even where the rights and interests of federal land managers go well beyond holding of “bare legal title.”

In evaluating the putative owner liability of the United States, the courts routinely discount evidence of federal regulation of commercial hardrock mining, particularly when exercised during wartime or undertaken to protect the environment generally. The critical question to these courts is not whether the United States retained some authority over public lands subject to hardrock mining, or possessed the power to encourage or facilitate hardrock mining in furtherance of the sovereign’s

\begin{itemize}
  \item \textsuperscript{533} Id. at 1244–45.
  \item \textsuperscript{534} Id. at 1246.
  \item \textsuperscript{535} Id. at 1245.
  \item \textsuperscript{536} Id.
  \item \textsuperscript{537} Id. at 1246.
\end{itemize}
obligation to provide for the national defense. Locke and other precedent indicate that the federal government possesses some irreducible land management authority on the public lands. The question is whether that modicum of residual authority with respect to hardrock mining (that is, retained strands in the bundle of rights) supports owner liability for purposes of CERCLA.

As discussed above, a number of courts have held that it does not. As an initial matter, property in a mineral ultimately consists of the right to mine it. To promote commercial freedom and individual enterprise, the mining laws continue to guarantee to miners free and open access to explore for minerals on unappropriated public lands; provide exclusive exploration rights; and provide exclusive rights to develop the valuable minerals discovered. These rights to possession and use, to income from the property, to security of tenure, and to exclude others from the property, are among the most fundamental rights inherent in property ownership. Indeed, miners have no greater right to create a nuisance or to endanger the public from their operations and these duties too are obligations attendant to “ownership.” Looking to the public laws, then, which continue to grant to miners the right of present and exclusive possession of the surface, as well as minerals under the surface, courts have properly concluded that the “unique property” created by those laws does not leave to the United States sufficient rights and interests to justify imposition of owner liability under CERCLA.

538. See United States v. Locke, 471 U.S. 84, 104 (1985). (“Even with respect to vested property rights, a legislature generally has the power to impose new regulatory constraints on the way in which those rights are used, or to condition their continued performance on certain affirmative duties.”).


541. See A.M. Honore, Ownership, in OXFORD ESSAYS IN JURISPRUDENCE: A COLLABORATIVE WORK 107, 113 (A.G. Guest ed., 1961); 2 American Law of Mining, § 36.03[4] at 36–17 (2003) (“Actually and practically the incidents of ownership possessed by a mining locator amount to an unrestricted property estate which is good against the whole world as long as its validity is maintained.”).

542. Miners’ affirmative obligation to avoid harm to the public lands does not suggest that they lack “ownership” interests in the lands. One of the commonly described “incidents of ownership” is a prohibition on the use of one’s property to harm another. A.M. Honore, Ownership, in OXFORD ESSAYS IN JURISPRUDENCE: A COLLABORATIVE WORK 107, 123 (A.G. Guest ed., 1961). As noted by the Supreme Court, “all property in this country is held under the implied obligation that the owner’s use of it shall not be injurious to the community . . . .” Keystone Bituminous Coal Ass’n v. DeBenedictis, 480 U.S. 470, 491–92 (1987) (quoting Mugler v. Kansas, 123 U.S. 623, 665 (1887)). [Reda: spacing with ellipses; also need final period?]
3. Operator Liability Under CERCLA

In addition to claims of owner liability, mining companies frequently argue, with respect to both public lands and patented (private) lands, that the United States is liable under CERCLA as a site operator and must share the costs of cleanup. By virtue of the United States' activities during wartime to encourage hardrock mineral production, or federal agencies' management of lands subject to hardrock mining, the United States allegedly has become so intertwined in facility management as to become an "operator" for purposes of CERCLA section 107.

As with "owner," courts have struggled to identify indices of "operation," particularly when multiple parties participate in site activities. In the corporate context, the Supreme Court has developed the admirably brief and intuitively appealing test of "eccentricity"—a corporate parent is liable under CERCLA for environmental harm at a subsidiary's facility where its involvement is direct and also "eccentric"—that is, in kind and intensity, it violates accepted norms of parental oversight.\(^5\)

Consideration of operator liability of government entities similarly implicates both concerns—the intensity and scope of the agency's involvement in site operations and the purpose of that involvement. In the United States, for example, it is paradigmatic that private industry (even in wartime) remained firmly in private hands.\(^4\) The federal government did, of course, retain broad powers to regulate industry, particularly in matters of health and safety.\(^5\) It was also a significant and interested consumer, and an active participant in a market economy.\(^6\) In considering whether the federal government should be liable as an operator under CERCLA, however, the conventional roles of the government in the exercise of its regulatory and police powers and as a market participant should be distinguished from those few instances in which the government seized facilities or engaged in day-to-day production activities. Government involvement in manufacturing and production operations, at hardrock mines as at other facilities, rarely departed from the conventional roles and thus should not give rise to operator liability.

\(^{544}\) Lichter v. United States, 334 U.S. 742, 766 (1948).
a. General Principles of Operator Liability Under CERCLA

Like "owner," the word "operator" is not defined in CERCLA. Although courts construing the word "operator" agreed that the touchstone for liability is "control" over facility operations, they created several competing tests to determine whether a person has evidenced sufficient control to be an operator under CERCLA. The most common of these considers whether the purported "operator" was actively involved in running the facility, typically on a day-to-day basis. A few courts endorsed a more lenient standard, under which an entity's "authority to control" operations triggers "operator" liability.

In 1998, the United States Supreme Court examined the meaning of "operator" in CERCLA to determine when a parent corporation could be deemed an operator of a facility owned by a subsidiary. Noting that CERCLA did not define "operator," the Supreme Court looked to its ordinary meaning:

[a]n operator is simply one who directs the workings of, manages, or conducts the affairs of a facility. To sharpen the definition for purposes of CERCLA's concern with environmental contamination, an operator must manage, direct, or conduct operations specifically related to pollution, that is, operations having to do with the leakage or disposal of hazardous waste, or decisions about compliance with environmental regulations.

Significantly, the Court did not agree with the district court's conclusion that operator liability could be based on the degree of control a parent exercises over its subsidiary's business. Rather, the Court said that the key question is the relationship between the parent company and the subsidiary's facility.

Normal corporate behavior between a parent and subsidiary, exemplified by such activities as the parent's "oversight" of the subsidiary, monitoring its performance, supervising its budget and finance, and articulating general policies and procedures governing corporate affairs, would not, under this view, give rise to operator liability. According to the Court, "[t]he critical question is whether, in degree and detail, actions directed to the facility by an agent of the parent


550. Id. at 66-67.

551. Id. at 70.

552. Id. at 71-2.
alone are eccentric under accepted norms of parental oversight of a subsidiary's facility." The Court acknowledged, however, that "operate" means "something more than mere mechanical activation of pumps and valves and must be read to contemplate 'operation' as including the exercise of direction over the facilities' activities."

The Sixth Circuit grappled with Bestfoods in exploring the potential operator liability of a municipality for cleanup costs incurred by EPA at a privately owned and operated landfill in Michigan. In United States v. Township of Brighton, Brighton Township, Michigan (Township) contracted with a private operator, Collett, to use a portion of his land as a municipal dump. The Township agreed to pay Collett rent and maintenance fees. Although Collett was responsible for maintaining the facility, the Township required him to meet its specifications and be under its supervision. Over the years, the Township made significant appropriations for the landfill, including funding repairs, special maintenance, bulldozing, trenching, bulldozer and crane work, and other rehabilitation work. The State of Michigan repeatedly warned the Township about poor site conditions, and the Township eventually closed the dump. EPA subsequently responded to environmental contamination there, incurred response costs, and alleged that both Collett and the Township were liable as "operators" under CERCLA for the remediation of the site.

The court of appeals vacated the district court's finding that the Township was liable as an operator. The Sixth Circuit was unable to determine from the record whether the Township had exercised sufficient control to incur liability under CERCLA. The court nevertheless explored the meaning of "operator" liability in order to guide the trial court. Writing for the court, Judge Boggs concluded that the test for operator liability was the Supreme Court's test in Bestfoods, even though the Court established it in the context of corporate-form cases not directly related to government operator liability. Thus some affirmative acts on the part of the Township—such as directing the workings of the facility, or managing, or conducting its affairs—were prerequisites to liability. The court also emphasized that "mere regulation does not
suffice to render a government entity liable," but actual operation does.\textsuperscript{563} The dispositive question, in the view of the court, was whether the affirmative acts of the municipality showed that the "government entity was running the facility or merely regulating it."\textsuperscript{564}

In answering this question, a court must distinguish between government regulation of health and safety exercised as a conventional police power, and governmental "macromanagement" disguised as regulation.\textsuperscript{565} According to Judge Boggs, where a governmental body takes hands-on, non-regulatory action such as directly supervising landfill activities; making repeated and substantial ad hoc appropriations; undertaking bulldozing and maintenance activities; and undertaking direct responsibility for ameliorating unacceptable conditions, its activities may rise to the level of "operator."\textsuperscript{566} Because the Township had undertaken several actions, consistent with its agreement with Collett to operate the dump under the Town's supervision, indicating that it "was not operating at arm's length with a contractor," Judge Boggs was unable to conclude, as a matter of law, that the Township was not an operator.\textsuperscript{567}

Judge Karen Nelson Moore concurred in the decision to remand but differed with Judge Boggs in the appropriate analysis of "operator" liability.\textsuperscript{568} She acknowledged that CERCLA treats governmental and non-governmental entities alike for liability but said that "[p]olicy concerns caution against consideration of the same factors in the same manner where the nongovernmental entity's conduct occurs within the regulatory context."\textsuperscript{569} She warned against impeding government's ability to regulate, particularly in the realm of public health, safety and welfare.\textsuperscript{570}

She also read \textit{Bestfoods} to require that activities must be specifically related to pollution or decisions about environmental compliance to constitute actual control, so courts must conduct a fact-intensive inquiry into the totality of conduct of the purported operator.\textsuperscript{571} To give more precise guidance to the trial court, she referred with approval to other cases in which courts had enumerated discrete factors relevant to "operator liability."\textsuperscript{572}

\begin{itemize}
\item \textsuperscript{563} \textit{Id.} at 316.
\item \textsuperscript{564} \textit{Id.} at 316 n.11.
\item \textsuperscript{565} \textit{Id.} at 315.
\item \textsuperscript{566} \textit{Id.}.
\item \textsuperscript{567} \textit{Id.} at 315–16.
\item \textsuperscript{568} \textit{Id.} at 325-26.
\item \textsuperscript{569} \textit{Id.} at 324.
\item \textsuperscript{570} \textit{Id.}.
\item \textsuperscript{571} \textit{Id.} at 325-26.
\end{itemize}
Dissenting, Judge Dowd, while viewing Bestfoods as the controlling standard for direct operator liability for both corporate and government entities, read Bestfoods to require "a high level of control over day-to-day operations," including the hiring and supervising of workers and control over the facility's financial decisions. Thus the regulatory control exercised by the Township over the site would not rise to the level of operator liability because the facts presented before the district court demonstrated that the Township did not control "daily operations" at the site.

Although they emphasized different facts and used somewhat different language, each of the opinions represented a principled attempt to adapt the Bestfoods test to a case involving governmental, rather than parent/subsidiary liability. In so doing, they underscored and reiterated the theme first articulated by the Supreme Court—that operator liability depends on direct and substantial involvement in operations specifically related to pollution. At the same time they acknowledged that operator liability analysis when applied to government—which acts for the public good—necessarily implicates policy concerns not normally present in the case of private corporations.

b. Imposition of Operator Liability When Agencies Engage in Direct, Non-Regulatory Control of Facility Operations

Only a few courts have imposed operator liability on the United States for its involvement in private commercial activities. The first, and most well-known of these decisions, FMC Corp. v. United States Department of Commerce, involved a facility in Virginia that the War Department commissioned to manufacture high-tenacity rayon for the War effort. EPA investigations decades later found extensive soil and groundwater contamination at the facility. Eventually, FMC—a subsequent owner of the facility—began a cleanup, and then filed suit to recover costs for cleanup. The court stated that the regulatory activities of a government entity went beyond mere regulation and amounted to macromanagement of the facility in question. 153 F.3d at 327.

include (1) the extent of the government's expertise and knowledge of the dangers posed by hazardous waste, (2) whether the government established or designed the facility, (3) whether the government participated in the opening and closing of the facility, (4) whether the government hired or supervised employees involved in activities related to pollution, (5) whether the agency established the facility's operational plan, (6) whether the agency monitored or controlled hazardous waste disposal, and (7) whether the government made any public declarations of responsibility over the facility and/or its hazardous waste disposal. Judge Moore explained that these factors were illustrative, rather than exhaustive, and should be weighed together with "other factors indicative of actual control over a facility's hazardous waste operations, to determine whether the regulatory activities of a government entity went beyond mere regulation and amounted to macromanagement of the facility in question." 153 F.3d at 327.

573. Id. at 333–34.
574. Id. at 335.
576. Id. at 472–73.
against the United States, alleging that it, through the actions of various wartime agencies, was liable as an owner, operator, and arranger.\(^{577}\) Allegedly, the United States had become so pervasively involved in facility operations during the war years that it should share the costs of cleanup.

The court of appeals, in affirming the district court's imposition of operator liability on the United States, applied the "actual control" test developed in the context of parent/subsidiary liability.\(^{578}\) That test imposes "operator" liability on a corporation if it exercised "substantial control" over another corporation. Such control at a minimum requires active involvement in the activities of the other entity and included, in this case, the government's direction that the facility manufacture a specific product; control of the price and supply of the raw materials; leasing of government-owned equipment for use in the manufacturing process and for waste management; assurances that the facility retained an adequate labor force; participation in the management and supervision of the labor force; possession of the authority to remove workers; and control of the price and purchasers of the product.\(^{579}\) These facts demonstrated that the government exercised "considerable day-to-day control over American Viscose" through its requirement that American Viscose make the product in the first place, and through its exercise of "a significant degree of control over the production process through regulations, on-site inspectors, and the possibility of seizure."\(^{580}\)

In a case involving the liability of a state rather than a federal agency, a court held the State of California liable under CERCLA as an operator of a hazardous waste facility.\(^{581}\) The court endorsed the findings of a Special Master that operator liability was appropriate where the state conceived of and negligently selected the site; failed to assess deficiencies in the site's location which made it environmentally unsafe; failed to design the site to mitigate or prevent releases; and failed to remedy the site promptly when it became aware of the potential hazards there.\(^{582}\) The court also predicated liability on the fact that the state hired employees for the facility, made operational decisions, actively controlled waste

\(^{577}\) FMC Corp. v. Dep't of Commerce, 29 F.3d 833, 834-35 (3rd Cir. 1994).
\(^{578}\) 29 F.3d at 842 (citing Lansford-Coaldale Joint Water Authority v. Tonolli Corp., 4 F.3d 1209, 1222 (3d Cir. 1993)).
\(^{579}\) The court distinguished the regulatory conduct at issue in other reported decisions – in which courts had refused to impose operator liability on the United States – on the basis that those decisions did not involve a government entity with the breadth of control at issue here and, in those cases, the government entity was not "involved in the facility for the purpose of obtaining a product for its own use." Id. at 844.
\(^{580}\) Id. at 844.
\(^{582}\) Id. at 20,657-58.
disposal, opened and closed the site, and decided who could use the site and what could be dumped there. The court rejected the State’s argument that it could not be held liable because it had “merely acted as a regulator pursuant to its police power,” and found that the State’s actions here “went beyond mere regulation.”

In *Cadillac Fairview/California, Inc. v. Dow Chemical Co.*, the United States was found liable as an operator for the costs of cleaning up several pits and evaporation ponds contaminated with wastes from the production of synthetic rubber during World War II. The pits and ponds were within the grounds of a former styrene plant owned by the United States and operated by its agents—Dow Chemical Co. (Dow) and other private companies—under agreements with a government-owned corporation established to develop a synthetic rubber industry.

