

Application of Takings Law to the Regulation of Unpatented Mining Claims

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INTRODUCTION

The unpatented mining claim is a unique property interest in American jurisprudence. Created by the 1872 Mining Act, the unpatented mining claim survives today, essentially unchanged, as a symbol of rugged individualism and the western frontier. As the focus of government stewardship of federal lands has shifted from resource extraction to multiple use, however, there have been increasing attempts to limit the rights of unpatented mining claimants on federal land. This paper examines whether these limitations violate the Fifth Amendment of the Constitution, which proscribes the "taking" of property without just compensation.

This article begins by discussing the history and structure of the 1872 Mining Act, with emphasis on government regulation of the mining industry, the requirement that applicants discover a "valuable mineral deposit," and the nature of the unpatented claim. This article will then apply the law of takings to federal regulation of unpatented mining operations. The analysis will reject a traditional approach to takings law in favor of an alternative approach that better reflects the unique nature of the unpatented mining claim as a property interest. This alternative analysis will examine 1) the relative authorities of the Bureau of Land Management, the Forest Service, and the Environmental Protection Agency to regulate mining on public lands; 2) the impact of such regulation on a mining claimant's underlying property interest; and 3) how the law of takings applies to mining regulation, given the preceding analysis.

I.

BACKGROUND AND STRUCTURE OF THE 1872 MINING ACT

The declared policy of the 1872 Mining Act was to "promote the development of the mining resources of the United States."¹ The Mining Act² was intended to further the existing federal policy that the public lands of the United States should be freely available for exploration and occupation for hardrock mining.³ The Mining Act states:

Except as otherwise provided, all valuable mineral deposits in lands belonging to the United States, both surveyed and unsurveyed, shall be free and open to exploration and purchase, and the lands in which

1. General Mining Act of 1872, ch. 152, 17 Stat. 91 (1872), amended by the Mining and Minerals Policy Act of 1970, Pub. L. No. 91-631, 84 Stat. 1876 (codified as amended at 30 U.S.C. §§ 21-54 (1994)).

2. The Mining Act modified the Mining Act of 1866, ch. 262, 14 Stat. 251 (1866), and the Placer Act of 1870, ch. 235, 16 Stat. 217 (1870), which were the first federal efforts at a comprehensive legislative scheme for mining on the public lands. In addition, the Mining Act modified the Homestead Act of 1862, ch. 75, 12 Stat. 392 (1862), as to mineral lands. For a description of the evolution of American mining law, see JOHN D. LESHY, *THE MINING LAW, A STUDY IN PERPETUAL MOTION* 9-25 (1987); Stephen D. Alfors et al., *Coping with Mining Law Reform*, 37 ROCKY MTN. MIN. L. INST. § 12.02, at 12-5 to 12-13 (1991).

3. Hardrock mining includes mining of "veins or lodes of quartz or other rock in place bearing gold, silver, cinnabar, lead, tin, copper or other valuable deposits." 30 U.S.C. § 23 (1994). Originally, "valuable mineral deposits" included "whatever is recognized as a mineral by the standard authorities on the subject." Donald W. Large, *Defining "Valuable" Mineral Deposits - A Continuing Quagmire*, ARIZ. ST. L.J. 453, 455 & n.25 (1986) (quoting General Land Office Circular (July 15, 1873), in H. COPP, *MINERAL LANDS*, 50-51 (2nd ed. 1882)). This included non-metalliferous deposits such as precious gems, potassium, petroleum, sodium and phosphate. Congress subsequently removed from the scope of the Mining Act fuel and fertilizer minerals with the Mineral Lands Leasing Act of 1920 (codified as amended at 30 U.S.C.A. §§ 181-287 (West 1986 & Supp. 1996)), and widely occurring mineral substances such as sand, stone, gravel, clay and pumice. Common Varieties Acts of 1947 and 1955 (codified as amended at 30 U.S.C. §§ 611-15 (1994)).

they are found to occupation and purchase, by citizens of the United States and those that have declared their intention to become such, under regulations prescribed by law, and according to the local customs or rules of miners in the several mining districts, so far as the same are applicable and not inconsistent with the laws of the United States.⁴

The Act furthers free access by allowing miners to secure exclusive rights to mine on public lands, with the possibility of eventually acquiring fee simple title to their claims. Under its provisions, a person who finds a mining "location" can obtain exclusive rights to the subsurface and surface area within that site for mining purposes.⁵ In order to secure a valid mining "location," a claimant must discover a "valuable mineral deposit,"⁶ mark the location on-site, and record the claim at the local recorder's office.⁷ To maintain exclusive mineral rights to mine the location, the claimant must pay a \$100 annual fee to the federal government.⁸ The holder of an unpatented claim may thereafter obtain a patent for the location by paying \$5 per acre, submitting a certificate swearing that \$500 of labor has been performed on the site, and complying with all other terms of the Mining Act.⁹ The granting of a patent transfers a fee simple title to the located site from the government to the claimant.

4. 30 U.S.C. § 22 (1994).

5. *Id.* § 26. In the Surface Resources and Multiple Use Act of 1955 (codified at 30 U.S.C §§ 611-612 (1994)), Congress eliminated the exclusive surface ownership rights of prospective unpatented mining claimants.

6. 30 U.S.C. § 22.

7. 30 U.S.C.A. § 28 (West 1986 & Supp. 1996). The requirement that a claim be recorded with the Bureau of Land Management or be forfeited was added by the Federal Land Policy and Management Act in 1976 as a means of ridding federal lands of stale claims and providing for centralized collection by federal land managers of comprehensive and up-to-date information on the status of active claims. 43 U.S.C. § 1744 (1994); *United States v. Locke*, 471 U.S. 84, 104-05 (1984); *see also* 43 C.F.R. § 3833.0 (1995) (establishing procedures for the recordation of unpatented mining claims).

8. 30 U.S.C. § 28f(a) (1994). Sections 28f-k were added in 1993 by the Omnibus Budget Reconciliation Act of 1993, Pub. L. No. 103-66, 107 Stat. 405 as an amendment to former section 28b, which required the claimant to perform \$100 of annual assessment work on each claim. The amendment was added in response to the difficulty experienced by federal agency officials in the field determining whether any assessment work had actually been done. After the addition of the \$100 fee requirement, the number of outstanding claims on public lands declined by over fifty percent. Telephone Interview with Roger Haskins, Geologist and Mineral Examiner, Department of the Interior (Dec. 10, 1995) [hereinafter Haskins Interview].

9. 30 U.S.C. § 29 (1994). Typically, the question of whether a patent applicant has complied with the terms of the Mining Act will focus on whether the claimant has properly marked the location of the claim and whether the claimant has made a discovery of a "valuable mineral deposit." *See Large, supra* note 3, at 454-55.

A. Limitations on Hardrock Mining

As noted above, the Mining Act envisions that mineral deposits will remain “free and open” to mining.¹⁰ This concept is known and will be referred to in this article as the “free access principle.”¹¹ Despite this broad language, however, hardrock mining in the United States has been limited in several ways. First, Congress has limited the scope of the Mining Act significantly, both by withdrawing (or permitting the executive branch to withdraw)¹² certain public lands from hardrock mining access¹³ and by removing certain important or abundant minerals, such as petroleum, sand, and gravel, from the Act’s jurisdiction.¹⁴ Congress has also passed laws that regulate hardrock mining activities.¹⁵ Finally, in interpreting the language of the Mining Act, the courts have defined the unpatented mining claim as a conditional, and potentially defeasible, property interest. The next two sections will provide a general overview of the government’s regulation of mining and the nature of the unpatented claim as a property interest.

10. 30 U.S.C. § 22.

11. See LESHY, *supra* note 2, at 25-48.

12. Initially, withdrawal was accomplished by executive order. The authority of the executive branch to withdraw lands from the scope of the Mining Law was upheld in *United States v. Midwest Oil Co.*, 236 U.S. 459 (1915). Although no express statutory authority conferred such power on the executive branch, the court in *Midwest Oil* found that longstanding congressional acquiescence in executive withdrawals implied consent or “a recognized administrative power of the Executive in the management of the Public Lands.” *Id.* at 474. This was particularly true “in view of the fact that the land is property of the United States and that the land laws are not of a legislative character in the highest sense of the term . . . ’ but savor somewhat of mere rules prescribed by an owner of property for its disposal.” *Id.* (quoting *Butte City Water Co. v. Baker*, 196 U.S. 119, 126 (1905)).

Today the Executive Branch’s withdrawal power is statutorily authorized, subject to congressional review, under the Federal Land Policy and Management Act of 1976 (FLPMA). 43 U.S.C.A. §§ 1701-1784 (West 1986 & Supp. 1996). Under FLPMA, the Secretary of the Interior, or other specially designated Interior officials, may withdraw federal lands of 5000 acres or more from mineral entry, for a period of up to twenty years, subject to congressional approval. 43 U.S.C. § 1714(a), (c) (1994). For withdrawals of less than 5000 acres, no congressional approval is required. 43 U.S.C. § 1714(d). Agency heads, including the Director of the United States Forest Service (USFS), may request the Secretary to withdraw federal lands on their behalf. *Id.*; see also 43 C.F.R. §§ 2300.0-1 to 2310.5 (1995) for regulations interpreting the Secretary of the Interior’s withdrawal authority.

13. 43 U.S.C. § 1702(j) (1994) defines “withdrawal” as “withholding an area of Federal land . . . for the purpose of limiting activities . . . in order to maintain other public values in the area or reserving the area for a particular public purpose.” Examples of lands withdrawn from mineral exploration include Indian reservations, military installations, national parks and wilderness areas. A major reason underlying many withdrawals from the Mining Act is to prevent the “patenting” of mineral rights in which the claimant receives fee simple title to the land. See 30 U.S.C. § 29 (1994) (patenting procedures); John D. Leshy, *Reforming the Mining Law: Problems and Prospects*, 9 PUB. LAND L. REV. 1, 9 (1988).

14. See *supra* note 3.

15. See *infra* part I.A.1 (discussing government regulation).

1. *Government Regulation of Mining Operations on Public Lands*

The Mining Act provides for congressional oversight of mining activity based on statutory language allowing free access to mining on public lands "under regulations prescribed by law, and according to the local customs or rules . . . so far as the same are applicable and not inconsistent with the laws of the United States."¹⁶ Since the 19th century, courts have found that mining activity may be restricted when it causes harm to other important public resources. For example, federal and state courts held in a series of cases that the free access provisions of the Mining Act did not prevent the State of California from enjoining, and Congress from subsequently imposing a strict regulatory regime on, hydraulic mining practices found to have adverse impacts on agriculture and navigation.¹⁷

The government's specific authority to regulate mining activities on public lands stems from the Property Clause of the Constitution which states, "Congress shall have Power to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States."¹⁸ In *Kleppe v. New Mexico*, the Supreme Court held that the Property Clause power was "without limitations."¹⁹ Pursuant to its Property Clause powers, Congress has enacted several pieces of legislation asserting regulatory authority over mining activities. In the Surface Resources and Multiple Use Act of 1955, for example, Congress imposed a "multiple use" mandate on the previously exclusive surface rights enjoyed by unpatented mining claimants and limited lawful activities on unpatented claims to "prospecting, mining or processing operations and uses reasonably incidental thereto."²⁰ In the Federal Land Policy and Management Act

16. 30 U.S.C. § 22 (1994). Section 22 also begins with the words "[e]xcept as otherwise provided"; this language may provide the legal basis for the subsequent narrowing of the Mining Act's scope without requiring an amendment of the Mining Act itself. 30 U.S.C. § 22. See also *supra* notes 12-14 and accompanying text.

17. See *Woodruff v. North Bloomfield Gravel Mining Co.*, 18 F. 753, 772-75 (C.C.A. 1884); *North Bloomfield Mining Co. v. United States*, 88 F. 664 (9th Cir. 1898); *People v. Gold Run Ditch & Mining Co.*, 66 Cal. 138, 151-52 (1884). As John Leshy observes, neither these cases, nor the ones that followed, regarded the Mining Law as insulating mining operations from the application of the common law to control their impact on the environment. See LESHY, *supra* note 2, at 186.

18. U.S. CONST. art. IV, § 3, cl. 2.

19. 426 U.S. 529, 539 (1976) (quoting *United States v. San Francisco*, 310 U.S. 16, 29 (1940)); see also *Light v. United States*, 220 U.S. 523 (1911); *Camfield v. United States*, 167 U.S. 518, 525 (1897) ("[t]he general government doubtless has a power over its own property analogous to the police power of the several states").

20. 30 U.S.C. § 612(a)-(c) (1994). Section 612(b) states in pertinent part:

Rights under any mining claim hereafter located under the mining laws of the United States shall be subject, prior to issuance of patent therefor, to the right of the United States to manage and dispose of the vegetative resources thereof and to manage other surface resources thereof . . . [p]rovided, however, [t]hat any use of the surface of any such mining claim by the United States, its permittees or

of 1976 (FLPMA),²¹ Congress conferred express statutory authority on the Bureau of Land Management (BLM)²² to regulate mining activities on public lands.²³ The Forest Service's Organic Act of 1897²⁴ has also been found to authorize the USFS to regulate mining on forest service lands.²⁵

Pursuant to these authorities, the BLM and the USFS have promulgated regulations to control the adverse effects of mining activities.²⁶ In addition, the National Park Service and the Fish and Wildlife Service have adopted regulations governing mining activities on lands they manage.²⁷ Congress has also given the USFS and the BLM authority to conduct land use planning in the context of multiple use mandates which no longer favor mining over all other uses.²⁸ An in-

licensees, shall be such as not to endanger or materially interfere with prospecting, mining or processing operations or uses reasonably incident thereto. . . .

See also United States v. Fahey, 769 F.2d 829, 837 (1st Cir. 1985) (noting that "the general public has the right to enter on land containing unpatented mining claims for recreational and other purposes so long as they do not interfere with mining activities"); United States v. Curtis-Nevada Mines, Inc., 611 F.2d 1277 (9th Cir. 1980) (holding that owners of unpatented mining claims do not have the right to exclude members of the general public from using the claim location's surface for recreational purposes, provided individuals do not materially interfere with or endanger the mining operations).

21. 43 U.S.C.A. §§ 1701-1784 (West 1986 & Supp. 1996).

22. The BLM is authorized to carry out the management responsibilities of the Department of the Interior pursuant to 43 U.S.C. § 1731 (1994).

23. 43 U.S.C. § 1732(b) (1994); *see also* 43 U.S.C.A. § 1782 (West 1986 & Supp. 1996) for regulation of mining activities in wilderness study areas. FLPMA also imposed recordation requirements on existing unpatented mining claim holders with penalty of forfeiture of the claim for non-compliance. 43 U.S.C. § 1744 (1994). The recordation requirement was upheld in *United States v. Locke*, 471 U.S. 84, 104-05 (1984). In *Locke*, the Supreme Court held that Congress had the power to condition the retention of even vested property rights on the performance of certain affirmative duties reasonably designed to further legitimate legislative objectives. *See also* Bolt v. United States, 944 F.2d 603, 610 (9th Cir. 1991).

24. 16 U.S.C. §§ 478, 551 (1994).

25. 16 U.S.C. §§ 478, 551 (1994). The court in *United States v. Weiss* upheld the USFS's 1974 promulgation of regulations addressing mining on National Forest Lands. 642 F.2d 296 (9th Cir. 1981). *See infra* notes 153-59 and accompanying discussion. Prior to the Ninth Circuit's decision in *Weiss*, the Ninth Circuit had upheld a USFS prohibition of "unreasonable" mining activities under the USFS's authority over surface resources under the Surface Resources and Multiple Use Act of 1955, 30 U.S.C. § 612 (1994). *United States v. Richardson*, 599 F.2d 290, 292, 295 (9th Cir. 1979).

26. The USFS regulations are found at 36 C.F.R. §§ 228.1-.15 (1996). Department of the Interior regulations are found at 43 C.F.R. §§ 3802.0-1 to 3809.6 (1995).

27. *See* 36 C.F.R. §§ 9.1-.18 (1996) and 50 C.F.R. §§ 29.31-.32 (1995) respectively.

28. The term "multiple use" may be generally defined as the management of various resources existing on public lands in a manner which will best meet the various needs of the American people, with consideration given to the relative value of each resource. "Multiple use" is defined in the USFS's Multiple Use and Sustained Yield Act at 16 U.S.C. § 531(a) (1994), and in FLPMA at 43 U.S.C. § 1732(a). For FLPMA's definition, *see infra* note 137. The BLM's planning and multiple use mandate may be found at 43 U.S.C. §§ 1712, 1732(a) (1994). *See infra* note 136; *see also* 43 C.F.R. §§ 1601.0-1 to 1601.0-8 (1995). The USFS's planning and multiple use mandates may be found at 16

evitable result of this planning process is that mining uses are potentially subjected to strict regulatory controls in environmentally sensitive areas.²⁹ Mining is also regulated by a host of environmental statutes administered by the Environmental Protection Agency (EPA)³⁰ and, in most cases, state and local governmental agencies.³¹

The BLM, the USFS, and EPA are the federal agencies with primary responsibility for regulating mining operations on public lands. The BLM has primary authority for administering mining claims. Claim administration involves making validity determinations³² and monitoring recordation and assessment fee requirements.³³ The BLM also has the sovereign authority to regulate mining activities on public lands that are within its jurisdiction.³⁴ The USFS similarly has jurisdiction to regulate mining operations occurring on national forest land.³⁵ EPA, meanwhile, has the authority to regulate all activities that may have adverse effects on those environmental resources protected under the federal environmental statutes that it administers.³⁶ As a result of the overall discretion conferred upon these federal agencies to regulate mining, courts have held that the National Environmental Policy Act (NEPA)³⁷ applies to the permitting of unpatented mining operations.³⁸

U.S.C. §§ 528-531 (1994) and U.S.C.A. §§ 1601-1614 (West 1986 & Supp. 1996). See also 36 C.F.R. §§ 219.1-29 (1996); *infra* notes 160-71 and accompanying text.

29. See *infra* part II.B.1.d(ii)(b) (discussing government authority to impose stricter standards in sensitive areas).

30. These statutes include the Clean Water Act, 33 U.S.C. §§ 1251-1387 (1994); the Clean Air Act, 42 U.S.C. §§ 7401-7671 (1994); the Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901-6992 (1994); and the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§ 9601-9675 (1994). Each of these statutes imposes a potentially strict regulatory regime upon mining operations on public lands. In addition to its authority under the Property Clause, Congress' power to enact statutes that regulate private activities causing pollution or other environmental hazards with potential interstate effects has been upheld under the Commerce Clause. *Hodel v. Virginia Surface Mining & Reclamation Ass'n*, 452 U.S. 264, 282 (1981).

31. See, e.g., *California Coastal Comm'n v. Granite Rock Co.*, 480 U.S. 572 (1987); *LESHY*, *supra* note 2, at 212-20.

32. See *infra* note 289 and accompanying discussion; *infra* part I.A.2.a. (discussing present discovery requirement).

33. See *supra* notes 7 and 8 and accompanying discussion.

34. 43 U.S.C. § 1732(b) (1994).

35. 16 U.S.C. §§ 478, 551 (1994); see also *United States v. Weiss*, 642 F.2d 296, 297-99 (9th Cir. 1981).

36. See *supra* note 30.

37. 42 U.S.C. §§ 4321-4370 (1994). NEPA requires federal agencies to file environmental impact statements before undertaking "major federal actions significantly affecting the human environment." *Id.* § 4332(C).

38. See *Sierra Club v. Hodel*, 848 F.2d 1068, 1090-91 (10th Cir. 1988) (finding that the BLM's discretion to impose less degrading alternatives to proposed mining activity warrants compliance with NEPA); *Havasupai Tribe v. United States*, 752 F. Supp. 1471, 1491-92 (D. Ariz. 1990) (In complying with NEPA, the USFS must consider "no-action" alternative of rejecting unreasonable mining proposal). Where an agency lacks sufficient discre-

In approving mining operations within their respective jurisdictions, the BLM and the USFS generally act as coordinators by verifying that the mining claimant has obtained all the proper permits from EPA and state and local agencies.³⁹ The BLM and the USFS also typically add their own conditions for approval in order to fulfill their statutory mandates to protect public lands.⁴⁰

2. *The Nature of the Unpatented Mining Claim as a Property Interest*

Courts have traditionally held that unpatented mining claims are "fully recognized possessory interests" subject to sale and other forms of disposal,⁴¹ and are thus "within the protection of the Fifth Amendment's prohibition against the taking of private property for public use without just compensation."⁴² The source of the property interest in an unpatented claim is the language of the Mining Act,⁴³ which states that valuable mineral deposits on public lands "shall be free and open to exploration and purchase . . . under regulations prescribed by law."⁴⁴

tion to regulate mining activities, courts have held that NEPA does not apply. *See, e.g.,* *Sierra Club v. Penfold*, 857 F.2d 1307, 1314 (9th Cir. 1988) (holding that the BLM monitoring of casual mining operations where no prior approval required before commencement is insufficient to trigger NEPA requirements); *South Dakota v. Andrus*, 614 F.2d 1190, 1194 (8th Cir. 1980) (holding that agency approval of a patent application by a claimant possessing a valid claim is a non-discretionary act and thus NEPA does not apply); *see also* *Defenders of Wildlife v. Andrus*, 627 F.2d 1238 (D.C. Cir. 1980) (NEPA not triggered by failure of Secretary of the Interior to preempt state wildlife management program killing wolves).

39. Telephone Interview with Jim Hamilton, Mining Engineer, Bureau of Land Management, (Jan. 15, 1996) [hereinafter Hamilton Interview].

40. *See* 43 C.F.R. § 3809.2-1 (1995); 36 C.F.R. § 228.5(a) (1996).

41. *United States v. Locke*, 471 U.S. 84, 104 (1984); *see also* *Best v. Humboldt Placer Mining Co.*, 371 U.S. 334, 335 (1963); *Cole v. Ralph*, 252 U.S. 286, 295 (1920); *Forbes v. Gracey*, 94 U.S. 762, 767 (1876). In *Oil Shale Corp. v. Morton*, the Court described the unpatented claim:

A mining claim is an interest in land which cannot be unreasonably or unfairly dissolved at the whim of the Interior Department. Once there is a valid discovery and proper location, a mining claim, in the language of the Supreme Court, is "real property in the highest sense." Legal title to the land remains in the United States, but the claimant enjoys a valid, equitable, possessory title, subject to taxation, transferable by deed or devise, and otherwise possessing the incidents of real property.

370 F. Supp. 108, 124 (D. Colo. 1973). The property right in an unpatented claim includes a right of access. *Murray Perkins, Int'l Silica Corp.*, 116 I.B.L.A. 288, 294 (1990); *Mespelt & Almsy Mining Co.*, 99 I.B.L.A. 25, 27 (1987); *Interim Management Policy and Guidelines*, 48 Fed. Reg. 31,854, 31,856 (1963).

42. *Skaw v. United States*, 740 F.2d 932, 936 (Fed. Cir. 1984) (citing *Freese v. United States*, 639 F.2d 754, 757 (9th Cir. 1981)).

43. *See* *Lockhart v. Johnson*, 181 U.S. 516, 520 (1901); *Clawson v. United States*, 24 Cl. Ct. 366, 369 (1991).

44. 30 U.S.C. § 22 (1994).

a. *The Present Discovery Requirement*

Perhaps the most important aspect of the unpatented claim as a property interest is its conditional nature. Under the Act, a claimant must "discover" and maintain a valuable mineral deposit in order to acquire and retain property rights in the claim. This obligation is known as the "present discovery requirement."⁴⁵ The determination of whether a claimant possesses a valid present discovery of a valuable mineral deposit is made by the Department of the Interior, as part of its power to administer claims.⁴⁶ From the outset, however, the question of what constitutes a "valuable mineral deposit" has been the subject of considerable debate.⁴⁷ The original definition, known as the "prudent person test," was articulated in 1894 by the Department of the Interior:

[W]here minerals have been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of labor and means, with a reasonable prospect of success, in developing a valuable mine, the requirements of the statute have been met.⁴⁸

The prudent person test was upheld by the Supreme Court in *Chrisman v. Miller*⁴⁹ and subsequently modified as the "marketability test"

45. 30 U.S.C. § 22; *see, e.g.*, *Cameron v. United States*, 252 U.S. 450, 459 (1919). In the absence of such a discovery, the provisions of the Mining Act which allow for eventual patenting of public lands may be abused. *See* LESHY, *supra* note 2, at 157-158; *United States v. Bagwell*, 961 F.2d 1450, 1456 (9th Cir. 1992).

46. *See, e.g.*, *Cameron*, 252 U.S. at 459. Thus, when challenging potentially invalid claims located on national forest land, the USFS will typically request the Department of the Interior to determine the claim's validity, *Clouser v. Espy*, 42 F.3d 1522, 1526-27 (9th Cir. 1994), or bring its own challenge before a Department of the Interior administrative law judge. *See, e.g.*, *United States v. Goldfield Deep Mines Co. of Nevada*, 644 F.2d 1307, 1308-09 (9th Cir. 1981). In addition, pursuant to a memorandum of understanding signed in 1957 and amended in 1963, the USFS mineral examiners may act as the BLM subcontractors and conduct their own validity exams of mining claims on National Forests.

The opinion of the Department of the Interior is subject to judicial review based on the substantial evidence standard. *See* *Charlestone Stone Prods. Co. v. Andrus*, 553 F.2d 1209, 1210 (9th Cir. 1977); *Multiple Use, Inc. v. Morton*, 504 F.2d 448, 452 (9th Cir. 1974) (expertise of the Department of the Interior in assessing validity of mining claims must be looked upon with respect and regarded with care by a reviewing court).

47. *See, e.g.*, LESHY, *supra* note 2, at 119-50; *see generally*, Carl J. Mayer, Comment, *The 1872 Mining Law: Historical Origins of the Discovery Rule*, 53 U. CHI. L. REV. 624 (1986); Large, *supra* note 3.

48. *Castle v. Womble*, 199 Pub. Lands Dec. 455, 457 (1894).

49. 197 U.S. 313, 322-23 (1904). In *Chrisman*, the Court observed that the mere "will- ingness" or subjective mental state of the claimant would not be sufficient to establish a discovery. Instead, courts should look to the objective facts which are within the observation of the discoverer and ask whether such facts would justify a person of ordinary prudence in the expenditure of further time and money. *Id.*; *see also* *Cameron v. United States*, 252 U.S. at 459; *Best v. Humboldt Placer Mining Co.*, 371 U.S. 334, 335-36 (1963). *Chrisman* also noted that the test should be more liberally construed when a claim's validity was challenged by a rival mining claimant as compared to contests initiated by the

more than sixty years later in *United States v. Coleman*.⁵⁰ The marketability test requires a claimant to show that the mineral in question could be extracted, removed, and marketed at a profit.⁵¹ In assessing the costs of a mining operation for purposes of the profitability determination, the Department considers the costs of extracting and transporting the mineral to market.⁵² The Department will also consider costs incurred by the claimant in complying with various environmental regulations.⁵³

It is important to note that the discovery determination is not a one-time threshold requirement that, once satisfied, confers unalterable property rights upon a mining claimant. Instead, courts have treated the discovery requirement as a continuing condition of valid claim status that may be lost if the cost-profit balance of a mining operation tips away from marketability.⁵⁴ It is this "present discov-

government or by parties representing non-mining uses (farmers or homesteaders for example) on the public lands. 197 U.S. at 323.

50. 390 U.S. 599 (1968). The Court noted that "[t]he obvious intent [of the Mining Act] was to reward and encourage the discovery of minerals that are valuable in an economic sense." *Id.* at 602. A specific problem in the Court's holding was its failure to make a distinction between present and future marketability. In other words, a deposit not presently "profitable" might still be mined by a prudent person anticipating higher mineral prices in the future. Arguably, however, such a deposit would not qualify as a "Valuable Mineral Deposit" under the marketability test. For a criticism of *Coleman*, see Large, *supra* note 3, at 463-467. The marketability rule is also difficult to apply to minerals which enjoy wide price fluctuations. See, e.g., *In re Pacific Coast Molybdenum Co.*, 90 Interior Dec. 352, 359 (1983) ("While no prudent person would expend time and money to develop a mine where it is clear that there is no market for the mineral or the price . . . is obviously less than the cost of production, the question of prudence becomes more difficult when the mineral involved is subject to great price volatility.").

51. The test was already being used by the Department of the Interior in making their validity determinations. See *Foster v. Seaton*, 271 F.2d 836 (D.C. Cir. 1959); see, e.g., *Marketability Rule*, 69 Interior Dec. 145 (1962); *Secretarial Opinion*, 54 Interior Dec. 294 (1933); *Layman v. Ellis*, 52 Pub. Lands Dec. 714 (1929). *Coleman* does not acknowledge that it was, in effect, overruling prior precedent, but instead characterized the marketability test as merely a "refinement" of the prudent person test. 390 U.S. at 603.

