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Sylvia L. Harrison

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COMMENTS

DISPOSITION OF THE MINERAL ESTATE ON UNITED STATES PUBLIC LANDS: A HISTORICAL PERSPECTIVE

Sylvia L. Harrison¹

I. INTRODUCTION

The disposition of mineral interests in the United States public lands is governed by a confused system of overlapping and conflicting rights and jurisdictions.² Federal management of the public mineral estate reflects dichotomous policies aimed at exploitation on the one hand, and conservation on the other. Today the aging statutes³ guiding public mineral disposition have once again been targeted for renovation.⁴ To successfully address the shortcomings of the present statutory and regulatory framework for the administration of federal public minerals, lawmakers must begin from an understanding of the development of the concept of a public property interest in minerals and of the history of disposition of the public mineral estate. The story is a complex one.

One obvious factor contributing to the historical complexity arises from the difficulty of defining a mineral interest. The term "mineral" is inherently ambiguous, and property interests in different minerals often have different characteristics.

A second complicating influence arises from the diverse foundations of American mining law and American property concepts in minerals, primarily Spanish law and English common law. Because of the disparate laws of the original colonial powers, different land acquisitions piecing together the United States often carried different consequences for mineral ownership.

A third complication is that property interests in public lands

1. M.S. Earth Science, Montana State University, 1970; Ph.D. Geology, University of Montana, 1985.

2. See, e.g., *Kerr-McGee v. Hodel*, 630 F.Supp. 621 (D.D.C. 1986); *California Coastal Commission v. Granite Rock Co.*, 107 S.Ct. 1419 (1987).

3. The primary acts governing the disposition of public minerals are the Mining Law of 1872, ch. 166, § 5, 14 Stat. 86 (1866) (codified in 30 U.S.C. §§ 21-54 (1982)); and the Mineral Leasing Act of 1920, ch. 85, 41 Stat. 437 (1920) (codified and amended in 30 U.S.C. §§ 181-287 (1982)).

4. See Leshy, *Reforming the Mining Law: Problems and Prospects*, 9 PUB. LAND L. REV. 1 (1988).

historically were distributed through two different lines of enactments having distinct and sometimes conflicting goals. The initial thrust of public land disposition aimed primarily at distributing the surface estate for agriculture and commerce, while generally reserving vaguely-defined "mineral lands" to the government. The second line of enactments aimed specifically at disposing of the public mineral estate to private parties. These enactments had an incidental (but not insignificant) effect on the surface estate, insofar as the mineral properties were patentable, and insofar as the assertion of the mineral right conflicted with the rights of the possessor of the surface.

Finally, present-day management of the public mineral estate is subject to the conflict between the historical thrust of disposal of public natural resources and the modern trend toward their preservation and conservation. Since exploiting the mineral estate is often perceived as precluding other uses of the affected public lands, the conflict is likely to be heightened.

This paper outlines the nature and development of a public property interest in minerals, then summarizes the history of the acquisition and disposition of the public minerals. Perhaps by providing a historical perspective of the development of our mineral management practices, this review will contribute to a better resolution of the complex issues facing policy makers today.

A. *Defining the Mineral Estate*

The term "mineral" is inherently ambiguous. As the Supreme Court noted in *Watt v. Western Nuclear, Inc.*,⁵ the term is broad enough to include virtually all material substances of the earth, and could constitute the entire estate in land. Considerable confusion and volumes of litigation have arisen from statutes and grants purporting to affect "mineral" rights. Most of the contention deals with either of two issues: whether a particular substance is a mineral within the scope of the conveyance or law,⁶ or whether lands are "mineral lands" for the purposes of land classifications.

The following sampling of the numerous judicial and regulatory constructions of the term "mineral" illustrates the futility of attempting to divine a generally accepted definition:

The term "minerals," here used . . . includes all fossil bodies or matters dug out of mines; and Dr. Johnson says that "all metals

5. 462 U.S. 36 (1983).

6. For a thorough and entertaining review of the issue as dealt with by 19th century courts, see C. SHAMEL, *MINING, MINERAL AND GEOLOGICAL LAW* ch. IV (1907). For a comprehensive review of judicial and regulatory treatment to date, see 1 *AMERICAN LAW OF MINING* §§ 6.04 and 8.01 (2d ed. 1988).

are minerals, but all minerals are not metals . . . Beds of stone . . . are therefore properly minerals . . .⁷

It is plain that granite did not pass. The word "ore" has a definite signification, and it designates a compound of metal and other substance. Granite neither in a popular or scientific sense is a mineral ore.⁸

Certainly in popular estimation petroleum is not regarded as a mineral substance any more than is animal or vegetable oil . . .⁹

[T]he authorities now very generally . . . hold petroleum to be a mineral, and as much a part of the realty as timber, iron, and coal.¹⁰

[T]he word 'mineral'. . . shall not be held to include iron and coal.¹¹

Perhaps the closest approximation to a unifying rule is that with respect to private grants, courts will generally attempt to construe the intent of the parties, and with respect to statutes, the intent of the legislature.¹² Today, most statutes and regulations include some attempt to define the affected minerals, but unanticipated ambiguities are inevitable, particularly considering the tendency for "worthless" materials to transform into highly sought-after commodities as new technologies and markets develop.

A further complexity in the problem of defining a mineral estate is introduced by the diverse species of mineral interests. There are at least five common types of mineral property interests. The following discussion is not intended to provide a comprehensive guide to property interests in minerals, but is included to illustrate some of the source of confusion surrounding mineral rights.

1. *Possessory Interests*

Fee simple interests: At English common law, and under American assumptions founded on English common law, the right to minerals has long been recognized as a corporeal interest in land¹³ that can pass by inheritance or grant. With the exception of sovereign claims, at common law the owner of the surface presumably owns fee simple title to the

7. *Earl of Rosse v. Wainman*, 14 Meeson and Welsby 859, 872, 69 Rev. Rep. 841, 850 (1845).

8. *Armstrong v. Granite Company*, 147 N.Y. 495, 42 N.E. 186, 187 (1895).

9. *Dunham & Shortt v. Kirkpatrick*, 101 Pa. 36, 44 (1882).

10. *Williamson v. Jones*, 39 W. Va. 231, 256, 19 S.E. 436 (1894).

11. *The Atlantic and Pacific Railroad Company Act*, ch. 278 § 3, 14 Stat. 292, 294 (1866).

12. "For a substance to be a mineral reserved under the [Act], it must not only be a mineral within one or more familiar definitions of that term, . . . but also the type of mineral that Congress intended to reserve . . ." *Watt*, 462 U.S. at 44.

13. "Though a mine be an inheritance, yet it may be severed from the inheritance by a grant now made; but certainly it is an interest in the land . . ." *Port, Esq. v. Turton*, 95 Eng. Rep. 248-49, 2 Wils. 170, 172 (1763).

minerals.¹⁴ The fee owner, however, can convey the mineral estate separately from the surface,¹⁵ and confusion frequently arises not only as to the scope of the mineral interest conveyed, but also as to its nature.¹⁶ *Mineral leases:* Mineral leases are among the most common form of mineral conveyance today.¹⁷ Technically, a lease is a possessory interest, but in the case of mineral leases, "possessory rights" are often severely circumscribed by the terms of the lease. Ambiguous lease instruments may be construed as creating profits, and vice versa.¹⁸ The argument generally arises in disputes over the extent of the mineral holder's rights to use the surface estate.

2. *Quasi-possessory Interests*

Easements and profits: Under Roman Law, superimposed freehold interests were prohibited, and therefore rights to work minerals or quarry stone from another's property were in the nature of quasi-possessory interests analogous to easements and profits rather than separate fee interests.¹⁹ Although the extent of Roman influence on modern mineral conveyances is open to speculation, quasi-possessory interests²⁰ in mineral rights are common today. In modern conveyances, easements are employed primarily to grant access or exploration rights to minerals, whereas "profits" (*profits a prendre*) grant the right both to enter upon and to extract a mineral product from another's land.