In affirming the district court’s decision to impose operator liability on the United States, the court of appeals pointed out that the facility was an “agent” plant, not a “contract” plant, and that Dow operated the plant as the agent of the United States and at the expense and risk of the United States. Thus, the United States owned the plant and the lands and “made, approved, or ratified all significant operating decisions.”

Because “the government owned the site, the pits, the plant, and all materials including the wastes, knew just what Dow was doing, had unfettered control over it, approved of it, had an agency relationship with Dow that would ordinarily require it to indemnify Dow for what it did, and had made an express written promise to hold Dow harmless for whatever it did,... there was no inequity in allocating 100% of the costs to the government.”

The holdings of *FMC, Stringfellow, and Cadillac-Fairview* are consistent with *Bestfoods* and stand for the unremarkable proposition that the government may be liable as an operator where it manages or directs facility operations, particularly as they relate to waste management and environmental issues. In *FMC*, for example, the federal government owned, leased, and exercised substantial control over federal equipment at the FMC facility related to both production and waste management, and also constructed several facilities to serve the FMC facility. Government personnel were present at the facility and were actively involved in site operations generally. In total, the government’s

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583. *Id.* at 20,658.
584. *Id.*
585. No. 83–7996, 1997 U.S. Dist. LEXIS 3081 (C.D. Cal. Feb. 19, 1997), *aff’d*, 299 F.3d 1019 (9th Cir. 2002). The United States had not challenged a previous opinion of the court finding it liable as an owner under CERCLA. *Id.* at *6.
586. 299 F.3d at 1022.
587. *Id.*
588. *Id.* at 1026.
activities at the site demonstrated an extraordinary degree of control over facility operations, including waste management.

Similarly, in *Cadillac-Fairview*, the government owned the facility at issue, entered into production agreements with private parties as the government's agents, and was actively involved in operational decisions, including waste management. Moreover, the government had agreed to indemnify its agents from all losses they might incur in connection with their government contracts. In *Stringfellow*, too, state agencies and employees not only engaged in regulatory oversight of a facility, but undertook typically proprietary activities such as selecting the site and conducting engineering analyses and design studies. Eventually the state took over control of a facility and operated it in such a way as to cause environmental contamination.

The conduct of the government in these cases exceeded, in numerous respects, the normal oversight/regulatory role of the sovereign and are little different from the actions of any other private commercial lessor, principal, or joint venture partner. At such facilities, the agency engaged in affirmative conduct and decision-making with respect to waste management and environmental issues, and also stepped outside the traditional federal agency role as regulator of third parties, or as an "interested" customer of a private commercial enterprise.

c. Judicial Reluctance to Impose Operator Liability for "Regulatory" Activities

In a number of other cases, however, courts have refused to impose liability on federal, state and local governments where their activities are more accurately viewed as those of a regulator of private commercial activity, or a customer of a private manufacturer—not a facility "operator" within the meaning of CERCLA. In *United States v. Dart Industries, Inc.*, for example, the court of appeals affirmed a district court's holding that a state environmental agency—the South Carolina Department of Health and Environmental Control (DHEC)—was not an operator of an abandoned waste site even though it exercised regulatory authority over the site. The defendants, generators of waste disposed of at the site, had filed a contribution action arguing that the State was an operator because the DHEC had controlled hazardous waste disposal activities at the site; approved and disapproved applications for storage of waste at the site; inspected the site; and required that generators comply with a waste manifest system when sending waste to the site. The

589. 847 F.2d 144, 146 (4th Cir. 1988).
590. Id.
district court granted the State's motion to dismiss, finding that the DHEC did not own or operate the site but rather engaged in "a series of regulatory actions consistent with its statutory mandate."\(^{592}\)

In affirming the decision of the district court, the court of appeals found that the DHEC had simply exercised its statutory duty of "loosely regulating" the facility after it had been abandoned by its previous owners. A finding of liability, according to the court, must be predicated on "hands on" activity at the facility that shows day-to-day management of facility operations. At this site, however, there were no allegations that DHEC "went beyond this governmental supervision and directly managed [the operator's] employees or finances."\(^{593}\) The DHEC's involvement, which did not go beyond that necessary to bring the site into compliance with state environmental regulations, did not give rise to CERCLA liability. Indeed, even if the state had inadequately enforced state environmental regulations at the site, the court held, "such unfortunate deficiencies do not constitute ownership or control...; the DHEC is not liable as an owner or operator under § 9607."\(^{594}\)

In *United States v. New Castle County*,\(^{595}\) a district court also declined to find a state agency liable as an operator under CERCLA where the agency had, in furtherance of its solid waste authorities, selected a site for the landfill; assisted with planning and design; determined the types of wastes that could be disposed of; issued disposal permits; required the submission of periodic reports to the state; and monitored and inspected the site. According to the court, CERCLA operator liability should extend to those who profit in a commercial sense from the treatment or disposal of wastes.\(^{596}\) The situation is different, however, where a governmental entity acts "in its regulatory capacity as protector of the health, safety and welfare of its citizens" and "did not participate or have the ability to control the Site with any proprietary or financial interests at stake."\(^{597}\) Although certain regulatory activities of the State, such as mandating the details of refuse soil compaction and cover and the thickness of the daily and final cover over the refuse may well be characterized as conditions relating to day-to-day operational decisions, they nevertheless were required as part of the permit approval process and consistent with the State's regulatory authority.\(^{598}\)

The court also found that many of the factors relevant to operator liability were absent, including facts demonstrating that the purported

\(^{592}\) *Id.* at 621.

\(^{593}\) 847 F.2d at 146.

\(^{594}\) *Id.*


\(^{596}\) *Id.* at 864.

\(^{597}\) *Id.* at 866.

\(^{598}\) *Id.* at 869.
operator controlled facility finances; managed the employees; managed the daily business; was responsible for environmental controls; and received commercial or economic benefit from dumping. The State's activities did not give rise to CERCLA liability because they were regulatory in nature and did not constitute active, voluntary, hands-on participation in the day-to-day management and operations of the site.

In yet other cases, courts have rejected manufacturers' arguments that the activities of defense agencies in contracting for defense materiel or in overseeing privately-owned manufacturing facilities give rise to federal operator liability. In United States v. Vertac Chemical Corp., for example, the owner of a facility won government contracts for the production of Agent Orange, a chemical herbicide used during the Vietnam War. When EPA sought to recover response costs it incurred in addressing contamination from dioxin and other wastes at the facility, the private operator sued the United States, arguing that it was liable under CERCLA as an operator.

The court considered the manufacturer's argument that the United States was liable as an operator because the government required the manufacturer to give priority to the Department of Defense (DOD) over other customers; issued directives to the manufacturer's suppliers directing them to provide sufficient raw materials and to expedite their operations; and conducted health and safety-related inspections. The court concluded, however, that the United States did not operate the facility within the meaning of CERCLA. It agreed with the FMC court that operator liability could result from actual or substantial control over the activities of another, but found that here the United States was not liable because it had not exercised such control over facility activities.

The court distinguished FMC by pointing out that the company was not compelled to manufacture a product, but had chosen to bid for the contracts; the United States had not retained ownership of equipment or machinery; and, in particular, the federal government took no part in designing, performing, or supervising activities relating to the handling, treatment or disposal of wastes. Rather, the private entity made all decisions about environmental and waste issues. In addition, the

599. Id. The court distinguished Stringfellow, noting that the State of California in that case had hired, directed and supervised employees with day-to-day responsibility for the landfill at issue; had publicly announced that it was responsible for the site; and various State employees were directly responsible for site conditions. Id. at 870.
600. Id. at 870.
602. Id. at 806, 809.
603. Id. at 809.
604. Id. at 809–810.
605. Id.
government had not directed the manufacturer to change its production processes, supervised or managed the manufacturer's employees, or was "actively involved on a regular basis in, and thus never exerted substantial control over, operations at the...facility while [the manufacturer] was producing Agent Orange."'

Similarly, in Washington v. United States,607 a court considered whether the United States had to contribute to the cleanup of paint and similar wastes disposed of at a shipyard in the State of Washington during World War II. Private parties had argued that liability was appropriate because under the Navy's ship repair and construction contracts, the Navy supervised shipyard production through the placement of on-site supervisors and inspectors; participated in managing and supervising workers; provided financing and equipment for use at the facility; controlled costs; and was aware that the generation of waste was inherent in shipyard activities.608

The court rejected the claim, first noting that the Supreme Court had recognized that, for the most part, the government did not choose to operate private industry in the war effort.609 The court referred to the Supreme Court's observation in Lichter v. United States that Congress chose not to "convert[] the nation in effect into a totalitarian state" by operating all domestic industry and instead carefully regulated to "reach[] unequalled productive capacity and yet retain[] the maximum of individual freedom consistent with a general mobilization of effort."610 Thus, even in wartime, manufacturing in the United States remained a private enterprise. The essentially private nature of domestic production/manufacturing operations, the court explained, provides "important background information for what the Government was trying to accomplish during World War II and is significant" in determining whether operator liability is properly imposed on the United States.611

The private operator had itself conducted site operations and generated and handled wastes in the same manner it had before the War.612 In addition, government inspectors and accountants had no

606. Id. at 809. See also United States v. Taylor, No. 1:90:CV:851, 1993 U.S. Dist. LEXIS 19082, at *50-51 (W.D. Mich. Dec. 3, 1993) (United States not liable as an operator of a munitions manufacturing site where it did not have the authority to control the waste disposal practices of the manufacturer); Maxus Energy Corp. v. United States, 898 F. Supp. 399 (N.D. Tex. 1995), aff'd, 95 F.3d 1148 (5th Cir. 1996) (dismissing allegations of operator liability where the United States did not specify production processes; hire, fire, discipline or manage production staff; or control or participate in waste disposal).
608. 930 F. Supp. at 482-83.
609. Id. at 485 (quoting Lichter v. United States, 334 U.S. 742, 766 (1948)).
610. Id.
611. Id.
612. Id. at 485.
responsibility for directing the disposal of wastes but rather focused on
improving efficiency and controlling costs.\textsuperscript{613} The court concluded that
"[v]iewing the totality of the evidence depicting the circumstances as a
whole at the Shipyard during the war years, the United States cannot be
considered to have been actively involved in the day-to-day activity that
produced the contamination."\textsuperscript{614}

d. Operator Liability at Hardrock Mining Sites

For hardrock mining sites, too, mining companies have argued that
the United States should be liable under CERCLA as an operator by
virtue of its regulatory oversight of mineral production, and the wartime
activities of federal agencies in encouraging the extraction and sale of
strategic minerals. Courts have not sympathized with those arguments,
instead carefully distinguishing between regulatory actions and hands-on
operational decision-making relating to matters of pollution. After
examining the facts in a number of contexts, they have ruled that the
United States' activities do not constitute such direct and active
involvement in private commercial hardrock mining as to give rise to
operator liability.

In \textit{East Bay Municipal Utility District},\textsuperscript{615} for example, a public utility
found itself responsible for the costs of cleaning up an abandoned mining
site in northern California. Looking for parties with which to share the
costs of cleanup, it sued the United States, arguing that, by virtue of
government activities during World War II to secure and increase the
production of zinc, the United States "operated" the mine.\textsuperscript{616} Indices of
alleged "operator" status included the government's establishment of
price controls on zinc; issuance of employment stabilization orders;
granting of occupational deferments from the draft for mining employees;
establishment of a 48-hour work week; creation of a purchase priorities
and allocation system; and direct financial backing for the mine, in the
form of advances against sales, direct loans, and output contracts.\textsuperscript{617}

\textsuperscript{613} Id.

\textsuperscript{614} Id. See also Delaney v. Town of Carmel, 55 F. Supp. 2d 237, 249 (S.D.N.Y. 1999)
(county department of health not liable for contamination at local waste site even though it had
approved the site for disposal of septic waste, inspected the site, noted deficiencies in its
operation, and evaluated a proposed well field because "it is well settled that a municipality
whose actions were taken in furtherance of its sovereign or regulatory functions" is not an
operator under CERCLA); Rospatch Jessco Corp. v. Chrysler Corp., 962 F. Supp. 998 (W.D.
Mich. 1995) (Air Force not liable as operator of manufacturing facility where it did not force the
manufacturer to produce aircraft or involve itself in daily operations or management decisions).

\textsuperscript{615} E. Bay Mun. Util. Dist. v. Dep't of Commerce, 948 F. Supp. 78 (D.D.C. 1996), aff'd, 142
F.3d 479 (D.C. Cir. 1998).

\textsuperscript{616} 142 F.3d 479 at 481.

\textsuperscript{617} Id. at 485–87.
In rejecting operator liability, the court looked first for evidence of federal managerial control at the mine and found none. According to the court, price restrictions imposed by the government on the zinc market, while intended to ensure the availability of zinc during wartime, did not constitute "operation" but rather standard regulation. The government's regulations governing labor availability and hours also did not give the government "the kind of direct managerial or supervisory authority over [the mine's] workforce that is a crucial component of operator liability." The government's financial backing, made as an advance against the mining company's sales, may make the government an unsecured creditor, the court acknowledged, but did not rise to the level of operator liability. Finally, output contracts between the mine and the United States also did not cause the government to incur liability as an operator, because they simply reflected the wartime market and the willingness of the government to pay substantial premiums in order to meet its metals needs.

The government's contingent authority to seize production facilities, together with various inspection rights and powers, did not give the government any managerial prerogatives or authority. The United States' powers during wartime could, in theory, subject an entity to such duress that the federal government could be deemed the operator. The court found no such duress here, however, where the mining company engaged in mining as a result of voluntary and mutually advantageous contracts. The principal tasks most indicative of responsibility for mine de-watering; land rehabilitation; and operation in compliance with good mining and engineering practices—were expressly assigned to the mining company. Although the mining company was required to meet the government plan, the court said that "a contractual right to ensure that a producer follows some agreed plan is hardly authority to control operations."

618. Id. at 485.
619. Id.
620. Id.
621. Id.
622. Id.
623. Id. at 486.
624. Id. at 486–87.
625. Id. at 486.
626. 142 F.3d at 486 (citing Hines Lumber Co. v. Vulcan Materials Co., 861 F.2d 155, 158 (7th Cir. 1988)) (finding that "control" cannot be inferred from non-producer's right to inspect workplace or from producer's obligation to comply with environmental rules).
As discussed above, in *Iron Mountain Mines*, the mining companies alleged that the United States was liable as an operator of a hardrock mine in Northern California, during and immediately after World War II, and thus should share response costs incurred by them pursuant to CERCLA. The court ruled that operator liability is permissible only where an entity "play[ed] an active role in running the facility, typically involving hands-on, day-to-day participation in the facility's management" or "had authority to control the cause of the contamination at the time the hazardous substances were released into the environment." Applying these tests to the facts at hand, the court granted the motion of the United States to dismiss, emphasizing that the government did not compel the mining companies to conduct mining; or issue commands to the company as to how, where or when to mine. Although the United States may have been aware that acid mine drainage was a foreseeable result of mining, it did not control or influence waste disposal matters, and it "did not assume responsibility for the drainage or relieve [the mining company] from the responsibility."

"In short," said the court, "in terms of basic operational decisions such as whether to mine at all, how much to produce, where on the mountain to mine, and whether to ameliorate the creation of acid mine drainage, [the mining company] remained firmly in charge and never shared control with the United States." Although acknowledging that the United States was an interested consumer of strategic minerals during the War, the court found no evidence of its day-to-day involvement in or management of the mine. Had the United States itself purchased or leased a mine, the court said, it would be liable under CERCLA. But where the government obtains ores through indirect means such as "engage[ment] in classic economic regulation by providing financial incentives to private industry to meet wartime production goals," it does not expose itself to CERCLA liability.