52. *Dredge Corp. v. Conn*, 733 F.2d 704, 708 (9th Cir. 1984); see, e.g., *Melluzo v. Morton*, 534 F.2d 860 (9th Cir. 1976); *Converse v. Udall*, 390 F.2d 616, 622 (9th Cir. 1968). In *Dredge Corp.*, the court stated, "[t]he profitability of a particular deposit is determined not only by its cost of extraction, preparation for market, and transportation to market, but also by the overall market demand and supply." 733 F.2d at 708.

53. See, e.g., *Clouser v. Espy*, 42 F.3d 1522, 1530 (9th Cir. 1994) (noting that the USFS regulation will result in increased operation costs thereby affecting claim validity); *United States v. Pittsburgh Pac. Co.*, 84 Interior Dec. 282, 285 (1977) (Interior Board remands discovery determination to consider costs of complying with environmental laws); *United States v. Kosanke Sand Corp.*, 80 Interior Dec. 538, 551 (1973) (Interior Board remands to hearing examiner to consider additional costs necessary to meet pollution control standards under applicable federal, state and local laws); see also *In re Pacific Coast Molybdenum Co.*, 90 Interior Dec. at 361 (environmental groups contest granting of mineral patent by claiming specific environmental compliance costs that were not taken into account).

54. See *Best*, 371 U.S. at 336 (locator who does not carry his claim to patent takes the risk that his claim will no longer support the issuance of a patent); *Cameron v. United States*, 252 U.S. 450, 460 (1919) (government has legal authority to declare claim null and

ery" standard that makes the unpatented mining claim unique as a property interest.⁵⁵

b. The Unpatented Mining Claim as a Contractual Right

The United States, as owner of the underlying fee title to federal lands, retains broad powers over the terms and conditions of the unpatented claim, and claimants must, therefore, take their mineral interests with the knowledge that the government retains substantial regulatory powers over those interests.⁵⁶ Under the Property Clause, Congress exercises the powers both of a proprietor and of a legislature over the public domain.⁵⁷ In disposing of and administering the public lands, however, Congress acts solely in a "proprietary" role.⁵⁸ It is in this proprietary role that the government determines how miners may initiate and maintain valid claims under the Mining Act.⁵⁹ Rights acquired from the government in its proprietary capacity are considered

void so long as it holds legal title); *Ideal Basic Indus., Inc. v. Morton*, 542 F.2d 1364, 1367-68 (9th Cir. 1976) (within the Department of the Interior, determinations of validity are subject to review as long as legal title to the property remains in the United States); *Mulkern v. Hammitt*, 326 F.2d 896, 898 (9th Cir. 1964) (government correctly denied patent application since plaintiff's claim no longer satisfies the prudent person test due to changed economic conditions); see also *Skaw v. United States*, 2 Cl. Ct. 795, 801 (1983) (discussing marketability rule); *United States v. Whittaker*, 102 I.B.L.A. 162 (1988); *United States v. Jenkins*, 75 Interior Dec. 312, 319 (1968) (termination of federal manganese purchase program voids discovery of claims on low-grade manganese deposits); *United States v. Denison*, 71 Interior Dec. 144, 150 (1964) (contested claims are null and void for lack of a present discovery of valuable mineral deposits due to changed economic conditions).

55. For example, under the present discovery standard, in order for a miner's claim to survive a withdrawal action as a valid existing right, see *infra* note 87, a reviewing body must find that the claim was valid both on the date of withdrawal hearing and at the subsequent discovery hearing. *Lara v. Secretary of the Interior*, 820 F.2d 1535, 1542 (9th Cir. 1987); see *Charlestone Stone Products*, 553 F.2d 1209, 1210 n.2 (9th Cir. 1977); *United States v. Foresyth*, 94 Interior Dec. 453 (1987) (reviewing the limestone market both at the time of the withdrawal and at the present time).

56. *United States v. Locke*, 471 U.S. 84, 104-05 (1984). *Locke* observes that the unpatented mining claim property right is the right to a flow of income from mining production, akin to vested economic rights over which the government enjoys substantial power "to regulate for the public good the conditions under which business is carried out and to redistribute the benefits and burdens of economic life." *Id.* at 105; see also *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1027-28 (1992); *infra* note 100 and accompanying text describing distinction made in *Lucas* between personal and real property interests.

57. *Kleppe v. New Mexico*, 426 U.S. 529, 540-41 (1976).

58. *Alabama v. Texas*, 347 U.S. 272, 273 (1954); *United States v. Midwest Oil Co.*, 236 U.S. 459, 474 (1915).

59. *Butte City Water Co. v. Baker*, 196 U.S. 119, 126 (1905) (finding congressional delegation to states of the power to make regulations regarding "location" procedures under the Mining Act is constitutional since such regulations are "proprietary" rather than legislative by nature). The government also acts in such a proprietary capacity under the Mineral Lands Leasing Act (MLLA). *Utah Int'l, Inc. v. Andrus*, 488 F. Supp. 962, 969 (C.D. Utah 1979) (BLM regulations defining "commercial quantities" test under the MLLA constitute action taken by sovereign in its proprietary, as opposed to regulatory, role).

to arise under contract rather than under the Fifth Amendment.⁶⁰ As a result, the language of the Mining Act may be fairly characterized as creating a standing contractual offer from the United States,⁶¹ as the proprietor of the public lands, which mining claimants may accept by exploring for and discovering valuable mineral deposits.⁶² All the elements for the formation of a contract are present in this interaction. Each of the parties consents to provide consideration in exchange for the binding obligation of the other. The government offers its lands in exchange for an annual assessment fee, taxes, and the furtherance of the national policy that the mineral resources of the United States should be developed.⁶³ The claimant offers his or her labor and expenditures in return for the constitutionally protected right to mine the public's mineral resources for a profit.⁶⁴ Any violation of the terms of this contract, including the mining claimant's promise to pay an annual \$100 assessment fee and to maintain a valuable mineral deposit, acts as a condition subsequent voiding the agreement.⁶⁵ Unpatented claims are also subject to Congress' continuing sovereign powers to impose regulations on mining activities.⁶⁶ Such regulations

60. *Sun Oil Co. v. United States*, 572 F.2d 786, 818 (Ct. Cl. 1978); *see also* J.J. Henry Co. v. United States, 411 F.2d 1246, 1249 (Ct. Cl. 1969); *Marathon Oil Co. v. U.S.*, 16 Cl. Ct. 332, 338-39 (1989). Rights against the United States arising under contract are, however, still protected by the Fifth Amendment. *Lynch v. United States*, 292 U.S. 571, 579 (1934).

61. Statutes may themselves create binding contracts when the language and circumstances evince a legislative intent to create private rights of a contractual nature enforceable against the government. *United States Trust Co. of N.Y. v. New Jersey*, 431 U.S. 1, 17-18 (1977); *Indiana ex rel. Anderson v. Brand*, 303 U.S. 95, 104-05 (1938).

62. The "discovery" of a valuable mineral deposit thus constitutes a condition precedent to the formation of valid contractual rights, including the grant by the United States of a property interest that bestows upon the claimant the right to immediate and exclusive possession. *Tosco Corp. v. Hodel*, 611 F. Supp. 1130, 1187 (D. Colo. 1985). *See also* *Western Mining Council v. Watt*, 643 F.2d 618, 626-27 (9th Cir. 1981) (dismissing plaintiffs' arguments that FLPMA impaired plaintiffs' "contractual" rights under the Mining Act based on lack of standing).

63. *See supra* notes 1-4, and accompanying text.

64. *See* *Winstar Corp. v. United States*, 25 Cl. Ct. 541, 547-49 (1992) (describing process of contract formation between government and private company).

65. *See, e.g.,* *Cole v. Ralph*, 252 U.S. 286, 296 (assessment work is in the nature of a condition subsequent to a perfected and valid claim); *Tosco Corp.*, 611 F. Supp. at 1187 (only way valid discovery may become subject to divestiture is through occurrence of condition subsequent such as nonperformance of annual assessment work).

66. *See, e.g.,* 30 U.S.C. § 22 (1994); *see also* *Brown v. Public Agencies Opposed to Social Sec. Entrapment*, 477 U.S. 41, 52 (1986) (sovereign power is an "enduring presence that governs all contracts subject to the sovereign's jurisdiction, and will remain intact unless surrendered in unmistakable terms"); *Kleppe v. New Mexico*, 426 U.S. 529, 540 (1976) (noting that the Property Clause gives Congress complete power to regulate activities on public lands entrusted to it).

may not, however, "unreasonably interfere" with the terms of the contractual agreement.⁶⁷

An interesting analogy can be made between the property rights that characterize the unpatented mining claim and the property rights associated with offshore oil and gas leases under the original Outer Continental Shelf Lands Act (OCSLA).⁶⁸ The original structure of OCSLA lease interests offers useful guidance for future courts as they interpret the contractual nature of the property interest associated with unpatented mining claims. Under the OCSLA, the Secretary of the Interior has initial discretion over whether to issue leases for offshore oil and gas development and over setting the terms of the lease agreement. By setting the terms of an OCSLA lease, the Secretary functions as a proprietor, defining the lessee's initial property rights in a fashion similar to the 1872 Mining Act.⁶⁹ These contractual property rights are based upon the terms of the lease and incorporate conservation regulations in place at the time the lease is entered into.⁷⁰ Violation by the lessee of the lease terms, including the accompanying regulations, is a condition subsequent that renders the lease voidable.⁷¹

Like Congress, the Secretary of the Interior possesses the regulatory power of the sovereign and, under the OCSLA, may impose reg-

67. See, e.g., *United States v. Weiss*, 642 F.2d 296, 298-99 (9th Cir. 1981); see also 43 C.F.R. § 3809.0-2 (1995); 36 C.F.R. § 261.1(4)(b) (1995). For discussion on what constitutes "reasonable" regulation of mining operations by EPA, the BLM, and the USFS, see *infra* notes 212-63 and accompanying text.

68. 43 U.S.C.A. §§ 1331-1343 (West 1986 & Supp. 1996). OCSLA was enacted in 1953 and subsequently amended in 1978.

69. See Warren M. Christopher, *The Outer Continental Shelf Lands Act: Key to a New Frontier*, 6 STAN. L. REV. 23, 43-49 (1953).

70. *Pauley Petroleum Inc. v. United States*, 591 F.2d 1308, 1322 (Ct. Cl. 1979); see also *Sun Oil Co. v. United States*, 572 F.2d 786, 804 (Ct. Cl. 1978); *Union Oil Co. of Cal. v. Morton*, 512 F.2d 743, 749 (9th Cir. 1975).

71. *Morton*, 512 F.2d at 749. The pre-1978 OCSLA stated that the "continuance in effect of any lease . . . shall be conditioned upon compliance with the regulations issued under this subchapter and in force and effect on the date of the issuance of the lease . . .", 43 U.S.C. § 1334(a)(2) (1976), and that the lease may be canceled whenever the lease owner "fails to comply with any of the provisions of this subchapter, or of the lease, or of the regulations issued under this subchapter and in force and effect on the date of the issuance of the lease. . . ." 43 U.S.C. §§ 1334(b)(1), (2). Neither the BLM nor the USFS have interpreted their powers under the Mining Act to include the ability to terminate a lease based on the lessee's failure to comply with regulations existing at the time of lease execution. See, e.g., 43 C.F.R. § 3809.3-2 (1995) (BLM surface management regulations provide that mine operators not in compliance with applicable regulations may only be enjoined from further mining activity until operation comes back into compliance). As will be shown, however, a miner's inability to comply with such regulations and operate at a profit renders the underlying unpatented property interest null and void. See *infra* notes 272-87 and accompanying discussion.

ulations on the lessee retroactively.⁷² Unlike the lease term violations discussed above, however, violations of these retroactive regulations do not constitute grounds for lease forfeiture.⁷³ Moreover, post-lease regulations may not “unreasonably interfere” with lease rights.⁷⁴ This limitation mirrors the sovereign authority over mining activities that Congress has conferred on the BLM and the USFS.⁷⁵ An exception to the rule that post-lease regulations may not “unreasonably interfere” with or prohibit operations authorized under the lease agreement was provided by the D.C. Circuit in *Alaska v. Andrus*.⁷⁶ The court in that case held that, under the pre-1978 OCSLA, the Secretary had the power to include lease terms that would enable the Secretary to terminate a lease if environmental hazards, unknown or unforeseen at the time of leasing, subsequently arose or were discovered.⁷⁷

72. 43 U.S.C. § 1334(a) (1994) (Secretary may issue such “rules and regulations as he determines to be necessary and proper in order to provide for the prevention of waste and conservation of the natural resources of the outer Continental Shelf”).

73. See *Pauley Petroleum*, 591 F.2d at 1322; *Sun Oil Co.*, 572 F.2d at 802 (“the Secretary’s power and authority to obliterate and/or interfere with vested lease rights is not absolute”); see also *Morton*, 512 F.2d at 747-48 (holding that section 1334(a) does not give the Secretary the authority to suspend drilling operations indefinitely). Violation of government regulations issued subsequent to the “discovery” of a valid mining claim also do not terminate valid rights under the Mining Act. See, e.g., 43 C.F.R. § 3809.3-2. A clear exception to this rule is provided by section 1744 of FLPMA, which imposes a retroactive filing requirement *under penalty of claim forfeiture* on all claim holders. See *supra* notes 7 and 8. In addressing challenges to the filing requirement, courts have generally upheld the “reasonableness” of the law, thereby ignoring how the filing requirement retroactively altered the terms of the contractual agreement. See, e.g., *United States v. Locke*, 471 U.S. 84, 105-08 (1984); *Western Mining Council v. Watt*, 643 F.2d 618, 627-30 (9th Cir. 1981). This result may be reconciled, however, on the theory that the recordation requirement arose because of the overwhelming number of stale mining claims that had accumulated on the public lands, a problem unanticipated at the time the Mining Act was enacted. See *supra* note 7. See also *infra* notes 77-79, 261-63.

74. *Pauley Petroleum*, 591 F.2d at 1326; see also *Sun Oil Co.*, 572 F.2d at 802. The offshore leases typically contain clauses stating that the leases are subject to “all lawful and reasonable regulations” of the Secretary of the Interior “not inconsistent with the express and specific provisions” of the lease. See, e.g., *Pauley Petroleum*, 591 F.2d at 1325.

75. 43 U.S.C. §§ 1712(e)(3), 1732(b) (1994); 16 U.S.C. § 478 (1994). See *infra* parts II.B.1.a. and II.B.1.b. for discussion of the BLM and the USFS authority to regulate hard-rock mining.

76. 580 F.2d 465, 480 (D.C. Cir. 1978).

77. *Id.*; see also *Sun Oil Co.*, 572 F.2d at 816. One issue in *Andrus* was whether the Secretary had properly considered the “alternative,” under NEPA’s environmental review process, of including such “termination clauses” in oil and gas leases approved in 1976 pursuant to the OCSLA. *Andrus*, 580 F.2d at 480-84. The government argued that the OCSLA did not authorize post-lease termination based on events out of the lessee’s control. *Id.* at 480. In finding the Secretary’s EIS inadequate for not addressing the “termination clause” alternative, the court quoted approvingly from the decision in *Morton*, 512 F.2d at 749 (9th Cir. 1975), that “[a] lease may be terminated by its own terms in the event that stated conditions subsequently occur.” *Andrus*, 580 F.2d at 484 (alteration in original). The Secretary of the Interior subsequently issued regulations adopting the termination clause provisions. Outer Continental Shelf Oil and Gas Operations, Emergency Suspension Procedures, 42 Fed. Reg. 53,956 (1977). These regulations were successfully chal-

The 1978 amendments to the OCSLA modified the holding of *Alaska*, allowing the Secretary of the Interior to cancel leases upon a finding that the threat of environmental harm outweighs the advantage of continuing activity on the lease, but requiring a statutory compensation to the lessee.⁷⁸ *Alaska v. Andrus* still offers a persuasive model, however, for how the government may, in its role as proprietor of public resources, create and administer property interests that are conditional upon the lessee's compliance with regulations enacted subsequent to the execution of the contractual agreement and in response to previously unanticipated environmental concerns. As will be shown, this model has direct relevance to ongoing government regulation of unpatented mining operations.⁷⁹

II.

TAKINGS ANALYSIS

In analyzing takings claims brought by mining claimants against the government, this article will focus on the regulatory activities of the three federal agencies with primary authority over mining activity: the BLM; the USFS; and EPA. The increasingly strict regulation of the mining industry over the last two decades by these agencies has resulted in an accompanying increase in takings claims brought against the federal government. Such claims are of three general types.

First, some claimants attempt to establish claims in areas that have already been withdrawn from the scope of the Mining Act. These claimants then bring takings actions against the government when they are subsequently denied the right to mine.⁸⁰ Courts have uniformly rejected these actions⁸¹ relying on the rule that a claim can-

lenged in *Western Oil & Gas Ass'n v. Andrus*, 12 E.R.C. 1129, 1130-31 (C.D. Cal. 1978). Appeals from both this case and *Alaska v. Andrus* were mooted by the subsequent amendments to the OCSLA in 1978. See James B. Martin, *The Interrelationships of the Mineral Lands Leasing Act, the Wilderness Act, and the Endangered Species Act: A Conflict in Search of Resolution*, 12 ENVTL. L. 363, 431-33 (1982).

78. 43 U.S.C. § 1334(a) (1994).

79. See *infra* notes 261-63, 318 and accompanying discussion regarding the authority of the BLM and the USFS to impose new environmental regulations on an already permitted mining operation in order to address previously unanticipated environmental concerns.

80. Withdrawals of public lands from the scope of the Mining Act almost uniformly contain "grandfather" provisions allowing for the continuance of mining activity on claims deemed to be valid at the time of withdrawal. Thus, the typical withdrawal case does not involve a takings claim, see *infra* note 87, but instead an action to review a Department of the Interior discovery determination that a claim was not "valid" at the time of withdrawal. See, e.g., *Cameron v. United States*, 252 U.S. 450, 456 (1919); *Skaw v. United States*, 740 F.2d 932, 935-38 (Fed. Cir. 1984); *Converse v. Udall*, 399 F.2d 616, 622 (9th Cir. 1968).

81. *Fixel v. United States*, 26 Cl. Ct. 353, 355-56 (1992); *Clawson v. United States*, 24 Cl. Ct. 366, 369 (1991). In *Fixel*, the claimant purchased his unpatented claims two years after the withdrawal. The court did not address the issue of whether the seller of the claims

not be recognized as valid unless it is based on a valid discovery at the time of the withdrawal.⁸² Absent a valid discovery, the courts have held that plaintiffs possess no property rights upon which to base a Fifth Amendment action.⁸³

A second type of takings action arises when mining claimants lose the right to patent their claims when the land on which their unpatented claims are located is withdrawn from mineral access.⁸⁴ Courts reject these actions reasoning that a "right to patent" does not "vest" until a claimant has complied fully with the extensive procedures required under the Mining Act to obtain a patent on a mining claim⁸⁵ and that the loss of the "future opportunity" to patent is not a cognizable claim under the Fifth Amendment.⁸⁶

The third type of takings claim arises when regulation renders an otherwise profitable mining operation unprofitable.⁸⁷ Because the property interest in an unpatented claim consists primarily of the right to a "flow of income from production of the claim,"⁸⁸ regulation that renders an unpatented mining operation unprofitable constitutes a "denial of all economic use" and is therefore, arguably, a taking under

had established a valid discovery prior to withdrawal or whether the validity of a pre-withdrawal discovery survived a post-withdrawal sale. *See* *Cole v. Ralph*, 252 U.S. 286, 295 (1920) (unpatented claim is a full possessory interest subject to sale and other forms of disposition).

82. *Cameron*, 252 U.S. at 456. Thus, a mining claimant has no right to endeavor to make a discovery after a withdrawal and thus prevent the United States from subjecting the land to other uses. *Id.*; *see also* *Clouser v. Espy*, 42 F.3d 1522, 1525 n.4 (9th Cir. 1994); *United States v. Consolidated Mines & Smelting Co.*, 455 F.2d 432, 444 (9th Cir. 1971).

83. *Fixel*, 26 Cl. Ct. at 355-56; *Clawson*, 24 Cl. Ct. at 369.

84. Withdrawal actions typically terminate, without any savings clauses, the ability of existing unpatented claimholders to proceed to patent upon claims located within the withdrawn area. *See, e.g.*, *Sawtooth National Recreation Area Act (SNRA)*, 16 U.S.C. § 460aa-11 (1994) ("[p]atents shall not hereafter be issued for locations and claims heretofore made in the recreation area under the mining laws of the United States").

85. *Swanson v. Babbitt*, 3 F.3d 1348, 1353 (9th Cir. 1993); *Freese v. United States*, 639 F.2d 754, 758 (Ct. Cl. 1981); *see Wyoming v. United States*, 255 U.S. 489, 497 (1921). Once a claimant has complied with the required procedures, including the establishment of a valid discovery under 30 U.S.C. § 22 (1994), the patent approval process by the Department of the Interior has been held to be a ministerial act, not subject to NEPA. *South Dakota v. Andrus*, 614 F.2d 1190, 1193 (8th Cir. 1980) (stating that "the issuance of a mineral patent is a ministerial act," and that such acts "have generally been held outside the ambit of NEPA's EIS requirement").

86. *Swanson*, 3 F.3d at 1353; *Freese*, 639 F.2d at 758. In response to the plaintiff's claims of an unconstitutional taking, the court in *Freese* noted that, "[a]t best, plaintiff has suffered a denial of the opportunity to obtain greater property than that which he owned upon the effective date of the Sawtooth Act. This cannot fairly be deemed the divestment of a property interest, save by the most overt bootstrapping." *Freese*, 639 F.2d at 758.

87. The government typically avoids a fourth potential type of takings claim by grandfathering in "valid existing rights" in effect at the time lands are withdrawn from mineral entry. *See supra* note 80; *see, e.g.*, *Skaw v. United States*, 740 F.2d 932, 935-38 (Fed. Cir. 1984).

88. *United States v. Locke*, 471 U.S. 84, 105 (1984).

the Fifth Amendment.⁸⁹ Such regulation may occur in the initial stages of mining activity, at the time a claimant is applying for a permit to operate, or may be imposed later on an existing permitted operation. Although no case explicitly has found government regulation of an unpatented mining activity to be in violation of the Fifth Amendment, it is clear that a number of courts believe the claim may have merit, given the appropriate factual circumstances.⁹⁰

The remainder of this article will focus on this third "regulatory" type of takings action. This analysis is especially relevant because regulatory takings claims brought by hardrock miners promise to grow in number as ever more stringent regulations are placed upon the mining industry. As a jumping off point for a regulatory takings analysis, the next section will discuss the traditional takings analysis applied to mining claims by courts and most commentators.⁹¹ This discussion is important because courts have been generally receptive to the application of the traditional takings analysis to mining regulations. This article will conclude, however, that the traditional takings analysis is

89. *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1018-24 (1992); see *infra* notes 94-100 and accompanying discussion.

90. See *Clouser v. Espy*, 42 F.3d 1522, 1539-40 (9th Cir. 1994) (declining to hear takings challenge based on lack of jurisdiction); *Rybachek v. United States*, 23 Cl. Ct. 222, 226 (1991) (remanding to lower court to establish whether Clean Water Act regulations denied mining claimant all economic use of property); *Trustees for Alaska v. EPA*, 749 F.2d 549, 559-60 (9th Cir. 1984) (dismissing miners' takings claims based on their failure to allege specific economic injuries due to Clean Water Act regulations). In *Skaw v. United States*, the court remanded to the claims court to determine whether the claimants had a valid claim and, if so, whether the congressional restrictions on placer and dredge mining denied the claimants all economic use of their property. 740 F.2d at 939. The claims court did not reach the takings issue, finding instead that the claimants had not possessed valid claims at the time of the initial land withdrawal. *Skaw v. United States*, 13 Cl. Ct. 7, 37, 40 (1987). See also *State of Utah v. Andrus*, 486 F. Supp. 995, 1011 (D. Utah 1979) (finding substantial takings question where alternative access designated by the BLM to valid claims in wilderness areas is unreasonably expensive).

91. See, e.g., *Rybachek*, 23 Cl. Ct. at 226 (remanding to lower court to establish whether Clean Water Act regulations denied mining claimant all economic use of property); *Trustees for Alaska*, 749 F.2d at 559-60 (dismissing miners' takings claims based on their failure to allege specific economic injuries due to Clean Water Act regulations); *Skaw*, 740 F.2d at 939 (remanding to claims court to determine whether prohibition of dredge and placer mining denied claimants all economic use of their property); *State of Utah v. Andrus*, 486 F. Supp. at 1011 (finding substantial takings question where alternative access designated by the BLM to wilderness area claims is unreasonably expensive).

Most legal commentaries also assume that traditional regulatory takings law is applicable to mining regulation. See, e.g., Barton H. Thompson, Jr., *Application of the Law of "Takings" to Restrictions on Mineral Development*, 41 ROCKY MTN. MIN. L. INST. 8-1 (1995); Daphne Werth, *Where Regulation and Property Rights Collide: Reforming the Hardrock Act of 1872*, 65 U. COLO. L. REV. 427, 450-57 (1994); Stephen P. Ruffatto & Carolyn S. Ostby, *Cohabitation of Wilderness and Mining: Can the Marriage be Saved?*, 38 ROCKY MTN. MIN. L. INST. § 11.05 (1992); Marla E. Mansfield, *On the Cusp of Property Rights: Lessons from Public Land Law*, 18 ECOLOGY L.Q. 43, 92-98 (1991); Jan G. Laitos, *Regulation of Natural Resource Use and Development in Light of the "New" Takings Clause*, 34 ROCKY MTN. MIN. L. INST. 1-1 (1988).

incomplete, since it does not adequately address the unique nature of the unpatented claim as a property interest.

A. Traditional Takings Analysis

An analysis of what constitutes a “regulatory taking” begins with the Supreme Court’s 1922 decision in *Pennsylvania Coal Co. v. Mahon*, in which Justice Holmes observed that, “while property may be regulated to a certain extent, if that regulation goes too far, it will be recognized as a taking.”⁹² Since *Mahon*, numerous courts and legal scholars have struggled with the question of how “far” a regulation may go before it violates the Fifth Amendment.⁹³ The most recent, comprehensive attempt to answer this question was undertaken by the U.S. Supreme Court in *Lucas v. South Carolina Coastal Council*.⁹⁴ In *Lucas*, the Court reviewed a South Carolina statute prohibiting the erection of permanent habitable structures on erodible beachfront areas. Adopting the lower court’s finding that the statute had rendered Lucas’ beachfront parcel “valueless,” Justice Scalia, writing for the majority, adopted a *per se* rule that a statute that deprives a land-

92. 260 U.S. 393, 415 (1922). The “takings clause” is found in the Fifth Amendment to the Constitution which states, in pertinent part, “nor shall private property be taken for public use, without just compensation.” U.S. CONST. amend. V. The Fifth Amendment takings clause is applicable to the states—and local governmental entities—through the Fourteenth Amendment to the Constitution. *Chicago, B. & Q.R. Co. v. Chicago*, 166 U.S. 226, 233-34 (1897). Traditionally the takings clause has been interpreted to prevent government from physically appropriating private property. *See, e.g., Loretto v. Teleprompter Manhattan CATV Corp.*, 458 U.S. 419, 434-35 (1982) (noting that government action constituting permanent physical occupation of property constitutes automatic taking without regard to important public purpose of regulation or extent of economic impact); *Loveladies Harbor, Inc. v. United States*, 28 F.3d 1171, 1175 (Fed. Cir. 1994) (“At the time the Constitution was written and for almost 150 years after, the concern was with physical occupation of private lands by the Government.”). With the rise of regulatory government in the twentieth century came the realization that government regulation might in some circumstances also violate the Fifth Amendment. A regulatory taking case is thus defined as an action “[in which] the value or usefulness of private property [has been] diminished by regulatory action not involving the physical occupation of the property.” *Hall v. City of Santa Barbara*, 833 F.2d 1270, 1275 (9th Cir. 1987).

93. *See, e.g., Penn Cent. Transp. Co. v. New York City*, 438 U.S. 104, 123-24 (1978); *Agins v. City of Tiburon*, 447 U.S. 255 (1980); Joseph L. Sax, *Takings and the Police Power*, 74 YALE L.J. 36 (1964); Frank Michelman, *Property, Utility, and Fairness: Comments on the Ethical Foundations of “Just Compensation” Law*, 80 HARV. L. REV. 1165 (1967).