3. *Non-Possessory Rights*

Royalties: A royalty interest is an interest in the production or revenues from production of oil, gas or other minerals from a given mineral fee estate.²¹ Royalties are commonly conveyed in conjunction with a lease of the mineral interest, but do not necessarily relate to any underlying lease or production contract. The grant or reservation of a royalty simply entitles the holder to a portion of production, but conveys none of the "usual

14. *Lewis v. Branthwaite*, 109 Eng. Rep. 1205, 1208 (1831) (*Littledale J.*).

15. *See e.g., Port, Esq.* 95 Eng. Rep. at 749.

16. A considerable body of litigation arose from early American grants of mineral interests, centering on the question whether building stone, such as granite or marble, was included in the conveyance. *See e.g., Armstrong*, 147 N.Y. 495, 42 N.E. 186; *Phelps v. Church of Our Lady, Help of Christians*, 115 F. 882 (3d Cir. 1902).

17. 4 AMERICAN LAW OF MINING, *supra* note 6, at § 130.02[3].

18. *Commercial Asphalt, Inc. v. Smith*, 200 Kan. 362, 366-67, 436 P.2d 849, 853 (1967).

19. W. BUCKLAND & A. MCNAIR, *ROMAN LAW & COMMON LAW* 78 (1936).

20. "A quasi-possessory interest is one which entitles its beneficiary to *use* land, but not to use it so intensively as to constitute possession." R. Natelson, *Real Property* 4-3 (1988) (unpublished manuscript available from the University of Montana, Missoula, MT).

21. *Marias River Syndicate v. Big West Oil Co.*, 98 Mont. 254, 264, 38 P.2d 599, 601 (1934).

attributes of ownership, such as the right to possess, lease or otherwise control the minerals."²²

Licenses: The right to remove minerals, particularly sand and gravel, from another's land is sometimes granted through a "license." A license is commonly defined as "permission to do an act or series of acts on another's land, that absent authorization, would constitute trespass."²³ Licenses differ from easements and profits in that they are generally considered to be revocable by the landowner at will and do not rise to the level of an "interest" in land.²⁴

4. *Special rules for oil and gas*

Because of their fluidity and low density relative to the reservoir rocks, oil and gas tend to migrate toward areas of lower pressure through pore spaces of permeable strata, subsurface faults, joints, and so on. Pumping oil from one portion of a subsurface reservoir can induce the migration of oil from adjoining properties, a fact which was commonly abused by early exploiters of the resource. In resolving the inevitable ownership disputes, courts in most jurisdictions draw an analogy to "*ferae naturae*,"²⁵ and hold that the "fugitive" nature of oil and gas prevents actual ownership until they are reduced to possession. The surface owner generally is given a presumptive right to secure such possession, subject to State regulation.²⁶

II. MINERALS AS PROPERTY AND AS A SEVERABLE ESTATE: ROOTS OF AMERICAN MINING LAW

The concept of a separate property interest in minerals, severable from the surface estate, has had an erratic development. Not surprisingly, the early recognition of a separate mineral interest appears to have been most frequently and vigorously asserted by sovereign entities claiming rights to precious metals, or to other strategic deposits, such as salt.²⁷

A sovereign's assertion of a right to minerals is often said to derive from Roman civil law;²⁸ however, this may not be an accurate perception. Roman law scholars point out that the principle "*cujus est solum, ejus est*

22. *Stokes v. Tutvet*, 134 Mont. 250, 258, 328 P.2d 1096, 1100 (1958).

23. J. BRUCE AND J. ELY, JR. *THE LAW OF EASEMENTS AND LICENSES IN LAND* 1-6 (1988).

24. *Id.* at 1-7.

25. "Of a wild nature or disposition." BLACK'S LAW DICTIONARY 558 (5th ed. 1979). Early commentators and cases held that property in a wild animal could only be acquired once it had been reduced to possession. They then argued about what constituted possession. *See, e.g., Pierson v. Post*, 3 Cai. R. 175, 2 Am. Dec. 264 (N.Y. 1805).

26. *Brown v. Spilman*, 155 U.S. 665, 669-670 (1895).

27. C. SHAMEL, *supra* note 6, at 21.

28. *See, e.g., id.*

usque ad coelum et ad inferos,”²⁹ while not expressed in Roman texts, was nonetheless the Roman practice. “[A]part from the facts that most mining areas were the property of the State, and mining in Italy was restricted, possibly for political reasons, it is clear that minerals were the property of the owner of the land”³⁰ Whatever the true Roman practice, the demise of the Roman Empire created the opportunity for newly independent sovereigns to assert an “arbitrary exercise of power . . . justified on the ground that the mines were required as a source of revenue.”³¹ By the time of extensive colonization of the New World, the concept of a severable mineral estate was well established in most European countries.

The roots of American mining law derive primarily from the laws of Spain, as adopted by Mexico, and from English common law. England and Spain early evolved differing concepts as to the severability of minerals from the surface estate. The chief distinction between the systems lay in the extent of the sovereign’s assertion of ownership of mines; while Spanish sovereigns traditionally claimed property in minerals as an incident of sovereignty, English sovereigns laid claim only to mines of gold and silver and regarded these as a personal, severable, prerogative.

At English common law the owner of the soil was presumed to be the owner of minerals, subject to the “regalian” right to precious metals, as recognized in the landmark “Case of Mines.”³² In that case, mines of silver and gold were held to belong to the crown, but those mines primarily valuable for base metals were deemed to belong to the owner of the surface. Considerable confusion followed the decision in the “Case of Mines” as to the value of primary-product base metals compared to the value of incidental by-product precious metals. And despite Queen Elizabeth’s victory in the case, the regalian right was never fully developed in England for the simple reason that no mines valuable chiefly for gold and silver exist

29. “To whomsoever the soil belongs, he owns also the sky and to the depths.” BLACK’S LAW DICTIONARY 341 (5th ed. 1979).

30. W. BUCKLAND AND A. MCNAIR, *supra* note 19, at 78. Although the Digest of Justinian does not address the subject of mineral ownership directly, an usufruct was specifically given the right to “work such mines of gold, silver, copper, iron or other minerals as were opened by the owner, or he may open such mines himself” By implication, the surface owner must have had the right to work mines upon his land. T. MOMMSEN, P. KRUEGER, & A. WATSON, 7 DIGEST OF JUSTINIAN § 5 (1985).

31. *Moore v. Smaw*, 17 Cal. 199, 222 (1861) The opinion continues with a quote from Gamboa’s commentary on the law of Philip II:

Upon the breaking up of the Roman Empire, the Princes and States which declared themselves independent, appropriated to themselves those tracts of ground in which nature has dispensed her most valuable products with more than ordinary liberality, which reserved portions or rights are called rights of the crown. Among the chief of the valuable products are the metallic ores of the first class, as those of gold and silver and other metals proper for forming money

Id. at 222.