628. *Id.* at 1283 n.14 (quoting Long Beach Unified School District v. Dorothy Godwin California Living Trust, 32 F.3d 1364, 1367 (9th Cir. 1994)).

629. *Id.* at 1287 (quoting Kaiser Aluminum & Chem. Corp. v. Catellus Development Corp., 976 F.2d 1338, 1341 (9th Cir. 1992)).

630. *Id.* at 1285.

631. *Id.* at 1285.

632. *Id.*

In *Atlantic Richfield*, the mining companies alleged that the United States encouraged and conducted mining-related activities and thus was an operator of a facility in the Upper Clark Fork River, Montana watershed. In particular, the mining companies alleged that federal regulation of pollution from a smelter through the Smoke Commission; federal grants for sewer systems that discharged sewage into a local stream; regulatory decisions by EPA to classify a local stream to receive wastes; federal land manager knowledge and encouragement of disposal of mining wastes into a local stream; Forest Service advice regarding the construction of a tailings pond; and the federal government’s overall encouragement of mining-related activities, *in toto*, gave rise to operator liability. The government argued that activities undertaken by its agencies in their capacity as a sovereign in matters of pollution abatement, and their general advice and oversight of commercial hardrock mining, fell short of site “operation.”

Although denying the government’s motion to dismiss because of an inadequate factual record, the magistrate agreed that operator liability “requires a high degree of involvement in the operations that caused the waste disposal.” To prevail, he said, the mining companies must demonstrate that the government “specifically directed, sanctioned, and actively participated in the activities that resulted in the release or threat of release of hazardous substances at the facility,” or “actually participated in or controlled the day-to-day operations at the site(s).”

In the case involving the Blackbird Mine in Lemhi County, Idaho, mining companies also asserted that the United States was an “operator” by virtue of the involvement of federal agencies in encouraging the production of cobalt and copper during and after World War II. With respect to Interior, for example, the mining companies alleged that several of its bureaus had conducted minerals investigations to explore for ore deposits and provided technical advice and guidance concerning mining and milling matters generally. Other federal agencies provided market incentives to help ensure a domestic supply of strategic minerals. They entered into procurement contracts on behalf of the United States; granted favorable tax treatment for equipment

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635. Id. slip op. at 17.
636. Id. at 18.
637. Id.
639. See *supra* notes 398–406 accompanying text.
640. See *id.*
amortization; provided grants and loans for exploration projects; and issued priority ratings to expedite the purchase of mining equipment.641

Despite the federal agencies' actions to encourage the development of strategic and critical materials and to regulate mining matters generally, the private mining companies "ran the Mine and controlled the Mine's operations, including making all of the day-to-day management decisions about the operation of the Mine."642 The court found that the United States did not direct, supervise or participate in the disposal of tailings or waste at the mine, or "have any direct operational control over any...activities that resulted in the disposal or release of hazardous substances."643 Based on these findings, the court ruled that, “[w]ith the possible exception of” certain exploration and geophysical work conducted directly by federal agencies that may have generated waste, "the United States is not liable under CERCLA as... an operator"644

Finally, in ASARCO,645 defendants also had maintained that the federal government encouraged, promoted, controlled, and directly participated in the hardrock mining activities that gave rise to environmental contamination in the Coeur d'Alene basin of Idaho and should, therefore, share costs of cleanup. In particular, they maintained that the operator status of the United States resulted from (1) making public lands available for mineral exploitation under the public mining laws; (2) encouraging mineral production during World War II through control of prices for the product, control of wages for miners and workplace conditions generally; and (3) participating with industry during and following the war in initiatives designed to encourage and promote mineral exploration and development.646 They also maintained that the

641. The court had previously dismissed operator allegations asserted against the Forest Service. The mining companies had pointed to the Forest Service's regulation of mining operations at the mine, including its issuance of special use permits, construction of a public road that improved access to the Mine, and undertaking of a remediation project in the Blackbird Creek in the mid-1970s, as sufficient to give rise to operator liability. Ruling on the government's motion to dismiss on grounds of sovereign immunity, the court found that "[t]he United States is not liable as an operator or arranger by reason of the Forest Service's activities at the Mine." Idaho v. M.A. Hanna Mining Co., No. 83-4179, slip op. at 3 (D. Idaho Dec. 13, 1994).


643. Id. at 21.

644. Id. at 22. The court went on to grant the United States a zero allocation for any liability that may be imposed as a result of the agencies' direct waste-producing activities, in light of "the extremely small amount of work performed and waste that may have been generated..." Id. at 23.


government knew that tailings were generated from mining and milling operations, and of the disposal methods used for such tailings.647

The court looked both to the Bestfoods decision and pre-Bestfoods case law.648 Controlling legal authority pre-Bestfoods, the court concluded, required a finding that any putative operator possess "control over the cause of the contamination."649 The fundamental question, in the court's eyes, is "under the totality of the circumstances which existed during World War II did the government 'manage, direct, or conduct operations specifically related to pollution' at the mines and mills of the Defendants."650 Applying the Bestfoods test, the court found that the government was not liable because its regulatory activities at the mine did not constitute such management, direction, or control.651 Looking to the alternative "authority to control" test, the court similarly found that there was a lack of actual managerial control over the mines and mills and the threat of seizure does not support a finding of liability where such a threat was never triggered. The mines and mills were not forced to produce, instead the Defendants elected to produce to aid the war effort. The Defendant mining companies actually earned a profit under the government's economic incentives.652

According to the court, under either test the United States "was not an owner/operator for purposes of CERCLA."653

e. Summary of Operator Liability

In cases involving a variety of "facilities," including manufacturing plants, landfills, and mining sites, courts have been reluctant to impose operator liability on the United States when the activities of its agencies can be fairly characterized as (1) the exercise of conventional regulatory authority, particularly in the realm of public health and safety; or (2) that of a participant in an market economy which, even during wartime, remained firmly in private hands. Liability accrues in those few instances where the government has clearly stepped outside these roles—or its behavior may be said to be "eccentric" in the words of the Bestfoods court—and where the United States engaged in affirmative conduct over environmental and waste issues (by generating waste itself, or by engaging in a joint enterprise with a manufacturer under which it

647. Id. at 4.
648. 280 F. Supp. 2d at 1130.
649. Id. at 1126.
650. Id. at 1127.
651. Id. at 1130.
652. Id. at 1129.
653. Id. at 1130.
exercised substantial control over the sources of pollution and, in fact, managed or directed such operations). Instances of governmental action outside the boundaries recognized as appropriate and legitimate for a regulator or a market participant have been rare, however.

The decisions to date reflect a principled application of standards of operator liability, particularly in light of the test enunciated by the Supreme Court in *Bestfoods*. Before imposing liability on the United States, courts require evidence of a very high level of active involvement in the activities that gave rise to the contamination. Underlying the reluctance to impose liability on the federal government are prudential concerns that invariably arise when private parties seek to recover response costs in contribution from an entity that is not acting for a proprietary purpose, but in pursuit of general societal goals.654

4. **Arranger Liability**

Private parties have argued, on occasion, that the United States is liable under CERCLA as a party that arranged for disposal of waste within the meaning of CERCLA section 107(a)(3). These claims typically allege that the United States, although not a party that itself generated waste or made disposal decisions, nevertheless exercised sufficient control over facility operations and waste management to justify CERCLA liability. Although courts have at times endorsed such "indirect" theories of arranger liability, they have largely rejected the plaintiffs' arguments that federal activities at hardrock mining sites to promote mineral production or to regulate hardrock mining generally renders federal agencies "arrangers" within the meaning of CERCLA.

a. **Arranger Liability Generally**

CERCLA imposes liability on "any person who by contract, agreement, or otherwise arranged for disposal or treatment... of hazardous substances owned or possessed by such person, by any other party or entity, at any facility owned or operated by another party or entity and containing such hazardous substances."655 Like "owner," and "operator," the word "arranger" also is undefined in CERCLA. Courts have had no difficulty imposing liability on agencies of the United States where they contract, like any private party, for the disposal of wastes generated by their activities. Defense agencies such as DOD and the

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Department of Energy have been found liable as "arrangers" even when the government's waste is generated in the ordinary course of fulfilling national defense or energy missions.\textsuperscript{656} Consistent with their rulings on operator liability, however, courts also have been unwilling to impose "arranger" liability on government entities that disturb, remove, or transport waste in connection with their remedial activities.\textsuperscript{657}

The more difficult question, and one that arises with respect to both private parties and government agencies, is whether a party can be held liable where it does not itself directly generate and contract for the disposal of waste, but rather has some involvement with the processes or facilities—operated by others—that generate waste. Courts struggling to answer this question have been presented with unusual facts that, in turn, have given rise to tests for arranger liability that may properly resolve the case before them but can be extraordinarily difficult to apply more generally.

In \textit{United States v. Aceto Agricultural Chemicals Corp.},\textsuperscript{658} for example, EPA and the State of Iowa sought to recover costs they incurred in cleaning up a contaminated pesticide facility located in Iowa. Because the site operator was bankrupt, they sued pesticide manufacturers that had contracted with the facility operator for the formulation of their technical grade pesticides into commercial grade pesticide products.\textsuperscript{659} The formulator packaged the resulting products and returned them to the manufacturers for sale.\textsuperscript{660} Although the site operator had performed the formulation and disposed of waste, the pesticide manufacturers had allegedly "arranged for the disposal of wastes" because they retained ownership of the technical grade pesticide, the work in process, and the commercial grade product, and were aware that

\begin{footnotesize}


\textsuperscript{658} 872 F.2d 1373 (8th Cir. 1989).

\textsuperscript{659} \textit{Id.} at 1375.

\textsuperscript{660} \textit{Id.}
the generation and disposal of pesticide-containing wastes through spills, cleaning of equipment, and mixing and grinding operations, was an inherent part of the formulation process.661

The court rejected the defendants' argument that they could be liable as arrangers only if they intended to dispose of hazardous substances, or directly engaged in acts of disposal.662 Emphasizing the remedial purposes underlying CERCLA and Congress's intent to provide regulators with the tools necessary to effectively address environmental problems arising from waste disposal, the court found that the manufacturers had implicitly arranged for disposal of hazardous substances and that "[a]ny other decision, under the circumstances of this case, would allow defendants to simply 'close their eyes' to the method of disposal of their hazardous substances, a result contrary to the policies underlying CERCLA."

A second Eighth Circuit decision helped establish the outer bounds of arranger liability. In United States v. Northeastern Pharmaceutical & Chemical Co., (NEPACCO),664 the court concluded that a plant supervisor and corporate vice president—John Lee—was directly responsible as an arranger of hazardous substances because he had actual control over and the authority to control waste management and had engaged personally in the handling and disposal of hazardous substances on behalf of the corporation.665 Thus, even though Lee did not own or possess the hazardous substances and his actions were as a corporate officer, he was nevertheless liable under CERCLA because he had personally arranged for disposal of hazardous substances.666

661. Id. at 1375–76.
662. Id. at 1379–81.
663. Id. at 1382 (quoting United States v. Ward, 618 F. Supp. 884, 895 (E.D.N.C. 1985)). See also Jones-Hamilton Co. v. Beazer Materials & Services, Inc., 959 F.2d 126, 131 (9th Cir. 1992) (supplier of wood preservative chemical liable as an arranger where contamination occurred at formulator's facility); Gopher Oil Co. v. Union Oil Co., 757 F. Supp. 988, 993–94 (D. Minn. 1990) (following Aceto, and indicating that liability may be imposed on supplier of materials that are blended into commercial products where materials spilled on purchaser's site), aff'd, 955 F.2d 519 (8th Cir. 1992). Some courts, however, have read Aceto narrowly, and limited its application to the special case of pesticide formulators. See Briggs & Stratton Corp. v. Concrete Sales & Services Co., 971 F. Supp. 566, 572 (M.D. Ga. 1997) (Aceto is limited to circumstances where defendants exercised control over manufacturing processes and retained ownership of chemicals throughout the process); ACC Chem. Co. v. Halliburton Co., 932 F. Supp. 233, 238 (S.D. Iowa 1995) (Aceto involved case in which manufacturers owned the hazardous substances on which a third-party formulator performed processes, and increases the quantity of hazardous substances generated); Kelley ex rel. Michigan Nat'l Res. Comm'n v. ARCO, No. K87-372-CA4, 1990 U.S. Dist. LEXIS 10217, at *17–18 (W.D. Mich. July 31, 1990) (Aceto involved special case of pesticide manufacturers who own the hazardous substances with which they work, and has no applicability to cases involving sale of primary products to manufacturers).
664. 810 F.2d 726 (8th Cir. 1986), cert. denied, 484 U.S. 848 (1987).
665. Id. at 745.
666. Id. at 743–44.
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This is unremarkable and consistent with longstanding principles of corporate law under which officers can be held personally liable for their own acts or omissions. But the court also imposed liability on the facility's president and principal shareholder—Edwin Michaels—even though Michaels had not participated in the decision to dispose of hazardous substances. Although the court directed its analysis to Michael's personal liability under RCRA, it said that its analysis "is similar to our analysis of the scope of individual liability under CERCLA." According to the court, "[a]s NEPACCO's corporate president and as a major NEPACCO shareholder,..., Michaels was the individual in charge of and directly responsible for all of NEPACCO's operations, including those at the [] plant, and he had the ultimate authority to control the disposal of NEPACCO's hazardous substances." Thus, a corporate officer can be directly liable under CERCLA as an arranger where he has the authority or capacity to prevent the harm, even though he does not participate directly in the act of disposal.

Relying on this authority, a few courts have found the government liable as an arranger where the involvement of federal agencies in activities leading to disposal was sufficiently direct, or the government's involvement in facility waste management activities sufficiently pervasive, that the United States owned or possessed the waste and made or participated in the decisions that led to disposal.