94. 505 U.S. 1003 (1992). Two earlier decisions from 1987 signaled the Supreme Court’s conservative shift in takings cases, foreshadowing its decision in *Lucas*. In *Nolan v. California Coastal Comm’n*, 483 U.S. 825, 837 (1987), the Court found that a coastal commission decision requiring a public easement on a landowner’s beachfront estate as a condition of approval for remodeling failed to satisfy the requisite “nexus” between the condition imposed and the original purpose of the building restriction and that the restriction was thus not a legitimate purpose under the police power. In *First English Evangelical Lutheran Church v. County of Los Angeles*, 482 U.S. 304 (1987), the Court held that a claimant may recover damages for a temporary taking of property during the time period in which a regulation ultimately found to be unconstitutional is being challenged.

owner of all economically viable use of his land requires compensation, regardless of whether or not the statute was enacted for a legitimate public purpose.⁹⁵ The Court articulated an exception to its *per se* rule, however, in cases where the property interests proscribed by the regulation were “not part of [the owner’s] title to begin with.”⁹⁶ Such inherent limitations on a property owner’s original title must be found in the “restrictions that background principles of the State’s law of property and nuisance already place upon land ownership.”⁹⁷ Finally, the Court noted in a footnote that a landowner who does not suffer total economic deprivation as a result of a regulation may still have a takings claim depending upon the economic impact of the regulation and the degree to which the regulation interferes with investment-backed expectations.⁹⁸

95. 505 U.S. at 1018-24.

96. *Id.* at 1027.

97. *Id.* at 1029. As numerous commentators have pointed out, however, background principles of common property and nuisance law are hardly models of clarity from which one may draw rules as to what constitutes permissible government regulation. See, e.g., Richard A. Epstein, *Lucas v. South Carolina Coastal Council: A Tangled Web of Expectations*, 45 STAN. L. REV. 1369 (1993); William W. Fisher III, *The Trouble with Lucas*, 45 STAN. L. REV. 1393 (1993); Thomas P. Glass, *Property Law: Takings and the Nuisance Exception in the Aftermath of Lucas v. South Carolina Coastal Council*, 18 U. DAYTON L. REV. 509 (1993); John A. Humbach, *Evolving Thresholds of Nuisance and the Takings Clause*, 18 COLUM. J. ENVTL. L. 1 (1993); Paula C. Murray, *Private Takings of Endangered Species as Public Nuisance: Lucas v. South Carolina Coastal Council and the Endangered Species Act*, 12 UCLA J. ENVTL. L. & POL’Y 119 (1993).

As examples, Justice Scalia noted that the owner of a lakebed would not be entitled to compensation for a denial of a permit to engage in a landfilling operation which would have the effect of flooding others’ land, nor would a nuclear plant owner be allowed compensation for being required to remove all improvements on land sitting atop an earthquake fault. *Id.* In dissent, Justice Stevens warned that the majority’s holding “effectively freezes the State’s common law, denying the legislature much of its traditional power to revise the law governing the rights and uses of property.” *Id.* at 1068-69. It is difficult to ascertain from the Court’s holding the degree to which *Lucas* effectively “freezes” the states’ common law of nuisance. The majority’s opinion notes that “changed circumstances or new knowledge may make what was previously permissible no longer so.” *Id.* at 1031. However, the opinion seems to ignore language contained in the statute which states as a legislative purpose the protection of life and property by maintaining the beach/dune system as a buffer from high tides, storm surge and hurricanes. *Id.* at 1075. As Justice Stevens notes in his dissent, such language is not simply legislative rationalization in light of the approximately \$6 billion in property damage caused by Hurricane Hugo in 1989 in South Carolina alone. *Id.* For a view that the Court was actually more concerned with the statutory language which stated as an additional legislative purpose the preservation and restoration of the beach/dune system for “recreational and ecological purposes,” see Joseph L. Sax, *Property Rights and the Economy of Nature: Understanding Lucas v. South Carolina Coastal Council*, 45 STAN. L. REV. 1433 (1993). According to Professor Sax, Justice Scalia invokes nuisance principles “to emphasize the difference between regulations which are designed to maintain the land in its natural condition and regulations which embrace conventional police power.” Sax, *supra*, at 1441.

98. *Lucas*, 505 U.S. at 1019 n.8. Justice Scalia does not offer any insight into how the Court might use these factors to determine whether a taking has occurred.

From a certain perspective, *Lucas* stands for the relatively simple proposition that government regulation may not be inconsistent with the reasonable expectations of the property owner. The state may deny a property owner all economic use only if such a denial is consistent with traditional notions of nuisance law, that is, in cases where an individual would expect his use to be limited. The nature and scope of the property interests assessed in the takings analysis (subsurface estate, individual parcel, specific minerals in the ground, etc.) must likewise comport with the state's traditional treatment of property interests.⁹⁹ *Lucas* also emphasizes the distinction between personal property and real property, noting that, because the state has traditionally had a high degree of control over commercial dealings, the personal property owner should be aware of the possibility that new regulation might render his property economically worthless.¹⁰⁰

1. *Traditional Takings Analysis Applied to Mining Regulations*

Under a traditional analysis, agency regulation that renders an unpatented mining operation unprofitable could be ruled a taking under *Lucas*' holding that the government may not regulate property so as to deny an owner all economic use.¹⁰¹ Whether the denial of all economic use constitutes a taking will turn on whether the regulation proscribes use interests "which were not part of [the claimant's] title to begin with."¹⁰² *Lucas* holds that such inherent limitations on an owner's property rights may be found in the restrictions that background principles of the state's law of property and nuisance already place upon land ownership.¹⁰³ Justice Scalia is careful, however, to disassociate this language from a traditional "nuisance" analysis, which is based on the relative harm or injury caused by the proscribed

99. *Id.* at 1016 n.7; see also *Whitney Benefits, Inc. v. United States*, 926 F.2d 1169, 1174 (Fed. Cir. 1991) (holding that traditional state recognition of separate mineral and surface estates supports finding that government prohibition of subsurface mining constituted a compensable taking, even though claimant still owned and had use of the surface estate).

100. 505 U.S. at 1027-28; see also *Andrus v. Allard*, 444 U.S. 51, 64-66 (1979) (holding that government prohibition of sale of eagle feathers is not a violation of Fifth Amendment); *United States v. Locke*, 471 U.S. 84, 105 (1984) (essentially "economic rights" derived from unpatented mining claims subject to government's substantial power to regulate for the public good). For further discussion of *Locke*, see *supra* note 56.

101. *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1019 (1992). Such regulation denies an unpatented miner "all economic use" of property based on case precedent which limits the lawful activities on an unpatented claim to mining. See, e.g., *United States v. Bagwell*, 961 F.2d 1450, 1453 (9th Cir. 1992) (use of mining claim for purposes other than mineral development is not protected by federal mining law). This was essentially the claim made by the plaintiffs in *Rybachek v. United States*, 23 Cl. Ct. 222, 225 (1991).

102. See *Lucas*, 505 U.S. at 1027.

103. *Id.* at 1029; see also *supra* note 97.

activity.¹⁰⁴ Instead, the search for the “inherent restrictions” on a property owner’s title must be guided by the traditional “understandings of our citizens regarding the content of, and the state’s power over, the ‘bundle of rights’ that they acquire when they obtain title to property.”¹⁰⁵ In sum, the traditional analysis examines the reasonable expectations of mining claimants, as formed under the provisions of the Mining Act and subsequent legislation and judicial decisions,¹⁰⁶ regarding the government’s ability to regulate mining activities to the point of unprofitability. This examination finds fruitful arguments on both sides of the takings issue.¹⁰⁷

Commentators who claim that government regulation can constitute a taking of unpatented miners’ property rights rely on a host of authorities that purport to show that miners have a reasonable expectation that such regulation may not prevent mining activities.¹⁰⁸ Chief among these authorities is the language of the Mining Act which provides that the public lands “*shall be free and open to exploration and purchase.*”¹⁰⁹ Various courts have interpreted this language to preclude government regulation that has the effect of prohibiting mining activity.¹¹⁰ Subsequent federal legislation substantiates the view that

104. Justice Scalia is quick to point out that the distinction between “harm-preventing” and “benefit-conferring” regulation is often in the eye of the beholder. As an example, Justice Scalia notes that South Carolina’s beach protection legislation could have been phrased in terms of preventing “harm” to South Carolina’s ecological resources or as a means of achieving the “benefits” of an ecological preserve. *Id.* at 1022-25; *see infra* note 118.

105. *Lucas*, 505 U.S. at 1026.

106. In the case of mining on public lands, the proper source of a common understanding regarding mining property rights is the Mining Act and subsequently related legislation and judicial decisions. *Lucas* does not *require* that one search state law for background common law principles when the property interest is in fact derived from another source such as federal law. *Compare Lucas*, 505 U.S. at 1030 (courts should look to an independent source *such as* state law to define the range of interests that qualify for protection under the Fifth Amendment), *with Clawson v. United States*, 24 Cl. Ct. 366, 369 (1991) (independent source of the unpatented mining claim property interest is the Mining Act) (citing *Lockhart v. Johnson*, 181 U.S. 516, 520 (1901)).

107. An initial difficulty in this analysis is determining “whose” expectations should be evaluated, those of the general public or the owners of unpatented claims. *Lucas* stands for the proposition that courts should look to the expectations of affected landowners which, presumably, are synonymous with those of the general citizenry. *Lucas*, 505 U.S. at 1026-32. In the case of unpatented claims on public lands, however, both the unpatented claimholder and the general public have legitimate property interests in the land. *See, e.g., United States v. Locke*, 471 U.S. 84, 104-05 (1984). For a discussion regarding the very different “understandings” these two groups have vis a vis the government’s right to regulate mining on public lands, see *LESKY*, *supra* note 2, at 287-312.

108. *See, e.g., Lawrence G. McBride, Inverse Condemnation Issues in Revising the Mining Law*, 38 ROCKY MTN. MIN. L. INST. § 7.03[2], at 7-13 to 7-17 (1992); Ruffatto & Ostby, *supra* note 91, at 11-46 to 11-52.

109. 30 U.S.C. § 22 (1994) (emphasis added).

110. *See Locke*, 471 U.S. at 105 (no taking where claimant’s reasonable investment-backed expectations can continue to be realized as long as he complies with reasonable

regulation may not constitutionally prevent mining.¹¹¹ Additional support for this position can be taken from judicial decisions which hold that unpatented mining claims are compensable property interests under the Fifth Amendment.¹¹²

The opposing position counters that agency regulation of mining activities cannot constitute a taking, because miners have no reasonable expectations that the government will not render their operations unprofitable through regulation.¹¹³ This argument is supported by the language of the Mining Act, which conditions the guarantee of free access with the phrase “[e]xcept as otherwise provided . . .” and subjects all mining activities to “regulations prescribed by law.”¹¹⁴ Under this interpretation, miners have never possessed the right to use their property in a manner harmful to the public welfare and should therefore expect that their mining activities will be regulated.¹¹⁵ Finally, the anti-takings argument notes that the judicial decisions that have recognized unpatented claims as full possessory property interests have also held that the government retains “substantial regulatory

regulatory restrictions the legislature has imposed); *United States v. Doremus*, 888 F.2d 630, 633 (9th Cir. 1989) (allowing the USFS permit requirement for mining activities on grounds that requirement did not *materially interfere* with mining operations); *see also* *Skaw v. United States*, 740 F.2d 932, 941 (Fed. Cir. 1984) (stating that nothing in regulations allows the USFS to encroach impermissibly upon rights of miners by circumscribing their use in a manner that amounts to a prohibition); *United States v. Weiss*, 642 F.2d 296, 299 (9th Cir. 1981) (Secretary of Agriculture may adopt reasonable regulations which do not impermissibly encroach upon the right to the use and enjoyment of placer claims for mining purposes).

111. *See* 30 U.S.C. § 612(b) (1994) of the Surface Resources and Multiple Use Act, which provides the USFS authority to regulate mining activities in order to protect surface resources, but specifically limits such authority to actions that do not “materially interfere” with mining operations. In addition, both the Multiple Use & Sustained Yield Act of 1960 (MUSYA) and FLPMA limit the USFS’s and the BLM’s multiple use authority over mining activities. *See* 16 U.S.C. § 528 (1994); 43 U.S.C. § 1712(e) (1994), discussed *infra* notes 142 and 166.

112. *See supra* notes 41-42 and accompanying text. The tradition of grandfathering existing valid unpatented mining claims when areas are withdrawn from mining availability also supports the argument that actions that would prevent mining can “take” property interests in violation of the Fifth Amendment. *See supra* note 87.

113. *See, e.g.,* Werth, *supra* note 91, at 452-56; Mansfield, *supra* note 91, at 96; LESHY, *supra* note 2, at 220-28.

114. 30 U.S.C. § 22 (1994).

115. This view is illustrated by judicial decisions upholding the strict liability regimes imposed on the hydraulic mining industry in the late nineteenth century. *See supra* note 17 and accompanying text; *see also* *M & J Coal Co. v. United States*, 47 F.3d 1148, 1154 (Fed. Cir. 1995) (holding that at the time mining rights were acquired, company should have known that it could not mine in such a way as to endanger public health or safety). The ability to prevent “nuisance-like” activities through regulation has been upheld in a variety of contexts outside the area of mining. *See, e.g.,* *United States v. Hooker Chem. & Plastics Corp.*, 722 F. Supp. 960 (W.D.N.Y. 1989); *Miotke v. City of Spokane*, 678 P.2d 803 (Wash. 1984). Many mining activities could certainly be accurately characterized as “nuisance-like.” *See* *Trustees for Alaska v. EPA*, 749 F.2d 549, 552 (9th Cir. 1984) (discussing ecological damage caused by placer mining operations).

power over those interests," which are characterized as essentially the right to a stream of income, traditionally accorded less Fifth Amendment protection from government regulation than other property rights.¹¹⁶

Each of these opposing arguments has merit. Those who argue against the possibility of takings, based primarily on the theory that no one has a property right to endanger public health and safety, tend to underestimate the distinction elucidated in *Lucas* between government authority to prohibit "nuisance-like" activities and the authority to otherwise regulate, but not prevent, legitimate activities under the police power.¹¹⁷ Those who argue, on the other hand, that any prevention of mining activity violates miners' reasonable expectations, and thus "takes" their property rights, downplay the economic nature of the right and the fact that extensive regulation has traditionally been imposed on mining operations.¹¹⁸

The relative merits of these two viewpoints results in an analytic standoff, which inevitably leads to contradictory results in decisions reached by courts on a case by case basis.¹¹⁹ In an attempt to resolve

116. *United States v. Locke*, 471 U.S. 84, 105 (1984); *see also Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1026-29 (1992) (noting that owner of personal property should be aware of possibility that new government regulations may render property worthless by reason of the State's traditionally high degree of control over commercial dealings). The concept of the unpatented mining claim on public land as a property right to a stream of income parallels in some respects the nature of a property right in the flow of water in that both rights 1) intrude on a public common, 2) derive from original definitions that impose limits beyond those that constrain most property rights, and 3) are controlled by regulatory regimes that may impose further limits. *See Joseph Sax, The Constitution, Property Rights and the Future of Water Law*, 61 U. COLO. L. REV. 257, 260 (1990). State courts have traditionally upheld government actions that eliminate private property rights in water. *See, e.g., Joslin v. Marin Mun. Water Dist.*, 429 P.2d 889, 898 (Cal. 1967); *Coffin v. Left Hand Ditch Co.*, 6 Colo. 443 (1882).

117. *Lucas*, 505 U.S. at 1026-29 (1992); *Penn Cent. Transp. Co. v. New York City*, 438 U.S. 104, 145 (1978) (Rehnquist, J., dissenting) ("nuisance exception to the taking guarantee is not coterminous with the police power itself"). *See infra* note 344 and accompanying text. For example, under the traditional analysis, EPA regulation of gold mining in Alaska arguably does not require compensation due to the traditional "nuisance-like" effects of those mining activities. *See American Mining Congress v. EPA*, 965 F.2d 759, 766-69 (9th Cir. 1992) (addressing regulation of stormwater discharges from inactive mines); *Trustees for Alaska*, 749 F.2d at 552; *Rybachek v. United States*, 23 Cl. Ct. 222, 224-25 (1991). Conversely, government restrictions on mining activities to preserve aesthetic or recreational uses might well constitute a taking due to the lack of historical treatment of activities that interfere with such uses as "nuisances." In this context, it is clear that *Lucas* was especially concerned with government regulation which denied a property owner all economic use in order to set aside open space land for ecological preservation and recreational opportunity. *Lucas*, 505 U.S. at 1018-19 (analogizing government creation of an open space wildlife preserve with government dam project that floods property); *see Sax, supra* note 97, at 1441.

118. *See supra* notes 17, 56, and part II.B.1.

119. *See, e.g., Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393, 414 (1922) (finding state statute forbidding subsurface coal mining that causes subsidence to be an unconstitutional taking); *Keystone Bituminous Coal Ass'n v. DeBenedictis*, 480 U.S. 470, 486-92 (1987)

these issues, the sections that follow will present and justify an alternative approach to the traditional takings analysis. In applying the basic tenets of takings law to the regulation of hardrock mining, the alternative approach incorporates into its analysis two important issues—the government’s authority to regulate, and the contractual nature of the unpatented mining claimant’s property interest. By focusing on these two aspects of hardrock mining law, the alternative approach is able to establish a more definitive framework in which to analyze the takings issue.

B. Alternative Takings Analysis Applied to Regulation of Mining

In order to analyze the constitutionality of government regulation that renders an unpatented mining claim unprofitable, the alternative analysis considers three different issues: 1) whether the regulating agency has the statutory authority to regulate a mining operation to the point of unprofitability; 2) assuming such authority exists, whether the claimant has a valid property interest sufficient to bring a Fifth Amendment claim; and 3) assuming a valid property interest exists, whether the regulation constitutes a taking of such property in violation of the Fifth Amendment.

As applied to mining, the traditional takings analysis typically fails to address adequately the first two issues, namely, whether the agency has the authority to impose economically unfeasible regulations and the effect of such regulation on the claimant’s property interest. The alternative analysis presented in this article will focus on these two questions in order to show that authorized government regulations that render a mining operation unprofitable do not constitute a taking under the Fifth Amendment.

1. Agency Authority to Regulate a Mining Operation to the Point of Unprofitability

Where actions taken by government agencies are not authorized by Congress, either expressly or by necessary implication, those actions are not treated as acts of the United States and are therefore not compensable under the Fifth Amendment.¹²⁰ Instead, the appropriate

(finding state statute forbidding subsurface coal mining that causes subsidence to be constitutional based on the statute’s “public” purpose). Legal commentators also tend to disagree in applying traditional takings analysis to mining regulation. *See, e.g.*, Thompson, *supra* note 91, at 8-21 to 8-38 (1995) (discussing whether an owner of a mineral interest has a protected property interest similar to that of an owner of real estate and analyzing how courts have applied takings analysis to mineral cases); Werth, *supra* note 91, at 450-57; Ruffatto & Ostby, *supra* note 91, at 11-46 to 11-52 (applying takings analysis to valid existing rights); Mansfield, *supra* note 91, at 92-98; Laitos, *supra* note 91.

120. *Regional Rail Org. Act Cases*, 419 U.S. 102, 127 n.16 (1974); *United States v. North American Transp. & Trading Co.*, 253 U.S. 330, 333 (1920); *Hooe v. United States*,

remedy for harm caused by unauthorized agency action may be an action for breach of contract,¹²¹ a tort claim,¹²² or an order setting aside the action.¹²³ Determining whether an agency has the statutory authority to impose regulations that render certain mining operations unprofitable is therefore an essential first step in any takings analysis. This question is neither a simple nor an idle one. Several federal appellate court decisions discussed below imply that there are real limits on the statutory authorities of the USFS and the BLM to regulate mining operations. The following sections will discuss and compare the relative authorities of the BLM, the USFS, and EPA to regulate mining operations on public lands.¹²⁴ This analysis concludes that, while none of the three agencies is expressly authorized to prevent mining activity outright, each agency has the power to impose reasonable regulations that may in some circumstances render mining operations unprofitable.

a. BLM Authority to Regulate Hardrock Mining

In passing FLPMA in 1976, Congress directed the BLM to implement a series of policy objectives for the public lands, including preserving the natural environment¹²⁵ and accessing natural resources.¹²⁶

218 U.S. 322, 335-36 (1910); *Florida Rock Indus., Inc. v. United States*, 791 F.2d 893, 898-99 (Fed. Cir. 1986); *Coast Indian Community v. United States*, 550 F.2d 639, 649 (Ct. Cl. 1977); see *Youngstown Co. v. Sawyer*, 343 U.S. 579, 585 (1951). See also the following OCSLA cases, *Pauley Petroleum Inc. v. United States*, 591 F.2d 1308, 1327 (Ct. Cl. 1979); *Sun Oil Co. v. United States*, 572 F.2d 786, 819 (Ct. Cl. 1978); *Union Oil Co. of Cal. v. Morton*, 512 F.2d 743, 751 (9th Cir. 1975).

121. *Sun Oil Co.*, 572 F.2d at 818.

122. *North American Transp. & Trading Co.*, 253 U.S. at 333-34.

123. *Morton*, 512 F.2d at 752. Under the Administrative Procedure Act, a reviewing court has the power to set aside a government action "in excess of statutory jurisdiction, authority, or limitations, or short of statutory right." 5 U.S.C. § 706(2)(C) (1994).

124. Almost all federal regulation of mining operations on public lands is conducted by these three agencies. While state and local regulation on public lands may impose significant restrictions on mining operations, such non-federal regulation may not, under the Supremacy Clause, conflict with federal statutes. See, e.g., *California Coastal Comm'n v. Granite Rock Co.*, 480 U.S. 572 (1987); *Commonwealth Edison Co. v. Montana*, 453 U.S. 609 (1981); *Ventura County v. Gulf Oil Corp.*, 601 F.2d 1080, 1085-86 (9th Cir. 1979). Thus, one may assume that the limits of federal regulatory power over the mining industry will also apply to state and local regulation.

125. 43 U.S.C. § 1701(a)(8) (1994) states that the public lands shall be managed: in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.

126. 43 U.S.C. § 1701(a)(12) states that the public lands shall be managed "in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands, including implementation of the Mining and Minerals Policy Act of 1970 . . . as it pertains to the public lands."

FLPMA attempts to balance these potentially contradictory policy goals by requiring the BLM, “by regulation or otherwise,” to “take any action necessary to prevent unnecessary or undue degradation of the [public] lands.”¹²⁷

The BLM regulations define the “unnecessary or undue degradation” standard in the mining context as:

surface disturbance greater than what 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.¹²⁸

The BLM regulations also provide that failure to complete reasonable reclamation or to comply with federal environmental statutes and regulations shall constitute “unnecessary or undue degradation.”¹²⁹

Under the BLM’s regulations, mining operations are divided into three categories.¹³⁰ Large operations (five acres or more) or opera-

127. 43 U.S.C. § 1732(b) (1994). FLPMA also authorizes the BLM to regulate mining claims in “wilderness study areas” dated after October 21, 1976 (post-FLPMA) in a manner “so as not to impair the suitability of such areas for preservation as wilderness.” 43 U.S.C.A. § 1782 (West 1986 & Supp. 1996). This standard of protection for Wilderness Study Areas (WSAs) is known as the “non-impairment” standard. Courts have generally held that the “non-impairment standard” for post-FLPMA claims in WSAs is stricter than the “unnecessary or undue degradation standard.” *See, e.g., State of Utah v. Andrus*, 486 F. Supp. 995, 1005 (D. Utah 1979).

Under 43 U.S.C.A. § 1782, pre-FLPMA mining claims may continue operations in WSAs in the same “manner and degree.” *See* 43 C.F.R. § 3802.0-5(j) (1995); *Ceminex, Ltd.*, 129 I.B.L.A. 64, 70 (1994). Pre-FLPMA operations in WSAs are regulated under an unnecessary or undue degradation standard which is generally acknowledged to be the same as the standard under section 1732(b), applicable to all other public lands under the BLM’s jurisdiction. *See, e.g., Mansfield, supra* note 91, at 57 & n.76. Once an area has been designated as wilderness, mining operations are regulated under the Wilderness Act, 16 U.S.C. §§ 1131-1136 (West 1985 & Supp. 1996).

128. 43 C.F.R. § 3809.0-5(k) (1995). The BLM regulations define the pre-FLPMA WSA “unnecessary or undue degradation” standard, as described *supra* note 127, as “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.” 43 C.F.R. § 3802.0-5(l) (1995). For purposes of this paper, the section 3802 and section 3809 standards will be assumed to be the same.

129. 43 C.F.R. § 3809.0-5(k). The BLM regulations authorize agency officials to require operators to post a bond where necessary to ensure sufficient reclamation. 43 C.F.R. § 3809.1-9 (1995). The Department of the Interior subsequently made bonding requirements mandatory in 1990. *See* Bureau of Land Management, Instruction Memorandum 90-582, Modification of Bonding Policy for Plans of Operation Authorized by 43 CFR 3809 (Aug. 14, 1990). An operator may be exempted from the BLM bond requirement upon proving the existence of a state bond within seventy-five percent of the BLM’s estimation for reclamation costs. *Id.* at 2.

130. The categories consist of “casual,” “notice” and “plan” mines. “Casual use” mines are operations resulting in only negligible disturbance—typically those activities not using mechanized equipment or motorized vehicles in sensitive areas. *See* Pierre J. Ott, 125 I.B.L.A. 250, 252-53 (1993) (suction dredging operations on river were not “casual

tions in environmentally sensitive areas are known as "plan mines."¹³¹ The BLM regulations require plan mine operators to submit a "plan of operations" prior to commencing mining activities.¹³² In the ensuing environmental review process, BLM officers determine which mitigation measures, if any, are required in order to avoid unnecessary or undue degradation.¹³³ As a result of this environmental assessment, the BLM may approve the plan as proposed, require modifications to the plan,¹³⁴ or where the operation may cause significant environmental impacts, prepare an environmental impact statement.¹³⁵

The BLM also possesses significant authority under FLPMA to regulate mining activities on BLM lands through land use planning.¹³⁶ FLPMA directs the BLM to manage the public lands under principles of multiple use and sustainable yield, in accordance with land use plans developed under 43 U.S.C. § 1712.¹³⁷ Section 1712 sets forth

uses" and as such a plan of operations was required). Casual use mines are not subject to any notice or permit requirements under the BLM regulations. 43 C.F.R. §§ 3809.0-5(b), 3809.1-2 (1995). "Notice" mines are mining operations typically using mechanized equipment and causing some cumulative disturbance of five acres or less. A "notice" mine operator must notify authorized BLM officers in the field of the operations, agree to avoid any unnecessary or undue degradation of the land, and agree to carry out reclamation. 43 C.F.R. § 3809.1-3 (1995). "Notice" mines do not, however, need approval from the BLM prior to commencing operations. 43 C.F.R. § 3809.1-3(b). "Plan mines" are mining operations with cumulative disturbance over five acres, or any operations with greater than negligible disturbance taking place in sensitive areas such as those of critical environmental concern, *see infra* note 138, or Wilderness Areas administered by the BLM.

131. 43 C.F.R. § 3809.1-4(a); *Sierra Club v. Penfold*, 857 F.2d 1307, 1310 (9th Cir. 1988).

132. *Id.* § 3809.1-4. The plan of operations should include a list of measures to be taken to prevent unnecessary or undue degradation. *Id.* § 3809.1-5(c)(5).

133. *Id.* § 3809.2-1.

134. The BLM normally imposes such modifications through "stipulations" included within the approved plan. Stipulations are considered a reasonable exercise of the BLM's authority for the purpose of preventing unnecessary or undue degradation of the public lands. *Draco Mines, Inc.*, 75 I.B.L.A. 278, 287 (1983).

135. *See* 43 C.F.R. § 3809.1-6; *see also* *Sierra Club v. Hodel*, 848 F.2d 1068, 1091 (10th Cir. 1988) (finding that the BLM's responsibility to impose a less degrading alternative to avoid unnecessary or undue degradation warrants compliance with NEPA); *Southwest Resource Council*, 96 I.B.L.A. 105, 120 (1987) (finding that the BLM's ability to modify submitted plans is sufficient discretion to constitute a federal action within the scope of NEPA). Note that the fact that a proposed mining operation would not cause unnecessary or undue degradation of public lands does not preclude the possibility that it would cause significant environmental effects warranting NEPA compliance. *Southwest Resource Council*, 96 I.B.L.A. at 120-21; *Kendall's Concerned Area Residents*, 129 I.B.L.A. 130, 138 (1994).

136. 43 U.S.C. § 1712 (1994); *see also* 43 C.F.R. § 1600. "Principle" or "major" land uses on BLM lands include domestic livestock grazing, fish and wildlife development and utilization, mineral exploration and production, rights of way, outdoor recreation and timber production. 43 U.S.C. § 1702(l) (1994).