32. *Queen v. The Earl of Northumberland*, 5 Eng. Rep. 472 (1567).

there.³³

In contrast to the English practice, Spanish sovereigns as early as 1343 claimed an absolute right to all mines, including gold, silver, lead and other metals, as well as salt.³⁴ Although Spanish laws were thereafter periodically modified to give greater or lesser licenses for exploration and development of minerals, during the colonization of the New World all mines of gold, silver and quicksilver (mercury) were vested in the crown.³⁵ Thus, such mines passed to Mexico when that country declared its independence from Spain in 1821. Under Mexican law, then, the property of the soil was distinguished from that of the mine, and the mineral estate was held to pass only by grant from the government.³⁶

III. ACQUISITION OF THE PUBLIC MINERAL ESTATE

A. *Mineral Ownership in Colonial America and the Early United States*

The American colonies generally followed the English common law presumption that mineral ownership accrued to the surface owner, although most of the colonial charters reserved some fraction of precious metals for the crown.³⁷ After the colonies gained independence, the royal prerogative was largely forgotten. Only New York,³⁸ and by a circuitous route, the District of Columbia,³⁹ asserted government ownership of precious metals mines. As in England, the lack of economic gold and silver deposits in these two regions made this claim of "theoretical rather than practical importance."⁴⁰

Like the new States, the newly formed federal government was unaggressive in claiming mineral ownership. The Land Ordinance of 1785,⁴¹ enacted by the Continental Congress, reserved for congressional disposition one-third of all gold, silver, copper and lead mines within lands purchased from Indians or ceded to the United States from the individual states. The provision was not incorporated into the Constitution and

33. C. SHAMEL, *supra* note 6, at 22.

34. C. SHAMEL, *id.*, at 21, quotes a 1383 Law of Don Alonzo XI:

All mines of silver and gold and lead, and of any metal whatever, of whatsoever kind it may be, in our Royal Seigniorship, shall belong to us; therefore, no one shall presume to work them without our special license and command; and also the salt springs, basins, and wells, which are for the making of salt, shall belong to us.

35. See Moore, 17 Cal 199. Chief Justice Field provides an excellent synopsis of the Spanish and English laws.

36. Larés' Delrecho Administrativo, 91, 93, *quoted in* Moore, *supra* note 31, at 216.

37. 1 AMERICAN LAW OF MINING, *supra* note 6, at § 4.02.

38. C. SHAMEL, *supra* note 6, at 24.

39. Shoemaker v. United States, 147 U.S. 282 (1893).

40. C. SHAMEL, *supra* note 6, at 24.

41. Ordinance of May 20, 1785, 28 J. Continental Congress 375 (Fitzpatrick ed. 1933).

effectively ended with the Continental Congress.⁴²

B. *Acquisition of the Public Domain*

Because the tradition of private ownership of minerals prevailed in the original thirteen states,⁴³ the concept of a public mineral estate did not fully develop until the subsequent acquisition of the public lands.⁴⁴ With the exception of off-shore minerals and minerals within "acquired lands," the bulk of the public mineral estate lies within the so-called "public domain."⁴⁵

Between 1787 and 1846, the new republic acquired 1,500 million acres of new lands, through the accession of the Northwest Territory, the Louisiana Purchase, the Red River Basin, Florida, and the Oregon Compromise.⁴⁶ The majority of these lands were considered to vest in the federal government as public domain lands. Indian rights in the acquisitions were never accorded particular deference; the Supreme Court determined that Indian claims did not rise to the level of absolute title, but were merely occupancy rights, subject to the paramount title of the United States.⁴⁷ Beginning with the Jay Treaty of 1794,⁴⁸ however, the United States recognized valid pre-existing private grants made by the prior governments of the acquisitions to their citizens. Thus, to some extent, the property laws of Spain, France, Great Britain, and Mexico retained some influence over the land and mineral disposition patterns of the new territories. Unlike other acquisitions during this era, the admission of Texas to the Union in 1845⁴⁹ added no lands directly to the United States public domain. When Texas asserted its independence from Mexico in 1836, it retained the Spanish concept of state ownership of minerals and asserted title to all vacant lands. This theory prevailed when Texas was

42. 1 AMERICAN LAW OF MINING, *supra* note 6, at § 4.08.

43. No public domain lands were acquired by the federal government in the original thirteen states (Connecticut, Delaware, Georgia, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, Virginia), nor in the states carved from these (Kentucky, Maine, Vermont, West Virginia). However, all of these states contain lands *acquired* by the federal government for public purposes. In general, such acquired land is subject to special provisions with respect to any federally owned minerals.

44. For more detailed accounts of the acquisition of public domain lands than that provided here, see P. GATES, HISTORY OF PUBLIC LAND LAW DEVELOPMENT (1968) or L. MALL, PUBLIC LAND AND MINING LAW (3rd ed. 1981).

45. The general understanding of the term "public domain" includes those lands which were "acquired by the United States by cession, purchase, and treaty, as well as lands acquired by other methods where the latter have expressly been declared by Congress to be public lands or public domain." 1 AMERICAN LAW OF MINING, *supra* note 6, at § 3.02[3].

46. 1 AMERICAN LAW OF MINING, *supra* note 6, at § 5.02.

47. Johnson v. M'Intosh, 21 U.S. (8 Wheat.) 543 (1823).

48. Jay Treaty, Nov. 19, 1794 United States-Great Britain, 8 Stat. 116, T.S. 105.

49. Annexation of Texas, 3 Res. 8, 28th Con. 2d Sess., 5 Stat. 797 (1845).

admitted as a state, although the 1868 Texas Constitution later recognized valid surface owners' superior claim to mineral interests.⁵⁰ Although the state retains title today to unappropriated lands, Texas subsequently sold portions of lands now part of New Mexico, Colorado, and Wyoming to the United States. These lands were then regarded as additions to the federal public domain.⁵¹

The Mexican Cession, accomplished by the Treaty of Guadalupe Hidalgo in 1848,⁵² included the present states of California, Nevada, and Utah, together with parts of Arizona, New Mexico, Colorado, and Wyoming. As in Texas, Mexican mining law was the dominant influence on local mining customs within the lands ceded by the treaty. Because of the discovery of gold in California in 1848 and the subsequent gold rush of 1849, the Mexican Cession was a critical step in the development of United States mining law and the public mineral interest.

The Gadsden Purchase of 1853,⁵³ annexing lands in Arizona and New Mexico south of the Gila River, completed the acquisition of lands making up the 48 contiguous states. Alaska, purchased from Russia in 1867,⁵⁴ added nearly 560 thousand square miles to the United States, most of it originally public domain. The Territory of Hawaii contained some public lands vested in the United States, but these lands were ceded back to Hawaii upon its admission to statehood.⁵⁵

C. *Status of Mineral Rights in the Ceded Lands*

Minerals on public domain lands within these various acquisitions generally vested immediately in the United States. In the case of land grants to private parties from prior governments, the United States usually recognized valid interests and made no attempt to reserve mineral rights.⁵⁶ Because of the influence of the concept of the severed mineral estate on Spanish and Mexican law, however, confusion arose as to the title to minerals in the territories ceded by the Treaty of Guadalupe Hidalgo. Not surprisingly, this issue was most hotly disputed in California.

An important line of cases illustrative of the controversies arose out of conveyances of Mexican land grants to John C. Fremont and other early American arrivals in California. Subsequent to California's admission to the union, these land grants were presented for confirmation to the United

50. TEX. CONST. OF 1868, art. X, § 9.

51. 1 AMERICAN LAW OF MINING, *supra* note 6, at § 5.02[6].

52. Treaty of Guadalupe Hidalgo, Feb. 2, 1848, United States-Mexico, 9 Stat. 922, T.S. 207.

53. Gadsden Treaty, Dec. 30, 1853, United States-Mexico, 10 Stat. 1031, T.S. 208.

54. Convention Ceding Alaska, March 30, 1867, United States-Russia, 15 Stat. 539, T.S. 301.

55. 1 AMERICAN LAW OF MINING, *supra* note 6, at § 5.02[2].