The district court in FMC Corp. v. Department of Commerce, for example, held the United States liable for arranging disposal of hazardous substances at FMC's facility, because representatives of the

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667. See John F. Seymour, Civil and Criminal Liability of Corporate Officers Under Federal Environmental Laws, 20 ENV'T REP. (BNA) 337, 337–38 (1989) (noting general rule under which corporate officers can be held personally liable where they take part in a wrongful act, or direct or authorize others to engage in the activity, and discussing NEPACCO as an apparent exception to that rule because liability was imposed on officer because of his position in corporate hierarchy).
668. 810 F.2d at 745.
669. Id.
670. Id. In a subsequent decision in this case, United States v. Bliss, 667 F. Supp. 1298, 1306 (E.D. Mo. 1987), the district court imposed CERCLA arranger liability on Michaels, finding he had "ultimate authority for decisions regarding disposal" and had, together with the plant supervisor, "met with [the disposal company] to arrange for disposal of the waste." Id. at 1306. Thus, the district court imposed CERCLA liability on the corporate president, but only after reciting facts evidencing the officer's personal involvement in the wrongful act.
671. In Aceto, the Eighth Circuit read its decision in NEPACCO to impose arranger liability on those "who had the authority to control the disposal, even without ownership or possession." United States v. Aceto Agric. Chems. Corp., 872 F.2d 1373, 1382 (8th Cir. 1989). See also Donahey v. Bogle, 987 F.2d 1250, 1254 (6th Cir.) (citing NEPACCO for the proposition that person can be held personally liable where he had the authority to prevent the contamination, even though he had no direct participation in the act of disposal), cert. denied, 510 U.S. 1024 (1993).
United States knew that generation and disposal of hazardous substances was inherent in the manufacture of the product; the United States had actual knowledge of the facility's extensive on-site disposal activities; the volume of waste requiring disposal increased significantly as a result of the United States-mandated increases in production; government production requirements overtaxed equipment and increased the amount of waste; and some wastes were generated in government-owned equipment, over which the government exercised substantial ongoing control.\footnote{672}

Similarly, the district court in \textit{Cadillac Fairview/California, Inc.}\footnote{673} relied on \textit{Aceto} in ruling that the United States was liable as an arranger and responsible for cleaning up a facility formerly owned by the government and operated by private companies for the government. The United States was an arranger by virtue of "its ownership of all of the materials used and generated at the plants [operated by private parties], its concession that waste generation was inherent in the styrene plant operations, and its specific ordering of waste or by-product transfers between the [different production facilities] by its agent operators for treatment."\footnote{674} The Ninth Circuit affirmed the district court's imposition of 100\% of the remediation costs on the United States because the United States approved on-site dumping of waste; made or approved all significant operating decisions; and acquiesced or actively participated in decisions concerning waste disposal.\footnote{675}

More commonly, however, courts have found that the activities of federal agencies in connection with private manufacturing do not give rise to arranger liability. In \textit{United States v. Vertac Chemical Corp.},\footnote{676} for example, a court refused to impose arranger liability on the United States or otherwise require it to share the costs of cleaning up a former herbicide manufacturing facility. The site owners, relying on \textit{Aceto} and \textit{NEPACCO}, pointed out that herbicides such as Agent Orange had been produced for DOD under rated contracts or under orders and directives

\footnotesize{\begin{itemize}
\item \footnote{672}{786 F. Supp. 471, 484-86 (E.D. Pa. 1992). In a decision withdrawn and vacated when the case was reheard \textit{en banc}, the court of appeals, relying on \textit{Aceto}, affirmed the district court's imposition of arranger liability, finding that the United States supplied raw materials to the facility's owner, effectively owned the high tenacity rayon being produced, and knew that generation of wastes was inherent in the production process. \textit{FMC Corp. v. Dep't of Commerce}, 37 Env't Rep. Cas. (BNA) 1689, 1697 (3d Cir. 1993), withdrawn \textit{and opinion and judgment vacated upon granting of an en banc hearing}, 10 F.3d 987 (3d Cir. 1994). In its \textit{en banc} decision, however, the court was evenly split on the issue of "arranger" liability and thus affirmed the decision of the lower court imposing liability on the United States. \textit{FMC Corp. v. Dep't of Commerce}, 29 F.3d 833, 845-46 (3d Cir. 1994).
\item \footnote{674}{\textit{Id.} at *69.
\item \footnote{675}{\textit{Cadillac Fairview/California, Inc. v. Dow Chem. Co.}, 299 F.3d 1019, 1024-25 (9th Cir. 2002).
\item \footnote{676}{46 F.3d 803 (8th Cir. 1995).}}}}
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issued pursuant to the Defense Production Act of 1950.677 Under these contracts, the United States specified the physical properties of the product, the packaging, labeling and quality control.678 The rated contracts subjected the contractor to the Walsh-Healey Act's health and safety standards and to DOD inspection.679 The United States also waived duties to allow duty-free import of war materials purchased abroad.680

However, the government did not own or possess the hazardous substances at issue "merely because it had statutory or regulatory authority to control activities which involved the production, treatment or disposal of hazardous substances."681 Refusing to impose liability under the Aceto theory, the court concluded that the regulatory authority of the United States and its contractual relationship with the chemical manufacturer did not justify liability. The United States did not supply raw materials to the manufacturer; the contracts did not address the manner in which the wastes were to be disposed of, and the manufacturer chose to bury the waste on-site; the United States had no financial interest in any of the company’s suppliers; the government gave the company opportunities to negotiate some terms of the contract specifications; and the facility owner had sought the contracts at issue.682 Although the court acknowledged that "circumstances may exist where a government contract involves sufficient coercion or governmental regulation and intervention to justify the United States’ liability as an arranger," the involvement of the United States in the operations at issue did not support such liability.683

Using similar reasoning, courts have ruled that the government's regulatory activities to oversee waste sites do not give rise to arranger liability. In Hassayampa Steering Committee v. Arizona,684 for example, private generators of waste alleged that the State of Arizona was liable for response costs they incurred at a sanitary landfill, because the State had exercised its regulatory authority to permit the landfill, tracked waste transported to the landfill, and assisted the site owner in designing

678. 46 F.3d at 806-07.
679. Id. at 807.
680. Id.
681. Id. at 810. The court read its earlier decision in NEPACCO to hold simply that a corporate employee may be deemed to constructively possess hazardous substances where he knew about, had immediate supervision over, and was directly responsible for arranging for disposal. Id. In this case, in contrast, the court found no evidence that the United States immediately supervised, or had direct responsibility for, the disposal of wastes generated at the facility.
682. Id. at 811.
disposal pits. The court found, however, that arranger liability must be predicated on some nexus between the State and the parties that possessed the waste disposed of, such that the State had constructive ownership or possession of the waste. In the ordinary case, the authority to decide on behalf of the owner where the waste is disposed establishes this nexus. Here the owners of the waste had not authorized the state to decide where or how the waste would be disposed of. The manifest system authorized generators to use the site, but they had other options available to them. Thus, the State had no involvement with disposal until after the generators decided to dispose of the waste, and had sought a manifest.

In a rare and short-lived departure from the strong trend to insulate governmental agencies from arranger liability where they do not themselves own or possess waste and participate directly in decisions regarding disposal, one district court imposed liability on the United States for response costs associated with the disposal of acid sludge and other byproducts generated by processes used by private companies during World War II to produce badly-needed petroleum products for the government. That case, United States v. Shell Oil Co., involved the efforts of the United States and the State of California to recover costs incurred to address substantial environmental contamination at the McColl Superfund Site in Fullerton, California. When the State and EPA sought to recover their cleanup costs from the oil companies under CERCLA, the companies counterclaimed, contending that the United States should bear much of the cost of cleanup because it had “arranged for the disposal” of wastes at the site.

In ruling in favor of the oil companies on the issue of arranger liability, the court relied principally on Aceto, finding that the government owned or supplied raw materials; the government retained ownership or control of the work in progress; and generation of hazardous substances was inherent in the production process.

685. Id. at 701-02.
686. Id. at 700.
687. Id. at 700-01.
688. Id. at 702. See also New York v. City of Johnstown, 701 F. Supp. 33 (N.D.N.Y. 1988) (State not liable as arranger for its activities in permitting waste site, or its alleged failure to regulate the site, because regulatory authority did not constitute requisite “nexus” between the State and the owner of hazardous substances, nor did the State own or possess the hazardous substances); CPC Int'l, Inc. v. Aerojet-General Corp., 777 F. Supp. 549 (W.D. Mich. 1991) (Michigan regulatory agency not liable as an arranger for its activities to address groundwater contamination at waste site because it did not own or possess hazardous substances or control disposal, nor did it assume responsibility for or control over waste disposal).
Recognizing that the government did not directly own or supply raw materials, the court reasoned that it had constructively supplied raw materials because it ordered private companies to supply a finished product, avgas, and dictated the delivery dates, the quantity to be shipped, the prices of the materials, the specifications for the raw materials, and provided transportation for the raw materials. With respect to this element, the government's control over the output of avgas was "pervasive and omnipotent," and the government had "coerced the oil companies into producing avgas, knowing full well that acid sludge would be dumped."

The government retained ownership and control of avgas during its production because it had controlled the specifications, quantities, delivery and price of avgas and exercised "as a practical matter, almost total control over the production of avgas." With respect to the final Aceto criteria—whether generation of hazardous substances was inherent in production—the court found that the government was aware that acid wastes were being dumped and, when it proved unable or unwilling to provide for proper disposal, "turned a blind eye to the problem."

The court relied not only on the Aceto theory to impose indirect arranger liability, but also ruled that the government would be liable under more traditional theories of direct arranger liability. Although the oil companies had not alleged that the United States directly disposed of wastes at the site, the court nevertheless found that the government had affirmatively accepted responsibility for waste disposal because once a government-rented disposal tank was filled, the government took no further responsibility for the waste, and some wastes were eventually dumped because of a tank car shortage. The court found that "once an entity undertakes to arrange for disposal or treatment, it cannot abdicate responsibility when the disposal becomes infeasible."

Reversing this ruling, the Ninth Circuit emphasized that the companies sought the contracts to sell avgas to the government and derived substantial profits from their operations; designed and built their facilities; and managed their own refinery operations, including waste disposal. After the war, the oil companies retained ownership of the facilities they had constructed, in part, with government loans.

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691. Id. at *22. [Reda: spacing?].
692. Id. at *23.
693. Id. at *23-24.
694. Id. at *23.
695. Id. at *24-25.
696. Id.
698. Id. at 1050-51.
Although the government was aware that avgas production generated wastes, it did not order or approve the dumping of waste by the oil companies, nor was it aware of the disposal contracts for dumping at the McColl site.\textsuperscript{699}

The United States was liable neither as an arranger under conventional direct arranger analysis, nor as an indirect arranger under the \textit{Aceto} test.\textsuperscript{700} The government's discussions with the oil companies about the construction of an acid reclamation plant and the government's efforts to facilitate the lease of a storage tank for acid waste failed to “support a conclusion that the United States directly entered into arrangements to dispose of acid waste at the McColl site.”\textsuperscript{701} With respect to the non-traditional theory set forth in \textit{Aceto}, the court agreed with the district court and the oil companies that “control is a crucial element of the determination of whether a party is an arranger under § 9607(a)(3),” but the court did not agree that the government exercised the degree of control necessary to support arranger liability.\textsuperscript{702} Concluding that “[t]here is no bright-line test, either in the statute or in the case law, for a broad theory of arranger liability” under CERCLA, the court reviewed other decisions in order to discern those critical facts on which courts had relied in imposing, or rejecting, arranger liability.\textsuperscript{703}

Reviewing \textit{Aceto}, the Ninth Circuit said that the United States is “in a materially different position in this case from the pesticide manufacturers in that case.”\textsuperscript{704} According to the court, the United States was more properly viewed as an end-purchaser of avgas, not a co-manufacturer like the pesticide manufacturers and formulators in \textit{Aceto}.\textsuperscript{705} Also, unlike the pesticide manufacturers in \textit{Aceto}, the United States never owned any of the raw materials or intervening products, and unlike the pesticide manufacturers in \textit{Aceto}, did not contract out a crucial and waste-producing intermediate step in a manufacturing process and then disclaim responsibility for the waste generated during that step.\textsuperscript{706}

\textsuperscript{699}Id. at 1057.  
\textsuperscript{700}Id. at 1059.  
\textsuperscript{701}Id. at 1055.  
\textsuperscript{702}Id.  
\textsuperscript{703}Id. at 1056.  
\textsuperscript{704}Id.  
\textsuperscript{705}Id.  
\textsuperscript{706}Id. The court might also have distinguished \textit{Aceto} based on the place at which wastes were disposed. In \textit{Aceto}, the contamination was caused at the site of manufacture – the pesticide formulating plant. In \textit{Shell Oil}, the contaminated site was far removed from the site of manufacture. It is unclear whether the \textit{Aceto} analysis would expose parties to arranger liability, even if the \textit{Aceto} conditions were otherwise established, where waste is disposed of by a contract manufacturer off-site at a facility selected by the contract manufacturer. Under the \textit{Aceto} analysis, the principal issue of concern to the court is whether the defendant could be deemed to own or possess the waste. The second element of the claim – whether the defendant arranged for its disposal at a facility – is established simply through the contract for formulation and the
The court also addressed the application of NEPACCO to the government's activities, even though the district court had not relied on that decision in imposing liability. As noted above, in NEPACCO, two corporate officers were personally liable as arrangers under CERCLA based on their involvement in on-site unlawful waste disposal. The court decided that liability under NEPACCO requires much more than general "authority to control." NEPACCO stands for the narrow proposition that "responsible officials in the chain of command of a corporation may be held responsible as arrangers where one of those officers exercised actual control over the disposition of waste, and the other officer had the authority to control the first officer." NEPACCO was inapposite to Shell Oil, because the United States never exercised actual control over, nor had the direct ability to control, waste disposal, and the "waste never belonged to the United States." Finally, the Ninth Circuit distinguished NEPACCO because it involved a wrongdoing by a corporate entity, in which two officers participated. In Shell Oil, in contrast, the private companies alleged no wrongful act of the United States and named no governmental officer.

The court instead looked to FMC and Vertac as more relevant and persuasive authority and concluded that the degree of control exercised by the government in FMC at the Virginia rayon manufacturing plan was far greater than that exercised by the government in connection with avgas production. Pointing out that the Third Circuit divided evenly on pesticide manufacturers' knowledge that spills and leaks are inherent in the process. In the typical off-site disposal case, on the other hand, liability would need to be predicated on some involvement in the decision to send waste to a disposal facility.

707. 294 F.3d at 1056-57.
708. See supra notes 664-671 and accompanying text.
709. 294 F.3d at 1057.
710. Id.
711. Id. The court's refusal to impose liability under the NEPACCO theory was clearly correct, but the court might have rejected, rather than distinguished, NEPACCO's suggestion that liability can be imposed on a corporate officer under CERCLA based solely on his position in the corporate hierarchy. Mere authority to control a subordinate, without the obligation or duty to directly supervise his waste management activities, should not give rise to personal liability. See, e.g., United States v. TIC Inv. Corp., 68 F.3d 1082, 1090 (8th Cir. 1995) (disagreeing with NEPACCO and stating that, for arranger liability to attach to a corporate individual, there must be some actual exercise of control and it must include control over the arrangement for disposal of waste), cert. denied, 519 U.S. 808 (1996); Kelley v. Tiscornia, 827 F. Supp. 1315, 1325 (W.D. Mich. 1993) (rejecting NEPACCO's "authority to control" test for corporate liability, and requiring that officer directly participate in the act); General Electric Co. v. AAMCO Transmissions, Inc., 962 F.2d 281, 286 (2d Cir. 1992) (mere ability to control disposal insufficient for arranger liability; there must be some obligation to exercise control); CBS, Inc., v. Henkin, 803 F. Supp. 1426, 1433 (N.D. Ind. 1992) ("clear majority of cases... require some level of personal involvement before liability accrues"); Riverside Market Develop. Corp. v. Int'l Bldg. Prods., Inc., 931 F.2d 327, 330 (5th Cir.) (no CERCLA liability unless person participated in conduct), cert. denied, 502 U.S. 1004 (1991). [Reda: order of citations?].
712. Shell Oil Co., 294 F.3d at 1058.
the issue of arranger liability in that case, the court said that liability “cannot possibly be a close question on the facts in the case before us.” Similarly, the court examined the facts in the Vertac case and, although it concluded that the involvement “of the United States in the manufacturing of avgas somewhat greater than its involvement in the manufacturing of Agent Orange,... we believe that this was a matter of degree rather than kind.”

b. Arranger Liability at Hardrock Mining Sites

In cases involving hardrock mine sites too, defendants have alleged that the United States’ regulatory activities, or its involvement in private commercial mining activities, gives rise to “arranger” liability. Courts have dismissed such claims, however, finding that there was not the requisite nexus between the activities of the United States and the disposal decision.

In Hanna Mining Co., for example, mining companies asserted claims against both the Forest Service and other agencies of the United States, alleging that they were liable as arrangers for disposal of hazardous substances based on their site-related regulatory activities. The court first rejected the mining companies’ argument that the activities of the Forest Service, including regulation of mining activities, issuance of special use permits, building of roads, and undertaking Remediations, constituted “arranger” liability under CERCLA. The court also rejected arguments that other federal agencies were liable as arrangers, by virtue of their wartime regulatory activities. The court examined laws under which BOM and USGS had been authorized to perform minerals-related research in connection with the national defense and concluded that “in operating and controlling the mine, [the private mining company] made all of the waste disposal decisions during its mining operation.” Nor did the United States, “direct, supervise or participate in the disposal of tailings” at the mine site. Although the BOM had extracted some metallurgical samples, the “amount of on-site work conducted by the United States during its investigation activities is negligible compared to that conducted by the private mining companies.”