137. 43 U.S.C. § 1732(a) (1994). "Multiple use" is defined in FLPMA as:

[T]he management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people . . . a combination of balanced and diverse resource

nine criteria for the development of land use plans. These criteria include giving priority to the designation and protection of areas of critical environmental concern¹³⁸ (ACEC) and providing for compliance with applicable pollution control laws.¹³⁹ Pursuant to this authority, the BLM land use plans are typically divided into management priority areas, reflecting the sensitivity of the area's resources.¹⁴⁰ The BLM land use plans generally give high priority to environmental resource values,¹⁴¹ but do not exclude mining from an area unless the area has been formally withdrawn pursuant to FLPMA.¹⁴²

uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and *not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.*

43 U.S.C. § 1702(c) (emphasis added). The BLM planning regulations have elaborated on this definition, including borrowing from the language of the USFS statutory authority (Multiple Use and Sustained Yield Act of 1960, 16 U.S.C. § 531 (1994)) that multiple use includes "the use of some lands for less than all of the resources." 43 C.F.R. § 1601.0-5(f) (1995). This apparent authority to prohibit mining in certain areas appears limited, however, by section 1712(e)(3). See *infra* note 142.

138. 43 U.S.C. § 1712(c)(3). 43 U.S.C. § 1701(a)(11) also provides that it is the policy of the United States that "regulations and plans for the protection of public land areas of critical environmental concern be promptly developed." "Areas of critical environmental concern" are defined as "areas within the public lands where special management attention is required . . . to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards." *Id.* § 1702(a).

139. *Id.* § 1712(c)(8).

140. See, e.g., BUREAU OF LAND MANAGEMENT, U.S. DEP'T OF THE INTERIOR, BAKER RESOURCE MANAGEMENT PLAN, RECORD OF DECISION 5 (1989) (establishing areas for limited, restricted or exclusive resource uses) [hereinafter BAKER RMP]; BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, GARNET RESOURCE AREA, RESOURCE MANAGEMENT PLAN 41 (1986) (identifying 14 management areas based on different resource values) [hereinafter GARNET RMP]; BUREAU OF LAND MANAGEMENT, U.S. DEP'T OF THE INTERIOR, LITTLE SNAKE RESOURCE AREA RESOURCE MANAGEMENT PLAN AND FINAL ENVIRONMENTAL IMPACT STATEMENT 2-63 (1989) [hereinafter LITTLE SNAKE RIVER RMP] (RMP establishes priority protection areas for designated resource uses including wildlife, recreation and protection of ACECs).

141. As an example, the Baker RMP establishes a priority ranking of resource allocations in the following order: 1) Threatened or Endangered Species; 2) Cultural Resources; 3) Paleontological Resources; 4) ACECs; 5) Visual Resource Management; 6) Riparian Areas; 7) Crucial Wildlife Habitat; 8) Soils/Watershed; 9) Recreation; 10) Forestry; 11) Grazing; 12) Wildlife/Fisheries; 13) Off Road Vehicle Use; 14) Salable Minerals; 15) Leasable Minerals; 16) Locatable Minerals; 17) Fire Management. BAKER RMP, *supra* note 140, at 12. While the Baker RMP notes that assigning priority for a resource value does not necessarily exclude other resource uses from those areas, the management priority does indicate which resource value would be considered most important when resolving resource use conflicts. *Id.*

142. Although FLPMA authorizes the BLM, subject to close congressional oversight, to exclude certain "major uses" from environmentally sensitive areas, 43 U.S.C. § 1712(e)(1)-(2), section 1712(e)(3) states that public lands shall be removed from or re-

The extent of the BLM's authority to regulate mining activities is unfortunately not as clear as the existence of the authority itself. Based on the language of FLPMA¹⁴³ and the Mining Act,¹⁴⁴ it appears that the BLM has the authority to impair the rights of mining claimants, but only to prevent "unnecessary or undue degradation" of the public lands.¹⁴⁵ The BLM regulations reflect this statutory provision by establishing an agency policy that "under the mining laws a person has a statutory right" to conduct mining activities on the public lands so long as such activities do not cause unnecessary or undue degradation.¹⁴⁶ This policy assumes that the BLM does not have the authority to prevent normal mining activities on public lands.¹⁴⁷

Judicial decisions also support the apparent BLM policy that the "unnecessary and undue" degradation standard provides insufficient authorization for the BLM to prohibit mining operations through regulation. The court in *Utah v. Andrus*, for example, appeared to adopt the American Mining Congress' definition of "unnecessary" as "that which is not necessary for mining" and of "undue" as "that which is excessive, improper, immoderate or unwarranted."¹⁴⁸ The court's adoption of these definitions implies that mining activities that are "necessary" are not subject to economically infeasible regulation.¹⁴⁹

stored to the operation of the Mining Act "only by withdrawal action pursuant to section 1714." While these provisions are potentially contradictory, the BLM regulations reemphasize that withdrawal is the only mechanism by which the BLM may eliminate mining as an approved land use. See 43 C.F.R. § 2300.0-3(b)(2) (1995). Typically the BLM land use plans recommend withdrawal for sensitive areas such as ACECs, or other areas important for research needs or preservation of sensitive habitat. See, e.g., BAKER RMP, *supra* note 140, at 46-47; GARNET RMP, *supra* note 140, at 13.

143. Section 302(b) of FLPMA states, "Except as provided in . . . the last sentence of this paragraph, no provision of . . . this Act shall in any way amend the Mining Law of 1872 or impair the rights of any locators or claims under that Act, including, but not limited to rights of ingress and egress." The "last sentence of this paragraph" states, "[i]n managing the public lands the Secretary shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands." 43 U.S.C. § 1732(b) (1994).

144. As noted above, the Mining Act subjects the free access provisions to "regulations prescribed by law." 30 U.S.C. § 22 (1994).

145. 43 U.S.C. § 1732(b).

146. 43 C.F.R. § 3809.0-6 (1995). The BLM regulations also state that the agency should not "unduly hinder" mining operations, but should instead "assure that such activities are conducted in a manner that will prevent unnecessary or undue degradation." *Id.* § 3809.0-2.

147. See *Surface Management of Public Lands Under U.S. Mining Laws*, 45 Fed. Reg. 78,902, 78,906 (1980) (the BLM states it does not have authority to prohibit mining operations in ACECs even to prevent potential irreparable damage). For a critique of this "accommodation" approach, see Mansfield, *supra*, note 91, at 88 ("The BLM should follow the model not of accommodation, which enshrines one interest as dominant, but rather of balancing correlative rights.").

148. 486 F. Supp 995, 1005 (D. Utah 1979).

149. See McBride, *supra* note 108, at 7-14 ("What is key in [the unnecessary or undue degradation] formulation is the implicit recognition that there can be 'due and necessary' degradation of lands by mining . . .").

In *Sierra Club v. Hodel*, the Tenth Circuit observed that, though the BLM could require mining claimants to adopt less degrading access routes, it could not, under the "unnecessary or undue degradation standard," deny a proposed access improvement altogether if such denial would prevent the claimant from mining its claim.¹⁵⁰

In light of this judicial precedent and the BLM's own regulations, one might conclude that the BLM lacks the statutory authority to prohibit mining operations through regulation. In a later section, however, this article will argue that the BLM in fact does have the authority to prevent mining activities on public land by imposing reasonable regulations that may have the effect of rendering some mining operations unprofitable.¹⁵¹

b. USFS Authority to Regulate Hardrock Mining

The authority of the USFS to regulate mining on national forest lands derives from the agency's Organic Act, which gives the Secretary of Agriculture the power to develop regulations to protect and preserve the national forests.¹⁵² In 1974, the USFS promulgated regulations to minimize, "where feasible," adverse environmental impacts on national forest surface resources caused by mining activities.¹⁵³ The regulations require a mining operator to file a notice of intent to

150. 848 F.2d 1068, 1091 (10th Cir. 1988). A similar position was taken by the Ninth Circuit in *Sierra Club v. Clark*, 774 F.2d 1406 (9th Cir. 1985), in which the Sierra Club argued that the Barstow to Vegas offroad vehicle race was unnecessary and thus could be denied by the BLM under the unnecessary or undue degradation standard. *Id.* at 1410. The court rejected this argument, noting that Congress had expressly authorized offroad vehicle use "where appropriate." *Id.* Deferring to the BLM's expertise as to where offroad vehicle activities were appropriate, the court denied the Sierra Club's claims. *Id.* at 1409-10. In *Southwest Resource Council*, 96 I.B.L.A. 105, 120 (1987), the Interior Board stated:

The BLM may require design changes in plant operation or in the route of access. The BLM may not, however, absolutely forbid mining or totally bar access to a valid mining claim. . . . The reason, of course, is that such action would totally frustrate the congressional policy, as expressed in the mining laws, which accord a mining claimant rights, even against the Government, upon the discovery of a valuable mineral deposit.

See also *Murray Perkins, Int'l Silica Corp.*, 116 I.B.L.A. 288, 299 (1990) (Mullen, J., concurring) (observing that a showing that a proposed operation will result in unnecessary or undue degradation requires that some other course of action can be taken to avoid that degradation).

151. See *infra* part II.B.1.d. (analyzing agency authority to render a mining operation unprofitable). At this point, it is sufficient to note that no statutory, regulatory, or judicial language has formally equated "necessary" or "due" degradation with the economic feasibility of an individual mining operation.

152. 16 U.S.C. § 551 (1994).

153. 36 C.F.R. §§ 228.1-.15 (1996). The power of the USFS to enact these regulations was subsequently upheld in *United States v. Weiss*, 642 F.2d 296, 298-99 (9th Cir. 1981). In 1977 the USFS added additional regulations which generally prohibit certain activities such as unauthorized cutting of timber or damaging of any "natural feature." 36 C.F.R. §§ 261.1-.10 (1996); see also *United States v. Doremus*, 888 F.2d 630, 632-35 (9th Cir. 1989).

operate prior to commencing mining activities.¹⁵⁴ Where the District Ranger determines that the proposed mining activities will likely cause a significant disturbance of surface resources, the operator is required to submit a proposed plan of operations,¹⁵⁵ which may either be approved or modified by the District Ranger.¹⁵⁶ The approved plan of operations becomes the guideline for what constitutes "reasonable" mining activity in the national forest.¹⁵⁷ In considering what conditions can be reasonably included in a plan of operations, the District Ranger must consider "the economics of the operation along with other factors. . . ."¹⁵⁸ Finally, the USFS regulations require an operator to comply with the Clean Air Act, the Clean Water Act, and the Resource Conservation and Recovery Act (RCRA), and to protect scenic and wildlife values and complete reclamation "where practicable."¹⁵⁹

The USFS's land use planning powers also affect the regulation of mining activities on national forests. Pursuant to the Multiple-Use and Sustained-Yield Act of 1960 (MUSYA)¹⁶⁰ and the National Forest Management Act (NFMA),¹⁶¹ the USFS is required to develop resource management plans that comport with the principle of multiple use.¹⁶² The USFS regulations under NFMA accordingly set forth criteria for developing resource management plans for individual national forests.¹⁶³ These plans must strike a balance among a variety of

154. 36 C.F.R. § 228.4. Small scale operations not involving mechanized earthmoving equipment or the cutting of trees may not require a notice of intent to operate. *Id.*

155. *Id.* § 228.4(a).

156. *Id.* § 228.5(a).

157. *Doremus*, 888 F.2d at 632.

158. 36 C.F.R. § 228.5(a).

159. *Id.* § 228.8(a)-(g).

160. 16 U.S.C. §§ 528-531 (1994).

161. 16 U.S.C.A. §§ 1601-1614 (West 1985 & Supp. 1996). NFMA incorporated and revised the provisions of the Forest and Rangeland Renewable Resources Planning Act of 1974.

162. "Multiple use" is defined in section 4 of the Multiple-Use and Sustained-Yield Act (MUSYA) as:

The management of all the various renewable surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that *some land will be used for less than all of the resources*; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.

16 U.S.C. § 531(a) (emphasis added). MUSYA's "multiple use" definition is incorporated into the land use plan mandates of the NFMA at 16 U.S.C. § 1604(e)(1).

163. 36 C.F.R. §§ 219.1-.28 (1996); National Forest System Land and Resource Management Planning, 47 Fed. Reg. 43,037 (1982). The regulations direct the USFS to develop and implement plans which "provide for multiple use and sustained yield of goods and

resource uses and values including recreation, fish and wildlife, water, soil, cultural resources, mining, grazing, and timber.¹⁶⁴ Though the USFS may, under the MUSYA, prefer some uses over others based on the relative resource values in particular areas,¹⁶⁵ the MUSYA does not authorize the USFS to prohibit mining activities in the absence of formal withdrawal.¹⁶⁶ Instead, the USFS regulates mineral operations based on their potential effect on competing resource values.¹⁶⁷ As a

services from the National Forest System in a way that maximizes long term net public benefits in an environmentally sound manner." 36 C.F.R. § 219.1(a). At the time of this writing, the USFS has proposed new planning regulations which attempt to incorporate the principles of "ecosystem management" into the planning process. See National Forest System Land and Resource Management Briefing, 60 Fed. Reg. 18,886 (1995).

164. Although mining activity was never specifically included within the USFS's multiple use mandate, the USFS regulations implementing the multiple use mandate state that "mineral exploration and development in the planning area shall be considered in the management of renewable resources," and set out various criteria for planners to consider in incorporating mining activities into a forest plan. 36 C.F.R. § 219.22; see also National Forest System and Resource Management Planning, 44 Fed. Reg. 26,554, 26,641 (1979) (Committee of Scientists' report pursuant to 16 U.S.C. § 1604(h) observes that there is "little logic to deciding the allocation of National Forest lands for various purposes without attention to all reasonably foreseeable uses, which in some forests include recovery of minerals").

165. 16 U.S.C. § 529. This power is also substantiated by MUSYA's "multiple use" definition that "some land will be used for less than all of the resources," *id.* § 531(a), and federal district court decisions. See *National Wildlife Fed'n v. United States Forest Serv.*, 592 F. Supp. 931, 938 (D. Or. 1984) (the USFS has authority from Congress to emphasize one use over another so long as other competing uses are considered); *Big Hole Ranchers Ass'n v. United States Forest Serv.*, 686 F. Supp. 256, 263-64 (D. Mont. 1986) (the USFS has wide discretion to weigh and decide the proper uses within any area of a National Forest); see also Charles F. Wilkinson & H. Michael Anderson, *Land and Resource Planning in the National Forests*, 64 OR. L. REV. 1, 30 (1985) (MUSYA only requires the USFS to give equal consideration to all resources, not to administer them equally); George Cameron Coggins, *Of Succotash Syndromes and Vacuous Platitudes: The Meaning of "Multiple Use, Sustained Yield" for Public Land Management*, 53 U. COLO. L. REV. 229, 259 (1981) (the USFS planning mandate essentially involves choosing the best combination among competing resource uses).

166. The MUSYA's declaration of policy states that nothing in the MUSYA shall be construed as affecting "the use or administration of the mineral resources of national forest lands . . ." 16 U.S.C. § 528. The NFMA makes no specific mention of mining activity. The USFS may withdraw lands from mining activity under FLPMA through the formal request of the Secretary of Agriculture. See U.S. FOREST SERV., FOREST SERVICE MANUAL § 2761.01 (1991). Like those of the BLM, the USFS plans routinely recommend withdrawal in sensitive areas where degradation from mining activity is considered otherwise unavoidable. See, e.g., PACIFIC SOUTHWEST REGION, U.S. FOREST SERV., U.S. DEP'T OF AGRIC., SHASTA-TRINITY NATIONAL FORESTS LAND AND RESOURCE MANAGEMENT PLAN 4-49 (1994) (expressing the USFS policy to recommend withdrawal for any land classified as a Research Natural Area) [hereinafter SHASTA-TRINITY NFL&RMP]; PACIFIC SOUTHWEST REGION, U.S. FOREST SERV., U.S. DEP'T OF AGRIC., SIERRA NATIONAL FOREST LAND AND RESOURCE MANAGEMENT PLAN 4-21 (1991) (expressing policy of initiating the USFS withdrawals when other available surface use and occupancy controls cannot protect surface resources) [hereinafter SIERRA NFL&RMP].

167. In order to aid its planners, the USFS developed departmental guidelines on how mining activities should be addressed in Forest Service plans. FOREST SERVICE, U.S. DEP'T OF AGRICULTURE, MINERALS PLANNING HANDBOOK (1982) [hereinafter MINERALS

result, the USFS will impose stricter environmental regulations on mining activities in sensitive areas.¹⁶⁸

In addition to granting the USFS this quasi-zoning power, NFMA authorizes the agency to establish substantive baseline standards designed to ensure sustainable development of the forests' renewable resources and to protect the environment.¹⁶⁹ The USFS has implemented nationwide regulations called "Minimum Management Requirements" (MMRs) interpreting these standards.¹⁷⁰ These regulations have in turn been interpreted by regional offices to set forth minimum standards for land use planning in individual national forests.¹⁷¹

PLANNING HANDBOOK]. Following the language of the USFS regulations, 36 C.F.R. § 219.22, the Minerals Planning Handbook sets out five components relating to minerals which must be included within a forest plan. These components include a description of relevant mineral issues in the forest, an inventory of active mines in the area, a forecast of potential future mining activity, an assessment of the impacts of mineral development on other forest resources and of the effects of renewable resource allocations and management on mineral development. *Id.* §§ 1.22-.23, 4.21-.26.

168. The Minerals Planning Handbook, for example, sets forth "zoning" guidelines for mineral activities. Under these guidelines, an area within a forest plan should be divided between lands withdrawn, or proposed to be withdrawn, from mineral entry, and lands open to mineral entry. Lands open to mineral entry are to be further divided into four categories ranging from the most environmentally sensitive to the least sensitive. *Id.* § 6.22. Mining operations in the most sensitive areas are subject to the strictest environmental mitigation measures and practices. *Id.*

The policy behind the guidelines—that mining regulation will vary according to competing resource values—is reflected in the various USFS plans. In the Inyo National Forest Plan, for example, mining operations are seasonally restricted in mountain sheep winter range habitat and within mule deer migration corridors. PACIFIC SOUTHWEST REGION, U.S. FOREST SERV., U.S. DEPT OF AGRIC., INYO NATIONAL FOREST LAND AND RESOURCE MANAGEMENT PLAN 116-17 (1988). In concentrated recreation areas, mineral activities are regulated so as to minimize impacts to "visual resources." *Id.* at 136. The Shasta-Trinity NFL&RMP sets forth a series of restrictions on mining activities in "riparian reserves and key watersheds," including a detailed reclamation plan and bond, minimalization of road and support facilities construction, and strict regulations of waste disposal. *See* SHASTA-TRINITY NFL&RMP, *supra* note 166, at 4-56.

169. 16 U.S.C. § 1604(g)(3).

170. 36 C.F.R. § 219.27. As described at section 219.27, the MMRs are general policy prescriptions designed to protect a host of natural resources including soil, streams, streambanks, wetlands, shorelines, biological diversity, fish and wildlife habitat, air and water quality. Although primarily designed to address surface management issues involving timber harvesting, MMRs have been applied to all activities in National Forests including mining. *See* Constance Brooks, *Multiple Use Versus Dominant Use: Can Federal Land Planning Fulfill the Principles of Multiple Use for Mineral Development?* 33 ROCKY MTN. MIN. L. INST. § 1.04(a), at 1-34 (1988).

171. The nationwide MMR regulations are implemented with greater specificity in the regional guidelines, which then form the base regulatory standards applicable to forest management plans within the region. Telephone Interview with Ralph Worthington, Section Head Management Plans, U.S. Forest Service (Jan. 20, 1996); *see* W. Hugh O'Riordan & Scott W. Horngren, *The Minimum Management Requirements of Forest Planning*, 17 ENVTL. L. 643, 649-50 (1987) (citing Regional Guidelines for Incorporating Minimum Management Requirements in Forest Planning, (Feb. 9, 1983)); *see also* A Report on Minimum Management Requirements for Forest Planning on the National Forests of the Pacific

The extent of the USFS's authority over mining is tempered by section 478 of the agency's own Organic Act which provides:

Nor shall anything in [this Act] (including section 551) prohibit 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. Such persons must comply with the rules and regulations covering such national forests.¹⁷²

Neither the MUSYA nor NFMA overrides section 478's express acknowledgment of the "statutory rights" of mining claimants, conferred by the Mining Act, to conduct mining operations on public lands.¹⁷³ The strong language in section 478 is perhaps one reason why the USFS regulations appear to assume less authority over mining operations than do the BLM regulations.¹⁷⁴ Unlike the BLM regulations, for example, the USFS regulations imply that the "reasonableness" of

Northwest Region, 51 Fed. Reg. 25,073 (July 10, 1986) ("[MMRs] establish standards, based upon Forest Service Interpretation of laws and regulations, that must be met when National Forest land is managed under Forest Plans developed pursuant to the [NFMA] and its implementing regulations."); PACIFIC NORTHWEST REGION, U.S. FOREST SERV., U.S. DEP'T OF AGRIC., SIUSLAW NATIONAL FOREST LAND AND RESOURCE MANAGEMENT PLAN IV-39 (1990) (MMRs or "standards and guidelines" "are the base level practices used to achieve goals and objectives of the Forest Plan") [hereinafter SIUSLAW NFL&RMP]; *Sierra Club v. Espy*, 38 F.3d 792, 800-01 (5th Cir. 1994) (MMRs provide a minimum level of protection that the USFS must follow in managing National Forests); *Seattle Audobon Soc'y v. Evans*, 952 F.2d 297, 301 (9th Cir. 1991) (MMRs require the USFS to set minimum standards to protect critical habitat for threatened or endangered species).

172. 16 U.S.C. § 478 (1994). Another potential source of limitation on the USFS authority is the language contained within the Surface Resources and Multiple Use Act of 1955, which provides that the right of the United States to manage the surface resources "shall not endanger or materially interfere with" mining operations. 30 U.S.C. § 612 (1994); *see supra* note 20 and accompanying discussion; *see also* *United States v. Doremus*, 888 F.2d 630, 632-33 (9th Cir. 1989) (entertaining plaintiff's claim under section 612 but finding the USFS prior approval requirement does not "materially interfere" with mining operations). *But see* *Clouser v. Espy*, 42 F.3d 1522, 1538-39 (9th Cir. 1994) (the "materially interfere" standard of section 612 does not apply to actions taken by the government to regulate mining-related activities outside the boundary of the mining claim and thus does not vest claimholders with a property right to any particular type of access to their claims).

173. Under the MUSYA, mining activities are not subject to the USFS's multiple use authority set forth at 16 U.S.C. § 528 (1994). *See supra* note 166. Subsequent statutory and regulatory enactments appear to have conferred implied authority on the USFS to regulate mining under its land use planning authority. *See, e.g.*, 16 U.S.C. § 1604(g); National Forest System Land and Resource Management Planning, 44 Fed. Reg. 26,554, 26,641 (1979); 36 C.F.R. § 219.22; MINERALS PLANNING HANDBOOK, *supra* note 167.

174. The USFS regulations reemphasize section 478's protection of miners' rights. *See* 36 C.F.R. § 228.1 (the Mining Laws confer a "statutory right" to enter national forests to search for minerals); *id.* § 261.1(4)(b) (regulatory prohibitions shall not "preclude activities as authorized by the . . . U.S. Mining Laws Act of 1872 as amended"). In *Doremus*, the Ninth Circuit interpreted this language to mean that mining operations "may not be prohibited nor so unreasonably circumscribed as to amount to a prohibition." 888 F.2d at 632 (citing *United States v. Weiss*, 642 F.2d 296, 299 (9th Cir. 1981)).

the agency's regulatory restrictions will depend in part on the degree of economic impact felt by individual mining operations.¹⁷⁵

Several federal court decisions have interpreted the USFS authority over mining operations. In the leading case, *United States v. Weiss*, the Ninth Circuit affirmed the authority of the USFS to regulate mining operations.¹⁷⁶ The court noted that:

While prospecting, locating, and developing of mineral resources in the national forest may not be prohibited nor so unreasonably circumscribed as to amount to a prohibition, the Secretary may adopt reasonable rules and regulations which do not impermissibly encroach upon the right to the use and enjoyment of placer claims for mining purposes.¹⁷⁷

In contrast to the language of *Weiss*, the Ninth Circuit's decision in *Clouser v. Espy*¹⁷⁸ indicates that the USFS authority over mining operations may be greater than had been previously assumed.¹⁷⁹ In *Clouser*, the court rejected the miners' arguments that the USFS regulations were rendering their operation unprofitable. Instead, the court held that although the USFS regulations may have "collateral consequences for claim validity," that did not alter the USFS's primary jurisdiction over regulating mining activities on national forests.¹⁸⁰

The decision in *Clouser* represents a potential break with precedent in regard to the USFS's authority over mining. Since "claim va-

175. See 36 C.F.R. § 228.5 (1996) (Ranger to consider "economics" of operation in determining reasonableness of resource protection requirements); *id.* § 228.8 (operations to minimize adverse environmental impacts "where feasible"); *id.* § 228.5(g) (reclamation shall be conducted "where practicable"). An example of how this regulatory language is implemented is found in the Siuslaw Forest Plan, which states that the plan's standards and guidelines for mineral activity shall "[i]nclude reasonable, *operationally feasible* provisions to protect riparian values and meet state water quality standards" SIUSLAW NFL&RMP, *supra* note 171, at IV-55 (emphasis added).

176. 642 F.2d at 299.

177. *Id.* The Court added in a footnote that such regulations may "be struck down when they do not operate to accomplish the statutory purpose or where they encroach upon other statutory rights." *Id.* at 299 n.5; see also *Doremus*, 888 F.2d at 632; *Foundation for North American Wild Sheep v. United States*, 681 F.2d 1172, 1182 n.48 (9th Cir. 1982) (noting that the USFS Authority under Multiple-Use Sustained Yield Act of 1960 "mandates that access to preexisting mining claims be granted to the owners of those claims"); *Havasupai Tribe v. United States*, 752 F. Supp. 1471, 1491-92 (D. Ariz. 1990) (citing with approval the USFS statements in EIS that the USFS lacks authority to disapprove a reasonable operating plan for a mining operation that will be conducted in a reasonable and apparently environmentally responsible manner).

178. *Clouser v. Espy*, 42 F.3d 1522 (9th Cir. 1994).

179. In *Clouser*, a group of claimants representing different mining interests sued the USFS on the grounds that the agency's decisions regarding whether to permit motorized or non-motorized access to mining claims had a significant effect on the costs of the proposed mining operations and thus should be made by the Department of the Interior, the agency with jurisdiction to decide the overall validity of the plaintiffs' mining claims. *Id.* at 1527-28.

180. *Id.* at 1529-31. The court noted that "virtually all forms of Forest Service regulation of mining claims . . . will affect claim validity." *Id.* at 1530.

lidity" is based on overall "profitability,"¹⁸¹ the most plausible interpretation of the court's language is that the USFS has the authority to render a mining operation unprofitable where the loss of economic value is a "collateral consequence" of otherwise reasonable regulatory oversight.¹⁸² The precedential value of *Clouser* is unclear, however, because of the court's refusal to hear the takings claim and the manner in which it addressed the authority issue.¹⁸³ As a result, the precise degree to which the USFS may regulate mining operations remains unresolved. In a subsequent section, this article will argue that the USFS, like the BLM, possesses sufficient authority to render mining operations unprofitable through the imposition of reasonable regulations.

c. EPA Authority to Regulate Hardrock Mining

The authority of EPA to regulate mining operations on public lands derives from the various environmental protection statutes administered by the agency.¹⁸⁴ Under each of these statutes, EPA is authorized to regulate polluting activities in order to accomplish the statutory purpose of environmental protection in the relevant media.¹⁸⁵ This article will examine EPA regulation under the Clean Water Act as a model for EPA authority over mining activities.¹⁸⁶

Under the Clean Water Act, EPA is authorized to eliminate water pollution through the use of effluent limitations applied to point

181. See *supra* notes 50-51 and accompanying discussion.

182. It is clear that the court's focus was determined in part by the plaintiffs' argument that, since the Department of the Interior has authority to determine claim validity, it should also have authority over any decision—such as means of access—which has an effect on the validity of the claim. *Clouser*, 42 F.3d at 1528.

183. *Id.* at 1538-39. The court declined jurisdiction on the takings issue. On the "authority" issue, the court curiously relied on the Surface Mining Act, 30 U.S.C. § 612, to find that the USFS regulation did not "materially interfere" with the mining operation since the access regulations addressed activities outside the boundaries of the mining claim. *Id.*; see also *United States v. Doremus*, 888 F.2d 630, 633 (9th Cir. 1989). It is not clear why the court chose not to address *Weiss'* precedent that USFS regulations which unreasonably prohibit mining activity will be considered in excess of statutory authority. *United States v. Weiss*, 642 F.2d 296, 299 (9th Cir. 1981).