56. For a comprehensive treatment of Spanish and Mexican land grants, see *id.* at § 13.02.

States government.⁵⁷ In *Fremont v. United States*,⁵⁸ the government disputed the validity of a land grant made by the Mexican government to Juan Alvarado in 1844, and conveyed by him to Fremont in 1847. The U.S. Attorney General contended that Fremont could not obtain clear title to the property because the original grant had not expressly conveyed mineral rights, and thus under Mexican law, impliedly reserved them to the Mexican government.⁵⁹ The Supreme Court ultimately recognized the validity of the grant and confirmed Fremont's title; however, it disclaimed jurisdiction over the issue of ownership of potential mines on the property, leaving the question unresolved.⁶⁰

Considering that Fremont's grant encompassed 900 square miles in the heart of California's gold country,⁶¹ it was inevitable that the mineral ownership would eventually be litigated. In 1861, the California Supreme Court settled the issue in *Moore v. Smaw*,⁶² holding that the patent from the United States passed fee title to "all interests. . . in the soil, and everything imbedded in or connected therewith."⁶³

More significantly, the court in this case laid to rest California's assertion of a regalian right to gold and silver on public lands, previously enunciated in *Hicks v. Bell*.⁶⁴ Curiously, the Hicks decision relied on English common law to support its reasoning, rather than relying on the practice of the former Mexican government of California. In overruling Hicks, the court in *Moore v. Smaw* held that "the minerals were held by the United States in the same manner as they held any other public property which they acquired from Mexico; and that their ownership over them was not lost, or in any respect impaired by the admission of California as a State."⁶⁵ No states have subsequently seriously asserted regalian rights to lands within the United States public domain.

D. *Other Public Minerals*

The last major additions to the public mineral interest are certain minerals in "acquired lands," and offshore minerals. Acquired lands are a special category of federal property "obtained by the Government through purchase, condemnation, or gift, or by exchange for such purchased,

57. Pursuant to the Act of March 3, 1851, (for the settlement of private land claims in California).

58. 58 U.S. (17 How.) 542 (1854).

59. *Id.* at 565.

60. *Id.*

61. *Id.* at 572, Catron, J. dissenting.

62. 17 Cal. 199 (1861).

63. *Id.* at 226.

64. 3 Cal. 219 (1853).

65. *Id.* at 222.

condemned, or donated lands”⁶⁶ These lands were historically treated separately from other public properties, although some confusion over the management of such lands was introduced by the Federal Land Policy and Management Act of 1976,⁶⁷ which included acquired lands in its definition of “public lands.” The Government has acquired various mineral interests in these lands, depending on the provisions of the acquisitions, which generally have not been subject to the same provisions governing mineral disposition as other “public lands.” However, since these minerals are available for public disposition under special statutes and regulations,⁶⁸ acquired minerals can be considered part of the public mineral estate for the purposes of this discussion.

Offshore lands make up the final piece in the public mineral estate puzzle. Long considered to be the property of the States,⁶⁹ in 1947 offshore lands were held to be United States property.⁷⁰ In 1953, however, Congress ceded offshore lands within three miles of the coast to the coastal states,⁷¹ while continuing to assert federal control of offshore lands beyond that limit.⁷² These lands are now subject to oil and gas leasing under the jurisdiction of the Bureau of Land Management.

IV. DISPOSITION OF PUBLIC LANDS: WITHDRAWAL, RESERVATION AND SEPARATION OF THE MINERAL ESTATE

Two policies guided the initial management of public lands added to the United States through the various annexations described above: extinguishing Indian claims and encouraging settlement and development. These policies were implemented by a series of enactments disposing of public lands primarily for agriculture and commerce. Although these enactments resulted in the conveyance of public lands to private individuals and companies, most contained some provision for retention of a portion of the public mineral estate for public purposes. The history of the wholesale privatization of the public domain which dominated the 19th century is well documented in numerous sources.⁷³ This discussion will

66. 1 AMERICAN LAW OF MINING, *supra* note 6, at § 10.01 (quoting BUREAU OF LAND MANAGEMENT, U.S. DEP'T OF THE INTERIOR, PUBLIC LAND STATISTICS 1985 107 (G.P.O.: 1986-676-003/40618 Region 8)).

67. 43 U.S.C. § 1702(e) (1982).

68. *See, e.g.*, Mineral Leasing Act of Acquired Lands, ch. 513, § 2, 61 Stat. 913 (codified in 30 U.S.C. §§ 351-59 (1982)).

69. *See Pollard v. Hagan*, 44 U.S. (3 How.) 212 (1845).

70. *United States v. California*, 332 U.S. 19 (1947).

71. Submerged Lands Act of 1953, ch. 65, § 2, 67 Stat. 29 (codified in 43 U.S.C. §§ 1301-15 (1953)).

72. Outer Continental Shelf Lands Act of 1953 (OCSLA), ch. 65, 67 Stat. 29 (1953) (codified and amended in 43 U.S.C. §§ 1331-43 (1979)).

73. *See P. GATES, supra* note 44.

simply highlight the effects of the major public land disposition enactments on the public mineral estate.

The United States' first major land act was the Act of March 3, 1807,⁷⁴ which authorized the creation of land offices and the sale of public lands in the Northwest Territory. The Act reserved from sale all discovered and undiscovered lead mines, authorizing the President to lease them for terms not exceeding five years.

The Act of 1807 was followed by several decades of grants of federal lands to private parties to encourage construction of roads and canals. These were accompanied by a spate of measures recognizing settlers' rights to buy or otherwise appropriate public land. Major enactments included the General Preemption Act of 1841,⁷⁵ which authorized the practice of future settlement on surveyed public lands, and prospectively granted every new state admitted 500,000 acres of federal lands outright. "Salines," known mines, and coals lands were excluded from disposition under the Act. Abuses of the preemption system eventually led to the enactment of the Homestead Act of 1862,⁷⁶ which allowed homesteaders entry on unappropriated, surveyed public land.

The federal mineral leasing program begun in the 1807 Act was abandoned by mid-century,⁷⁷ and throughout the preemption and homesteading eras, the government relied heavily on a land classification scheme to reserve minerals to the government, allowing entry only on lands classified as "nonmineral" in character. Lands were classified as mineral or nonmineral by authorized officers of the General Land Office, relying on such information as surveyor field notes, affidavits of the entrymen, and testimony of interested parties.⁷⁸ Unless agricultural entries were protested or contested, they were likely to be approved. Predictably, these classifications were subject to insufficient information, error and fraud. In the iron-rich region near Duluth and St. Cloud, Minnesota, for example, a special investigator found that of 2,361 homestead entries made in 1884, nearly half were commuted to cash within six months, and less than one-thirtieth were for actual settlement.⁷⁹ These abuses were difficult to correct after the fact, for once land was patented, the entryman was granted fee title to all the interests in the land, including any minerals subsequently discovered.⁸⁰

74. Ch. 46, §§ 2-4, 2 Stat. 445 (1807).

75. Ch. 16, § 1, 5 Stat. 453 (1891).

76. 43 U.S.C. §§ 161 et seq. (repealed 1976).

77. The fate of these Mississippi Valley lead mines is considered in more detail *infra*, text accompanying notes 89-99.

78. R. ROBBINS, OUR LANDED HERITAGE 251-4 (2d ed. 1976).

79. *Id.* at 252.

80. *Id.* at 252.

As large scale appropriations of public minerals continued under the guise of agricultural entries authorized by the preemption and homesteading laws, grants to railroads to encourage construction of new lines also resulted in privatization of a significant portion of the public mineral resource. Between 1830 and 1888, the government conveyed more than 318 million acres of public land to railroads through rights of way and grants. More than 130 million of these acres were eventually patented.⁸¹ The status of mineral ownership on these lands was ambiguous. Most grants excluded "mineral" lands, and then excluded "coal and iron" from the definition of mineral. The Supreme Court upheld this exclusion in *Northern Pacific v. Soderberg*,⁸² concluding that Congress obviously recognized the importance of coal and iron in facilitating and operating a railroad.⁸³

Minerals other than coal and iron also passed to the railroads under these grants; although the checkerboard grants along the rail routes mandated selection of nonmineral lands, issuance of patent was taken as conclusive evidence that land was not mineral in character, so that any later discovered minerals passed with patent.⁸⁴ The Southern Pacific Railroad, for example, successfully defended its title to more than 160,000 acres of oil-bearing land in the San Joaquin Valley of California, which it had patented as agricultural lands, despite allegations that it had known the land to be "mineral" when it made the selections.⁸⁵

The Stock Raising Homestead Act⁸⁶ (SRHA) of 1916 eliminated the necessity for the "mineral-nonmineral" land classification by severing the mineral estate from the surface interest. The SRHA authorized entry onto not more than 640 acres of land, but reserved to the United States any coal and other minerals found within the land, together with "the right to prospect for, mine, and remove the same." Although the Act forestalled disputes over the character of the land, the question of just what minerals are included in the reservation is still being litigated.⁸⁷

The Taylor Grazing Act,⁸⁸ enacted in 1934 to protect the rapidly deteriorating grazing lands on public domain, effectively ended the government's liberal land disposition policy, at least in the contiguous states. The Act authorized the creation of grazing districts, and once a

81. 1 AMERICAN LAW OF MINING, *supra* note 6, at § 13.07[1]. For a thorough discussion of land grants, particularly grants to railroads, as related to mineral development, see ch. 13.