In Iron Mountain Mines too, the district court dismissed a claim that the federal government was liable as an arranger under CERCLA for response costs incurred by EPA in cleaning up a hardrock mining site

713. Id. at 1058.
714. Id. at 1059.
717. Id. at 21.
718. Id. at 7.
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from which it had purchased ores during World War II. Mining companies pointed to incentives granted by the government to encourage the production of copper and zinc deemed essential to the war effort, together with price controls to encourage maximum production. They also emphasized that the government purchased the entire copper and zinc output of the mine; controlled marketing and pricing of the ore produced; inspected the facility to ensure against production interruptions and sabotage; hired workers for the mine; granted deferments to mine workers; and resurfaced and improved various roads and other facilities.

In dismissing the claim, the court noted that the mining companies had not alleged that the United States operated the mine in such a way that it could be deemed to possess mining wastes, or ever possessed the mining waste in any way. Although the court acknowledged that "some cases impose arranger liability on parties who did not literally own or physically possess hazardous waste at the time that it was disposed of or released... in each of these cases the party either was the source of the pollution or managed its disposal by the arranger." The court emphasized that "[n]o court has imposed arranger liability on a party who never owned or possessed, and never had the authority to or duty to dispose of, the hazardous materials at issue." Because the complaint did not allege facts showing that the United States "was directly responsible for arranging for the transportation and disposal of" the waste, or owned or possessed the waste at issue, no arranger liability could be imposed.

The district court in East Bay Municipal Utility District also dismissed a claim of arranger liability asserted against the United States. Rejecting allegations that the regulation of wartime mining was sufficient to show that the United States had arranged for the disposal of hazardous substances, the court cited Vertac for the proposition that a "government entity may not be found to have owned or possessed hazardous substances under section 9607(a)(3) merely because it had

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720. Id. at 1451.
721. Id. at 1436 & n.6.
722. Id. at 1451.
723. Id. at 1451, referring to Cadillac Fairview/California, Inc. v. United States, 41 F.3d 562, 565-66 (9th Cir. 1994).
724. Id. Although the court referred to the "authority to control" standard, it referenced in support of this holding the decision of the Second Circuit Court of Appeals in General Electric Co. v. AAMCO Transmissions, Inc., 962 F. 2d 281, 286 (2d Cir. 1992), quoting with approval that court's statement that "it is the obligation to exercise control over hazardous waste disposal, not the mere ability or opportunity to control" that makes an entity an arranger under CERCLA." (Emphasis in original). Id. at 1451.
725. Id. at 1451-52.
statutory or regulatory authority to control activities which involved the production, treatment or disposal of hazardous substances.” In this case too, the contractual relationship between the United States and the mining company was not “sufficiently coercive to render the government liable as an arranger.”

The court concluded that, given the voluntariness of the output contract and the limited rights granted to the government if the company failed to perform, the government could not be said to have constructive possession of the waste. The United States was not an arranger because it “did not dictate[] the manner in which the wastes were disposed of or in some way control[] the disposal of those wastes.” The federal government’s relationship with the mine did not involve it in any decisions regarding the disposal of waste, nor did the United States assume any responsibility for waste disposal. Absent some “nexus” between the United States and disposal, the court ruled, arranger liability could not be imposed.

In *Coeur d’Alene Tribe v. ASARCO, Inc.*, too, mining companies alleged that the United States was liable as an arranger for contamination arising from hardrock mining within the Coeur d’Alene Basin of Idaho. Consistent with their operator liability allegations, they argued that the United States’ activities during World War II and thereafter to encourage the production of minerals constituted an arrangement for disposal of hazardous substances. The United States allegedly was directly liable for its own activities that caused the generation and disposal of waste, and indirectly liable for the activities of private mining companies themselves where the government had the authority to control and exercised substantial control over the arrangement for disposal.

The court looked to *Bestfoods* and concluded that “it appears arranger liability requires active involvement in the arrangements of disposal of hazardous substances.” Such involvement could be satisfied if either (1) a person owns or possesses the waste and directly arranges for its disposal; or (2) the person has the authority to control disposal and

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727. *Id.* at 94.
728. *Id.* at 94–95.
729. *Id.* at 95.
730. In *Atlantic Richfield*, the magistrate referred to *Aceto* and *NEPACCO* in ruling that, to establish that the United States is liable as an arranger, a party must show that (1) the United States actually arranged for disposal of hazardous substances at a site, or (2) the United States supplied hazardous substances and owned or controlled them during the mining or production process, and the generation of hazardous substances was inherent in the processes which released the hazardous substances. No. 89–39–BU-PGH, slip op. at 18–19 (D. Mont. Nov. 1, 1994).
732. *Id.* at 1132.
733. *Id.* at 1131.
exercises some actual control over the disposal.\textsuperscript{734} Under either test, the United States was not an arranger based on its activities during World War II.\textsuperscript{735} Looking to the decisions in FMC, Vertac, and Shell, the court observed here that the United States neither owned nor possessed the waste nor directly arranged for its disposal.\textsuperscript{736} Similarly, although the government provided a host of contractual incentives to private mining companies, and was aware that mining inevitably produced waste, the United States “did not exercise actual control over the disposal of mine tailings.”\textsuperscript{737} 

The court also considered whether the United States’ general land management powers under the public mining laws could make it an arranger under CERCLA for private mining contamination.\textsuperscript{738} Consistent with its ruling on the alleged owner liability of the United States, the court found that BLM had neither the authority to regulate mining activities on public lands, nor the power to address environmental contamination that may be caused by such mining.\textsuperscript{739} With respect to post-FLPMA contamination, the defendants had failed to show that “BLM failed to regulate the mining activities or arranged for the disposal of tailings from unpatented mining claims.”\textsuperscript{740}

The court also refused to impose arranger liability on the United States based on the involvement of the BOM in a 1980s-era flood plain reclamation study, under which the agency sponsored research to develop options to reclaim mine tailings.\textsuperscript{741} As part of the study, a contractor disposed of some 500 tons of tailings in tailings ponds. Although BOM had approved of and funded the study, an industry group seeking to explore ways to improve the local environment had proposed the work.\textsuperscript{742} According to the court, “[t]his activity is not the type of action intended by Congress to create arranger liability.”\textsuperscript{743} Analogizing to the line of cases in which courts have insulated EPA from CERCLA liability for its remedial activities, the court found that the same prudential concerns apply here.\textsuperscript{744}

However, the United States was liable as an arranger for certain affirmative acts of disposal.\textsuperscript{745} BOM’s own “exploration contracts and

\textsuperscript{734} Id. at 1132.  
\textsuperscript{735} Id.  
\textsuperscript{736} Id.  
\textsuperscript{737} Id.  
\textsuperscript{738} Id. at 1133.  
\textsuperscript{739} Id. at 1133-34.  
\textsuperscript{740} Id. at 1134.  
\textsuperscript{741} Id.  
\textsuperscript{742} Id.  
\textsuperscript{743} Id.  
\textsuperscript{744} Id.  
\textsuperscript{745} Id. at 1133-34.
activities" undertaken during World War II gave rise to arranger liability because "the United States knew or should have known that the exploration would create mining tailings," and encouraged the generation of tailings from the exploration.\(^{746}\) The court acknowledged, however, that the amount of waste generated from the government's activities was likely negligible and cautioned that "defendants will have to prove by a preponderance of the evidence that the amount of tailings produced via these exploration activities is in an amount large enough for such tailings to be a contributing factor for causation purposes."\(^{747}\)

Finally, the court found that the United States was an arranger for waste disposed of during the construction of a highway used to improve access to the mine generally.\(^{748}\) The United States Bureau of Public Roads, the predecessor to the Federal Highway Administration, had financed, planned, and approved road construction and exercised its authority to control the disposal of mine tailings used to line the roadbed.\(^{749}\) In imposing arranger liability on the United States, the court noted that the government had paid 92% of the construction costs for the highway, exercised overall approval rights over the design and construction of the road, conducted periodic inspections, and had approved the use of tailings as borrow areas and as source material for road construction.\(^{750}\) Although the construction work was conducted by the State of Idaho and its contractors, the court found that the United States was engaged in a joint venture with respect to the road construction, with "joint management and control" by both the State of Idaho and the federal government.\(^{751}\)

\(^{746}\) Id.  
\(^{747}\) Id.  
\(^{748}\) Id. at 1132–33.  
\(^{749}\) Id. at 1133.  
\(^{750}\) Id.  
\(^{751}\) Id. The court's ruling with respect to this issue is unconvincing. Although parties to a joint venture are mutually and vicariously liable for harms of the venture, the relationship between the United States and the State's contractors cannot easily be viewed as a joint venture. Although no contract expressed any joint venture agreement, the court inferred the presence of such an agreement from the federal government's funding of the road, its oversight of road construction activities, and testimony that the government had "approved the use of tailings" as borrow areas and as source material for construction. Such regulatory actions as approving the use of fill for road construction, however, should not cause the government to be a joint venture partner in road construction. Federal agencies, like the Federal Highway Administration here, frequently provide financial assistance for road construction, and also provide supervision, oversight, and approvals regarding construction. The essential elements of joint ventures, however — such as an expressed willingness to be joint venturers, a sharing of the profits, and formal recognition of shared control — are not present. See Edward Hines Lumber Co. v. Vulcan Materials Co., 861 F.2d 155, 158 (7th Cir. 1988). Moreover, the regulatory actions of the agency should not provide the requisite nexus between the federal government and the State to support arranger liability, nor should those actions amount to constructive possession of the waste. See, e.g., Maxus Energy Corp. v. United States, 898 F. Supp. 399, 406–07 (N.D. Tex. 1995), aff'd, 95
c. Summary of Arranger Liability

As with its rulings on operator liability, courts have been unwilling—with few exceptions—to impose arranger liability on the United States for the activities of its agencies at hardrock mining sites. Typically those agencies neither owned nor possessed hazardous substances within the meaning of section 107(a)(3), nor actively participated in the disposal decisions. In the few instances where courts imposed liability (that is, the United States either participated directly in disposal decisions or itself generated wastes), the contribution of the United State to the contamination has usually been too slight to justify an allocation of response costs.

These decisions, as with the operator rulings discussed earlier, have rejected early, broad formulations of CERCLA liability, under which courts sometimes imposed liability on persons based on their authority to control the action of others or their ability to prevent the harm. As in the operator context, and as underscored by the Supreme Court’s decision in Bestfoods, courts now seek evidence of an entity’s actual or constructive possession of the hazardous substance, its actual involvement in the disposal decision, or, at the very least, an assumption of a duty or obligation to control disposal. With respect to federal liability at hardrock mining sites, where agencies undertake their activities in connection with their role as regulators to promote minerals development or oversee hardrock mining generally, such findings are particularly unlikely.

IV. RECOMMENDATIONS FOR REFORM

The domestic hardrock mining industry has contributed significantly to the nation’s economic growth and defense, but mining has also resulted in widespread degradation of the land, particularly in the West. Much of the degradation resulted from practices no longer common today, when mining sites were operated and abandoned with little concern for the environment, lands were not re-vegetated, and mine waste was piled on-site or dumped into the nearest stream. Under current regulatory regimes, state and federal land managers have begun to integrate land planning into their consideration of hardrock mine proposals, require reclamation at closure, and, in some cases, impose financial assurance to ensure rehabilitation of the lands.

752. See supra § 1.
753. See supra note 7 and accompanying text.
754. See supra § II.D.-F.
Active and inactive mine sites nevertheless continue to contaminate the environment and inhibit or preclude other future uses. The number of sites requiring remediation, although unknown, is indisputably large and many of those sites will give rise to huge cleanup costs. Cleanup funds are scarce. Total state spending on reclamation of hardrock mines is minuscule and, as noted above, the Trust Fund authorized under CERCLA is no longer supported by business taxes, but largely through annual appropriations from the Treasury. Shrinking federal and state funds available for reclamation and cleanup encourage regulators to look to their enforcement authorities to compel mining companies to address such sites. Defendants in such actions will continue to seek contribution from other viable parties, including the federal government.

The issues presented in such cases are complex and require courts to consider simultaneously the rights and interests of parties under the hardrock mining laws—a set of statutes described as “more encrusted with technicalities, subtleties, and divisions than even common law pleading or the Rule against Perpetuities”—and under CERCLA, which traditionally has embraced broad liability based on status. The more nuanced “bundle of rights” approach to owner liability under CERCLA recognizes that holding title is not dispositive, but rather that ownership depends on the relative rights and interests of holders. To fully understand the distribution of these interests at mining sites, courts must engage in a detailed factual inquiry informed by both a broad historical perspective and a keen understanding of the practices that have long governed hardrock mining. Prevailing tests for “arranger” and “operator” liability also require that courts carefully examine the roles and

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755. See supra § I.A. EPA's Office of Enforcement and Compliance Assurance has identified, as one of its highest priorities over the next five years, increased RCRA enforcement at mineral processing sites. EPA said, “Evidence gathered in recent inspections indicates that mineral processing facilities are failing to obtain the necessary permits and adequately manage their wastes. EPA has found that the mishandling of mineral processing wastes has caused significant environmental damage and resulted in costly cleanups. These highly acidic wastes have caused fish kills and the arsenic and cadmium that these wastes often contain have been found in elevated levels in residential drinking water wells.” 68 Fed. Reg. 68,893, 68,895 (Dec. 10, 2003).

756. Oversight Hearing on the Superfund Program Before the Senate Subcomm. on Superfund, Waste Control and Risk Assessment, 107th Cong. 7 (April 10, 2002) (statement of Marianne Lamont Horinko, Assistant Administrator, Office of Solid Waste and Emergency Response: “There is now a greater number of federal facilities and very large sites (mega-sites exceeding $50 million in cleanup costs) as a percentage of NPL sites not construction complete than ever before.”).

757. See supra note 28.

758. WGA REPORT 1998, supra note 57, at 7 (reporting that state funds dedicated to hardrock reclamation in 1997 slightly exceeded $2 million).

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responsible of federal agencies and instrumentalities, and their successors and predecessors, over the course of generations.

With few exceptions, courts have not eschewed the hard analysis required in these cases and as a result the United States has generally prevailed in CERCLA contribution actions.\textsuperscript{760} Court decisions holding that federal agencies should be protected from CERCLA liability at hardrock mining sites on public lands remain controversial, however. In commenting on EPA's policy for listing mixed ownership hardrock mines on the Federal Agency Hazardous Waste Compliance Docket (Docket), some state regulators opposed EPA's proposal to treat such sites as private for purposes of Docket and potential NPL listing.\textsuperscript{761} Among other things, they disagreed with the position taken by the courts in Friedland and other cases, because they believed that EPA's policy might encourage the creation of more orphan sites on the public lands, and that "unless the [federal land managing agency] decides to voluntarily undertake cleanup activities... EPA or the state will likely be left the responsibility for the cleanup."\textsuperscript{762} Even EPA, which generally has refrained from listing mining sites on the NPL as federal facilities or targeting federal land managers in enforcement actions has at times looked to sister agencies as a potential source of funding to clean up hardrock mines.\textsuperscript{763}

Mining companies, of course, disagree strongly that they alone should bear the costs of remediating hardrock mines located on public lands. Federal land managers, on the other hand, view miners' CERCLA

\textsuperscript{760} See generally supra § III.B.

\textsuperscript{761} Comment Letter, Washington Department of Ecology; Idaho Department of Environmental Quality; the Oregon Department of Environmental Quality; Alaska Department of Natural Resources; and the Idaho Department of Lands, EPA Region X States' Comments on EPA's Draft Policy on Listing Mixed Ownership Mine or Mill Sites Created as a Result of the General Mining Law of 1872 on the Federal Agency Hazardous Waste Compliance Docket (March 25, 2002).

\textsuperscript{762} Id. at 3.