184. These statutes include the Clean Water Act, 33 U.S.C. §§ 1251-1387 (1994), Clean Air Act, 42 U.S.C. §§ 7401-7671 (1994), and the Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901-6992 (1994).

185. The statutory objective of the Clean Water Act is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a) (1994). The statutory objective of the Clean Air Act is "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." 42 U.S.C. § 7401(b)(1). The statutory objective of RCRA is "to promote the protection of health and the environment and to conserve valuable material and energy resources . . ." 42 U.S.C. § 6902(a). None of these statutes mention the statutory rights of miners under the Mining Act.

186. Among the various federal environmental statutes, the Clean Water Act arguably has the most significant regulatory impact upon the mining industry.

sources that discharge pollutants into the nation's waters.¹⁸⁷ Effluent limitations are established in two ways. First, EPA determines appropriate pollution control technologies for different industrial groups and sets effluent limitations based on the application of those technologies.¹⁸⁸ This technology-based approach reduces pollution by requiring point source polluters to conduct their operations using already existing, though not necessarily widely used, pollution control technologies that are capable of preventing the unnecessary discharge of pollutants into the nation's waters.¹⁸⁹

Second, the Clean Water Act requires the establishment of water quality standards for individual water bodies.¹⁹⁰ Section 303 provides that the states shall have the primary responsibility to set and implement these standards,¹⁹¹ while EPA retains general oversight authority.¹⁹² Section 303 requires states to designate the beneficial uses of water bodies within the state and set water quality standards corresponding to the designated uses.¹⁹³ Where the state determines that the effluent limitations achievable by control technologies are not sufficient to protect water quality standards, the state must establish a priority ranking for such individual water bodies¹⁹⁴ as well as Total Maximum Daily Loads (TMDLs)¹⁹⁵ indicating the volume of specified

187. "Point Sources" are defined as "any discernible, confined and discrete conveyance . . . from which pollutants are or may be discharged." 33 U.S.C. § 1362(14). In *Trustees for Alaska v. EPA*, 749 F.2d 549, 557-58 (9th Cir. 1984), the court held that placer gold mines discharging water from a sluice box were point sources within the meaning of the statute. Sediment washed down from banks into streams during placer gold mining operations is considered a discharge of a pollutant into navigable waters and thus subject to EPA regulation. *Rybachek v. EPA*, 904 F.2d 1276, 1285 (9th Cir. 1990).

188. Among the designated pollution control technologies are "best practicable control technology currently available" (BPT), 33 U.S.C. § 1311(b)(1)(A) (1994), "best available technology economically achievable for such category or class" (BAT), 33 U.S.C. § 1311(b)(2)(A) (1994), and "best conventional pollutant control technology" (BCT), 33 U.S.C. § 1311(b)(2)(E) (1994).

189. BPT, BAT and BCT are each determined by EPA based on factors set out in 33 U.S.C. § 1314 (1994).

190. 33 U.S.C. § 1313(a) (1994).

191. *Scott v. City of Hammond*, 741 F.2d 992, 994 (7th Cir. 1984) (noting that the Clean Water Act places primary reliance for developing water quality standards on the states).

192. Where a state fails to fulfill its statutory obligation, EPA has a mandatory duty to perform the states' role. *Id.* at 994-95. 33 U.S.C. § 1313(b) (1994).

193. In setting standards, states should consider "their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also tak[e] into consideration their use and value for navigation." 33 U.S.C. § 1313(c)(2)(A) (1994). EPA regulations also require the states to submit an "anti-degradation policy" with their water quality standards to EPA for approval. 40 C.F.R. § 131.112 (1996).

194. 33 U.S.C. §§ 1313(a)-(d) (1994). The states should establish the priority ranking based on 1) the severity of the pollution, and 2) the uses to be made of such waters. 33 U.S.C. § 1313(d)(1)(A) (1994).

195. 33 U.S.C. § 1313(d)(1)(C) (1994) provides that TMDLs "shall be established at a level necessary to implement the applicable water quality standards with seasonal varia-

pollutants¹⁹⁶ that may be discharged into the water body without violating the designated standards.¹⁹⁷ Based on this calculation, the state apportions TMDL allotments among the various point sources and non-point sources of pollution within the watershed, typically resulting in more stringent effluent limitations for TMDL pollutants.¹⁹⁸

A useful illustration of the nature and scope of EPA's authority over mining activities under the Clean Water Act is provided by the agency's regulation of the placer gold mining industry. EPA first published technology-based effluent limitations for placer gold mining in 1988.¹⁹⁹ The regulations establish Best Practicable Control Technology (BPT) to be the use of settling ponds, which remove suspended solids from mine wastewater, and Best Available Technology Economically Achievable (BAT) to be some recirculation of mine wastewater.²⁰⁰ EPA then set effluent limitations based on these designated technologies.²⁰¹ In *Rybachek v. EPA*,²⁰² the plaintiff gold miners chal-

tions and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality."

196. EPA is required to identify TMDLs for specific pollutants based on their relative importance in achieving water quality objectives. 33 U.S.C. § 1314(a)(2)(D) (1994).

197. 33 U.S.C. § 1313(d)(1)(C) (1994); see *EPA v. California ex rel. State Water Resources Control Bd.*, 426 U.S. 200, 205 n.12 (1976) (noting that water quality based limitations are to be used to supplement technology-based restrictions to prevent water quality from falling below acceptable levels).

198. An example of this process is the Western District Court of Washington's decision in *Dioxin/Organochlorine Ctr. v. Rasmussen*, 37 Env't Rep. Cas. (BNA) 1845 (W.D. Wash. 1993). In *Dioxin*, technology-based controls were failing to achieve water quality standards designated for the Columbia River basin. Based on the states' water quality standards, EPA set a TMDL for dioxin of 5.97 milligrams per day. *Id.* at 1847. EPA allocated thirty-five percent of the dioxin loading capacity to American pulp mills, five percent to a Canadian pulp mill, thirty-eight percent to wood-treating and municipal wastewater treatment plants and twenty-two percent to a combination of margin of safety, non-point source runoff, other industrial sources background levels, and future growth. *Id.* at 1850. The court found EPA's TMDL standard and accompanying allocation scheme to be reasonable, since EPA's conservative assumptions in setting TMDLs ensured the margin of safety required by the Clean Water Act. *Id.* at 1851-52.

199. Ore Mining and Dressing; Point Source Category; Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards, 53 Fed. Reg. 18,764 (1988) (codified at 40 C.F.R. §§ 440.140-148 (1995)). Although EPA had regulations in place covering "Ore Mining and Dressing Point Sources," regulations specific to the placer gold mining industry subcategory had not previously been established. Ore Mining and Dressing Point Source Category Effluent Limitations Guidelines and New Source Performance Standards, 47 Fed. Reg. 54,598 (1982) (codified at 40 C.F.R. §§ 440.10-122 (1995)). The rulemaking was completed as part of a consent decree entered into in *Trustees for Alaska v. EPA*, No. A85-440 Civ. (D. Alaska, May 7, 1986). Ore Mining and Dressing; Point Source Category; Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards, 53 Fed. Reg. at 18,764.

200. See *infra* note 204 regarding how cost factors are considered in determining BPT and BAT under 33 U.S.C. § 1314.

201. "BPT limitations are generally based on the average of the best existing performance by plants of various sizes, ages, and unit processes within an industrial category or subcategory." Ore Mining and Dressing; Point Source Category; Effluent Limitations and Guidelines, Pretreatment Standards, and New Source Performance Standards, 53 Fed.

lenged EPA's issuance of BPT and BAT effluent limitations claiming that EPA had failed to consider adequately the costs imposed by the new standards.²⁰³ The court rejected the plaintiffs' claims, holding that EPA had achieved an appropriate cost-benefit balance in imposing the BPT and BAT standards.²⁰⁴ Perhaps most importantly, the court held that although the increased compliance costs associated with the environmental regulations would force a small percentage of gold mining operations to close, this fact alone did not render EPA's regulations "unreasonable."²⁰⁵

In regulating gold mining, EPA, or the states under EPA oversight, may impose additional restrictions in order to implement the water quality standards established under section 303 of the Clean Water Act.²⁰⁶ Such additional regulation may soon be forthcoming as the result of a recent Ninth Circuit decision requiring EPA to establish TMDLs in Alaska, a state that contains almost half the nation's active placer gold mining operations.²⁰⁷ Resource-based standards poten-

Reg. 18,764, 18,765 (1988). This average is not based upon a broad range of plants within an industrial category or subcategory, but upon performance levels achieved by exemplary plants. *EPA v. National Crushed Stone Ass'n*, 449 U.S. 64, 76 n.15 (1980) (citing 39 Fed. Reg. 6580 (1974)). BAT limitations generally represent the best existing performance in the industrial category or subcategory. *Ore Mining and Dressing; Point Source Category; Effluent Limitations and Guidelines, Pretreatment Standards, and New Source Performance Standards*, 53 Fed. Reg. at 18,766.

202. 904 F.2d 1276 (9th Cir. 1990).

203. *Id.* at 1289-91.

204. *Id.* 33 U.S.C. § 1314(b)(1)(B) (1994) requires EPA to conduct a cost-benefit analysis as one factor for arriving at BPT for an industrial category. EPA's discretion in conducting this balancing, however, would only be overturned when "the costs are 'wholly disproportionate' to the potential effluent-reduction benefits." *Rybachek v. United States*, 904 F.2d 1276, 1289 (citing *Ass'n of Pacific Fisheries v. EPA*, 615 F.2d 794, 805 (9th Cir. 1980)); *American Iron & Steel Inst. v. EPA*, 526 F.2d 1027, 1051 (3rd Cir. 1975); ENVIRONMENTAL POLICY DIVISION OF THE CONGRESSIONAL RESEARCH SERVICE, 93D CONG., 1ST SESS., A LEGISLATIVE HISTORY OF THE WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972 170 [hereinafter CWA LEGISLATIVE HISTORY].

Under section 1314(b)(2)(B) EPA must consider the "cost" of meeting BAT limitations but, in contrast to the cost-benefit analysis required for BPT, need not compare such costs with the benefits of effluent reduction. *Rybachek*, 904 F.2d at 1290-91; *see also EPA v. National Crushed Stone Ass'n*, 449 U.S. at 76 (stating that BPT limitations require a consideration of the benefits of effluent reductions as compared to the costs of pollution control); *Natural Resources Defense Council, Inc. v. EPA*, 863 F.2d 1420, 1426 (9th Cir. 1988).

205. *Rybachek*, 904 F.2d at 1291; *see* 33 U.S.C. § 1311(b)(2)(A) (1994) (requiring that BAT be "economically achievable," which EPA has interpreted to correspond to the "best existing performance" in an industrial category). In *Rybachek*, the court upheld EPA's finding that the recirculation technology designated as BAT was "economically achievable" despite the fact some individual operations might be forced to close. *Rybachek*, 904 F.2d at 1291.

206. *Trustees for Alaska v. EPA*, 749 F.2d 549, 557 (9th Cir. 1984) (EPA may include in placer mining permits whatever effluent limitations it determines are necessary to achieve the state water quality standards).

207. *See Alaska Ctr. for the Env't v. Browner*, 20 F.3d 981, 986 (9th Cir. 1994).

tially pose an even greater regulatory hurdle for Alaskan gold miners than the imposition of technology-based standards, since the Clean Water Act does not require that water quality standards for designated uses be technologically feasible.²⁰⁸ In other words, the State of Alaska has the authority, under its delegated power to protect water quality, to designate a particular watershed as a cold water fishery, and to put all placer mining operations in the area out of business based on their inability to meet the heightened resource-based standards.²⁰⁹

d. Analysis of Agency Authority to Render a Mining Operation Unprofitable

The preceding discussion has illustrated that while neither the BLM, the USFS, nor EPA has the authority simply to prohibit mining outright,²¹⁰ each agency has the power to impose reasonable regula-

208. The Clean Water Act states only that water quality standards shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational, agricultural, industrial and other purposes. 33 U.S.C. § 1313(c)(2)(A) (1994). Courts have held that the amount of weight given to each factor is within the state's discretion. *See* Homestake Mining Co. v. EPA, 477 F. Supp. 1279, 1283 (D. S.D. 1979) (citing *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1045 (D.C. Cir. 1978) (phrase "taking into consideration" confers broad discretion on EPA as to how much weight to give to various factors)); *see also* 40 C.F.R. § 131.10(g)(6) (1995) (states *may remove* a designated use if they can demonstrate that attaining designated use is not feasible due to substantial and widespread economic and social impact).

209. Courts have generally held that states may adopt water quality standards more stringent than the technology-based effluent standards, thereby forcing industry to create more effective pollution control technology. *United States Steel Corp. v. Train*, 556 F.2d 822, 830, 838 (7th Cir. 1977) (states may set more stringent water quality control standards, even at the cost of economic and social dislocations caused by plant closings.); *Homestake Mining Co.*, 477 F. Supp. at 1283; *see also* EPA v. California *ex rel.* State Water Resources Control Bd., 426 U.S. 200, 219 (1976).

210. While the land use planning authorities of the BLM and the USFS might arguably allow for some outright restriction on mining in sensitive areas, *see* Mansfield, *supra* note 91, at 80-83 (arguing for strengthened the BLM control under the unnecessary or undue degradation standard); LESHY, *supra* note 2, at 199-205, the land use planning powers do not purport to override the statutory rights created by the Mining Act. *See supra* notes 142 and 166; *see also* Surface Management of Public Lands Under U.S. Mining Laws, 45 Fed. Reg. 78,902, 78,906 (1980) (stating that the BLM can not prohibit mining activities, even in areas of critical environmental concern, absent formal withdrawal of lands from mineral entry).

EPA possesses significant power to control the siting of new pollution sources through its resource based standards, *see* discussion, *infra* notes 218-19, which may be highly restrictive in sensitive areas. *See, e.g.,* Methow Valley Citizens Council v. Regional Forester, 833 F.2d 810, 818 (9th Cir. 1987) (the USFS required to take into account air quality impact to a Class I wilderness area); *Kerr-McGee Chemical Corp. v. U.S. Dep't of the Interior*, 709 F.2d 597, 599 & n.1 (9th Cir. 1983); *Dioxin/Organochlorine Ctr. v. Rasmussen*, 37 Env't Rep. Cas. (BNA) 1845, 1847-49 (W.D. Wash. 1993). However, even this authority requires that existing or new sources be allowed to operate to the extent that the strict regulatory standards can be met. *See, e.g.,* Craig N. Oren, *The Protection of Parklands from Air Pollution: A Look at Current Policy*, 13 HARV. ENVTL. L. REV. 313, 321-27 (1989) (Clean Air

tions on mining operations. This raises an important question: exactly what constitutes "reasonable" regulation of mining activities? As discussed briefly above, EPA appears to have the clear authority to render mining operations unprofitable through reasonable regulation.²¹¹ The question then becomes whether the BLM and the USFS also possess similar authority. In order to address this question the next parts will examine 1) the nature of reasonable regulation by EPA, and 2) whether such regulation could also be accomplished within the statutory authorities of the BLM and the USFS.

i. Reasonable Regulation of Mining Activities by EPA

For EPA, reasonable regulations fall into two general categories: technology-based and resource-based. *Technology-based* limitations will be considered "reasonable" depending on their impact on an entire "category" of regulated industrial activities rather than their effect on an individual mining operation.²¹² *Resource-based* limitations will be considered "reasonable" according to the degree to which the restrictions protect the designated sensitive resource.

EPA's authority to regulate mining under the Clean Water Act is a useful illustration of how technology-based regulation may be reasonable as applied to a category of activities, while still preventing some individual operations from being profitable.²¹³ In promulgating technology-based control standards for the placer gold mining industry, for example, EPA found that the BPT and BAT limitations were economically achievable for the industry subcategory as a whole.²¹⁴ Seventeen mining operations were projected to close due to the imposition of BPT and BAT technology, but, according to EPA, this was an

Act PSD standards allow for incremental increases of regulated pollutants, albeit at a highly restricted level).

211. *Rybachek v. EPA*, 904 F.2d 1276, 1291 (9th Cir. 1990); *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1036-40 (D.C. Cir. 1978); *American Iron and Steel Inst. v. EPA*, 526 F.2d 1027, 1051-52 (3rd Cir. 1975); EPA also possesses authority to put marginal operations out of business under the Clean Air Act. See, e.g., *Sierra Club v. EPA*, 540 F.2d 1114, 1129 (D.C. Cir. 1976) (finding that legislative history of Clean Air Act manifests a congressional determination that Clean Air Act objectives should take precedence over claims of economic or technological infeasibility).

212. Such technology-based regulations will be referred to from time to time as "categorical regulations."

213. The legislative history of the Clean Water Act illustrates that although Congress authorized EPA to consider costs in setting regulations for an entire industrial source category, it did not intend for EPA "to determine the economic impact of controls on any individual plant . . ." CWA LEGISLATIVE HISTORY, *supra* note 204, at 170; see *American Iron and Steel Inst.*, 526 F.2d at 1051. ("Congress clearly intended that the [EPA] consider costs on a class or category basis, rather than [on] a plant-by-plant basis.")

214. Ore Mining and Dressing; Point Source Category; Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards, 53 Fed. Reg. 18,764, 18,778 (1988).

“acceptable level of impact” given that the total number of closures represented less than three percent of U.S. placer gold mines.²¹⁵ The Ninth Circuit subsequently upheld EPA standards based on its finding that EPA had “considered the relevant factors and articulated a rational connection between the facts found and the choice made.”²¹⁶

EPA’s authority to oversee, and implement if necessary, the setting of mandatory water quality standards²¹⁷ also provides a model of how resource-based regulations might be implemented. Under the Clean Water Act, EPA can impose stricter standards on mining operations whenever technology-based limitations fail to adequately protect certain designated resources, such as fish and wildlife habitat, in sensitive water bodies.²¹⁸ In setting such standards, EPA retains broad discretion over how best to protect the sensitive resource.²¹⁹

215. *Id.* EPA’s cost benefit analysis, required in implementing BPT standards under 33 U.S.C. § 1314(b)(1)(B), found that BPT standards would reduce 387,600 kilograms of toxic metals and 1,838,000 metric tons of total suspended solids from placer mine wastewater at a cost nationwide of \$2.42 million. *Id.* at 18,772. According to EPA, the pollution reduction benefits associated with compliance justified these costs. *Id.*

216. *Rybachek v. EPA*, 904 F.2d 1276, 1291 (9th Cir. 1990) (quoting *Baltimore Gas & Elec. Co. v. Natural Resources Defense Council*, 462 U.S. 87, 105 (1983)). Other courts have upheld the power of EPA to adopt regulations that, while reasonable for an industry as a whole, nevertheless render individual operations unprofitable. *American Iron and Steel Inst.*, 526 F.2d at 1051.

217. 33 U.S.C. § 1313. *See supra* notes 192-98 and 206-09 and accompanying discussion.

218. *See, e.g., Homestake Mining Co. v. EPA*, 477 F. Supp. 1279, 1282 (D. S.D. 1979). In *Homestake Mining*, the Court upheld EPA’s approval of South Dakota’s water quality standards for Whitewood Creek based on the State’s designated use of the creek as a “cold water permanent fishery and for recreation in and on the water.” *Id.*

219. *See Dioxin/Organochlorine Ctr. v. Rasmussen*, 37 Env’t Rep. Cas. (BNA) 1845 (W.D. Wash. 1993) (court finds EPA’s conservative approach in setting TMDL levels to be reasonable given margin of safety required by Act). EPA also possesses significant powers to implement resource-based restrictions pursuant to its authority under the Clean Air Act to prevent significant deterioration of air quality in sensitive areas. 42 U.S.C. §§ 7470-7479 (1994). *See also Sierra Club v. Ruckelshaus*, 344 F. Supp. 253 (D.C. Cir. 1972). Under the Clean Air Act’s PSD (prevention of significant deterioration) program, new or expanded “sources” in areas that have attained National Ambient Air Quality Standards (NAAQS) for certain pollutants must comply with both best available technology standards under 42 U.S.C. § 7475(a)(4) and incremental standards which vary depending upon the “Class” status of the area as designated by EPA and the states under 42 U.S.C. § 7472. For example, incremental standards restrict yearly increases in sulfur dioxide to two micrograms per cubic meter for Class I areas (typically large National Parks or Wilderness Areas), twenty micrograms in Class II areas and forty micrograms in Class III areas. *Id.* § 7473(b); *Oren, supra* note 210, at 320-21; *see, e.g., Methow Valley Citizens Council v. Regional Forester*, 833 F.2d 810, 818 (9th Cir. 1987) (court rejects the USFS environmental review based on its failure to consider that proposed development would cause the incremental standards for certain pollutants to be exceeded in adjacent wilderness area designated as Class I); *Kerr-McGee Chem. Corp. v. U.S. Dep’t of the Interior*, 709 F.2d 597, 602 (9th Cir. 1983) (acknowledging that redesignation of Death Valley from Class II to Class I could constitute sufficient injury as a result of increased pollution controls to confer judicial standing on chemical corporation).

ii. *Reasonable Regulation of Mining Activities by the BLM and the USFS*

This section will compare EPA's authority over mining with the authority of the BLM and of the USFS. In particular, it will examine whether the BLM and the USFS have EPA-like authority to render mining operations unprofitable through the imposition of 1) technology-based, categorical regulation; and 2) stricter, resource-based standards.

At the outset, there are at least two reasons why the apparent differences between the authorities of EPA, the BLM, and the USFS may be less significant than they might first appear. First, the statutory rights of miners under the Mining Act co-exist with EPA's authority to protect the environment in much the same way that those rights co-exist with the statutory authorities of the BLM and the USFS. This is so because the environmental statutes administered by EPA at no point authorize EPA to override the statutory rights created by the Mining Act. In the absence of such overriding authority, the common law of statutory conflicts requires that "free access" under the Mining Act be preserved.²²⁰ Since EPA's authority to regulate mining does not violate the free access principle, it is reasonable to conclude that the BLM and the USFS may have similar authority without violating the miners' rights under the Mining Act.

Second, although the BLM and the USFS regulations emphasize the right of free access, they also require mining operations to comply with the environmental protection mandates of the Clean Water Act, the Clean Air Act, and RCRA.²²¹ These regulations reemphasize the proposition that compliance with EPA-administered environmental statutes is not wholly inconsistent with preservation of statutory rights under the Mining Act. It is, therefore, reasonable to conclude that regulations issued by the BLM or the USFS that have the same effect on mining operations as EPA regulations do not violate miners' statutory rights.²²²

220. See, e.g., *Ruckelshaus v. Monsanto Co.*, 467 U.S. 986, 1018 (1983) (stating that "where two statutes are 'capable of co-existence, it is the duty of the courts, absent a clearly expressed congressional intention to the contrary, to regard each as effective'") (quoting *Regional Rail Reorganization Act Cases*, 419 U.S. 102, 133-34 (1974)); *Watt v. Alaska*, 451 U.S. 259, 266-67 (1981) (when two statutes conflict to some degree they should be read together to give effect to each if that can be done without damage to their sense and purpose). The result compelled by statutory conflict law is supported by the straightforward language of the Mining Act that the statutory right of free access is subject to "regulations prescribed by law." 30 U.S.C. § 22 (1994).

221. See 43 C.F.R. § 3809.2-2(a)-(c) (1995); 36 C.F.R. § 228.8(a)-(c) (1996).

222. An illustrative example of this point may be found in the Siuslaw Forest Plan which describes a forest wide MMR as imposing on mining operations "reasonable, operationally feasible provisions to protect riparian values and meet state water quality standards . . ." *SIUSLAW NFL&RMP*, *supra* note 171, at IV-55. As described above, however,

In a general sense, the three agencies charged with regulating mining of public lands share a basic regulatory approach which accepts that a potentially environmentally degrading activity will occur, but recognizes that control measures may be imposed to minimize the adverse impacts. Such control measures are judged on a standard of "reasonableness." The sections below argue that the BLM and the USFS, like EPA, have the authority to render mining operations unprofitable through the imposition of reasonable technology- and resource-based standards.

a. BLM and USFS Authority to Impose Industry-wide Categorical Regulations

As discussed above, EPA has the authority to impose categorical standards on the mining industry, despite the fact that some operations may be forced out of business. The BLM and the USFS each appear to have similar authority. The statutory authority of the BLM provides for categorical regulation based on the agency's responsibility to prevent "unnecessary or undue degradation," which the BLM regulations define as disturbance greater than would be expected from a "prudent operator in usual, customary, and proficient operations. . . ." ²²³ The BLM's authority closely parallels EPA's authority to set BPT standards, ²²⁴ a process that requires EPA to consider all

there is no requirement under the Clean Water Act that the achievement of state water quality standards will be "feasible" according to current standards of technology. Thus, as a result of its incorporation into the heightened "technology-forcing" regime of water quality control standards, the term "operationally feasible" arguably no longer acts as a potential limitation on the USFS's power to regulate mining operations. See, e.g., *United States Steel Corp. v. Train*, 556 F.2d 822, 830 (7th Cir. 1977).

223. See 43 U.S.C. § 1732(b) (1994); 43 C.F.R. § 3809.0-5(k). In *Kendall's Concerned Area Residents*, 129 I.B.L.A. 130, 140 (1994), the Interior Board noted that the regulations require the BLM to consider the effects of the mining activity "in relation to operations of similar character." The Board went on to note that:

[This requirement] does not require that a plan of operations be reviewed in relation to other specific mining operations. A plan also could be examined in relation to industry standards for the type of operation, regulatory standards governing the type of operation, or other standards which allow a meaningful determination whether the effects of the proposed plan were unnecessary or undue.

Id. at 140-41 n.4.

In practice, the BLM does not formally identify any specific control technologies which are "usual, customary and proficient." Instead, the BLM relies on the knowledge of its staff regarding generally accepted mining practices. The BLM allows considerable discretion on the part of its field officers to regulate mining activities according to the unique facts of each situation. Hamilton Interview, *supra* note 39. Because performance standards merely establish a base level of environmental protection, without necessarily mandating how such protection must be achieved, there is no reason why national categorical standards would preclude a case by case consideration of mining operations by local BLM officials. Performance standards are discussed in more detail *infra* at note 265.

224. In determining BPT, EPA conducts a cost-benefit balancing. 33 U.S.C. § 1314(b)(1)(B) (1994); *Rybachek v. EPA*, 904 F.2d 1276, 1289 (9th Cir. 1990). In deter-

“necessary and normal” activities conducted by the regulated entity.²²⁵ Under this authority, the BLM field personnel will typically require mining operations to comply with performance-oriented regulations²²⁶ that correspond to necessary and normal mining operations conducted with an assumed proficiency.²²⁷ Further evidence that EPA and the BLM regulatory standards are the same is found in the BLM regulations which note that the failure to comply with EPA statutes and regulations “will constitute unnecessary or undue degradation.”²²⁸ The BLM authority thus appears to allow for reasonable categorical regulation, despite the fact that some mining operations may be put out of business.²²⁹

mining subsequent BPT effluent limitations, EPA looks to the average of the best existing performance by plants of various sizes, ages and processes within an industrial subcategory that use BPT. Ore Mining and Dressing; Point Source Category; Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards, 53 Fed. Reg. 18,764, 18,765 (1988).

225. *Marathon Oil Co. v. EPA*, 564 F.2d 1253, 1269 (9th Cir. 1977). In *Marathon Oil*, the court noted that EPA's BPT limitations had been computed from a data base that excluded post-drilling activities. Since such activities were a necessary and normal part of offshore oil operations, EPA's effluent limitations understated the level of pollutants normally discharged and thus overestimated the level of pollution control that could be achieved using BPT. *Id.*

226. *See infra* note 265.

227. The BLM has established interim guidelines regarding the BLM inspection policies applicable to mining activities. *See* BUREAU OF LAND MANAGEMENT, DEP'T OF THE INTERIOR, INSTRUCTION MEMORANDUM NO. 90-59, REVISED INSPECTION POLICY (Oct. 23 1989) [hereinafter IM 90-59]. While the interim inspection guidelines are geared towards verification that mining operations are being conducted in a proficient manner according to standard industry practice, the specific designation of performance and design standards, which define what constitutes acceptable mining and reclamation practices, *see infra* note 265, is delegated to the BLM State Directors, in cooperation with the state and local officials. *See* BUREAU OF LAND MANAGEMENT, DEP'T OF THE INTERIOR, INSTRUCTION MEMORANDUM NO. 89-402, INSPECTION AND ENFORCEMENT POLICY FOR HARDROCK MINERAL OPERATIONS CONDUCTED UNDER 43 CFR SUBPARTS 3802 AND 3809—SURFACE MANAGEMENT Attachment I, Policy for Implementation of Inspection and Enforcement Procedures for Locatable Minerals on the Public Lands 1-6 (Apr. 3, 1989) [hereinafter IM 89-402]; *see, e.g.*, BUREAU OF LAND MANAGEMENT, DEP'T OF THE INTERIOR, PINEDALE RESOURCE MANAGEMENT PLAN, DRAFT ENVIRONMENTAL IMPACT STATEMENT Appendix C-1 (1990) (describing statewide standards in Wyoming BLM Standard Mitigation Measures for Surface-Disturbing Activities). Guidelines imposed by the BLM on mining activities may be quite comprehensive. *See, e.g.*, *Red Thunder, Inc.*, 124 I.B.L.A. 267, 274-76 (1992) (detailing the BLM conditions to an approved operating plan for disposing of cyanide compounds); *Draco Mines, Inc.*, 75 I.B.L.A. 278, 281-84 (1983).