82. 188 U.S. 526 (1903).

83. *Id.* at 536.

84. *Burke v. Southern Pacific*, 234 U.S. 669 (1914).

85. J. ISE, *THE UNITED STATES OIL POLICY* 292 (1972).

86. 43 U.S.C. §§ 291-301 (repealed 1976).

87. See *supra* text accompanying note 5.

88. Ch. 865 § 1, 48 Stat. 1269 (1934) (codified in 43 U.S.C. §§ 315 *et seq.* (1982)).

district had been set up, operated to withdraw the affected lands from entry except under the mineral laws.

V. DISPOSITION OF THE PUBLIC MINERAL ESTATE

The haphazard treatment accorded public minerals in the disposition enactments outlined above illustrates the prolonged absence of any coherent policy for government management of the public mineral estate. The nation had reached its ninetieth birthday before the first major statutes specifically outlining a policy for the disposition of the public mineral wealth were enacted.⁸⁹ This may have reflected a conscious indifference to the country's mineral wealth, but just as likely, simply reflected economic realities. Due to the rapid expansion of the country's borders during the nineteenth century, the government depended heavily on the private sector for the exploration and development of the annexed lands. The difficulties and inadequacies of the government's mineral exploration efforts are illustrated by the following excerpt from an 1850 report on the results of a government geological survey of the Lake Michigan region:

The geological exploration of this region was attended with great difficulties and hardships which cannot well be exaggerated. The northern shore of Lake Michigan is extremely dangerous for coasting boats There are numerous hidden reefs and boulders of granite strewn over the bottom, so that even in calm weather, great caution is required. Superadded to these, the prevailing winds here are southerly, which roll in a heavy sea, so as to render it a task of great difficulty to land in a heavy sea Swarms of mosquitoes, black flies, and midges infest the region, and the explorer finds little rest by night or by day Had the funds at our command been greater, our explorations would have been more minute, and we could have added to the list of valuable iron deposits.⁹⁰

The "valuable iron," like much of the nation's mineral wealth, found its way into private hands before Washington knew it existed.

A. *The Revolution to 1872*

Once the newly formed States abandoned their colonial claims to hypothetical precious metal deposits, lead became the chief focus of minerals policy in the early United States. The reason for this interest lay

89. See *infra* text accompanying notes 108-10.

90. Report of J. Foster and J. Whitney, U.S. GENERAL LAND OFFICE ANNUAL REPORT 150-1 (1850).

in the strategic importance of lead in the manufacture of bullets, shot and other ammunition.⁹¹ The first enactments governing the disposition of public lands expressly reserved lead mines from sale and authorized a federal program for leasing these mines. The subsequent disastrous results of lead mine leasing in the Upper Mississippi Valley undoubtedly influenced United States mineral policy for decades to come.

Lead had been discovered in the Mississippi Valley as early as 1692, and it was first mined near Dubuque in 1788.⁹² The early history of federal leasing of lead deposits under the authority of the Act of March 3, 1807 and similar acts is obscure, but the leasing policy was recognized in repeated congressional enactments through at least 1832.⁹³ The strategic importance of lead was underscored by the transfer of administration for the mines to the War Department in 1821.⁹⁴ The leases generally called for an "in-kind" rental payment: for example, six pounds of lead for every hundred pounds mined or smelted.⁹⁵ Collection of this "rent lead" was anything but successful. The failure of an Upper Mississippi River smelter operator to deliver lead to the government in accordance with his lease resulted in the landmark case, *United States v. Gratiot*.⁹⁶ While the case settled definitively Congress's constitutional power to lease public lands, it apparently did little to improve administration of the effort. In a scathing 1850 report on the federal mineral leasing policy, the Commissioner of the General Land Office noted that the entire rent lead collected in 1841 and 1842 was scarcely enough to pay the salary of one employee in the service, and that the government had actually lost money in the program in the following years.⁹⁷

Congressional disenchantment with the leasing program led to a series of acts in 1829,⁹⁸ 1846,⁹⁹ 1847,¹⁰⁰ and 1850,¹⁰¹ authorizing the sale of mineral lands in Missouri, Illinois, Wisconsin and Iowa, and finally, of the valuable copper deposits of the Lake Superior region. As a result of these enactments and through dispositions made under other provisions, virtually the entire public interest in metallic minerals in the Upper Mississippi and Great Lakes region passed into private hands.

Just as the United States was disposing of these mineral lands,

91. See *supra* text accompanying notes 73-80.

92. H. RIES, *ECONOMIC GEOLOGY OF THE UNITED STATES* 313 (1909).

93. *United States v. Gratiot*, 39 U.S. (14 Pet.) 526, 530 (1840).

94. U.S. GENERAL LAND OFFICE REPORT 18 (1850).

95. See, e.g., *Gratiot* at 527-8.

96. *Id.* at 526.

97. U.S. GENERAL LAND OFFICE REPORT, *supra* note 94, at 19.

98. Act of March 3, 1829, 4 Stat. 364.

99. Act of July 11, 1846, ch. 36, 9 Stat. 37.

100. Act of March 3, 1847, ch. 50, 9 Stat. 179.

101. Act of Sept. 26, 1850, ch. 72, 9 Stat. 472.

however, it was acquiring the vast mineral wealth of California and the Southwest through the 1848 treaty of Guadalupe Hidalgo.¹⁰² The California Gold Rush and the admission of California as a State set the stage for the development of the policies which have governed the disposition of public minerals ever since.

Until this time, unauthorized mining on public lands was held to constitute an actionable trespass.¹⁰³ In the West, however, prospectors appropriated vacant lands according to local mining practices, which at this time were influenced primarily by Mexican law and common law customs of "first in time, first in right." Although local mining laws varied, most required making a "discovery," marking the boundaries of the claim, and usually some form of filing or recordation.

Thousands of California gold claims were located by the "Forty-niners" according to these customs. Meanwhile, California's non-Indian population swelled from about 14,000 in 1848 to more than 200,000 by the year 1852.¹⁰⁴ When California was admitted to the Union in 1850, the nation not only acquired a huge mineral resource, but a huge independent miners' lobby.

The Congress convening in 1850 was urged to sell off the California gold claims on the newly acquired public domain, both in reaction to the sad record of eastern mineral leasing, and in anticipation of raising significant revenue for the Union.¹⁰⁵ In recommending the sale of the western mining lands, the Land Commissioner in 1850 decried the effect of the leasing system upon the morals of the community in which it existed, stating that the system "begot a spirit of wild, speculating hazard . . ." and that "[c]ommunities were kept in unceasing turmoil, ferment, litigation, and bloodshed by this odious system."¹⁰⁶ Despite these warnings, the western lobby prevailed over strong eastern sentiment. For the next sixteen years, Congress took no action relative to western mineral lands.

In the absence of federal legislation, small organized local mining districts proliferated. By 1866, at least five hundred mining districts and another five hundred mining communities controlled the Western mining industry.¹⁰⁷ Local mining laws were codified in territorial and state legislation and gained solid recognition in the courts.¹⁰⁸ Thus, in 1866,

102. See *supra* note 52.

103. *United States v. Gear*, 44 U.S. (3 How.) 120 (1845).