\textsuperscript{763} EPA issued to Interior a special notice letter, authorized under CERCLA section 122(e), advising Interior of its potential liability for response costs incurred at the Tar Creek Superfund site – an NPL site in Oklahoma at which lead and zinc mining had occurred for decades. Although no public lands were involved, EPA alleged that Interior may be liable as both an operator and an arranger because of its activities, as trustee for certain lands owned by the Quapaw Tribe within the site and leased for hardrock mining, in overseeing mining and assisting the Tribe with mineral leases. Letter from Myron O. Knudson, Director, Superfund Division, EPA Region 6, to Bruce Babbitt, Secretary, Department of the Interior (Dec. 19, 2000). EPA's position is not only inconsistent with the principles outlined above bearing on the federal government's CERCLA liability for oversight of third-party mining activities, but also contravenes CERCLA provisions dealing with trustee liability. CERCLA section 107(n) provides that the liability of a fiduciary for actions taken in a fiduciary capacity "shall not exceed the assets held in the fiduciary capacity." 42 U.S.C. § 9607(n) (2000). In amending CERCLA to grant liability relief to trustees, Congress codified the general common law rule that a trustee is not personally liable for actions taken on behalf of a beneficiary absent negligence, or breach of fiduciary duty.
liability as a fair—although long delayed and not entirely expected—recompense for generations of free and open access to the public lands.

Nearly everyone agrees, however, that the prevailing approach to the remediation of hardrock mines has limitations. To use scarce cleanup and enforcement monies effectively, policymakers must have an accurate inventory of mining sites, together with a defensible method to prioritize sites based on the risk they pose to human health and the environment. Although federal and state agencies have made some strides toward developing both, neither a comprehensive inventory nor a compatible—much less uniform—prioritization scheme currently exists. Hardrock mine cleanups often result as much from chance disputes among business competitors, or from serendipitous discoveries of significant releases, as from the planning activities or long-term policy decisions of regulators.

A more fundamental problem with hardrock mining cleanups, of course, is that sources of funding for mine cleanups are limited. Old sites abandoned generations ago typically are orphaned, and must be addressed using public funds. Active sites, too, often require using public funds as mining companies experience insolvency, and bonds prove insufficient. Where mining companies remain solvent, CERCLA enforcement can be costly and protracted. Imposition of joint and several liability under CERCLA can impose huge liabilities on an entity that, through a combination of bad luck and market volatility, may be the only remaining viable party at a site. Despite these problems, no dedicated source of funding for mine cleanups exists.

Legislative and administrative reforms are needed to address the growing backlog of contaminated mining sites; to help ensure that limited federal and state enforcement and cleanup resources are used judiciously; to encourage the remining of previously-mined lands; and to promote a more efficient and equitable means to address contaminated hardrock mines. Until recently, however, the mining industry has opposed broad reforms that would erode traditional and zealously-guarded rights of self-initiation and open access to the public lands, or impose royalties or taxes on mineral production. Environmental groups, bruised by legislative defeats in the hardrock mining area, have been wary of reforms that offer even modest liability relief for the mining industry. State and federal regulators, charged by legislators with balancing mineral production and

764. See supra § 1.A.
765. See, e.g., MEMBERS OF THE NEVADA BONDING TASK FORCE, CURRENT MINING BONDING ISSUES IN NEVADA 15 (March 24, 2003) ("During the past few years, approximately 32 mining projects on Federal and private lands in Nevada have entered bankruptcy. . . . However, it soon became evident that many costs associated with reclamation and closure had not been anticipated.").
environmental protection, find themselves mistrusted by both mining and environmental interests and reluctant to advocate reforms absent some clear common ground among stakeholders, and strong congressional interest.\textsuperscript{767}

Reform efforts must also overcome significant institutional obstacles. Hardrock mining is highly Balkanized, with regulatory authority shared among federal, state, and local entities that do not always share the same goals and interests. Legislative and regulatory initiatives directed at hardrock mining reform often focus on public lands, and do not always address state and private property. Where legislative proposals apply more broadly, federal agencies and states often express different views of what constitutes "cooperative federalism"—how they would share funding and authority at hardrock mining sites.\textsuperscript{768}

Because of their different missions, agencies of the federal government, too, do not always share the same vision and goals. As the entity that sometimes finds itself managing the risk left behind by hardrock mining, EPA often views federal land managers as excessively deferential in regulating industry and too ready to shortchange environmental values in favor of commercial ones. Federal land managers, on the other hand, often are simultaneously envious and critical of EPA's single-minded mission of environmental protection. They view EPA's approach to risk assessment as excessively conservative and myopic, since Congress did not charge EPA with the more difficult task of managing public lands for multiple uses, including mineral production. Mining companies struggle to respond to heightened expectations for environmental stewardship, from both regulators and environmental groups, in a marketplace that rewards agility, flexibility, and the establishment of lean reserves.

Despite these obstacles, reforms are possible. Mining companies increasingly realize that western culture has changed.\textsuperscript{769} New residents often do not share the same hierarchy of interests as their predecessors, who historically relied on mining for jobs and economic growth.\textsuperscript{770} Newcomers increasingly look to the western lands for recreation and for wildlife conservation. Congress's repeated extension of the patent moratorium demonstrates its awareness of a broad-based and entrenched

\textsuperscript{767}. See generally Leshy, Hubbard supra note 242.

\textsuperscript{768}. See e.g., James M. McElfish Jr. & Ann E. Beier, Environmental Regulation of Coal Mining: SMCRA's Second Decade 27 (1990) (commenting that "[n]o issue under [the Surface Mining Control and Reclamation Act] SMCRA is more troubling than the relationship between the state regulatory authorities and the federal government.").

\textsuperscript{769}. Christopher McGrory Klyza, Reform at a Geological Pace: Mining Policy on Federal Lands, in Western Public Lands and Environmental Politics 95, 103-04 (Charles Davis ed., 1997).

\textsuperscript{770}. Id.
political consensus that miners should not receive title to public lands for a nominal fee.\textsuperscript{771} At the same time, however, legislators are aware of the high capital costs attendant to modern domestic hardrock mining and acknowledge that companies increasingly are looking to foreign sources of ores, to the detriment of both local and national economies.\textsuperscript{772} Some legislators and policymakers, too, continue to believe that current laws and practices do not adequately address the hardrock mining problem.\textsuperscript{773} Thus, meaningful reforms, some of which are discussed below, may be possible in the near future.

A. Better Data on Hardrock Mining Sites

Federal and state regulators readily acknowledge the poor state of knowledge of the hardrock mining problem nationwide.\textsuperscript{774} Inventory efforts, nascent at both the national and state level, are incomplete and often inaccurate.\textsuperscript{775} Where data exist, they are often collected for different purposes, using different methodologies, and are not always shared among regulators.\textsuperscript{776} Typical inventories today often do not consistently categorize sites into those that present, or may present, a significant environmental threat. Even when characterized generally, sites are not subject to uniform, or even compatible, prioritization schemes—rational methods to allocate scarce enforcement and cleanup dollars.\textsuperscript{777}

The undeveloped nature of hardrock mining planning is not the result of regulatory disinterest. Conducting inventories, characterizing site conditions, and prioritizing sites for enforcement or funding are resource-intensive tasks for which appropriations have been scarce at

\textsuperscript{771} See Hardrock Mining Reform is in the Air, 29 PUBLIC LANDS NEWS 3-4 (Sept. 17, 2004).


\textsuperscript{774} See BUREAU OF LAND MGMT., ABANDONED MINE LAND INVENTORY AND REMEDIATION, Exec. Summ. (Nov. 1996) (“the reliability and consistency of data [on hardrock mining sites] across BLM administrative boundaries is poor”).

\textsuperscript{775} Id. Pilot field activities found “three times as many [abandoned mine land] features on-the-ground as were indicated from existing data sources.”

\textsuperscript{776} See, e.g., U.S. GEN. ACCOUNTING OFFICE, REP. NO. GAO-04-382, WATERSHED MANAGEMENT: BETTER COORDINATION OF DATA COLLECTION EFFORTS NEEDED TO SUPPORT KEY DECISIONS (2004) (noting problems in state and federal sharing of water quality data and recommending that a lead organization be designated to coordinate data collection and disseminate it nationwide).

\textsuperscript{777} See supra § I.
both the federal and state levels. Nevertheless, policymakers increasingly realize that implementing a rational hardrock mining program depends on reliable data about the universe of sites, the consistent identification of sites presenting problems, and the development and consistent application of a risk-based prioritization scheme for cleanup.\footnote{778}

The mere existence of an inventory can serve as a powerful incentive to cleanup. For example, auditors are admonishing federal agencies to show greater conservatism in reporting their environmental contingent liabilities. They expect federal agencies to quantify costs associated with hardrock sites that may soon impose an obligation on the federal fisc and to schedule such sites for cleanup.\footnote{779} The formal designation of a site as a potential environmental liability carries equally important implications for corporations. If a site is inventoried and identified as a potential problem, responsible mining companies will need to consider such a listing when reporting their environmental liabilities to shareholders and the Securities and Exchange Commission.\footnote{780} Corporations, lenders and bondholders are understandably uneasy about Superfund listings, particularly at mega-sites. Thorough and up-to-date hardrock mining site inventories can, therefore, ensure that both the federal government and private industry inform the public and corporate stockholders of the true scope of their potential liabilities. Such information can have a significant and salutary effect on both public understanding of the size of the problem and on cleanup.\footnote{781}

Inventory efforts can also help federal land managers and states identify sites at which enforcement-lead cleanups should be expedited. Because of the volatility of the minerals markets, mining companies incorporate and dissolve with some frequency.\footnote{782} Inventory efforts, which commonly include an identification of current and past operators, can help to alert land managers of potential bankruptcies, mergers, and acquisitions that may in turn have profound implications on taxpayer liability at the site. Where bankruptcy or other financial notices

\footnote{778. See DOI01: Establish a Hard Rock Mine Reclamation Fund to Restore the Environment, in NATIONAL PARTNERSHIP FOR REINVENTING GOVERNMENT (1994) ("DOI should establish a nationwide priority system for cleanup of abandoned hard rock mines based on the risks involved and identified through an inventory of mine sites").


782. See supra note 765.}
demonstrate a potential for insolvency, regulators can prioritize sites for investigation and cleanup, file proofs of claim in bankruptcy proceedings, and engineer settlement agreements with responsible parties under which monies are placed in escrow to address both present and future environmental liabilities.\textsuperscript{783}

Inventory efforts, undertaken in cooperation with states, can also facilitate joint cleanup/enforcement efforts at mixed ownership sites. States are often most knowledgeable about existing and potential land uses near sites, and thus are often best able to assist with risk identification and prioritization. Federal agencies have sometimes partnered with state regulators to share data collection and to facilitate site investigations and cleanup.\textsuperscript{784} Nevertheless, funding for such efforts is scarce. In recent years, however, some legislators have proposed amending the hardrock mining laws to encourage states to complete inventories of abandoned hardrock mines and identify priority sites for cleanup. These proposals also generally provide for a hardrock reclamation fund, discussed below, to be made available to states to remediate hardrock mines, after inventories have been completed.\textsuperscript{785}

\textbf{B. Hardrock Reclamation Fund}

Numerous studies of the public mining laws have recommended that they be revised to require hardrock miners, like other users of the public lands, to pay fair-market value for their rights to extract minerals.\textsuperscript{786} Such

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\item[783.] In a matter involving ASARCO Inc. for example, the Department of Justice filed a complaint and motion for a preliminary injunction to enjoin the transfer of ASARCO's most valuable asset—the majority ownership interest in a Peruvian copper company—to its parent corporation, Americas Mining Corp. DOJ alleged that the proposed sale was for significantly less than the actual value of that interest and would severely reduce ASARCO's ability to meet its environmental obligations at numerous contaminated mining sites across the country. A consent decree ultimately was lodged, which, among other things, required that ASARCO set aside monies in a trust to address its existing and future environmental liabilities. EPA and other federal agencies periodically access the trust to address sites identified by them as requiring environmental investigations or cleanups. \textit{See United States v. ASARCO Inc., No. 02-2079 (D. Ariz. Feb. 2, 2003) (consent decree).}
\item[785.] \textit{See ABANDONED HARDROCK MINES RECLAMATION ACT, H.R. 504, 108th Cong. § 103(d)(2) (2003).}
\item[786.] \textit{See, e.g., Paul Stokstad, Structuring a Reclamation Program for Abandoned Noncoal Mines, 25 ECOLOGY L. Q. 121, 147-152 (1998) (summarizing a number of studies that have examined the issue of taxes and royalties on hardrock mining); DOI01: Establish a Hard Rock Mine Reclamation Fund to Restore the Environment, in NATIONAL PARTNERSHIP FOR REINVENTING GOVERNMENT (1994) ("Legislation should be enacted to establish a new hard rock mining reclamation fund . . . emphasizing its use for cleanup and research....")}; \textbf{PUBLIC}
\end{enumerate}
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proposals often are linked to the creation of a hardrock reclamation fund. A portion of the proposed royalties, rents, or taxes paid by hardrock miners would help supply a fund dedicated to the cleanup of inactive and abandoned mines. Proponents point out that minerals produced on private and state lands invariably are disposed of only after payment of substantial rents or royalties. They emphasize further that the United States charges royalties for hardrock minerals taken from acquired lands—lands not within the public domain—and for minerals subject to the leasing laws. The lack of a royalty for hardrock mines is anachronistic, they maintain, and tends to skew mineral production toward the public lands because mining companies, like any other business, expand operations where the price for access is lower.787

The Surface Mining Control and Reclamation Act (SMCRA), designed to address coal mining problems, includes such a fund—the Abandoned Mine Reclamation Fund—whose purpose is to reclaim lands

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787. OTA REPORT, supra note 164, at 201 ("The absence in the Mining Law of required compensation payments at least comparable to those implicitly required on private land . . . means that mineral resources on Federal land are underpriced in comparison with mineral resources on private land and in relation to the real total social costs of their discovery, development, and production. The under pricing of mineral resources on Federal land may tend to encourage their wasteful use."). More than 25 years ago, the CEQ estimated that the United States would collect about $120 million per year if it charged the same royalties it currently imposes on hardrock mining on acquired land on the hardrock mineral production from other federal lands. COUNCIL ON ENVT. QUALITY, HARD ROCK MINING ON THE PUBLIC LAND 12 (1977). See also U.S. GEN. ACCOUNTING OFFICE, REP. NO. GAO/RCED-92-192, VALUE OF H ARDROCK MINERALS EXTRACTED FROM AND REMAINING ON PUBLIC LANDS 2 (1992) (finding at least $1.2 billion worth of minerals produced in 1991 from federal lands in western states); BUREAU OF LAND MGMT., FINAL ENVIRONMENTAL IMPACT STATEMENT, SURFACE MANAGEMENT REGULATION FOR LOCATEABLE MINERAL OPERATIONS (2000) (reporting that in 1998, approximately $1.7 billion worth of hardrock minerals were extracted from the federal lands, with no royalty or other payment made to the United States).
previously used for coal mining and abandoned or left inadequately reclaimed. The main revenue source for the fund is a fee assessed against current coal producers. As Congress commented when enacting SMCRA, using language equally appropriate to hardrock mining:

[The burden of paying for reclamation is rightfully assessed against the coal industry. The bill adopts the principle that the coal industry and, by extension the consumers of coal, must bear the responsibility for supporting special rehabilitation programs to recover and reclaim areas which have been severely impacted in the past by coal mining operations.]

Although states, under some circumstances, can reclaim high-priority non-coal mine sites using SMCRA funds, they traditionally have used those monies only to address safety hazards, not environmental problems. Moreover, management of the program implicates difficult issues of federalism, and states have expressed concern both about the propriety of levying fees on businesses in their states to address a nationwide problem and, when fees are levied, about whether they have received a fair share of fund monies. At coal mines, however, SMCRA funds have been instrumental in reclaiming a substantial number of the nation’s abandoned and inactive sites.