228. 43 C.F.R. § 3809.0-5(k).

229. *See also* 43 C.F.R. § 3809.1-8 (the BLM has the authority to require operating plans to comply with changes or additions necessary to avoid unnecessary or undue degradation.); *Red Thunder, Inc.*, 129 I.B.L.A. 219, 236 (1994) (noting the BLM's authority to order a complete cessation of mining activities in order to implement mitigation measures to prevent unnecessary environmental damage). In *B.K. Lowndes*, 113 I.B.L.A. 321, 326 (1990), the Interior Board, in commenting on the miners' appeal from a BLM order of non-compliance, noted that:

[M]uch of appellants' discussion of their efforts to comply with the BLM and State requirements, and the defense of their inability to do more, merely empha-

The authority of the USFS to impose reasonable categorical regulation on mining operations is slightly less clear than that of the BLM because of the regulatory requirement that the USFS consider "the economics of *the operation*" along with other factors when determining the reasonableness of mining regulations.²³⁰ Despite this potential limitation, a strong case can be made that the USFS authority allows for reasonable categorical regulation. This argument is best supported by the operation of the USFS's MMRs, which, like the technology-based regulations under the Clean Water Act, set reasonable minimum protection standards that apply "categorically" to all mining activities without regard to the economics of individual operations.²³¹ Under the MMR model, limiting phrases such as "feasible" or "practicable" may be interpreted as applying to categorical groups (such as the placer gold mining industry) instead of to individual operations.²³² The court in *Clouser v. Espy* appears to have adopted this view when it upheld as reasonable the USFS regulations that were allegedly putting the plaintiff mining claimant out of business.²³³ Under the cate-

sizes their lack of compliance due to the financial difficulties of CGU and the asserted need for restructuring of funding for GMM. Appellants have presented nothing with this appeal to persuade us that the BLM has erred in its finding of undue or unnecessary degradation of the Federal lands involved in this case, nor of the impropriety of the notice of noncompliance.

Id.

230. 36 C.F.R. § 228.5(a) (1996) (emphasis added). This provision was added because of concerns of "the possibility of unreasonable enforcement of the regulations, with resulting cost increases that could make otherwise viable mineral operations prohibitively expensive." National Forests Surface Use Under U.S. Mining Laws, 39 Fed. Reg. 31,317 (1974). It is not clear from this language whether regulations that rendered operations "prohibitively expensive" would be considered *per se* "unreasonable" or not. Nothing in the USFS's authorizing statute would appear to preclude the USFS from applying reasonable categorical regulations. See 16 U.S.C. § 478 (1994); *supra* note 172 and accompanying text. Other parts of the USFS regulations, however, require that environmental restrictions, including reclamation obligations, be "feasible" or "practicable." 36 C.F.R. §§ 228.8, 228.8(d), (f), (g).

231. See, e.g., SHASTA-TRINITY NFL&RMP, *supra* note 166, at 4-56 (setting forth a series of resource protection requirements for mineral operations to meet in riparian reserves). An important aspect of both technology- and resource-based minimum regulatory guidelines is the extent to which they may be enforced through performance standards rather than government prescribed management policies. See *infra* note 265.

232. It is on this theoretical base that EPA imposes BPT limitations under the Clean Water Act. See 33 U.S.C. § 1314(b)(1)(A)-(B) (1994). As discussed above, such authority is consistent with the sections of the USFS regulations that mandate compliance with the categorical regulatory standards administered by EPA under the Clean Water Act, the Clean Air Act and RCRA. See 36 C.F.R. § 228.8(a)-(c). Finally, categorical regulatory power is supported by the USFS's undisputed authority to deny a proposed operating plan it finds to be "unreasonable." See, e.g., 36 C.F.R. § 228.5(a)(3) (the USFS has authority to notify permit applicant of any changes or additions to the operating plan necessary to meet regulatory requirements); *Havasupai Tribe v. United States*, 752 F. Supp. 1471, 1492 (D. Ariz. 1990) (court approvingly cites language from Environmental Impact Statement stating that the USFS has authority to disapprove "unreasonable" plans of operations).

233. 42 F.3d 1522, 1528-30 (9th Cir. 1994). See *supra* notes 178-83.

gorical model, the requirement that the USFS officer consider the "economics of the operation" simply confirms the USFS's discretion to consider economics, where appropriate, in granting variances to individual operations from otherwise uniformly applicable categorical regulations.²³⁴

In addition to the specific authorities of each of the agencies, there are several more general reasons for allowing categorical regulation of hardrock mining operations. First, as discussed above, the rights of an unpatented mining claimant are essentially contractual.²³⁵ Under the contract model, a claimant could claim that agency regulation that rendered her mining operation unprofitable constituted commercial frustration or impossibility and thus grounds for the discharge of the underlying contract.²³⁶ Under this scenario, a miner could theoretically sue to recover expenses incurred up to the time of contract dissolution.²³⁷ Since commercial impossibility is judged objectively, however, a court would consider the feasibility of performance for the entire group of similarly situated businesses, not just the individual operation, in determining whether the categorical regulation was reasonable.²³⁸

Second, categorical regulation is supported by the policy underlying the range of alternatives that an agency must consider in selecting environmental mitigation measures under a NEPA-mandated review process. In that process, the BLM and the USFS must consider all reasonable alternatives to a proposed project that are "practical or

234. Several federal decisions have held that similar language requiring an agency to "take into consideration" various factors does not in any way limit agency discretion as to how much weight to give any one factor. See, e.g., *Homestake Mining Co. v. EPA*, 477 F. Supp. 1279, 1283 (D. S.D. 1979).

235. See *supra* notes 56-67 and accompanying text.

236. See *Pauley Petroleum, Inc. v. United States*, 591 F.2d 1308, 1317 (Ct. Cl. 1979).

237. *Id.* The general definition for commercial impossibility is given as "where, after a contract is made, a party's performance is made impracticable without his fault by the occurrence of an event the non-occurrence of which was a basic assumption on which the contract was made, his duty to render that performance is discharged, unless the language or the circumstances indicate the contrary." RESTATEMENT (SECOND) OF CONTRACTS § 261 (1979).

238. In *Pauley Petroleum*, the court considered plaintiff's claims that the government's imposition of a strict liability regime on an existing OCSLA lease following the Santa Barbara oil spill was unreasonable as to smaller companies that could not afford the same type of risk as the major companies. The court rejected this argument stating that, "[t]his attempted distinction will not work, in part because the law requires an objective view of commercial frustration or impossibility—the fact that a risk makes the contract unreasonable for a particular party is no excuse." 591 F.2d at 1319; see also *Clark Grave Vault Co. v. United States*, 371 F.2d 459, 461 (Ct. Cl. 1967) (existence of known alternative methods of manufacture, acknowledged to be feasible and not otherwise economically prohibitive, defeats plaintiff's subjective claims of impracticability); *Natus Corp. v. United States*, 371 F.2d 450, 456-57 (Ct. Cl. 1967) (court will not grant relief on plaintiff's commercial impossibility claim merely because performance cannot be achieved under the most economical means).

feasible” on an objective rather than subjective basis.²³⁹ In other words, the fact that proposed mitigation measures might not be economically feasible for an individual mining operation would not discharge the agency’s responsibility to consider those measures as “reasonable alternatives” under NEPA.²⁴⁰

Finally, as discussed above, the general policy underlying the land use planning authorities of the BLM and the USFS supports a categorical regulatory approach. These authorities establish minimum standards of protection for certain resources that must be met by all activities on the public lands, notwithstanding the varying degree of impact that the uniform regulatory standards will have upon individual operations.²⁴¹

b. BLM and USFS Authority to Impose Stricter Standards in Sensitive Areas

Like EPA, the BLM and the USFS appear to have the authority to impose resource-based standards, which may be even stricter than categorical regulations in certain sensitive areas. Both agencies’ regulations incorporate the resource-based standards contained within the Clean Water and Clean Air Acts; standards that clearly allow for more stringent regulation in sensitive areas.²⁴² The BLM and the USFS also have the authority to impose their own resource-based standards. The land use planning authority conferred on both agencies by Congress grants discretion to prefer some uses over others,

239. See *Sierra Club v. Marsh*, 744 F. Supp. 352, 363 n.18 (D. Me. 1989) (“The scope of the EIS discussion of alternatives is defined by the ‘reasonableness’ of the options, not by whether the applicant prefers or *is capable of implementing* a particular alternative.”) (emphasis added); Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026, 18,027 (1981) (reasonable alternatives are those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant).

240. Under NEPA, a determination that an alternative is reasonable requires that the agency examine fully the environmental impacts of that alternative in the EIS, even though the alternative may ultimately be rejected. See 40 C.F.R. § 1502.14 (1995); *Sierra Club v. Marsh*, 714 F. Supp. 539, 575 n.47 (D. Me. 1989). Because the agency *may* reject the reasonable alternative which is not economically feasible for an individual mining operation, NEPA law does not *require* an agency to regulate on a categorical basis. Nevertheless, the objective scope of the reasonable alternative analysis does offer some support for the concept of categorical regulation.

241. See *supra* notes 135-41 and 160-71. MMRs, for example, have been described by the USDA Office of General Counsel as “the agency’s scientific determination of the minimum resource protection standards necessary to comply with the law.” O’Riordan & Horngren, *supra* note 171, at 652 (citing Memorandum from James P. Perry, Deputy Assistant General Counsel, Natural Resources Division, USDA Office of General Counsel, to Everett Towle, Forest Service Director of Land Management Planning (April 4, 1985)) (emphasis omitted).

242. See 43 C.F.R. § 3809.2-2(a)-(b) (1995); 36 C.F.R. § 228.8(a)-(b) (1996); *supra* note 219 and accompanying text.

depending upon the resource values of the area in question.²⁴³ The USFS's MMRs, promulgated under the authority of NFMA, provide as good a case for strict regulation in sensitive areas as they do for overall categorical regulatory power.²⁴⁴ Focused as they are on the protection of resource values, MMRs unavoidably mandate that regulatory restrictions vary according to the character of the resource potentially affected by mining activities.²⁴⁵

Both agencies' surface management regulations also allow for stricter regulation in environmentally sensitive areas. In determining what constitutes "unnecessary or undue degradation," the BLM may consider the effect of mining on other resources and land uses.²⁴⁶ The USFS mining regulations meanwhile provide for special consideration of resources such as scenery, fish and wildlife habitat, soil, and water.²⁴⁷

As discussed above, categorical regulation will generally be considered "reasonable" when it sets standards that can be met by a majority of well run mining operations employing existing technology. In contrast, the reasonableness of "resource-based" standards depends on the degree to which such regulation protects the sensitive resource in question. Thus, an important question to ask under the resource-based model is the extent to which agencies may preclude normal mining activities in order to protect a sensitive resource. Neither the BLM nor the USFS appears to have the direct authority, absent specific legislation from Congress,²⁴⁸ to prohibit all mining activities in

243. See 43 U.S.C. §§ 1712, 1732(a) (1994); 16 U.S.C. §§ 528-531 (1994) & 16 U.S.C.A. §§ 1601-1614 (West 1985 & Supp. 1996); 36 C.F.R. §§ 219.1-28 (1996) (USFS). Both the BLM and the USFS land use plans routinely include resource-based restrictions that apply to particularly sensitive areas. See *supra* notes 140-42 and 161-68 and accompanying text. See, e.g., Pierre J. Ott, 125 I.B.L.A. 250, 251 (1993) (discussing the BLM's Merced Wild and Scenic River Management Plan); PACIFIC SOUTHWEST REGION, U.S. FOREST SERVICE, U.S. DEP'T OF AGRIC., SIX RIVERS NATIONAL FOREST DRAFT FOREST PLAN 3-25, 4-32 (1988); LITTLE SNAKE RIVER RMP, *supra* note 140, at 2-63 (the BLM plan proposes management priority areas to protect resources including wildlife, recreation, soil, and water, and ACECs subjects the majority of land to special environmental stipulations); BAKER RMP, *supra* note 140, at 12 (low ranking of "locatable minerals" among resource priorities indicates that other resources would be considered more important when resolving resource use conflicts). For a listing of the priority ranking in the Baker RMP, see *supra* note 141.

244. See *supra* notes 231-32 and accompanying text.

245. See *supra* notes 170-71 and accompanying text.

246. 43 C.F.R. § 3809.0-5(k); see Eric L. Price, 116 I.B.L.A. 210, 219-20 (1990) (noting that visual impacts of mining operation that are substantially noticeable from vantage points within adjacent wilderness study area must be taken into account in making "unnecessary or undue degradation" determination). The BLM regulations also require that operators avoid adverse impacts to endangered species habitat or cultural and paleontological resources. 43 C.F.R. § 3809.2-2 (d)-(e).

247. 36 C.F.R. § 228.8(d)-(f).

248. Under the Endangered Species Act, for example, the BLM and the USFS would be required to deny a proposed mining operation that, in the absence of an approved

sensitive areas.²⁴⁹ One might nonetheless inquire whether these agencies have the power to impose regulatory standards that force miners to create more effective pollution control technologies—standards that may be achievable by only a few, if any, mining operations.²⁵⁰

The government's regulatory authority to force technological innovation has been upheld under the resource-based standards found in such laws as section 303 of the Clean Water Act.²⁵¹ Both the BLM and the USFS may enforce these technology-forcing standards through the incorporation of federal environmental statutes into their regulations.²⁵² Similar authority can be found in the BLM's own regulatory standards for managing the public lands. In considering the impacts of mining on other resource values, the BLM has substantial discretion to determine what constitutes "unnecessary or undue degradation."²⁵³ By focusing on the impact on the protected resource, rather than the "reasonableness" of the mining activity,²⁵⁴ it becomes

habitat conservation plan, threatened to "take" an endangered species. *See, e.g.*, 16 U.S.C.A. § 1538 (West 1985 & Supp. 1996); *Havasupai Tribe v. United States*, 752 F. Supp. 1471, 1492 (D. Ariz. 1990) (the USFS has authority to "deny an unreasonable plan of operations or a plan otherwise prohibited by law"); *see also* Surface Management of Public Lands Under U.S. Mining Laws, 45 Fed. Reg. 78,902, 78,905 (1980) (given an unavoidable conflict with an endangered species' habitat, a plan may be rejected based on section 7 of the Endangered Species Act).

249. The land use planning authorities of neither the BLM nor the USFS appear to allow these agencies to directly prohibit mining operations on public lands not already withdrawn from the scope of the Mining Act. This lack of authority, due to Congress' unwillingness in public land use planning to override the "free access" principle as stated in the Mining Act, elevates mining activity to a unique status among competing land uses on the public lands. *See supra* notes 142, 166 and accompanying text.

250. As discussed, resource-based limitations are generally not based upon technological feasibility. As a result, resource-based standards often retard, or even preclude, development. *See, e.g.*, *Methow Valley Citizens Council v. Regional Forester*, 833 F.2d 810, 818 (9th Cir. 1987) (court rejects the USFS approval of development activity based on its failure to consider incremental air pollution impacts to adjacent wilderness area designated as Class I under Clean Air Act's PSD standards); *Kerr-McGee Chem. Corp. v. U.S. Dep't of the Interior*, 709 F.2d 597, 602 (9th Cir. 1983) (noting that redesignation of Death Valley from Class II to Class I area under Clean Air Act could potentially restrict chemical corporation's expansion plans); *Dioxin/Organochlorine Ctr. v. Rasmussen*, 37 Env't Rep. Cas. (BNA) 1845, 1850-52 (W.D. Wash. 1993) (court approves EPA's setting of TMDLs that allocates only a minor percentage of overall loading capacity to "future growth").

251. 33 U.S.C. § 1313 (1994).

252. *See supra* notes 221-22.

253. 43 C.F.R. § 3809.0-5(k) (1995); *see, e.g.*, *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1045 (D.C. Cir. 1978) (agency's power to "consider" different factors includes significant discretion as to how each factor should be weighed); *see also* *Homestake Mining Co. v. EPA*, 477 F. Supp. 1279, 1283 (D. S.D. 1979).

254. This approach has been supported in western water law decisions in which courts have found water use "unreasonable," and thus violative of state constitutional requirements, based on the impacts the water use had on sensitive resources rather than the manner in which the water was used. *See, e.g.*, *United States v. State Water Resources Control Bd.*, 182 Cal. App. 3d 82, 130 (1986) (court holds that water use was unreasonable because of adverse impact of water user group's water diversions on the Delta's water quality);

clear that "normal" mining activities in an environmentally sensitive area may cause "undue degradation,"²⁵⁵ thus triggering stricter regulation.²⁵⁶ The inevitable result of this approach is that in extremely sensitive areas, the BLM would have the authority to impose any restrictive standards deemed necessary to protect the resource against "undue degradation," even if such standards were not achievable through the use of existing technology.²⁵⁷

Unlike the BLM, the USFS is arguably limited to imposing currently feasible standards because of regulatory language requiring that measures taken to protect sensitive resources be "practicable."²⁵⁸ A cursory analysis of the USFS's resource-based planning process reveals, however, that MMRs developed to protect extremely sensitive resources will invariably preclude the development of mining activities at times by imposing technologically unfeasible standards. While an argument can be made that the USFS may not prohibit *all* mining activity in a given area,²⁵⁹ the USFS's routine application of MMRs to

Michael Graf, *Using the Public Trust Doctrine to Achieve Proportionate Reductions of Water Diversions from the Delta*, 13 UCLA J. ENVTL. L. & POL'Y 263, 287-88 (1994/95).

255. The American Heritage Dictionary defines "undue" as "exceeding what is appropriate or normal; excessive." AMERICAN HERITAGE DICTIONARY 1319 (2d college ed. 1985).

256. See Mansfield, *supra* note 91, at 83-84 & 88-90. Professor Mansfield observes:

Activities that involve too great a sacrifice of collective values for too little societal gain should be considered "undue," even if they would provide a private party with a positive economic return. Thus, even those actions "necessary" to implement a private goal and employing the least damaging economically feasible method might create "undue" degradation.

Id. at 83.

257. The acceptance of the idea that "undue degradation" may result from necessary and normal mining activities is significant since, under FLPMA, the BLM is arguably not limited to purely regulatory measures in protecting the public lands based on section 1732(b)'s authorization to prevent unnecessary or undue degradation "by regulation or otherwise" (emphasis added). See LESHY, *supra* note 2, at 201. Instead, where sensitive environmental resources are threatened with irreparable harm, the BLM would arguably have the authority to prohibit further mining activities. This is so because section 1732(b) provides that the BLM's power under the "unnecessary or undue degradation standard" may "amend the Mining Law of 1872" or "impair the rights of any locator or claims under that Act, including, but not limited to, rights of ingress and egress." *Id.* (quoting 43 U.S.C. § 1732(b)). It is worthwhile to note that the BLM itself has not officially embraced this potential authority.

In considering the BLM's potential authority to prohibit mining operations under FLPMA, it is important to keep in mind the potentially different consequences under a takings analysis between the imposition of strict regulatory standards and outright prohibition of mining activities. See *infra* notes 307-11 and accompanying text.

258. 36 C.F.R. §§ 228.8(d)-(g) (1996). The American Heritage Dictionary defines "practicable" as "capable of being effected, done, or executed; feasible." AMERICAN HERITAGE DICTIONARY 972 (2d college ed. 1985).

259. See *supra* note 174.

mining operations affecting sensitive resources makes this result inevitable.²⁶⁰

The potential regulatory impact of technology-forcing standards is cushioned by the important qualification that the "reasonableness" of an environmental regulation will also depend upon the timing of its implementation. The BLM and the USFS have the authority to attach reasonable environmental conditions to a plan of operations. If, however, the agencies wish to impose additional environmental requirements on a mining operation that has already received a permit, they must establish the existence of new or previously unanticipated environmental concerns.²⁶¹ This type of qualification on agency authority to modify the activities of ongoing mineral operations was also present in the pre-1978 OCSLA, in which the scope of restrictive post-lease regulations and termination clauses was limited to previously unanticipated environmental conditions.²⁶² This requirement strengthens a claimant's rights under the reasonable regulation standard

260. In the Shasta-Trinity NFL&RMP, the MMRs for minerals management in unwithdrawn riparian reserves require the USFS officers to:

locate and design the waste facilities using best conventional techniques to ensure mass stability and prevent the release of acid or toxic materials. If the best conventional technology is not sufficient to prevent such releases and ensure stability over the long term, *prohibit such facilities in the Riparian Reserves.*

SHASTA-TRINITY NFL&RMP, *supra* note 166, at 4-56 (emphasis added). The Shasta-Trinity Plan does not address the possibility that the absence of onsite waste facilities will prevent mining operations in riparian areas from complying with other MMRs that may be applicable to the overall operation, or will increase overall operation costs to the point that mining in the area will no longer be profitable. In some instances the USFS has interpreted its own regulations to authorize the prohibition of mining operations unable to comply with MMR standards. See *Havasupai Tribe v. United States*, 752 F. Supp 1471, 1492 (D. Ariz. 1990) (Regional Forester states that if operator is *unable* to comply with reasonable requirements for surface resource protection, the USFS has the authority to disapprove all or portions of the plan) (emphasis added). An agency's interpretation of its own regulations is entitled to great deference. *United States v. Yuzary*, 55 F.3d 47, 51 (2d Cir. 1995); *Leslie Salt Co. v. United States*, 896 F.2d 354, 357 (9th Cir. 1990).

261. See 43 C.F.R. § 3809.1-8 (1995) (the BLM regulations require agency to show that modifications to a plan are necessary to address environmental concerns that were reasonably not anticipated at the time of plan approval). 36 C.F.R. § 228.4(e) (1996) (the USFS regulations require agency to show that all reasonable measures were taken by the authorized officer to predict the environmental impacts of the proposed operations prior to plan approval).

262. See *supra* notes 77-79 and accompanying text; *Sun Oil Co. v. United States*, 572 F.2d 786, 816 (9th Cir. 1978); *Alaska v. Andrus*, 580 F.2d 465, 480 (D.C. Cir. 1978); *Union Oil Co. of Cal. v. Morton*, 512 F.2d 743, 750 (9th Cir. 1975) (Congress clearly did not intend to grant leases so tenuous in nature that the Secretary could terminate them at will.); see also *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1031 (1992) (stating that "changed circumstances or new knowledge may make what was previously permissible no longer so").

against the potential vicissitudes of subsequent agency regulatory approaches.²⁶³

e. Summary of the Agency Authority Issue

The preceding discussion reveals that both the BLM and the USFS have EPA-like authority to impose categorical technology-based regulations and stricter resource-based regulations on mining activities even where those regulations render some operations unprofitable. Both the BLM and the USFS have broad discretion to decide what constitutes "reasonable" regulation of mining operations.²⁶⁴ In line with this discretion, one can imagine a situation in which the BLM and the USFS may set base level, categorical standards that are achievable by the vast majority of mining operations and, in addition, stricter standards to protect designated sensitive resources.²⁶⁵ The

263. See Christopher, *supra* note 69, at 44 (potential lessees of outer shelf land are "sensitive to provisions that would give the United States power to change the *proprietary* regulations governing the lease after issuance of a lease").

264. Courts have held that regulation of mining claims involves sufficient discretion to warrant compliance with NEPA. See, e.g., *Sierra Club v. Hodel*, 848 F.2d 1068, 1091 (10th Cir. 1988). There are several bases for this discretion. First, courts typically review agencies' factual findings on the traditionally deferential "arbitrary and capricious" standard. Under this standard, a court is called upon to determine whether the agency's decisions were based on a consideration of the relevant factors and did not betray a clear error of judgment. Moreover, a court must be careful not to substitute its judgment for that of the agency. See, e.g., *Clouser v. Espy*, 42 F.3d 1522, 1537 (9th Cir. 1994); *Mt. Graham Red Squirrel v. Espy*, 986 F.2d 1568, 1571 (9th Cir. 1993). This deference to an agency's consideration of factors is supplemented by court decisions which find that an agency has discretion to weigh even congressionally enumerated factors according to its own judgment. See, e.g., *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1045 (D.C. Cir. 1978); *Homestake Mining Co. v. EPA*, 477 F. Supp. 1279, 1283 (D. S.D. 1979). In addition, an agency's interpretation of its own statutory authority is entitled to substantial deference from a reviewing court. *Chevron, U.S.A., Inc. v. Natural Resources Defense Council*, 467 U.S. 837, 844-45 (1984); *Alaska Miners v. Andrus*, 662 F.2d 577, 579 (9th Cir. 1981). Finally, an agency's interpretation of its own regulations is entitled to great deference. *Yuzary*, 55 F.3d at 51; *Leslie Salt Co.*, 896 F.2d at 357.

An example of this deferential review standard is illustrated in *Clouser* in which the court upheld the USFS's factual finding that, based on the USFS's own expeditions taken with a pack horse, motorized access was not "essential" to the plaintiffs' mining operations. 42 F.3d at 1537.

265. As discussed, technology-based regulations supplemented by resource-based, specific protection measures are already being implemented by these agencies on a regional or state level through the use of performance standards. See *supra* notes 171, 223. In general, performance standards offer a more flexible regulatory approach that allows for innovation on the part of the regulated community. In technology-based regulation, performance standards are derived from performance levels achieved by technologies which may be used by the regulated category of industry. In resource-based regulation, performance standards are established according to the protective measures deemed necessary to preserve the resource value. Where performance standards are used as the means of regulation, neither the technology nor the resource-based approach mandates a particular mode of operation. Instead, local agency officials and private operators retain discretion as to how to meet such standards on a case by case basis. A good example of the performance standard approach is found in the *Siuslaw NFL&RMP*, which states:

more valuable a competing resource, the more protective the agencies may set the standards, to the point that in the most sensitive areas not already withdrawn from mining by Congress, only well run operations mining highly profitable minerals will be able to operate.²⁶⁶

In this context, it is worthwhile to ask whether agencies may have the authority, in extremely sensitive areas, to set standards that can only be attained through future technological innovation. While some decisional and regulatory language appears to limit regulations to current technological feasibility,²⁶⁷ one could argue that regulatory standards that are "impractical" based on current control technologies do not violate the free access principle in the same manner as a withdrawal of land from the scope of the Mining Act.²⁶⁸ Instead of denying free access, such heightened standards merely shift the burden to the mining industry to develop innovative methods to preserve the sensitive resource.²⁶⁹

A regulatory approach combining categorical, technology-based regulation with resource-specific standards is supported by sound pol-

Standards and guidelines are the base level practices used to achieve goals and objectives of the Forest Plan. They generally emphasize the desired result rather than provide detailed management direction; this enables resource specialists using on-site information to tailor direction to specific needs and opportunities associated with each project and the complexities of the resources involved.

SIUSLAW NFL&RMP, *supra* note 171, at IV-39.

266. See Mansfield, *supra* note 91, at 90 (The BLM should evaluate "unnecessary or undue degradation" on a sliding scale in which the relative scarcity of both the mineral resources and threatened collective resources should influence the decision).

267. See *supra* note 175; see, e.g., 36 C.F.R. § 228.8(d)-(f) (1996) (the USFS measures to protect sensitive resource shall be "practicable."); see also *United States v. Weiss*, 642 F.2d 296, 299 (9th Cir. 1981) (the USFS regulations may not constrain mining operations so as to amount to a prohibition).