104. R. PAUL, *CALIFORNIA GOLD* 20-5 (1947).

105. U.S. GENERAL LAND OFFICE REPORT, *supra* note 94, at 20-1.

106. Report of J. Butterfield, Commissioner, U.S. GENERAL LAND OFFICE REPORT, *supra* note 94, at 19-20.

107. R. ROBBINS, *supra* note 78, at 220.

108. Justice Stephen J. Field exerted a remarkable influence over the development of the mining

when Congress finally enunciated a policy governing the public mineral estate, it embraced neither leasing nor sales, but the free entry and location practice which had come to dominate Western mining.

The Mining Act of 1866,¹⁰⁹ not only legalized existing mining claims on public lands, but declared that mineral lands would be free and open to exploration and occupation and governed by local customs or rules of the several mining districts not in conflict with the laws of the United States. The Act also provided that lode claims could be patented, for \$5 per acre, after certain expenditures for improvements and labor had been made.

A major omission of the 1866 Act was its failure to address placer claims, which encompassed a substantial portion of the California gold deposits. To accommodate placer miners, Congress passed the Placer Act of 1870.¹¹⁰ Under the Placer Act, individual placer claims of 20 acres and association claims of 160 acres could be located and patented for \$2.50 per acre. The Act defined placer deposits as "all forms of deposit, excepting veins of quartz, or other rock in place." This broad and imprecise language later had unexpected ramifications.

The Mining Act of 1872¹¹¹ codified and combined the Lode and Placer Acts. The 1872 Act set out special requirements for the locations of "valuable mineral" deposits on public lands, superceding the local laws which had previously governed this practice. Following the pattern of the previous acts, it allowed location of mining claims as a property interest separate from the surface estate, but provided for subsequent patent to include the surface. The 1872 Act is still the basic law governing acquisition of hardrock and placer deposits on the public domain.

B. *Coal prior to 1920*

Until the Civil War, federal mineral policy, such as it was, focused mainly on metallic minerals. However, with the demands of the War and of post-War industrialization and the opening of the public domain, the nation began to turn its attention to its mineral fuel resources, coal and oil.

The vast coal fields of the Appalachian Mountains more than supplied

laws. Elected to the 1851 California legislature, he was responsible for drafting the state's first civil practice act, which he patterned after his brother's model code, but with modifications to meet the new state's needs. He included a provision which required courts to defer to local mining laws, "when not in conflict with the constitution and laws of the state." California Laws, 1851, Sec. 621, p. 149. *See* C. Swisher, STEPHEN J. FIELD 52-7 (1930). Later, as a justice of the California Supreme Court, he was responsible for the judicial guidance of mining law in the state, *see, e.g.*, Moore v. Smaw, 17 Cal. 199 (1861). After his appointment to the U.S. Supreme Court in 1863, he seized the opportunity to express federal approval of local mining customs. *See* Jennison v. Kirk, 98 U.S. 453 (1878).

109. Ch. 262, § 9, 14 Stat. 251, 253 (1866).

110. Ch. 235, 16 Stat. 217, (1870).

111. Mining Law of 1872, ch. 166, § 5, 14 Stat. 86 (1866) (codified in 30 U.S.C. §§ 21-54 (1982)).

the nation's needs for the first century of its existence. With industrialization and westward expansion, however, came a burgeoning demand for local coal. Production figures from the era reflect a phenomenal growth in the coal industry: ten times more coal was mined in 1900 than in 1868.¹¹² Throughout this time, the public coal lands were rapidly passing into private hands. The first federal legislation directly providing for coal disposition was the Act of July 1, 1864,¹¹³ which provided for sale of federal coal lands to the highest bidder, for a minimum price of \$20 per acre. The Coal Lands Act of 1873¹¹⁴ re-enacted provisions of prior acts, but increased possible acquisitions to 640 acres. Meanwhile, inadequate controls over land classifications allowed large amounts of coal lands to be patented under agricultural entries, while the railroads gained control over significant coal fields through the liberal railroad grant policies.¹¹⁵

In the face of Congressional disarray over a suitable response to the vanishing public coal resource, President Theodore Roosevelt ordered a temporary withdrawal of about 66 million acres of land from coal acquisition in 1906.¹¹⁶ Responding to public pressure resulting from these and similar withdrawals, Congress enacted the Coal Lands Act of 1909.¹¹⁷ Under this Act, withdrawn lands were reopened to agricultural entry, but coal and the right to mine it were reserved to the United States.

This legislation marked a change in the direction of the nation's mineral management policy, from liberal disposition for private exploitation to preservation for the "public benefit."¹¹⁸ This Act was followed by the Coal Lands Act of 1910¹¹⁹ which opened land to agricultural entry that had previously been closed under mineral classifications. Recognizing the potential conflicts between the severed surface and mineral estates, the Act required persons authorized to mine and remove the reserved coal to compensate the surface owner for damages to crops and improvements resulting from mining activities.¹²⁰ Similar provisions applied to minerals reserved under the Stock Raising Homestead Act of 1916.¹²¹

Although the Coal Land Acts and the SRHA created a system for retaining coal and other minerals while continuing disposal of the surface, the government had still to develop a system governing extraction of the

112. H. RIES, *supra* note 92, at 33.

113. Ch. 205, 13 Stat. 343 (1864).

114. Ch. 279, 17 Stat. 607 (1873).

115. See *supra* text accompanying notes 81-4.

116. 1 AMERICAN LAW OF MINING, *supra* note 6, at § 22.03[1].

117. Ch. 270, 35 Stat. 844 (1910) (codified in 30 U.S.C. § 81 (1982)).

118. 1 AMERICAN LAW OF MINING, *supra* note 6, at § 22.03[1], n. 3.

119. Act of June 22, 1910, ch. 318, § 1, 36 Stat. 583, 30 U.S.C. §§ 83-85 (1982).

120. 30 U.S.C. § 85 (1982).

121. 43 U.S.C. § 299 (1982).

reserved minerals. Meanwhile, the belated development of a policy for reserving the public coal was echoed by an even tardier recognition of the value of the public petroleum and gas resources.

C. *Petroleum prior to 1920*

Considering the magnitude of the United States petroleum industry today, it is easy to forget its inauspicious beginnings. The first oil marketed in the country came from oil springs in New York and Pennsylvania, where it was gathered by laying blankets on the surface of the water, then wringing out the absorbed oil.¹²² At the beginning of the nineteenth century, oil was used chiefly as a lubricant and for medicinal purposes. The extent of the demand is illustrated by the following excerpt:

Mr. Cary, one of the first settlers on Oil Creek, possessing perhaps a little more enterprise than his neighbors, would collect or purchase a cargo of oil and proceed to Pittsburgh, and exchange it for commodities needed in his home. This cargo consisted of two five-gallon kegs that were slung on each side of a horse, and thus conveyed by land a distance of seventy or eighty miles . . . Sometimes the market in Pittsburgh became very dull, for a flatboatman would occasionally introduce a barrel or two at once. At other times the demand fell off so that the purchase of a barrel was hazardous.¹²³

By the middle of the nineteenth century, however, the decline of oil production from whaling, together with the increasing industrialization of the country, began to create a new demand for lubricants and illuminants. In Europe, the production of oil from coal had created new technologies for the refinement and distillation of hydrocarbons.¹²⁴ And meanwhile, a relatively sophisticated drilling industry had evolved, through searches for subsurface sources of brine for salt production.¹²⁵ Thus, when the famous Drake well was drilled in Titusville, Pennsylvania in 1859, it instantaneously created a booming industry.

Until the early 1880's, almost the entire oil production of the United States came from private lands in Pennsylvania, New York and Ohio.¹²⁶ When oil was discovered on public lands in California in 1865, no regulations were in place to govern its disposition.