The creation and implementation of a dedicated hardrock reclamation fund raises questions identical to those that have arisen under SMCRA, including what kinds of fees or royalties are appropriate; who should administer such a fund (the federal or state

790. See MCELFRISH & BEIER, supra note 768, at 253-263 (1990) (commenting that states may use AML funds to reclaim noncoal mine sites where the state has reclaimed all AML coal sites, or non-coal reclamation is necessary because it is related to public health and safety); WGA STUDY 1991, supra note 13, at 110 (pointing out that “[o]nly safety hazards - not environmental problems - associated with noncoal [inactive and abandoned mines] are likely to receive SMCRA funding until a state completes all of its coal reclamation”). In addition, because SMCRA funds are allocated based on the amount of coal mining in a state, it is of little help in states, which, although producing much of the nation’s hardrock minerals, have little or no coal (i.e., Nevada, Idaho, California).
792. See Susan P. Bass, Tools for Regulating the Environmental Impacts of Mining in the United States, 26 ENV’T REP. (BNA) 10,159, 10,172 (1996) (“Through SMCRA, the law has dramatically reduced the environmental impacts of coal mining and substantially advanced the art of reclamation. In the area of hard-rock mining, however, the record is more mixed, reflecting a less coherent regulatory structure.”); Stokstad, supra note 786, at 164 (“Given the relative success of the SMCRA program in cleaning up abandoned coal mines, the recent proposals to create a noncoal reclamation program modeled after SMCRA are a sensible place to start.”).
793. See, e.g., T.S. Ary, Royalties, in THE MINING LAW OF 1872, supra note 6, at 73-85 (describing some of the numerous varieties of royalties that could be assessed on hardrock mining).
government); how sites will be prioritized for cleanup; the breadth of such a program (that is, should it apply to federal, state and private lands); and whether it should contain reclamation standards and, if so, their stringency. Despite the complexities and implementation difficulties inherent in any program to assess royalties on hardrock mining and to establish a reclamation fund, a fund is necessary to supplement quickly-diminishing sources of funding for hardrock mining site cleanup.

A hardrock reclamation fund could also help mitigate some of the inequities believed to flow from CERCLA. Industry critics of the taxes underlying the Trust Fund have argued that mining is treated preferentially because the corporate taxes were directed—when they were in effect—largely at the chemical and oil sectors. During debates on the renewal of the taxes underlying the Trust Fund, representatives of those industries maintained that the mining industry had not been paying its fair share. In particular, they argued, because large mining sites made up a disproportionate share of the sites yet to be addressed under CERCLA, mining companies should be subject to additional taxes. A dedicated hardrock reclamation fund used to address abandoned and inactive hardrock mines could not only supplement monies made available through the Trust Fund, but also ensure that the mining industry pays a fair share of the costs of addressing the nation's waste sites.

Additionally, a dedicated hardrock mining fund could address some of the fairness issues that miners themselves raise. A fund could help to pay for the "orphan share"—that share of response costs attributable to parties who are defunct or otherwise unlocatable. Given the long and varied use of hardrock mining sites over the generations, a large percentage of former owners and operators invariably are bankrupt or no longer in operation, and the orphan share at such mines is often sizeable.

794. Stokstad, supra note 786, at 147-152.
795. The National Mining Association has, in recent years, supported both the notion of a royalty and the creation of a hardrock reclamation fund. See NMA, MINING LAW REFORM ISSUE IN BRIEF: GENERAL MINING LAW REFORM (2002-02) ("NMA supports creation of an Abandoned Hard Rock Mine Reclamation Fund" to help reclaim mines at sites on public lands adversely affected by mining). The Western Governors' Association also supports a fair royalty for hardrock production, and has proposed that monies generated by such royalties be used to fund a State Resources Management Trust Fund, to improve natural resources in the states. WESTERN GOVERNORS' ASSOCIATION, HARDROCK MINING REGULATION AND REFORM, POLICY RESOLUTION 02-13 (June 2002). See also Miners Drop 3809 Litigation, Call for 1872 Mine Law Change, 26 PUBLIC LANDS NEWS 9-10 (Dec. 7, 2001) (Interior Secretary Gale Norton calls for revisions of the public land laws, including reasonable royalties for hardrock production).
797. Id.
Under CERCLA, EPA can use the Trust Fund in some circumstances to pay for the orphan share as part of a settlement with responsible parties. The Trust Fund is not available to conduct remedial actions on public lands, yet such lands contain innumerable inactive and abandoned mines with a proportionately large orphan share. A dedicated hardrock reclamation fund, authorized by statute to fund the orphan share, could supplement funds provided by responsible mining companies. Such a fund could also significantly enhance the effectiveness of enforcement actions by providing an invaluable incentive for private parties to participate voluntarily in cleanup.

A reclamation fund could also supplement other private and federal funds and promote basic research into mining site reclamation and cleanup. Although USGS and others have begun to study the environmental effects of hardrock mining, much more work is needed to explore such issues as the long-term integrity of dams and pit lakes; the prediction and prevention of acid mine drainage; and the design and long-term maintenance of tailings impoundments. In its 1999 review of hardrock mining practices, for example, the NRC warned that regulatory agencies and the mining industry are not adequately addressing research needs related to the environmental aspects of hardrock mining and reclamation. It concluded that public funding was needed for basic research, particularly in light of the potential for long-lasting environmental impacts from mining and recommended that Congress fund an aggressive and coordinated research program related to the environmental impacts of hardrock mining. A hardrock mining fund, with monies available for basic research, could help achieve these goals.


799. See supra note 350 and accompanying text.

800. NRC REPORT 1999, supra note 12, at 106. EPA'S NATIONAL HARDROCK MINING FRAMEWORK 8 (1997) (recommending that EPA work with other entities to promote research into such issues as metals fate and transport, remediation technology, and ecological risk assessment).


802. Id. at 9.
A dedicated hardrock fund could also help ensure the stability of a market for hardrock mining cleanups and thus promote the growth and development of technologies in this area. Regulators and land managers are highly dependent on contractors for investigation and cleanup work, but many contractors are unwilling to invest research and development funds to enter the mining remediation market without assurance that it is a stable one. Federal monies, made available from a revolving hardrock mining fund, could supplement private funds and assure private contractors and others that the government is committed to improving environmental conditions at hardrock mining site. The findings from such research would be relevant to both active and inactive sites and thus would serve both prophylactic (through the development of best management practices) and remediation goals. In this way, such a fund could help address concerns of active mining companies that contend current regulation treats them unfairly because it is directed largely at abandoned and inactive mines for which the principal contributors to the fund have little or no responsibility.

C. Incentives for Remining

Remining can help clean up abandoned sites. Hardrock mining can occur, of course, only in those few areas where minerals are concentrated in deposits of sufficient size to make mining economically viable.\(^3\) Old, previously-worked sites frequently contain minerals which, using modern mining techniques, can be economically "remined," adding to the nation's store of valuable mineral lands.\(^4\) During remining operations, many of the problems associated with abandoned mine lands can be mitigated as operators use or remove existing wastes, dispose of newly generated wastes consistent with current regulatory standards, and reclaim previously unreclaimed lands. Remining thus can simultaneously improve site conditions (particularly water quality), provide additional economic development opportunities to businesses and create jobs, and encourage the extraction of remaining minerals from previously mined lands while protecting virgin lands from development.

The government should encourage private industry to remine sites to achieve a net reduction in environmental risk.\(^5\) Miners reasonably fear

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\(^3\) Id. at 2-3 ("Only a very small portion of the Earth's continental crust (less than 0.01\%) contains economically viable mineral deposits. Thus, mines can only be located in those few places where economically viable deposits were formed and discovered.").

\(^4\) Id. at 104-06.

\(^5\) See, e.g., id. at 105 (stating that "reclamation of previously mined areas would be a reasonable approach for combining construction of the new mine with improvement of environmental conditions caused by earlier mining"); EPA, NATIONAL HARDROCK MINING FRAMEWORK 9 (1997) ("EPA should encourage reprocessing of historic mine wastes in conjunction with, or as a component of, site cleanup.").
that their activities at a previously-mined site will cause or contribute to a release of hazardous substances and thus subject them to site-wide liability under CERCLA for both response costs and natural resource damages. Under the Clean Water Act too, mining companies that undertake activities at disturbed sites fear that they will be held responsible for all discharges to surface waters from the historic mining site, including pre-existing discharges. In that event, they could be required to treat such discharges, in perpetuity, to meet contemporary effluent limitation guidelines and water quality standards. Liability under RCRA may be less problematic for mining companies because most mining wastes are exempt from the stringent regulatory regime applicable to hazardous wastes under Subtitle C of RCRA. Nevertheless, because mineral extraction, beneficiation, and process wastes are "solid wastes" within the meaning of RCRA, mining companies face some risk of liability under the "imminent and substantial endangerment" and the corrective action provisions of RCRA.

To encourage remining and to reap the environmental benefits believed to flow from remining, private industry must have some protection from federal environmental laws where its activities improve environmental conditions or, at a minimum, do not aggravate them. Several years ago, the NRC recommended that "[e]xisting environmental laws and regulations should be modified to allow and promote the cleanup of abandoned mine sites in or adjacent to new mine areas without causing mine operators to incur additional environmental liabilities." Although it did not propose specific reforms of federal environmental laws, it recommended that "[t]he federal land management agencies, in cooperation with EPA, and other state or federal agencies with potential regulatory authority, should propose to

806. See Committee to Save Mokelumne River v. E. Bay Mun. Util. Dist., 13 F.3d 305, 309 (9th Cir. 1993) (holding liable under the Clean Water Act a state government entity that had constructed a dam and reservoir to contain toxic runoff from abandoned mine, cert. denied, 513 U.S. 873 (1994). See also McELFISH & BEIER, supra note 768, at 278 (summarizing current and proposed remining initiatives at coal mines regulated under SMCRA and noting that the "biggest obstacle to remining by large operators appears to be concern with long-term liability").

807. See supra note 12.

808. See supra note 129.

809. Although some mining wastes are exempt from RCRA Subtitle C through the Bevill Amendment, the Amendment does not exempt mining wastes from the corrective action requirements of section 3004(m) or the imminent and substantial endangerment provisions of section 7003. See, e.g., American Iron & Steel Inst. v. EPA, 886 F.2d 390 (D.C. Cir. 1989), cert. denied, 497 U.S. 1003 (1990).

810. See, e.g., STUART BUCK & DAVID GERARD, CLEANING UP MINING WASTE (Political Economy Research Ctr. 2001); WGA STUDY 1991, supra note 13, 93-99; Stokstad, supra note 786, at 162-164.

811. NRC REPORT 1999, supra note 12, at 104.
Congress changes in regulatory authority that would promote voluntary cleanup.\textsuperscript{812}

Most of the various reforms proposed in the past to minimize the liability of entities engaged in remining activities never materialized. Mining companies and their trade associations have, for example, recommended exempting remining activities from joint and several liability so that miners will be liable for any environmental damage they cause during remining activities, but will not be liable for pre-existing conditions.\textsuperscript{813} Congress could implement such proposals through either direct amendments to CERCLA or through more tailored "Good Samaritan" laws under which a remediating party (including a party conducting remining activities) would not face liability under CERCLA or the Clean Water Act for their activities, provided they do not make conditions worse.\textsuperscript{814}

Others have proposed new statutory exemptions from the Clean Water Act's permitting requirements for remining activities. Under an amendment to the Clean Water Act, for example, Representative Nick Rahall (D.-WV) sought to promote the the remining of abandoned coal mines by exempting certain remining activities from otherwise applicable national effluent limitations.\textsuperscript{815} The Rahall Amendment allows EPA and states to waive effluent limitations at sites subject to remining and instead incorporate site-specific limitations for pre-existing discharges of certain designated pollutants.\textsuperscript{816} Permits would not be granted, however, if remining would cause discharges to exceed pre-existing levels.\textsuperscript{817} The remining exemption was, in fact, successful in improving environmental conditions at previously mined sites.\textsuperscript{818} The future of the program,
however, is in doubt in light of the recent decision of the United States Court of Appeals for the Sixth Circuit to invalidate EPA's rules for coal remining activities.\footnote{819. Citizens Coal Council v. EPA, 385 F.3d 969 (6th Cir. 2004) (finding that EPA’s regulations for the Coal Remining Subcategory under the Clean Water Act were invalid because, among other things, the agency did not determine the degree of effluent reduction attainable during remining, but rather established baseline loading as the desired goal).}

Other, more modest proposals to encourage remining activities include administrative reforms to reduce bonding for reclamation of previously mined lands; limiting the miner's liability associated with the release of a bond for approved mining projects,\footnote{820. The State of Maryland, for example, has sought to encourage remining of coal sites by reducing the open-acre bonding of sites subject to remining permits, and by reducing the bond liability period. See Memorandum from Maryland Bureau of Mines to Maryland Coal Operators, New Performance Bond Rates (May 28, 1996).} and establishing pollution credits/reclamation banking to permit entities reclaiming or remining sites to receive credit for the resource value restored there, credit they can use to mitigate the loss of similar values at other mining sites.

All of these proposals are controversial, as is the notion that those engaged in private commercial mining—even to remine lands—should receive relief from federal environmental laws, or even that they be given incentives through administrative actions to encourage remining.\footnote{821. With respect to the Clean Water Act provisions for coal remining, for example, several environmental groups successfully challenged EPA's implementing regulations, arguing that they violate the Clean Water Act in various respects. Citizens Coal Council v. EPA, 385 F.3d 969, 977-78 (6th Cir. 2004).}

Nevertheless, there is a growing recognition that mining is unique in that production cannot simply be transferred to virgin lands, because minerals are scarce. Meaningful remining simply will not occur absent some liability relief. The most fruitful avenue for reform likely consists not of broad amendments to CERCLA or the Clean Water Act, but to variations of targeted, Good Samaritan legislation, under which governments and private parties will receive some liability relief under federal environmental laws for their efforts to reduce contamination at hardrock mining sites.

Absent such reforms and incentives, both mining companies and the public will continue to miss opportunities for economically-beneficial mineral extraction and remediation; new operations will disturb virgin lands; and only those companies least able to bear the cost of cleanup (undercapitalized, and thus judgment proof) will be willing to conduct hardrock operations on previously-mined lands.
D. Watershed Approach

The environmental impacts of hardrock mining are not cabined by the physical boundaries of the mining claim nor are they respectful of jurisdictional limits. Rather, contamination commonly extends throughout broad watersheds. Traditional regulatory approaches to the permitting and cleanup of hardrock mines, in contrast, focus on discrete activities at specific sites. Regulatory authority is often media-specific and cannot always reach all impacts to a watershed. Increasingly, however, regulators are recognizing that the cleanup of mining lands on a site-by-site basis invariably is costly, and may ultimately have only a modest effect on water quality.

In 1991, EPA announced that water quality issues are best addressed "in a holistic manner" so that all point and non-point source discharges contributing to habitat degradation are considered at one time. Under this approach, regulators are encouraged to identify and address significant sources of water pollution within a hydrologically-defined geographic area. In the late 1990s, federal land managers and EPA developed a Clean Water Action Plan using watershed or hydrologic boundaries to define the problem area. USGS's abandoned mine lands initiative began to develop a "strategy for gathering and communicating the scientific information needed to formulate effective and cost-efficient remediation of [abandoned mine lands] within the framework of a watershed approach." Interior and the Forest Service also have developed a plan for a risk-based watershed approach to address

822. See generally EPA, A REVIEW OF STATEWIDE WATERSHED MANAGEMENT APPROACHES : FINAL REPORT (April 2002) (reviewing barriers to adoption of watershed approaches, including traditional focus on permitting of specific sites or stretches of streams). [Reda: spacing in title].
825. EPA, THE WATERSHED PROTECTION APPROACH FRAMEWORK DOCUMENT 1 (Oct. 1991). See also EPA, NATIONAL HARDROCK MINING FRAMEWORK C-10 (1997) ("Recent national initiatives are directed toward ensuring that point sources of pollution are addressed, to the maximum extent possible, on a watershed basis . . . The watershed approach can be an effective administrative mechanism to provide greater cost effective reductions of pollutant loadings.").
abandoned mines on federal lands. The plan calls for statewide analysis and prioritization of critical watersheds; characterization of those watersheds; and state/federal cooperation in cleanup.