268. See *infra* notes 307-11 and accompanying text.

269. A good example of a real life situation in which such issues have been recently discussed was the Crown Butte Mines, Inc.'s plan to develop a large gold mine ("New World Mine") in a delicate watershed 2.5 miles from the northeast corner of Yellowstone National Park. See GREATER YELLOWSTONE COALITION, IMPACTS TO YELLOWSTONE NATIONAL PARK FROM NORANDA/CROWN BUTTE'S NEW WORLD MINE (May, 1995) [hereinafter IMPACTS TO YELLOWSTONE]. Crown Butte was pinning its hopes on government approval of an untried technique to prevent acidic drainage from contaminating sensitive river basins near the Park. The engineer for New World called the proposed tailings disposal plan "light years ahead of other projects." Stephen H. Daniels, *Untried design pushed out West*, ENGINEERING NEWS-REC., ENVTL. UPDATE, March 14, 1994. Given the vigorous environmental opposition to allowing any mining operations so close to Yellowstone Park, regardless of the level of control technology used, it is clear that in some instances withdrawal of lands from mining will be a preferable alternative to the imposition of heightened performance standards. See, e.g., IMPACTS TO YELLOWSTONE, *supra*; GREATER YELLOWSTONE COALITION, IMPACTS TO WATER QUALITY FROM NORANDA/CROWN BUTTE'S NEW WORLD MINE (May, 1995). The Clinton administration adopted this view when it announced the tentative purchase of the mine on August 12, 1996 for \$65 million in public land or other assets.

icy.²⁷⁰ Baseline standards set on an industry-wide level ensure that reasonable environmental regulation is bounded not by the economic travails of companies on the edge of profitability seeking minerals of questionable value, but by a societal balancing of our potentially contradictory desires to preserve the public lands while simultaneously extracting valuable minerals from them.²⁷¹ Where the value of the resource to be protected is deemed greater, the corresponding value of the mining venture must also be greater in order to cover the increased costs of environmental compliance. In this way, agency regulation of mining operations offers the possibility of truly protecting our public resources while not infringing upon the statutory rights of miners to discover "valuable mineral deposits" on those lands.

2. *Regulation May Preclude the Existence of a Property Interest in an Unpatented Mining Claim*

Assuming that Congress has conferred authority on federal agencies to render a mining operation unprofitable, the second question is whether the unpatented mining claimant whose operation has been regulated to the point of unprofitability possesses a valid property interest upon which to bring a claim for a regulatory taking.²⁷² In the absence of a valid property interest, a party has no action for a taking under the Fifth Amendment.²⁷³ This foundation of takings jurispru-

270. The use of objective tests and comparative resource values is also supported by the method used by the BLM in determining claim validity under the Mining Act. For example, in applying the "prudent person" test, the BLM is required to look to objective facts and ask whether such facts would justify, on an objective basis, the expenditure of further time and money. See, e.g., *Chrisman v. Miller*, 197 U.S. 313, 322-23 (1904). Moreover, in determining whether a claimant has made a valid discovery, the BLM must also consider the costs of complying with reasonable environmental regulations. See, e.g., *Clouser v. Espy*, 42 F.3d 1522, 1530 (9th Cir. 1994). It is clear that the costs of such compliance increase with the environmental sensitivity of the area proposed to be mined. See *infra* notes 312-13 and accompanying text.

271. As John Leshy has noted, acceptance of the argument that agencies should not be able to preclude mining operations through regulation would mean that profitable operations could be stringently regulated while marginal operations could not be regulated at all. See LESHY, *supra* note 2, at 209; see also *Mansfield*, *supra* note 91, at 83-84 ("[M]aking economic feasibility the limit of the BLM's control would allow the most damaging activities to continue."). This same issue has arisen under the Federal Power Act, 16 U.S.C. § 791 (1994), regarding the Federal Energy Regulatory Commission's authority to condition new power licenses with environmental mitigation measures. The Commission rejected the hydropower industry's argument that a condition in a power license is *per se* unreasonable if it makes the project no longer economically viable. The Commission noted that accepting the theory would mean that "severe environmental damage would have to be accepted in order to protect even a very marginal project." See *Project Decommissioning at Relicensing*, 60 Fed. Reg. 339, 343 (1995).

272. See, e.g., *Coast Indian Community v. United States*, 550 F.2d 639, 649 (9th Cir. 1977).

273. U.S. CONST. amend. V. The Fifth Amendment states in relevant part: "No person shall . . . be deprived of life, liberty, or property, without due process of law; nor shall

dence is central to understanding the legal effects of mining regulation, because a strong case can be made that governmental regulation that renders a mining operation unprofitable also prevents the formation of, or eliminates, the property interest necessary to support a takings claim under the Fifth Amendment.²⁷⁴

It is a general principle of mining law that before a mining claim can benefit from Fifth Amendment protection, it must conform to the laws under which it was initiated.²⁷⁵ In other words, an invalid mining claim confers no property rights status on a claimant.²⁷⁶ As a result of the unique nature of the unpatented mining claim as a property interest,²⁷⁷ government regulation that renders a mining activity "unprofitable" also eliminates the claimant's "present discovery" under the Mining Act, thereby extinguishing the "property interest" necessary to bring a Fifth Amendment action.

As discussed in the first part of this article, in order to possess a valid claim, a claimant must have made a "discovery" of a valuable mineral deposit.²⁷⁸ What constitutes a "valuable mineral deposit" will be based on a determination of the overall profitability of the proposed mining activity.²⁷⁹ The cost of complying with environmental

private property be taken for public use, without just compensation." See *Hendricks v. United States*, 14 Cl. Ct. 143, 149 (1987) ("Plaintiffs must prove they owned a property right at the time of the taking."); accord *Cooper Bowe v. United States*, 8 Cl. Ct. 253, 254-255 (1985); see also *Cisneros v. Alpine Ridge Group*, 508 U.S. 10, (1993); *Bowen v. Public Agencies Opposed to Social Sec. Entrapment*, 477 U.S. 41, 55-56 (1986); *Federal Hous. Admin. v. Darlington, Inc.*, 358 U.S. 84, 91 (1958); *Peterson v. U.S. Dep't of the Interior*, 899 F.2d 799, 807 (9th Cir. 1990) (the first step in the takings analysis is to determine whether there is a property right that is protected by the Constitution).

274. Although several commentators have observed this characteristic of mining regulation, none appears to have explored in depth its importance to takings analysis. See, e.g., *LESHEY*, *supra* note 2, at 209; *Ruffatto & Ostby*, *supra* note 91, at 11-46 to 11-52; *McBride*, *supra* note 108, at 7-13 to 7-17. Most analyses of mining regulation and takings law do not address the effect of government regulation on claim validity. See, e.g., *Thompson*, *supra* note 91, at 8-1; *Werth*, *supra* note 91, at 450-57; *Mansfield*, *supra* note 91, at 92-98; *Laitos*, *supra* note 91. Professor Laitos does acknowledge that one may "be without constitutionally protected property if there has been a failure to comply with all the steps required under a statutory scheme creating private rights in federal property." Laitos, *supra* note 91, at 1-26.

275. See, e.g., *Cameron v. United States*, 252 U.S. 450, 460 (1919); *Swanson v. Babbitt*, 3 F.3d 1348, 1353 (9th Cir. 1993); *United States v. Bagwell*, 961 F.2d 1450, 1456 (9th Cir. 1992); *South Dakota v. Andrus*, 614 F.2d 1190, 1193-94 (8th Cir. 1980).

276. See, e.g., *Cameron*, 252 U.S. at 460; *Swanson*, 3 F.3d at 1353; *Bagwell*, 961 F.2d at 1456; *South Dakota v. Andrus*, 614 F.2d at 1193-94; *Fixel v. United States*, 26 Cl. Ct. 353, 355-56 (1992); see also *Clawson v. United States*, 24 Cl. Ct. 366, 369 (1991).

277. See *supra* part I.A.2.

278. 30 U.S.C. § 22 (1994); *United States v. Coleman*, 390 U.S. 599, 600 (1968); *Cameron*, 252 U.S. at 459-60; *Cole v. Ralph*, 252 U.S. 286, 295 (1920); *Chrisman v. Miller*, 197 U.S. 313, 322 (1904).

279. *Coleman*, 390 U.S. at 600; *Cameron*, 252 U.S. at 460; *Cole*, 252 U.S. at 295; *Chrisman*, 197 U.S. at 322; see *Dredge Corp. v. Conn.*, 733 F.2d 704, 707-08 (9th Cir. 1984); *Melluzo v. Morton*, 534 F.2d 860, 864 (9th Cir. 1976).

regulations is specifically included within this profitability calculation.²⁸⁰ It is important to note that a discovery does not confer permanent property rights on the unpatented claim holder, but rather gives the claimant the right to mine the claim only as long as the profitability of the mining activity can be maintained.²⁸¹ This means that a once-valid, unpatented mining claim may be extinguished as a property interest whenever an increase in operating costs or decrease in the mineral's market price reduces the mining operation below the level of profitability. Thus, when government regulation imposes costs on a mining operation that render that operation unprofitable, the mining operator no longer possesses a valuable mineral deposit. Without a valuable mineral deposit, the claimant does not possess a valid claim and thus has no property interest upon which to bring a Fifth Amendment action.

The fact that the government can extinguish the unpatented claim as a property interest through regulation without paying compensation, but is required to compensate a landowner whenever it denies all economic use,²⁸² may be explained by the different sources from which the unpatented mining claimant and the fee simple property owner derive their respective property interests. Fee simple title in real estate is typically a function of state law. Continued possession and ownership are not dependent upon the owner making any particular use of the land. The denial of economic use has no relevance to the underlying status of the real estate as a property interest because

280. See *Clouser v. Espy*, 42 F.3d 1522, 1530 (9th Cir. 1994) (noting that the USFS regulation will result in increased operation costs thereby affecting claim validity); *In re Pacific Coast Molybdenum Co.*, 90 Interior Dec. 352, 356 (1983) (environmental groups challenge validity determination by attempting to show specific environmental compliance costs that were not taken into account); *United States v. Pittsburgh Pac. Co.*, 84 Interior Dec. 282, 285 (1977) (Interior Board remands discovery determination to consider costs of complying with environmental laws); *United States v. Kosanke Sand Corp.*, 80 Interior Dec. 538, 551 (1973) (Interior Board remands to hearing examiner to consider additional costs necessary to meet pollution control standards under applicable federal, state and local laws).

281. See *Ideal Basic Indus., Inc. v. Morton*, 542 F.2d 1364, 1367-68 (9th Cir. 1976) (Within the Department of the Interior, determinations of validity are subject to review as long as legal title to the property remains in the United States.); *Mulkern v. Hammitt*, 326 F.2d 896, 898 (9th Cir. 1964) (government correctly denied patent application since plaintiff's claim no longer satisfied the prudent person test due to changed economic conditions); *Skaw v. United States*, 2 Cl. Ct. 795, 801 (1983); *United States v. Jenkins*, 75 Interior Dec. 312, 319 (1968) (termination of federal manganese purchase program voids discovery of claims on low-grade manganese deposits); *United States v. Denison*, 71 Interior Dec. 144, 150 (1964) (contested claims null and void for lack of a present discovery of valuable mineral deposits due to changed economic conditions). See also *Best v. Humboldt Placer Mining Co.*, 371 U.S. 334, 336 (1963) (locator who does not carry his claim to patent takes the risk that his claim will no longer support the issuance of a patent); *Cameron*, 252 U.S. at 460 (government has continuing authority to declare a claim invalid so long as it holds legal title).

282. *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1018-24 (1992).

an "owner" of real estate who has been denied all use still possesses and owns his or her property.²⁸³

In contrast, the unpatented mining claim derives its property status from the Mining Act and its legislative and judicial progeny that mandate the maintenance of a "valuable mineral deposit" as a condition of property status.²⁸⁴ As discussed above, the unpatented mining claim is essentially a contractual right.²⁸⁵ From this perspective, the loss of a "valuable mineral deposit" through government regulation acts as a condition subsequent which voids the "contract" between the claimant and the United States, thus extinguishing the claimant's underlying property interests.²⁸⁶ In other words, judicial precedent has conditioned the status of the unpatented claim as a property interest on the claimant's ability to both comply with reasonable environmental regulation and turn a profit.²⁸⁷

283. This distinction between fee simple estates and unpatented mining claims means that a mining claimant may not acquire "vested rights" to develop a mine based on substantial expenditure of time and labor as argued by at least one commentator. See James N. Berkeley & Lawrence V. Albert, *A Survey of Case Law Interpreting "Valid Existing Rights"—Implications for Unpatented Mining Claims*, 9 ROCKY MTN. MIN. LAW INST. § 9.05, at 9-83 to 9-98 (1988). In other words, the state doctrine of "vested rights" does not create a property interest, but rather preserves a property owner's right to use her property in a certain way based on her detrimental reliance on government actions. See, e.g., *Avco Community Developers, Inc. v. South Coast Regional Comm'n*, 553 P.2d 546, 550-51 (Cal. 1976); see *infra* note 322 and accompanying text. This conclusion is supported by the legal derivation of the "vested rights" theory from the long-standing tradition in zoning law to exempt existing non-conforming uses from the requirements of newly enacted land use regulations. See *Clackamas County v. Holmes*, 508 P.2d 190 (Or. 1973); *Peterson v. U.S. Dep't of the Interior*, 899 F.2d 799, 813 (9th Cir. 1990) (noting that investment-backed expectations cannot create a property interest).

284. Thus, the Mining Act possesses similarities to California water law which requires a water user to continue to use water reasonably as defined by the State Constitution and judicial precedent in order to retain property rights in the use of that water. See CAL. CONST. art. X, § 2. In California, courts have not hesitated to extinguish property rights in water which did not meet the "reasonableness" criteria. See, e.g., *Joslin v. Marin Mun. Water Dist.*, 429 P.2d 889, 896-97 (Cal. 1967).

285. See *supra* notes 56-79 and accompanying text.

286. See *supra* note 65 and accompanying text; *Tosco Corp. v. Hodel*, 611 F. Supp. 1130, 1187 (D. Colo. 1985); see also *Dames & Moore v. Regan*, 453 U.S. 654, 674 n.6 (1981) (government did not "take" any property when it nullified attachments of Iranian assets since the attached "property interests" were made contingent and revocable by the terms of the executive order).

287. The resulting extinguishment of the claimant's property interest is the inevitable consequence of considering the costs of environmental regulatory compliance as a factor in determining the validity of a claim. See *LESHY, supra* note 2, at 209. This result is no different than a Department of the Interior ruling that a claimant did not possess a valid claim at the time of a withdrawal because of the costs required to comply with then existing environmental regulations, notwithstanding that at an earlier date, prior to the enactment of such regulations, the claim may have been valid. Although no court has addressed the specific factual situation, it seems clear that case precedent would allow the Department to deny a claim on this basis. See, e.g., *Skaw v. United States*, 740 F.2d 932, 938 (Fed. Cir. 1984), and cases cited *supra* notes 80-83.

The BLM has primary authority to administer unpatented mining claims on all public lands.²⁸⁸ The BLM does not, however, typically make determinations as to whether a mineral deposit is "valuable" at the time it imposes environmental restrictions on mining operations.²⁸⁹ As a result, few cases have addressed the interaction between governmental regulation and claim validity, much less answered the question of whether an unpatented mining claimant with an unprofitable operation has a property interest upon which to base a takings claim.²⁹⁰

a. *Comparison With Preference Right Leasing Under the Mineral Lands Leasing Act*

Given the general lack of precedent indicating how courts would treat agency regulation that renders unpatented mining operations unprofitable, it is helpful to explore how courts have treated property rights that arise out of statutes similar to the Mining Act. The Mineral Lands Leasing Act (MLLA)²⁹¹ is similar to the Mining Act in the

288. See text accompanying *supra* notes 32-33.

289. See Southwest Resource Council, 96 I.B.L.A. 105, 122 (1987) (the BLM asserts in legal pleadings that it is not the policy of the [BLM] to determine profitability or validity of mining claims before approving plans of operation). Instead, the BLM (either on its own volition or upon a request from the USFS or other concerned agencies) usually initiates validity determinations only in particular circumstances, such as where a miner claims a vested right to mine in an area since withdrawn from mineral entry, or where a claimant proposes operations in an environmentally sensitive area. Validity determinations will also be routinely made whenever a claimant applies for a patent on its claim. Haskins Interview, *supra* note 8; see also SIERRA NFL&RMP, *supra* note 166, at 4-21 (explaining that within withdrawn areas, all claimed valid existing rights will be verified by a USFS mineral examiner prior to authorizing any surface disturbing mineral activities); GARNET RMP, *supra* note 140, at 14 (stating that validity examinations will be conducted in patent applications, to clear encumbrances when land is transferred, when land is needed for a federal program or where flagrant unauthorized use of mining claim area is occurring).

The ability of the BLM to conduct validity exams at the time operating plans are proposed will undoubtedly depend upon the resources available to the agency, a less than promising possibility in the current age of budget cutting. See, e.g., Southern Utah Wilderness Alliance, 125 I.B.L.A. 175, 179 (1993) (acting BLM State Director writes that the BLM minerals people are unwilling to undertake an official validity examination, citing that it would be "too much work" and "take too much time").

290. The only court which appears to have addressed the connection between government regulation and claim validity in a case in which the takings issue was raised is *Clouser v. Espy*, 42 F.3d 1522, 1530 (9th Cir. 1994). See *supra* notes 178-83 and accompanying text. In that case, however, the court declined jurisdiction on the takings issue. *Id.* at 1539-40. Most courts addressing takings challenges to mining regulation have avoided the question of how such regulation affects discovery. See, e.g., *Rybachek v. United States*, 23 Cl. Ct. 222, 226 (1991) (remanding for a determination of whether Clean Water Act regulations denied mining claimant all economically viable use of property); *Trustees for Alaska v. EPA*, 749 F.2d 549, 559-60 (9th Cir. 1984) (court dismisses miners' takings claims based on their failure to allege specific economic injuries); *Skaw*, 740 F.2d at 939 (remanding to claims court for determination of whether prohibition of dredge and placer mining denied claimants all economic use of their property).

291. 30 U.S.C.A. §§ 181-226 (West 1986 & Supp. 1996).

manner in which it creates property interests that are conditioned on the satisfaction of certain requirements. Under the MLLA, the Secretary of the Interior is required to grant a mineral lease to applicants who can show they have discovered "commercial quantities" of coal or "valuable deposits" of phosphate.²⁹² This requirement is analagous to the government's non-discretionary obligation under the Mining Act to accord legal recognition and property rights to the discoverer of a "valuable mineral deposit." The Department of the Interior makes its determination under the MLLA according to the same factors set forth under the "prudent person" test, as borrowed from the Mining Act.²⁹³

Judicial decisions under the MLLA provide some insight into how a court might evaluate the effect of government regulation on claim validity. In *Natural Resources Defense Council, Inc. v. Berkland*,²⁹⁴ the district court held that, before issuing a lease, the BLM must conduct an environmental analysis under NEPA to identify any environmental mitigation measures that might be necessary to fulfill the agency's trust obligations under the MLLA.²⁹⁵ The court found that the BLM had the discretion to impose these mitigation measures as lease conditions, and that the costs borne by the applicant to comply with the conditions were to be taken into account in determining whether the applicant had actually discovered a "valuable" deposit.²⁹⁶ The BLM regulations were subsequently amended to reflect this discretionary power to deny a lease application where the costs of environmental compliance outweighed the overall profitability of the proposed mining operation.²⁹⁷

292. See 30 U.S.C. §§ 201(b), 211(b); see also 43 C.F.R. § 3430.1-1, which states, "An applicant for a preference right lease shall be entitled to a non-competitive coal lease if the applicant can demonstrate that he discovered commercial quantities of coal on the prospecting permit lands . . ." (emphasis added); *Natural Resources Defense Council, Inc. v. Berkland*, 458 F. Supp. 925, 934 (D.D.C. 1978) ("The language 'shall be entitled' could not be clearer, and on its face it obligates the Secretary to issue a coal lease to the permittee.").

293. *Prospecting Permits; Issuance of Leases*, 41 Fed. Reg. 18,845, 18,845 (1976). For a discussion of the administrative background of the BLM's decision to adopt the "prudent person" test, see Sally K. Fairfax & Barbara T. Andrews, *Debate Within and Debate Without: NEPA and the Redefinition of the "Prudent Man" Rule*, 19 NAT. RESOURCES J. 505, 513-14 (1979).

294. 458 F. Supp. at 937.

295. The MLLA requires the Secretary of the Interior to set lease terms "for the protection of the interests of the United States and . . . for the safeguarding of the public welfare." 30 U.S.C. § 187; *Berkland*, 458 F. Supp. at 936 n.17. This standard arguably confers more agency discretion than the "unnecessary or undue degradation" or "minimization of harm" standards used by the BLM and the USFS under Mining Act, FLPMA and the USFS's Organic Act. See *supra* part II.B.1. (discussing agency authority to regulate mining claims).

296. *Berkland*, 458 F. Supp. at 937.

297. See, e.g., 43 C.F.R. § 3430.0-1 to .7 (1995). Section 3430.4-4 states that prior to determining that a lease applicant has discovered coal in commercial quantities, the au-

The BLM's authority to deny a lease application based on the costs of environmental compliance was upheld in *Kerr-McGee Corp. v. United States*.²⁹⁸ In that case, the plaintiff claimed a vested property right arising from its discovery of "valuable" deposits of phosphate prior to the designation of the Osceola National Forest as a wilderness area and its accompanying withdrawal from mineral leasing.²⁹⁹ The court rejected the plaintiff's claim because of the unresolved question of whether the plaintiff's discovery was legally "valuable" as of the date of withdrawal, given the reclamation costs demanded by the environmental stipulations contained in the lease.³⁰⁰ More specifically, the court found there to be a factual issue as to whether the required reclamation was even feasible given the level of current technology existing at that time. If such reclamation was not feasible at the time of withdrawal, then the plaintiff's discovery could not have been "valuable" and thus no property rights would have attached.³⁰¹ The holding of *Kerr-McGee* therefore stands for the proposition that, if an agency has the requisite authority, a claimant's inability to satisfy even technologically unfeasible regulatory standards will nevertheless render the underlying claim and any accompanying property interest invalid.³⁰²

The mineral leasing cases discussed above provide important guidance for this article's examination of the relationship between environmental regulation and claim validity under the Mining Act for two reasons. First, the mineral leasing cases offer a simple and arguably

thorized officer shall include all relevant environmental compliance costs in the adjudication of commercial quantities including costs to protect soil, groundwater, air quality, vegetation, wildlife habitat, surface water and archeological and paleontological resources.

298. 32 Fed. Cl. 43 (1994).

299. *Id.* at 49. The history of this case bears repeating. The Kerr-McGee Corporation was one of a number of companies that, having been issued exploration permits for the Osceola National Forest in the mid-1970s, claimed preference rights based on its discoveries of "valuable" deposits of phosphate under 30 U.S.C. § 211(b). *Id.* Subsequently, Congress passed a bill that designated the forest as wilderness and required federal purchase of the lease interests. *Id.* at 48 & n.10. After examining the lease stipulations required by the USFS to protect the environment, Secretary of the Interior Watt determined that the companies could not profitably mine and thus did not possess valid property rights subject to purchase. Based on this finding, the Congressional bill to purchase the lease rights was vetoed by President Reagan. See LESHY, *supra* note 2, at 164-65.

300. *Kerr-McGee*, 32 Fed. Cl. at 53. The main stipulation stated that "[t]he lessee shall . . . reestablish watercourses, soil stability and productivity, approximate land forms and elevations, and wetland and upland of similar vegetative communities and species diversity in approximate proportions as those existing prior to mining." *Id.* at 45.

301. *Id.* The government had made a finding, without soliciting comments from the plaintiffs, that existing technologies could not ensure a reasonable likelihood of successful reclamation. *Id.* at 47. The court found that the plaintiffs were entitled to introduce expert testimony showing that such reclamation was in fact feasible. *Id.* at 52-53.

302. This holding thus illustrates that the only apparent limitation on which regulatory costs may be included in the claim validity determination is the authority of the agency to impose the regulatory costs in the first instance. See *infra* note 304 and accompanying text.

precedential model of how the property rights associated with unpatented mining operations should be determined. Where the BLM determines that a proposed plan of operations does not satisfy the discovery requirement because of regulatory compliance costs, the BLM or the USFS may legitimately deny the plan without concern that their actions will constitute a taking of property rights.³⁰³ Second, the mineral lease cases (particularly *Kerr-McGee*) hold that the scope of regulatory costs that may be legitimately considered in determining claim validity is coextensive with the scope of the agency's regulatory authority.³⁰⁴ This holding shifts the discussion away from the nature of the regulatory "costs" imposed on mining operations and back to the issue of agency authority to impose such regulations in the first place. For those interested in mining law reform, this shift is not insignificant since an examination of the authority issue must eventually address the multiple use mandates conferred on the agencies by Congress. A focus on multiple use, in turn, inevitably offers better prospects for competing resource values to be adequately addressed in the ongoing debate over mining on the public lands.

b. Agency Authority, Claim Validity, and Withdrawal

The interaction between agency regulation and the validity of the unpatented claim makes the determination of the scope of the agency's authority all the more important. As discussed above, the question of how far agencies may regulate mining operations, especially in sensitive areas, remains a difficult one.³⁰⁵ The judiciary has

303. See *Southwest Resource Council*, 96 I.B.L.A. 105, 122 (1987) (Interior Board holds that the BLM is not precluded from determining the validity of a claim and, upon a proper determination of invalidity, denying approval of its plan of operations). See also *Swanson v. Babbitt*, 3 F.3d 1348, 1350 (9th Cir. 1993) (at any time prior to the issuance of patent, the government may challenge the validity of the mining claim and, if successful, the claim will be canceled with all rights forfeited). In *Clouser v. Espy*, the court interpreted "the property right in an unvalidated claim as being one that may permissibly be restricted pending determination of validity, in order to guard against damage to the claim and surrounding land." 42 F.3d 1522, 1536 n.15 (9th Cir. 1994). See also *United States v. Barrows*, 404 F.2d 749, 752 (9th Cir. 1968) ("court ha[s] power to prevent defendants from causing irreparable damage to the land, pending determination of the validity of defendants' claim").

304. Thus, assuming an agency possesses the requisite authority, one need not address the potentially confusing issue of whether regulatory standards that are not currently achievable by mining operations constitute "costs" to be calculated in the validity determination, or whether they amount to "prohibitions" of otherwise valid claims. Instead, the question of whether a regulation imposes includable "costs" is determined by reference to whether the regulation was within the statutory authority of the agency, which in turn is limited by the free access principle. See *supra* part II.B.1.e.

305. As noted, it is unclear whether the parameters of "reasonable regulations" will be ultimately circumscribed by concepts of current technological feasibility, or whether agencies may, in environmentally sensitive areas, impose regulatory standards that can only be achieved through the use of future technological innovation. See *supra* notes 250-63 and

not been eager to address the question; relevant decisions have sidestepped the issue altogether.³⁰⁶

Notwithstanding the potential uncertainty regarding the extent of the agencies' authority to control mining in sensitive areas, it is worthwhile to note that the statutory authority to regulate is quite different from the power to withdraw lands from mineral entry or otherwise prohibit mining activities.³⁰⁷ Admittedly, the distinction between the imposition of regulatory standards that are unachievable using current mining technology and the outright prohibition of mining in certain areas may seem meaningless to the miner in the field.³⁰⁸ Although both may preclude mining activity, their effects on statutory mining rights are, however, quite different. Regulation precludes mining activity by invalidating a miner's "discovery," while at the same time preserving the possibility of free access for future mining activities that meet the heightened discovery threshold. By contrast, withdrawal or prohibition eliminates any future free access regardless of how valuable the mineral or how sophisticated the level of mining technology may become.³⁰⁹ As a consequence, withdrawal and prohi-

accompanying text. Clearly, the BLM and the USFS possess the latter authority under the MLLA. See *Kerr-McGee Corp. v. United States*, 32 Fed. Cl. at 53 (holding it should receive plaintiff's evidence for determination of claim validity based on technological feasibility of reclamation requirements); see also *Union Oil Co. of Cal. v. Morton*, 512 F.2d 743, 752 (9th Cir. 1975).

306. See, e.g., *Clouser*, 42 F.3d at 1538-39; *Rybachek v. United States*, 23 Cl. Ct. 222, 224 (1991). The analysis in *Rybachek* was admittedly complicated by the court's failure to distinguish between actions brought by the plaintiffs on their patented versus unpatented claims. As noted above, patented claims in which the claimant owns fee title to the land do not rely on the maintenance of a valid discovery as the source of their property interest. See *Swanson*, 3 F.3d at 1351 (patented claim is one in which the government has passed its title to the claimant).

307. Congress' power under the Property Clause to withdraw lands from mineral entry or prohibit mining activities on federal lands is unquestioned. See, e.g., *Kleppe v. New Mexico*, 426 U.S. 529, 539 (1976) (noting that power over the public lands conferred on Congress by the Property Clause is "without limitations"). While the Executive Branch shares a more limited withdrawal authority, see *supra* note 12, it does not possess the power to prohibit mining activities on federal lands. This is true despite the arguable authority of the BLM to prohibit mining under FLPMA in order to avoid "undue degradation." 43 U.S.C. § 1732(b) (1994); see *supra* notes 253-57 and accompanying text. Thus, for the most part, the outright "prohibition" of mining will be accomplished through the withdrawal mechanism, either by Congress or by an agency through the procedures outlined under FLPMA.