Early oil prospectors took advantage of the loose language of the Placer Act of 1870 and of the Land Commissioners' liberal interpretation

122. J. ISE, *THE UNITED STATES OIL POLICY* 6 (1972).

123. PA. GEOL. SURVEY, ANN. REPT. PT. II, 590 (1886), *quoted in* J. ISE, *supra* note 122, at 7.

124. J. ISE, *supra* note 122, at 8-9.

125. J. BRANTLY, *HISTORY OF OIL WELL DRILLING* (1971).

126. J. ISE, *supra* note 122, at 528-529.

of "all forms of deposits" to claim public oil lands under the provisions of that law. A series of Land Office decisions, beginning in 1875, endorsed this practice, and the first oil lands were patented in California in 1880.¹²⁷

Oil lands continued to be located under the Placer Law with the Interior Department's blessing, until 1896, when Interior Secretary Hoke Smith ruled that petroleum "did not fall within the contemplation of the mineral laws."¹²⁸ The result of this decision was intense pressure for Congress to respond with a new law, and the Oil Placer Act of 1897¹²⁹ followed almost immediately. This Act specifically allowed location and patenting of hydrocarbons under the Placer Act. As John Ise laments, in *The United States Oil Policy*:

It was clear that Congress did not recognize the evils of the Placer Law in its application to oil lands The law was not adapted to the exploitation of oil and gas for several reasons: in the first place, it gave prospectors no definite rights until discovery; in the second place, it required the performance of assessment work regardless of the need for oil; in the third place, it provided for the disposition of tracts too small for efficient operations, and so made it necessary for the oil operators to use dummy entrymen to get large enough tracts.¹³⁰

Since the provisions of the Placer Act required locations in 20 acre claims, it was almost impossible for a prospector to protect his efforts during the often arduous process of making a legitimate discovery. And once a discovery was made, the small holdings prevented appropriate well spacing for efficient oil recovery. In order to secure a large enough block of ground to provide for secure and economical oil exploitation, illegal entries were almost mandatory. It was estimated in 1914 that more than 90 percent of the placer locators in California were "dummies."¹³¹

As hundreds of thousands of acres of oil lands fell into private hands under the Placer Act¹³² and railroad grants, the conservation movement initiated by President Roosevelt began to focus on the disappearing public oil reserve. Noting the rate at which oil lands in California were being patented, the Director of the U.S. Geological Survey projected that it would "be impossible for the people of the United States to continue ownership of oil lands for more than a few months. After that, the

127. *Id.* at 296-297.

128. *Id.* at 296.

129. 29 Stat. 526, ch. 216.

130. J. ISE, *supra* note 122, at 296.

131. *Id.* at 303.

132. Most of these lands were in California and Wyoming, but by one estimate, at least 5 million acres of land in New Mexico alone were located under the Placer Act. *Id.* at 306.

government will be obligated to repurchase the very oil that it has practically given away."¹³³ In 1909, President Taft withdrew 3 million acres of oil lands in California and Wyoming from all forms of entry. It should be noted that like the Coal Lands Act of 1910,¹³⁴ the 1909 withdrawal of oil lands was not motivated by an effort to prevent extraction of mineral resources, but to assure their extraction for "public benefit," in this case, the Navy.¹³⁵

Despite President Taft's withdrawal order, most operators continued exploiting the oil fields as though it had never been issued. Many claimed such executive withdrawals were constitutionally invalid.¹³⁶ Notwithstanding the efforts of the western oil lobby, Congress confirmed the President's authority to withdraw public lands, enacting the Pickett Act of 1910.¹³⁷ The Pickett Act, however, stipulated that subsequently withdrawn lands would not be closed to hardrock entry under the 1872 Mining Law.

In the confusion resulting from the coal and oil withdrawals, Congress began to grapple with the issue of creating a system for the "legal" exploitation of the reserved public minerals. Although discussions were sidetracked by the First World War, dozens of bills proposing some form of mineral policy legislation were debated between 1910 and 1920.¹³⁸ Conservationists, alarmed by the "depredations" of the private sector, favored federally operated mining programs, while mineral industry spokesmen favored a return to the old policies, or sale of the public lands to the private sector or to the States. Finally, walking the tightrope between the conservationists and the western oilmen, Congress enacted the Mineral Leasing Act of 1920.¹³⁹

The Mineral Leasing Act applies to coal, oil, phosphate, sodium, oil shale and gas. It makes leasing the exclusive means of disposing of oil and coal on unoccupied public domain lands and occupied lands where these minerals were reserved to the United States. In contrast to the short-lived federal leasing program of a century earlier, the Mineral Leasing Act survives (although much modified from its original form), and together

133. *United States v. Midwest Oil*, 236 U.S. 459, 466-67 (1915) (quoting a 1909 report from the Survey director to the Secretary of the Interior).

134. Act of June 22, 1910, ch. 318, § 1, 36 Stat. 583 (1910), *as extended by* Act of April 30, 1912, ch. 99, 37 Stat. 105 (1912) *and amended by* Act of June 16, 1955, Pub. L. No. 76, 69 Stat. 138, 30 U.S.C. §§ 83-85 (1982).

135. *Midwest Oil*, 326 U.S. at 468.

136. *See generally Midwest Oil*.

137. Act of June 25, 1910, ch. 421, § 2, 36 Stat. 847 (1912) (repealed 1976).

138. For a comprehensive and highly readable account of the debates leading to the passage of the 1920 Mineral Leasing Law, see J. Ise, *supra* note 122, at ch. XXII-XXIV.

139. Mineral Leasing Act, 1920, ch. 85, 41 Stat. 437 (1920) (codified and amended in 30 U.S.C. §§ 181-287 (1982)).

with the 1872 Mining Law, forms the foundation of federal mineral management policy today.

D. 1920 to the Present

The 1872 Mining Law is still the basic law governing disposition of locatable minerals. Subsequent refinements to the law have excluded its application to various states¹⁴⁰ and legislation dealing with whether a particular mineral is or is not covered by the Act. The most important of these latter modifications (other than the Leasing Act) is the Materials Disposal Act of 1947,¹⁴¹ as amended by the Common Varieties Act of 1955.¹⁴² This legislation initiated a sales program for materials such as sand, stone and gravel. These modifications have not affected the basic policy of the 1872 Mining Law; public lands, including those later incorporated into National Forests, remain open for entry under the Act.

The conceptual framework of the Mineral Leasing Act remains intact, although it has been subject to many modifications, amendments and revisions since 1920. The provisions of the Act were reproduced in the Outer Continental Shelf Lands Act of 1953¹⁴³ and the Geothermal Steam Act of 1970.¹⁴⁴ Coal leasing has been impacted by the Coal Leasing Amendments of 1975,¹⁴⁵ the Surface Mining Control and Reclamation Act of 1977,¹⁴⁶ and the Federal Coal Management Program of 1985.¹⁴⁷ These enactments retain many of the provisions of the 1920 Act, but modify leasing procedures, impose reclamation requirements and restrict lands available for leasing.

Mineral management policy has felt the effects of increased public consciousness over environmental concerns, but for the most part, the disposition systems set out by the 1872 Mining Law and the Mineral Leasing Act have been only indirectly impacted. The National Environmental Policy Act of 1969¹⁴⁸ has been used successfully to forestall some mineral leasing programs until careful consideration of their environmental impacts.¹⁴⁹ The Surface Mining Control and Reclamation Act of

140. Various statutes enacted between 1873 and 1900 excluded Michigan, Wisconsin, Minnesota, Missouri and Kansas from the operation of the mining laws, but included Alaska. *See* T. MALEY, *MINING LAW FROM LOCATION TO PATENT* (1985).

141. 30 U.S.C. §§ 601-02 (1982).

142. 30 U.S.C. § 611 (1982).

143. 43 U.S.C. §§ 1331-43 (1982).