Implementation of watershed approaches, however, is neither easy nor straightforward. Water quality and land management authorities within a single jurisdiction often are distributed among numerous agencies, commissions, and departments. These entities collect data using different definitions and methodologies for different purposes, and focus on a specific point source or non-point source discharge. Regulators often lack resources to conduct basin-wide assessments, and policy and program commitments to watershed approaches are often viewed as tentative and fragile because of the historic focus on traditional, long-standing program activities such as point source permitting; releases to individual streams; or parameter-driven programs (that is, a single pollutant rather than stressors to an entire waterbody).

Nevertheless, the limitations of existing approaches are becoming more apparent and improvements in this area are likely. States, in particular, have a strong interest in watershed approaches to mining contamination because, as they begin to complete their work in identifying Total Maximum Daily Loads (TMDLs) for their streams and rivers under the Clean Water Act, they increasingly are identifying hardrock mines as major contributors to water pollution. A TMDL essentially represents the maximum amount of pollutant that a water body can receive and still meet water quality standards. Although TMDLs are typically developed for discrete stream segments, EPA has frequently endorsed the development of TMDLs in broad watersheds noting, for example, that TMDLs can be far less expensive and more effective when developed to clean up an entire watershed because they represent a careful method for weighing competing pollution concerns, and foster an integrated approach to reduce pollution from both point and non-point sources.

At mining and sediment sites, in particular, watersheds can be extensive and the cost of restoring the entire site to CERCLA standards

828. INTERIOR/FOREST SERVICE, AN INTERAGENCY RISK-BASED WATERSHED APPROACH TO MITIGATING POLLUTION FROM ABANDONED MINES ON FEDERAL LANDS (Jan. 1996).


830. See Murray, supra note 824, at 13-15 to 13-17.

831. EPA, GUIDANCE FOR WATER QUALITY-BASED DECISION, THE TMDL PROCESS 4 (2001). See also EPA, A REVIEW OF WATERWIDE WATERSHED APPROACHES: FINAL REPORT 5 (April 2002) ("States that fully incorporate TMDLs into their watershed approach tend to be better focused and more attentive to measurable outcomes than those who do not, and TMDLs can be an efficient way to address multiple programmatic issues and responsibilities across state agencies.")
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can be very high. Recognizing that some watersheds will require immense expenditures, EPA acknowledged that “remediation of an entire fluvial system is unrealistic; instead technology should be developed to address the hot spots of pollution occurring in the system... In fluvial systems, targeting key areas is essential to obtain the greatest benefit from scarce resources.” 832 Members of the NACEPT too recently recommended that, at some mega-sites, regulators should focus on localized areas of contamination, and engage in source removal to address current health or ecological threats, while deferring other areas and longer term risks. 833 Federal land managers also are recognizing the need to address hardrock mining sites using any authorities available to them, and to triage the environmental harms by addressing worst sources first. 834

A watershed approach to mine site cleanups, although sensible and laudable, is not a regulatory program but a mind-set—a way to conceptualize water pollution, and to encourage consideration of the current condition of, and threat to, a defined watershed. Its success depends on the other reforms: increase in the quality and quantity of data on water quality; better coordination of all regulatory authorities to address the problem; improved research into assessments and planning; and increased funding for cleanups.

E. Increased Coordination and Cooperation Among Federal Land Managers, EPA, States, and Industry

As noted above, hardrock mining sites are frequently located on, or affect, a complex checkerboard of federal, state, and private lands. 835 The watershed approach to addressing environmental contamination can be helpful in two ways: first, it requires stakeholders to focus on environmental results rather than on specific authorities or media programs, and second, it encourages stakeholders to work together to address significant sources of pollutants by pooling their authorities and resources. At a single site, for example, a state can exercise its mining laws and reclamation authorities, its delegated Clean Water Act authority, and its authorities under state mini-CERCLA laws. Federal agencies, in turn, may be able to invoke their reclamation authorities

833. See NACEPT FINAL REPORT, supra note 10, at 75-78. Subcommittee members could not reach consensus on how best to address large geographic areas with numerous sources of contaminants. Some members advocated a risk-based priority setting. See id., Position Statement of Richard B. Stewart, Attachment A at 66-67.
835. See supra § I.A.
under FLPMA and the Organic Act, the Clean Water Act, and CERCLA.

Mining companies too, have an interest in working with regulators on prophylactic measures to prevent or mitigate contamination, particularly where releases from active mining sites are ongoing and commingling with releases from inactive sites. In southeastern Idaho, for example, mining companies have been working for several years in a partnership with state and federal regulators and land managers to investigate watershed-wide contamination arising from dozens of active and inactive phosphate mines.\textsuperscript{836} Mining activities—particularly the placement of tailings and waste shales on-site—had released selenium and other metals to the environment, and impacted a number of streams on federal, private, state and Tribal lands.\textsuperscript{837}

To address the contamination in a coordinated fashion, regulators and tribes developed a memorandum of understanding to pool their authorities.\textsuperscript{838} Thereafter, various agencies joined in administrative orders on consent (AOCs) with affected mining companies for the investigation of a large number of mining sites.\textsuperscript{839} Because some of the sites at issue are active phosphate mines, the AOCs also addressed the development of best management practices to prevent future releases of selenium.\textsuperscript{840} The effort focuses neither on specific authorities (CERCLA, Clean Water Act, state laws) nor on jurisdictional boundaries, but on the need to proceed in a coordinated and consistent fashion to address ecological risks of concern to all the stewards. The partnership has produced a number of area-wide studies of public health and ecological risk, and identified priority areas for site-specific investigations, without the parochialism and jurisdictional disputes that so often plague cleanups at watersheds.\textsuperscript{841}

Because some entities may have access to funds not available to the others and because mining site cleanups are costly, inter-agency coordination can also help to ensure that all potential sources of funds

\textsuperscript{836} \textit{In re Area-Wide Investigation of Contamination from Phosphate Mining in Southeastern Idaho, Consent Order/Administrative Order on Consent (2001)}.

\textsuperscript{837} \textit{Id.}

\textsuperscript{838} Memorandum of Understanding between Forest Service Region 4, EPA Region 10, USDOI (Bureau of Land Management, Bureau of Indian Affairs, and Fish & Wildlife Service), the Shoshone-Bannock Tribes, and State of Idaho Division of Environmental Quality Concerning Contamination from Phosphate Mining Operations in Southeastern Idaho (July 2001).

\textsuperscript{839} \textit{See e.g., Administrative Order on Consent for Performance of a Site Investigation and an Engineering Evaluation/Cost Analysis, In re South Maybe Canyon Mine Site, USDA Forest Service, Region 4 (1998)}.

\textsuperscript{840} \textit{Id.}

\textsuperscript{841} \textit{See generally STATE OF IDAHO DEP'T OF ENVTL. QUALITY, AREA WIDE RISK MGMT. PLAN} (Feb. 2004) (summarizing findings and remedial activities in connection with selenium contamination in the Southeast Idaho Phosphate Mining Resource Area).
are applied to the sites. States and municipalities, for example, may be eligible for Brownfields grants and loans now authorized under CERCLA. Where a redevelopment opportunity exists on the private portions of a mixed ownership site, eligible state and local governments can seek such grants to address the private portion. Similarly, states frequently identify inactive and abandoned mines as one of the major categories of non-point source pollution within their states and seek Clean Water Act grants to control releases from mining activities. The availability of these funds, when supplemented by federal funds or funds from responsible parties, can permit those with responsibility over mining sites to conduct a more thorough cleanup or a cleanup of a larger site. The federal government, in turn, may be willing to apply its limited appropriations to address an environmental hazard at a mixed ownership site where other stakeholders—EPA, states, private parties—are willing and able to contribute.

Federal coordination is necessary to enhance environmental protection at active hardrock mining operations. NEPA provides some of that coordination. The federal land manager is the lead for an environmental impact statement (EIS) for a hardrock mining plan of operations on federal lands, and EPA serves as a coordinating agency for purposes of NPDES or other permits. EPA participates in the scoping process and, upon request of the lead agency, may assume responsibilities for developing information and preparing portions of NEPA documentation. EPA routinely comments on and evaluates the environmental impacts of the proposed action, as well as the adequacy of the environmental analyses contained in the EIS. Depending on the resources and expertise of the land manager, EPA can often play an

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842. Because of the large number of abandoned hardrock mining sites and the monetary shortfalls facing the Trust Fund, EPA announced its intent recently to consider "carving out" mine sites for redevelopment using "Brownfields" funding. Under the 2002 Small Business Liability Relief and Brownfields Revitalization Act, certain contaminated sites—including "mine scarred lands"—are eligible for cleanup grants for redevelopment. 42 U.S.C. § 9601(39) (2000). NPL sites and federal lands are not eligible for brownfields grants or loans. Nevertheless, EPA believes that it can identify portions of large mine sites—including NPL sites—as eligible for brownfields monies. See EPA Eyes Brownfields Funds for Cleanup of Abandoned Mine Sites, INSIDE EPA'S SUPERFUND REPORT, Aug. 18, 2003, at 19.


844. Under section 309 of the Clean Air Act, EPA is required to review and comment in writing on the environmental impact of any matter related to duties and responsibilities granted to the Administrator, contained in legislation, regulations, or major federal actions. 42 U.S.C. § 7609(a) (2000).

important role in predicting environmental impacts and suggesting mitigation measures.\textsuperscript{846}

This process, however, has had problems. Because predictions of the likelihood, magnitude, and severity of future environmental harms at mining sites are often extraordinarily difficult, federal land managers and EPA sometimes disagree on such issues as the need for design features, or the amount of bonding necessary for reclamation. Regarding the proposed revival of gold mining operations at Battle Mountain, Nevada, for example, EPA maintained that unless the candidate mining company posted a bond in excess of $30 million to address potential future groundwater contamination, the United States risked a huge future liability.\textsuperscript{847} BLM asserted, on the other hand, that a much more modest bond was appropriate in light of the unlikelihood of long-term serious groundwater pollution, and because the bond could be modified in the future as conditions dictate.\textsuperscript{848}

This type of dispute is common, and EPA often has complained that federal land managers are not always receptive to its technical comments and its long experience with issues of water quality. EPA has, in turn, been criticized for not participating fully in NEPA review or soon enough in the process to be useful, and for failing to understand the economics of mineral production and reclamation.\textsuperscript{849}

Because predicting how a particular mine might affect the environment during its active life and after closure is no easy task, both agencies can benefit from the technical resources and special expertise of the other. Timely and thorough participation in the NEPA process by regulators, together with an openness to the other’s principled views about the potential impacts of prospective mining activity, is necessary to ensure full exploration of alternatives and proper development of mitigation measures.\textsuperscript{850}

\textsuperscript{846} See EPA and Hardrock Mining, A Sourcebook for Industry in the Northwest and Alaska 22–28 (Jan. 2003). If EPA's comments and concerns are not addressed, EPA can refer the matter to the Council on Environmental Quality (CEQ). The CEQ can, in turn, publish findings and recommendations concerning the project or initiate dispute-resolution. 40 C.F.R. pt. 1504. (2004).

\textsuperscript{847} Felicity Barringer, Mine's Pollution Fund is Focus of Federal Agencies' Duel, N.Y. TIMES, March 8, 2004, at A11.

\textsuperscript{848} Id.

\textsuperscript{849} EPA CAN DO MORE, supra note 109, at 16; NRC REPORT 1999, supra note 12, at 111–113.

\textsuperscript{850} See also NRC REPORT 1999, supra note 12, at 7. The NRC similarly concluded that “[f]rom the earliest stages of the NEPA process, all agencies with jurisdiction over mining operations or affected resources should be required to cooperate effectively in the scoping, preparation, and review of environmental impact assessments for new mines.” Id. at 6–7.
CONCLUSION

The public health and environmental damage caused by hardrock mines is a serious national problem. While current and reliable data on its scope are unavailable, rough estimates put the numbers of contaminated sites in the tens of thousands. Acid mine drainage alone has degraded entire watersheds in the West. The problem is, in part, a legacy of nineteenth century mining laws that Congress enacted to promote the entrepreneurial and settlement goals of a new nation. It also stems from the then-prevailing view that the interest of the federal government in public lands was custodial and transitory, to be exercised only until title could be transferred to private interests. Private mining companies espoused the belief, broadly shared by the public, that minerals were available for exploitation with little regard for the long-term consequences on the environment or future potential uses of the land.

The late twentieth century saw a significant shift in public land management away from the disposition of public lands to their retention in federal ownership. At the same time, government began to balance national goals for mineral production and economic growth with those of environmental stewardship and sustainability. Congress enacted natural resource and environmental laws that caused a general accretion in the rights and responsibilities of the federal government at hardrock mining sites and a corresponding diminishing of the rights of miners. The early public hardrock mining laws, however, remained in the statutes and continued to influence how these new rights and responsibilities were interpreted. As a result, hardrock mining regulation has continued in the face of considerable uncertainty about the precise nature and extent of private and public interests in public lands and minerals subject to hardrock mining claims, and about the authority of the federal government to prevent environmental harm.

With the enactment of CERCLA, in particular, federal land managers gained powerful tools to address environmental contamination at hardrock mining sites. The strict, joint and several, and retroactive liability scheme permitted them to recover their costs at hardrock mining sites on public lands nation-wide. Invoking that authority, they initiated civil actions to persuade or direct responsible mining companies to clean up hardrock mining sites on the public lands. In response to inevitable contribution claims asserted against them by mining companies, federal land managers urged courts to examine federal liability through the historical prism of the hardrock mining laws. In light of the relative distribution of rights and interests between the United States and private mining companies required by these laws, the government argued that it was simply unfair to impose the costs of cleanup on the federal taxpayer. Looking to the open and free access principles embodied in those laws,
courts sympathized with these arguments and refused to view the interests and activities of the United States at such sites as sufficient to give rise to owner, operator, or arranger liability.

Nevertheless, CERCLA is an imperfect tool to address tens of thousands of contaminated hardrock mining sites. The costs to remediate large hardrock mines can be extraordinarily high. Given the huge number of abandoned sites and the expiration of the corporate tax that historically sustained the Trust Fund, funding needs far exceed available resources. Mining companies continue to face insolvency, and bonding is often insufficient for reclamation and cleanup. Enforcement actions, though shifting the costs of cleanup to responsible parties, also have their own limitations. Mining companies often cannot fund the cleanups for which they are liable and remain viable business concerns. CERCLA's joint and several liability scheme can impose obligations on a company that, through misadventure and corporate dissolutions, finds itself the only identifiable party at a site.

To address these problems, both statutory and administrative reforms are necessary. A necessary first step in designing a rational regime for hardrock mine restoration is to develop a reliable inventory of "environmentally significant" hardrock mining sites, using consistent definitions, reliable data, and a shared understanding of risk. Resource constraints, although inevitable given the size of the problem and other budget needs, would decrease through the creation of a hardrock reclamation fund—funded through taxes or royalties on mineral production—to solely address hardrock mines. Fund monies could underwrite not only cleanup, but basic research into pollution problems at hardrock mines and the costs of the orphan share at mine sites.

Additional reforms can help promote the efficient use of existing state and federal resources. Such reforms include a more concerted effort, coordinated at the national level, to embrace a watershed approach, and legislative or statutory changes to encourage the reprocessing of historic mine wastes without causing miner operators to incur liability for existing conditions. Regulators should pool their regulatory authorities to address hardrock contamination without regard to jurisdictional or political boundaries, and work together, particularly in the NEPA process and state analogs, to predict the immediate and long-term environmental impacts of mining operations and to develop approaches to better manage and mitigate those impacts.