308. It is worth noting that as environmental restrictions become more strict, regulatory standards begin to approach those existing in congressionally designated sensitive areas such as Wild and Scenic Rivers, 16 U.S.C. § 1280 (1994) (unnecessary impairment), the California Desert Conservation Area, 43 U.S.C. § 1781(f) (1994) (undue impairment standard), and Wilderness Study Areas, *id.* § 1782(c) (non-impairment standard). At a certain point, restrictive regulation gives way to withdrawal as a means to protect sensitive resources from mining activity. See, e.g., *Wilderness Act*, 16 U.S.C. § 1132(d) (1994) (wilderness lands withdrawn from future mining).

309. Two responses can be made to this statement. First, executive withdrawals of areas over 5000 acres last for only twenty years and require a pre-withdrawal mineral inven-

bition, unlike regulation, are treated as "taking" valid existing mining claims under the Fifth Amendment.³¹⁰ This distinction between prohibition and regulation creates a strong incentive on the part of governmental agencies to prefer regulation as a means of preventing the adverse environmental impacts caused by mining activities in sensitive areas.³¹¹

c. Summary of Interaction Between Regulation and Claimants' Property Interests

If the regulating agency has the requisite authority, regulations that render an operation unprofitable will prevent the formation of, or extinguish, any underlying property interest that might have formed the basis of a Fifth Amendment takings claim. By incorporating the costs of environmental regulatory compliance into the determination of a claimant's property rights, the Mining Act achieves, in theory if not in practice, a balance between private economic gain and protection of the public's environmental resources.³¹² Because the BLM and the USFS may consider competing resource values in exercising

tory. 43 U.S.C. § 1714(c) (1994). Second, withdrawals can be reversed subject to procedural requirements under FLPMA. 43 U.S.C. § 1714(a). Notwithstanding these limitations, the principle of the withdrawal mechanism directly conflicts with the free access principle in a way that the imposition of regulatory standards do not. *See supra* note 269 and accompanying text.

A more difficult question arises when agency actions neither rise to the level of permanent prohibitions nor fall within the normal scope of "costs" imposed through regulatory standards. *See, e.g., Morton*, 512 F.2d at 749 (court upholds temporary drilling moratorium as reasonable); *Skaw v. United States*, 740 F.2d 932, 934 (Fed. Cir. 1984) (the USFS prohibits certain types of mining activities); *Pierre J. Ott*, 125 I.B.L.A. 250, 251 (1993) (the BLM limits mining to certain times of year). Because regulations straightforwardly impose "costs" that are includable in the determination of claim validity, they possess a decided advantage over "use" prohibitions in avoiding takings claims. *See supra* note 265.

310. For this reason, virtually all withdrawal actions contain savings clauses grandfathering in valid existing rights. *See supra* note 80 and accompanying text. Cases in which mining activities are "prohibited" in certain areas also find actionable takings claims. *See, e.g., Skaw*, 740 F.2d at 938-40.

311. This assertion is based on the assumption that governmental agencies would prefer to avoid paying compensation to miners where uncompensated regulation would achieve the same goal of sensitive land preservation. In many instances, however, this assumption may prove to be untrue, particularly where such strict regulatory approaches are neither administratively nor politically feasible.

312. Whether one believes that the balance is "proper" will of course depend on whether one believes environmental regulatory compliance costs accurately reflect the true "externality costs" of a given mining operation. In a letter dated December 16, 1993 to Montana Senator Max Baucus, Roger Kennedy, the Director of the National Park Service, wrote in regards to the New World Mine proposed near Yellowstone Park, "[i]t is quite possible that [the mine owners] could comply with all Federal and state legal requirements with regard to siting, operating, and reclamation of the mine but still have long-term and undesirable effects on the Yellowstone ecosystem." GREATER YELLOWSTONE COALITION, IMPACTS TO YELLOWSTONE, *supra* note 269. This sentiment led to the United States' purchase of the mine in August 1996. *See supra* note 269. As Secretary of the Interior Babbitt noted at the time, "the best solution [in this situation] is the no mining solu-

their discretion to impose reasonable regulations, the resulting limitations on a miner's ability to establish and maintain valid discoveries will vary in relation to the environmental sensitivity of the land. As such, the interaction between environmental regulation and claim validity arguably confers on the agencies a sort of indirect land use planning power to determine what mining activities may occur on the public lands.³¹³ As long as free access is preserved through the imposition of performance standard regulations, an agency should be allowed to exercise this quasi-zoning authority.³¹⁴

3. *Does Government Regulation of Unpatented Mining Claims "Take" Property Under the Fifth Amendment?*

By analyzing 1) the government's authority to regulate mining activities, and 2) the effect of such regulation on the unpatented claim as a property interest, the alternative takings analysis offers a cohesive framework in which to apply takings law to mining regulation. Under this analysis, the costs incurred in complying with reasonable environmental regulations directly influence whether a claimant has made a valid "discovery" under the Mining Act. As discussed above, when a government agency imposes environmental compliance costs on a proposed operating plan and these regulations preclude "profitable" operation, no "valuable discovery" takes place and thus no property rights are formed.³¹⁵ This conclusion is supported by relevant judicial decisions under the MLLA, which hold that no property rights form

tion" *Statement of Bruce Babbitt on New World Mine Settlement*, U.S. NEWSWIRE, Aug. 12, 1996.

313. This power may act in a manner similar to the "comparative value" test described in *LESHY*, *supra* note 2, at 140-145. Under the comparative value test, the BLM may weigh competing resource values in deciding whether a "discovery" has been made. See *Chrisman v. Miller*, 197 U.S. 313, 323 (1904) (Supreme Court approves a heightened "discovery" standard in a mineral contest between mineral and non-mineral claimants as opposed to contests between competing mineral claimants). In recent decisions, the Interior Board of Land Appeals (IBLA) has rejected the comparative value test. See *In re Pacific Coast Molybdenum Co.*, 90 Interior Dec. 352, 362-633 (1983); *United States v. Kosanke Sand Corp.*, 80 Interior Dec. 538, 547-48 (1973). The theoretical basis for this rejection is questionable, however, given the IBLA's accompanying holdings that environmental compliance costs, which clearly vary depending upon the "characteristics of the land involved," must be included within the general cost-profit calculation to determine whether or not a valid discovery exists. See *supra* note 53 and accompanying text.

314. As discussed, performance standards place the challenge of protecting the sensitive resource on the mining operator. See *supra* note 265.

315. In this respect, government action that prevents the formation of property rights through regulation is no different from actions that eliminate potential future property rights by withdrawing lands from the scope of the Mining Act. See, e.g., *Cameron v. United States*, 252 U.S. 450, 456 (1919) (no valid mining claim could be made after date land closed to mining); *Brown v. United States Dep't of the Interior*, 679 F.2d 747, 751 (8th Cir. 1982) (mining claims void where land has already been withdrawn from mineral entry).

until environmental compliance costs are incorporated into the profitability determination.³¹⁶ The principle is also supported by numerous cases arising under the Mining Act which hold that a claimant must satisfy the conditions precedent to the formation of a valid claim before the claim may receive Fifth Amendment protections.³¹⁷

In the event of "previously unanticipated" environmental concerns, agency regulations and judicial precedent allow for the imposition of new environmental standards on existing mining operations.³¹⁸ Under the current judicial interpretation, which characterizes the unpatented mining interest as a limited fee simple subject to various conditions subsequent, newly imposed regulations that render the mining operation "unprofitable" do not constitute a taking.³¹⁹ The proposition that government actions that eliminate conditional property interests are not susceptible to takings claims is also supported by a wide variety of cases.³²⁰

316. See, e.g., *Natural Resources Defense Council, Inc. v. Berklund*, 458 F. Supp. 925, 937 (D.D.C. 1978); *Kerr-McGee Corp. v. United States*, 32 Fed. Cl. 43 (1994); see also *Southwest Resource Council*, 96 I.B.L.A. 105, 122 (1987) (Interior Board holds that the BLM may make claim validity determination based on costs to comply with environmental regulations prior to granting operating permit).

317. See, e.g., *United States v. Locke*, 471 U.S. 84, 105 (1984); *Cameron*, 252 U.S. at 460. In *Southern Utah Wilderness Alliance*, 125 I.B.L.A. 175, 194 (1993), the court noted: [I]t is elementary that the rights granted can be limited and circumscribed in any manner Congress deems appropriate. It is well settled that the mere location of a mining claim, unsupported by the discovery of a valuable mineral deposit, affords the claimant no rights as against the government.

See also cases cited *supra* note 276.

318. Both the USFS and the BLM have the authority to impose modifications to existing plans of operations should agency officials observe the occurrence of unforeseen environmental degradation. See 43 C.F.R. § 3809.1-7 (1995) (BLM); 36 C.F.R. § 228.4(e) (1996) (Forest Service). The BLM has the authority to order a complete cessation of existing permitted operations should BLM officials observe violations of the unnecessary or undue degradation standard. *Red Thunder, Inc.*, 129 I.B.L.A. 219, 237 (1994).

319. See *supra* part I.A.2.b. As discussed, the most important of these conditions is the ongoing requirement that a claimant maintain a valuable mineral deposit, which will include the costs to comply with existing environmental regulations, including those enacted subsequent to an approved plan of operations.

320. See, e.g., *Cisneros v. Alpine Ridge Group*, 508 U.S. 10, 20-21 (1993) (finding that plaintiffs had no property right which was taken because government housing contract incorporates government's power to modify rent adjustments based on comparability studies); *Bowen v. Public Agencies Opposed to Social Sec. Entrapment*, 477 U.S. 41, 55-56 (1986) (finding that government action did not take any property right because social security contracts between federal government and individual states incorporate federal government's power under Social Security Act to modify contract); *Dames & Moore v. Regan*, 453 U.S. 670, 674 n.6 (1981) (government did not "take" any property when it nullified attachments of Iranian assets since the attachment "property interests" were made contingent and revocable by the terms of the executive order); see also *Alaska v. Andrus*, 580 F.2d 465, 483 (D.C. Cir. 1978) (holding that government may include termination clauses in leases which arise in the event of unforeseen environmental hazards); *Joslin v. Marin Mun. Water Dist.*, 429 P.2d 889, 898 (Cal. 1967) (holding plaintiff had no property interest to take when he failed to meet the evolving reasonableness standard required to maintain property rights in appropriated water).

Traditional regulatory takings analysis focuses almost exclusively on whether government restrictions violate the "reasonable expectations" of miners regarding their right to use their property.³²¹ The alternative analysis, on the other hand, recognizes that where no property interest is ever formed or where a property interest is eliminated through authorized regulation, the reasonable expectations of miners do not come into play.³²² Instead, a mining claimant who is prevented from mining due to the high costs of environmental compliance is limited to an action challenging the regulatory authority of the agency to impose such costs.³²³ If a court determines that the agency has such authority, the mining claimant has no valid cause of action against the agency.³²⁴

a. Judicial Takings Analysis

This article has argued that because the government's authority to regulate is incorporated into and conditions the property interest associated with an unpatented claim, traditional "regulatory takings" analysis ultimately plays no role in determining whether government regulation may violate miners' constitutional rights. A "judicial takings" argument³²⁵ challenges this conclusion by inquiring whether the century-long executive and judicial refinement that has led to the in-

321. See, e.g., *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1027 (1992) (noting that property owner necessarily expects the uses of his property to be restricted from time to time by the State's police powers).

322. In *Peterson v. U.S. Dep't of the Interior*, 899 F.2d 799, 813 (9th Cir. 1990) the court noted that "a constitutionally protected property interest" cannot "be spun out of the yarn of investment backed expectations." Instead, investment backed expectations only come into play once a constitutionally protected property interest has been established. *Id.*

323. In other words, the only real issue before a court deciding the effect of economically unfeasible regulations imposed on a proposed mining operation is whether the agency possesses sufficient authority to impose such regulations in the first place.

324. That this result appears similar to the general holding under the "traditional analysis" that a property owner has no reasonable expectation that she may use her property so as to constitute a common law nuisance should not be surprising. By including the costs of environmental regulatory compliance in the determination of claim validity, the Department of the Interior essentially accomplishes the same goal as the application of nuisance law; costs traditionally borne by the public at large are now internalized by the polluting activity.

325. Judicial decisions that unconstitutionally redefine property interests are called "judicial takings." See generally Barton H. Thompson, Jr., *Judicial Takings*, 76 VA. L. REV. 1449 (1990) (analyzing whether takings protections should constrain judicially made changes in the law). While court opinions may be the most common manner in which legal property interests are redefined, legal recharacterization may also occur whenever the legislative or executive branch interprets existing laws, either through supplemental legislation, rulemaking or agency adjudication. Keeping in mind that all three branches of government may "recharacterize" legal property rights, the remainder of this paper will refer to all such "recharacterizations" or "interpretations" as potential "judicial takings." For an argument as to why no distinction should be made between actual judicial takings and legislative or executive actions which recharacterize property rights, see *id.* at 1542-43.

terpretation of the unpatented mining claim as a conditional property interest has been a constitutionally valid process.³²⁶ The judicial takings inquiry questions an implicit assumption of the alternative analysis, that the characterization of the unpatented mining claim as a "conditional" property interest has not in any way "taken" property in violation of the Fifth Amendment. For this reason, it is the only remaining analysis relevant to the regulation of hardrock mining.

To determine whether the government's recharacterization of a property interest constitutes a taking, one must examine how "property" is defined under the Constitution.³²⁷ Under a positivist theory, property arises from, and is therefore defined by, the laws as set forth in common law and state and federal statutes.³²⁸ Where the government interprets such laws to extinguish an individual's previously recognized property interest, no taking occurs since no property can exist outside the laws.³²⁹ Under a normative or "natural law" theory, by contrast, the existence of private property predates the formation of government.³³⁰ Under these theories, laws that are inconsistent with the natural rights of property owners constitute a taking under the Fifth Amendment, regardless of how they are enacted or subsequently interpreted.³³¹

In evaluating the government's powers to recharacterize property rights, courts have generally attempted to chart a mid-course between positivist and normative theories of property. Courts will declare, for example, that property rights stem from positive law,³³² but will still prevent the government from defining those rights in a manner that

326. The language of *Lucas* supports the argument that the government may not simply "transform private property into public property without compensation . . ." *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1031 (1992); see also *Webb's Fabulous Pharmacies, Inc. v. Beckwith*, 449 U.S. 155, 164 (1980).

327. For an informative discussion regarding the manner in which the judiciary has defined property over the years, see Thompson, *supra* note 91, at 1522-41.

328. Thompson, *supra* note 325, at 1523.

329. In this context, "interpretation" of laws may be distinguished from legislative amendments (or repeals of existing laws) that adversely affect previously recognized property interests and which are generally considered to constitute takings under the Fifth Amendment. See, e.g., *Lynch v. United States*, 292 U.S. 571, 578-79 (1934) (holding that War Risk Insurance Act which relieved United States of all liability on war risk policies unconstitutionally took property rights of beneficiaries without payment of compensation); see also *supra* note 80 and accompanying text (regarding Congress' grandfathering of valid existing rights when designating new recreation and conservation areas which prospectively restrict mining activities in order to avoid takings claims).

330. See JOHN LOCKE, *THE SECOND TREATISE OF GOVERNMENT* (C.B. Macpherson ed., Hackett Publishing 1980) (1690); see also Thompson, *supra* note 325, at 1523-27.

331. Thompson, *supra* note 325, at 1524.

332. See *Ruckelshaus v. Monsanto Co.*, 467 U.S. 986, 1001 (1983); *Webb's Fabulous Pharmacies, Inc. v. Beckwith*, 449 U.S. 155, 161 (1980); see also *Lockhart v. Johnson*, 181 U.S. 516, 520 (1901) (noting the source of unpatented mining claim property right is the language of the Mining Act).

upsets property owners' reasonable expectations.³³³ This emphasis on "reasonable expectations" is a nod to the "natural rights" of property owners to possess property without fear of government seizure, either outright through the eminent domain process or constructively through legal recharacterization.

Judicial takings analysis asks whether the decisions that have over time defined the unpatented mining claim as a conditional property right constitute a "sudden and unpredictable change in the law" in violation of miners' reasonable expectations.³³⁴ Traditional regulatory takings law examines miners' expectations regarding the government's right to restrict how they may use their property interests. In contrast, judicial takings analysis focuses on miners' expectations regarding the government's power to define the unpatented claim as a conditional property interest in the first place. By focusing on these expectations, and by distinguishing between the regulatory authority and takings issues, judicial takings analysis avoids the two major pitfalls that have limited the usefulness of traditional takings analysis in the area of mining regulation.

333. See *Hughes v. Washington*, 389 U.S. 290, 296-97 (1967) (Stewart, J., concurring). In *Hughes*, Justice Stewart noted that "a State cannot be permitted to defeat the constitutional prohibition against taking property without due process of law by the simple device of asserting retroactively that the property it has taken never existed at all." *Id.* According to Stewart, a reviewing court owes no deference to a state court decision that "constitutes a sudden change in state law, unpredictable in terms of relevant precedents . . ." *Id.* at 296; see also *Robinson v. Ariyoshi*, 753 F.2d 1468, 1475 (9th Cir. 1985) (holding that Hawaii Supreme Court opinion had "taken" private property rights in water by following lesser known nineteenth century precedent that granted the state expansive water rights); *Sotomura v. County of Haw.*, 460 F. Supp. 473, 482 (D. Haw. 1978) (holding that Hawaii Supreme Court's opinion changing the dividing line between private and public beach took private property rights). It is clear from these precedents that other state water rights decisions such as *Joslin v. Marin Mun. Water Dist.*, 429 P.2d 889, 898 (Cal. 1967), and *Coffin v. Left Hand Dutch Co.*, 6 Colo. 443 (1882), which reordered property rights in water, were susceptible to judicial takings challenges by water users adversely affected at the time.

The contractual nature of the claimant's unpatented property right, as discussed above, provides further support for the application of reasonable expectation analysis to the issue of whether legal recharacterization of property rights constitutes a taking. Under contract law, when the language of the contract is unclear, a court may look to the intent of the parties in order to determine the scope of the parties' contractual rights. See, e.g., *Brobeck, Phlegér & Harrison v. Telex Corp.*, 602 F.2d 866, 872-73 (9th Cir. 1979). One could argue that the language of the "contractual agreement" between the miner and the United States is vague regarding the authority of the government to impose environmental mitigation costs that affect the valuable mineral deposit determination. Note that once one assumes that the judicial decisions finding such authority are constitutional, the "contract" formed is no longer vague and thus the parties' intent—as expressed outside the language of the authorizing statutes and interpretative decisions—is, as discussed above, not relevant to the scope of the parties' contractual rights. *Id.* at 871.

334. See *Hughes*, 389 U.S. at 296-97 (Stewart, J., concurring) (court decision that effects a sudden and unpredictable change in the law, thus upsetting the reasonable expectations of property owners, constitutes a compensable taking under the Constitution).

b. *Miners Should Reasonably Expect Their Unpatented Mining Claims to be Defined as Conditional Property Interests*

Under the language of the Mining Act, miners have always been on notice that their free access to “valuable mineral deposits” was subject to “regulations prescribed by law.”³³⁵ Judicial and administrative decisions from the turn of the century interpreting the discovery standard also made miners aware that a valid claim would only follow the discovery of a valuable mineral deposit.³³⁶ Thus, since early in this century, mining claimants should reasonably have expected that their claims would be subject to regulation. These regulations impose costs that unavoidably influence the profitability calculation used in determining claim validity. Moreover, since 1919, if not earlier, miners should also have expected their claims to be subject to the present discovery requirement, in which the loss of a currently profitable “valuable mineral deposit” renders their property interests invalid.³³⁷

The 1973 *Kosanke Sand* case was the first reported decision to include environmental compliance costs as part of the claim validity determination.³³⁸ Up to this point, miners might arguably have believed that “profitability” could not be affected by the cost of environmental compliance and mitigation measures. Given the importance of this ruling, the judicial takings issue essentially comes down to whether *Kosanke Sand* constituted a “sudden and unpredictable” change in the law that violated the reasonable expectations of pre-1973 mining claimants regarding the scope of their property right.³³⁹ Although arguably unprecedented, it is doubtful that this decision constituted a judicial taking. First, as stated above, the Mining Act explicitly subjects the property interest of the unpatented mining claim to “regulations prescribed by law.” Second, given the government’s continuing sovereign authority over the public lands, it was unreasonable for miners to expect such regulations to be limited to those

335. 30 U.S.C. § 22 (1994).

336. The “discovery” standard known as the “prudent person test” was first articulated in 1894. *Castle v. Womble*, 199 Pub. Lands Dec. 455 (1894). The prudent person test was upheld by the Supreme Court ten years later in *Chrisman v. Miller*, 197 U.S. 313, 322-23 (1904). The “marketability test” for discovery, used by the Department of the Interior throughout the 1960s, was adopted by the Supreme Court in 1968. *Coleman v. United States*, 390 U.S. 599, 600 (1968); see *supra* part I.A.2.a.

337. See *Cameron v. United States*, 252 U.S. 450, 460 (1919) (Department of the Interior has the authority to declare a claim null and void “so long as legal title remains in the government”); see also *Best v. Humboldt Placer Mining Co.*, 371 U.S. 334, 336-40 (1963); *Ideal Basic Indus., Inc. v. Morton*, 542 F.2d 1364, 1367-68 (9th Cir. 1976).

338. *United States v. Kosanke Sand Corp.*, 80 Interior Dec. 538, 551 (1973). Thus, after 1973, claimants were expressly aware that such compliance costs could be included in the discovery determination.

339. Miners making claims after 1973 would be on constructive notice of the *Kosanke Sand* decision and thus could not form reasonable expectations that environmental compliance costs were distinct from the discovery determination.

in existence at the time the discovery was first made.³⁴⁰ The authority to impose new regulations is supported by *Lucas'* holding that a property owner's reasonable expectations must allow for regulations to be imposed based on "changed circumstances or new knowledge."³⁴¹ The ability to restrict previously vested property rights through environmental regulation that addresses unanticipated environmental problems or concerns is also supported by the decisions allowing the inclusion of termination clauses in OCSLA leases.³⁴² The advent of environmental regulation of mining activities in the 1970s can be fairly traced to new knowledge and awareness regarding the potentially adverse environmental impacts of the industry. It seems appropriate, therefore, to conclude that including the costs imposed by such regulations in claim validity determinations was not a sudden break with the law of discovery, but rather a consistent extension of judicial interpretation regarding the nature of the unpatented mining interest.³⁴³

Concluding that the judicial characterization of the unpatented mining claim as a conditional property interest has been a constitutional process effectively ends the takings question. As discussed above, the alternative analysis shows that the Mining Act incorporates the government's authority to regulate into the property right conferred with the grant of the unpatented claim. As a result, the government's ability to impose regulations is limited not by the Fifth Amendment, but instead by the scope of the government's authority to regulate mining operations.³⁴⁴

340. See *United States v. Locke*, 471 U.S. 84, 105 (1984) (claimants must take their mineral interests with the knowledge that the government retains substantial regulatory power over those interests). From a contractual vantage point, it is clear that the provisions of the Mining Act do not unmistakably surrender the government's sovereign authority to regulate. See *Bowen v. Public Agencies Opposed to Social Sec. Entrapment*, 477 U.S. 41, 53 (1986) (noting that "contractual arrangements, including those to which a sovereign itself is party, 'remain subject to subsequent legislation' by the sovereign") (quoting *Merrion v. Jicarilla Apache Tribe*, 455 U.S. 130, 147 (1982)). Nor does the Mining Act in any way shift the risk of future regulatory change onto the government. Cf. *United States v. Winstar Corp.*, 116 S. Ct. 2432, 2472 (1996) (finding government liable for breach of contract damages based on contractual language which allocated the risk of future regulatory change to the government).

341. *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1031 (1992).

342. See, e.g., *Alaska v. Andrus*, 580 F.2d 465, 483 (D.C. Cir. 1978).

343. Although a "Case or Controversy" analysis under Article III of the Constitution is beyond the scope of this paper, it is clear that issues of mootness, ripeness and statute of limitations would arise under a takings claim based on *Kosanke Sand*.

344. The resulting unpatented property interest may thus be distinguished from other property rights in which "authorized" government restrictions under the police power may nevertheless violate property owners constitutional rights under the Fifth Amendment. See, e.g., *Penn Cent. Transp. Co. v. New York City*, 438 U.S. 104, 145 (1978) (Rehnquist, J., dissenting) (noting that requisite authority under the police power does not insulate government action from takings claims under the Fifth Amendment); see *supra* note 117 and accompanying text.

CONCLUSION

Under the alternative analysis, the central issue in applying the law of takings to the regulation of unpatented mining claims is whether the agency has the authority to impose the regulations being challenged. If the regulations are within the agency's authority, any compliance costs associated with such regulations that render a claimant's mining operation economically unfeasible will effectively preclude a valid discovery, thus preventing the formation of a protected property interest. Where an agency imposes economically infeasible regulatory costs on an existing mining operation in response to unforeseen environmental concerns, a claimant will be unable to maintain a valid present discovery, and the underlying property interest will thus be extinguished. The resulting loss of the claimant's property interest precludes any takings action because, without a valid property interest, a claimant has no cause of action under the Fifth Amendment.³⁴⁵

Traditional regulatory takings analysis is not applicable to the regulation of hardrock mining because of the unique manner in which the Mining Act incorporates the government's ongoing authority to regulate into the unpatented property interest. Under a more appropriate judicial takings analysis, one concludes that the characterization of the unpatented mining claim as a conditional property interest did not constitute a "sudden and unpredictable" change in the law, and thus did not upset miners' reasonable expectations in violation of the Fifth Amendment.

This article has discussed the issue of agency authority at length because the issue is crucial in determining the extent to which mining operations may be regulated constitutionally. Essentially, the model of EPA authority, the precedents from other laws, and the language of the agencies' regulations support the authority of the BLM and the USFS to impose reasonable regulations on mining activities in the form of categorical baseline standards as well as stricter standards in

345. In contrast, regulation which renders a *patented* claim unprofitable arguably constitutes a denial of all economic use, compensable under *Lucas*. See *Whitney Benefits, Inc. v. United States*, 926 F.2d 1169, 1174 (Fed. Cir. 1991) (finding that traditional state recognition of separate mineral and surface estates supports finding that government prohibition of subsurface mining constituted a compensable taking, even though claimant still owned and had use of the surface estate). This is an important point to consider for mining reformers who may wish to consider shifting their attention from ending free access to focus instead on eliminating the land patent process as an anachronism out of place with the modern system of federal land retention. See 43 U.S.C. § 1701(a)(1) (declaring that "the public lands be retained in Federal ownership, unless as a result of the land use planning procedure provided for in [FLPMA], it is determined that disposal of a particular parcel will serve the national interest"); see also *LESHY*, *supra* note 2, at 347-70 (discussing the prospects for change in mining laws).

environmentally sensitive areas.³⁴⁶ So long as the agency preserves the free access principle by implementing regulations through performance-oriented standards, as opposed to prohibiting mining activity outright in certain areas, such regulations should be upheld.³⁴⁷

By upholding agency authority to impose reasonable regulatory standards on mining operations, courts may preserve the miners' statutory right of free access while at the same time forcing mining operations to internalize the previously externalized costs of environmental degradation. This result is consistent with the national policy of encouraging development of our mineral resources when they are sufficiently valuable to permit the mining claimant both to make a profit and to comply fully with appropriate and reasonable environmental regulations. Mineral values and environmental compliance costs will fluctuate as the mineral markets and environmental technologies change and develop. More importantly, the regulatory standards that determine the costs of environmental compliance will vary according to the value our society places on protecting the environment. As has been true for over one hundred years, it is within this societal balancing that mining claimants will continue to discover the mineral resources of our nation.

346. New regulations imposed on existing operation must, however, be designed to respond to previously unanticipated environmental concerns. See *supra* note 261 and accompanying text.

347. Under the traditional analysis, it is clear that pollution control type regulation such as effluent limitations or toxic cleanup standards correspond more accurately to Justice Scalia's vision of permissible regulatory control over "noxious" uses, as opposed to heightened restrictions to protect sensitive resources in which the point of focus begins to shift to the less defensible (according to *Lucas*) goals of ecological and aesthetic preservation. *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1018-19 (1992) (noting that regulations which require owners to leave their land in a natural state carry with them the heightened risk that private property is being pressed into some form of public service under the guise of mitigating serious public harm). A key distinction, however, between the holding of *Lucas* and the regulation of mining operations on sensitive public lands is that mining operations, far from being "pressed into some form of public service," rely on the implicit consent of the public to allow for continued free access. While the Mining Act thus arguably requires that the non-withdrawn public lands be made accessible to miners, it does not preclude the public from placing high value on other public land resources, such that in environmentally sensitive areas, the "right" to mine may be legitimately restricted. See *supra* notes 265-69 and accompanying text; see also *Skaw v. United States*, 13 Cl. Ct. 7, 40 (1987) (noting the tremendous damage to pristine river by plaintiff's plan to conduct dredge mining).