144. 30 U.S.C. §§ 1005-25 (1982).

145. 30 U.S.C. §§ 201 *et seq.* (1982).

146. 30 U.S.C. §§ 1201-1328 (1982).

147. 43 C.F.R. Group 3400.

148. 42 U.S.C. §§ 4321 *et seq.* (1982).

149. *See, e.g.,* *National Resources Defense Council v. Hughes*, 437 F. Supp. 981 (D.D.C. 1977), *but contrast with* *Kleppe v. Sierra Club*, 427 U.S. 390 (1976).

1977,¹⁵⁰ the Wilderness Act of 1964,¹⁵¹ and other pieces of environmental legislation provide mechanisms for withdrawing certain public lands from the disposition laws. The Federal Land Policy and Management Act of 1976 (FLPMA),¹⁵² has had the most notable direct impact on the 1872 law, by requiring all mining claimants to file records of their claims and annual assessment work with the Bureau of Land Management,¹⁵³ and by authorizing the BLM to develop regulations controlling the surface disturbance resulting from mining activities. Although miners are now required to comply with federal and state reclamation regulations on both National Forest and BLM lands, the courts have consistently taken the position that the 1872 Law protects miners' rights to possess and enjoy their claims, and that such regulations may not be construed to prohibit those rights.¹⁵⁴

VI. DISCUSSION

Pressure for fundamental reform of the mining laws has been almost continuous since their enactment.¹⁵⁵ There is little doubt that a reevaluation of the Nation's mineral management policies is overdue.¹⁵⁶ Any such reevaluation must take into account the conflicts created by the complex origins and haphazard direction of the mineral disposition systems.¹⁵⁷ The source of some of these conflicts are reviewed and summarized below:

1) Conflicts within the mineral industry: Many large mineral extraction companies contend that the laws do not provide adequate mechanisms to protect their investments during the capital-intensive exploration and development phase of mineral property development.¹⁵⁸ The small claim size mandated by the 1872 Law, has frequently resulted in fragmented ownership of individual mineral deposits. This problem is compounded where claims have passed to successive heirs of the original locators. Title disputes and diverse interests among claimants often prevent economically feasible extraction of an otherwise viable deposit. Advocates of the 1872 Law, including vociferous small miners and prospectors, argue that it

150. 30 U.S.C. §§ 1201-1328 (1982).

151. 16 U.S.C. § 1133(d)(3) (1982).

152. 43 U.S.C. §§ 1761-65 (1982).

153. Prior to the enactment of FLPMA, recordation of claims was made only with the clerk of the county in which the claims were located.

154. See, e.g., *Skaw v. United States*, 740 F.2d 932 (1984), and *California Coastal Commission v. Granite Rock Co.*, 107 S.Ct. 1419 (1987).

155. J. LESHY, *THE MINING LAW* 4-5 (1987).

156. *Id.* at 5, 89.

157. For another perspective of current conflicts in minerals management policies, W. Shanahan & A. Joscelyn, *Philosophies in Collision: A Perspective of FLPMA*, 9 PUB. LAND L. REV. 59 (1988).

158. For a discussion of this aspect of the 1872 Mining Law, J. LESHY, *supra* note 155, at 98-107.

provides valuable incentives for exploration, and is after all, a "last bastion of free enterprise."¹⁵⁹

2) Conflicts between the Disposition Systems: The Mining Law contrasts with the subsequently enacted Leasing Act in several respects in addition to the procedural differences. Under the 1872 Mining Law, lands located for valuable minerals are subject to patent, and thus provide a vehicle by which the entire fee interest can pass into private hands. Under the Leasing Act, only the mineral interest, once actually severed from the land, passes into private ownership, subject to the royalty payments imposed by the Act. The Mining Law is still regarded as imparting absolute rights to public minerals, whereas the Leasing Act allows the Secretary of the Interior some discretion as to the lands to be leased and as to the qualifications of applicants.¹⁶⁰

3) Continued Uncertainties as to the Application of the Laws: The ambiguity of "mineral" definitions the various statutes has resulted in continued disputes and litigation. One of the best known examples is the case *Watt v. Western Nuclear*,¹⁶¹ in which a question arose over the status of gravel under the SRHA. The Court held that gravel was a "mineral" reserved to the United States under the Act, despite evidence that Congress was primarily concerned with coal reservation when it enacted the statute.

4) Conflicts on Severed Estates: The SRHA, railroad grants, Coal Lands Acts, and various other provisions created a separation of the mineral estate from the surface estate, while the provisions of the Mining Law and Leasing Act created temporary, if not permanent, conflicts between surface and mineral owners. No coherent policy has been implemented to resolve these conflicts in any predictable way, and statutory and common law resolutions are mainly developed at the state level.¹⁶²

5) Conflicts between State and Federal Management: Concerned over the environmental impacts of mineral exploitation on public lands within their boundaries, states began implementing environmental controls over these operations long before the federal government mandated careful reclamation planning. Jurisdictional disputes were inevitable, and have yet to be fully resolved.¹⁶³

6) Conflicts on non-severed public lands: The conflict between

159. G. COGGINS AND C. WILKINSON, *FEDERAL PUBLIC LAND AND RESOURCES LAW* 578 (1987).

160. 1 *AMERICAN LAW OF MINING*, *supra* note 6, at § 4.15.

161. 462 U.S. 36 (1983).

162. *See, e.g., Gulf Oil v. Wyoming Oil and Gas Conservation Commission*, 693 P.2d 227 (Wyo. 1985).

163. *See, e.g., California Coastal Commission v. Granite Rock Co.*, 107 S.Ct. 1419 (1987).

conservationists and the mineral industry continues. The Nation continues to rely almost exclusively on the private sector for the development of the public mineral resource, but in response to environmental concerns, imposes unpredictable controls over these private operations.¹⁶⁴ During the last few decades, mining technology has advanced to the point that many low grade metallic deposits on public lands which formerly had little economic potential are now being exploited as economic open pit and strip mines. Offshore oil resources have been thrown open to leasing, with little thought to the potential impact on the ocean resource. These developments have had the effect of escalating conflicts between mineral interests and other users of the public lands. Environmental advocates are frequent critics of the location system, particularly its guarantee of a "right to mine" on public lands.¹⁶⁵ Critics also argue that the law does not provide a return to the government, is not sufficiently subject to environmental regulation, encourages fraud, and fails to encourage responsible development.¹⁶⁶

VII. CONCLUSION

The economic and demographic tugs and pulls which have shaped United States mineral policy for the last two hundred years are with us still. Adding to the difficulty of attaining a consistent, coherent and predictable policy are the now well-ingrained traditions of mineral exploitation, which compete today with heightened public environmental consciousness.

The contradictory mandate facing public agents charged with managing the federal mineral resource is exemplified in the Federal Land Policy and Management Act of 1976 (FLPMA),¹⁶⁷ which requires management of public lands to protect the quality of the environment and where appropriate, to preserve the public lands in their natural condition. At the same time FLPMA directs that "public lands be managed in a manner which recognizes the Nation's need for domestic sources of minerals . . . including implementation of the Mining and Minerals Policy Act of 1970 . . ." and endorses the 1872 Mining Law. FLPMA provides little guidance for achieving this delicate balance.

Policy makers charged with charting new directions for the Nation's mineral management programs will find the task less perplexing if they can begin from a foundation of knowledge of the intricate historical development of Nation's mineral policy. Perhaps this historical perspective will better enable lawmakers to transcend our national ambivalence toward

164. See, e.g., *Kerr-McGee Corp. v. Hodel*, 630 F.Supp. 621 (D.D.C. 1986).

165. J. LESHY, *supra* note 155, at 4-5.

166. G. COGGINS AND C. WILKINSON, *supra* note 159, at 577.

167. 43 U.S.C. 1701 (8) and (12) (1982).

mineral development and ultimately forge a coherent and predictable policy for the future of the public mineral resource.