Appendix C
Mineral Laws of the United States

The five legal systems discussed below illustrate the changes in national minerals policy over the past century. One major shift was from a policy of free disposal, intended to foster development of the frontier, to a leasing policy intended to provide a return to the public and to foster conservation by controlling the rate of development. A second change resulted in a balancing of mineral values against other values for the land in question. Thus, the Mining Law of 1872 requires only that the land be valuable for minerals, but the leasing laws allow a lease only after a prospector shows that the land is "chiefly valuable' for the mineral to be developed. The leasing laws, and, to a greater extent, the Outer Continental Shelf Lands Act also require consideration of economic and environmental impacts, State and local concerns, and the relative value of mining and other existing or potential uses of the area. A third change was a recognition that different types of minerals could best be developed under different management systems. The hardrock minerals remain under a system that rewards the prospector's risk-taking, the fuel resources are leased under a system that takes national needs and priorities into account, and common construction materials are made readily available under a simplified sales procedure. When creating a legal regime for the mineral resources of the Exclusive Economic Zone (EEZ), the United States can benefit from long experience under several diverse systems.

The experimental nature of much of today's exploration and recovery equipment and the gaps in our knowledge of the physical and biological resources of the EEZ indicate that it may take years of research and exploration before an informed decision to proceed with commercial exploitation can be made. A legal system must reasonably accommodate the risk being taken by the mineral industry under these circumstances. At the same time, the system must also accommodate important public interests and ensure a fair market value for the public resources. The law must also consider the national and State interests in ocean development and define the respective Federal and State roles.

Onshore Mineral Management

Federal onshore minerals are managed under three principal legal systems: the Mining Law of 1872, the Mineral Leasing Act of 1920 and related leasing laws, and the Surface Resources Act of 1955 (table C-1). The laws do not apply uniformly to all Federal lands, and a mineral may be subject to different rules in different places, including some cases where there appears to be no applicable law at all.

The Mining Law of 1872

The Mining Law of 1872 is applicable to "hardrock" minerals in the public domain in most States. Like other laws of its era, it was intended to expand development of the Western States by making Federal lands available to persons who occupy and develop them. It adopted a system that was developed under State law and local custom between the start of the California gold rush in 1849 and passage of the first mining law in 1866.

All valuable mineral deposits and the lands in which they are found are free and open to exploration, occupation, and purchase. State mining laws and customs of the mining districts are recognized to the extent that they do not conflict with Federal law. The Mining Law outlines the requirements for locating, marking, and evaluating claims; sets a $100 minimum for annual expenditures on labor or improvements; and provides for transfer of ownership to the miner when these conditions are met. Depending on the type of deposit, payment of $2.50 or $5.00 per acre is required. The Government receives no royalties or other payments for the minerals.

In its original form, the Mining Law allowed for the greatest individual initiative and the least Government regulation. Over the years, its operation has become more restricted. First, the Government has withdrawn extensive areas from the operation of the Mining Law when they were needed for other purposes (military reservations, national parks, dam and reservoir sites, etc.). Second, certain minerals were excluded from the law and made available under other programs. Third, mining operations are subject to environmental and reclamation requirements and varying degrees of review and approval by the surface management agency. Prior to issuance of a patent, a claimant's use of a mining claim is limited to that required for mineral exploration, development, and production. Nonconflicting surface uses by others may continue.

Mineral Leasing Acts

Concern over resource depletion and monopolization in the early years of the 20th century lead to withdrawals of coal, oil, phosphate, and other fuel and nonmetallic minerals from entry under the Mining Law. In 1920 Congress passed the Mineral Leasing Act, making these

Table C-1.-Comparison of Federal Mineral Statutes

	Entry and patent system	Mineral leasing systems	Materials sale system	Continental shelf leasing system	Deep seabed system
Law and Applicability	General Mining Law of 1872 (30 U.S.C. 22 *et seq.*): hard rock minerals in the public domain in all States except Alabama, Kansas, Michigan, Minnesota, Missouri, Oklahoma (except ceded Indian lands), and Wisconsin. Withdrawals and reservations make specified areas unavailable *or* conditionally available.	Mineral Leasing Act of 1920 (*30* U.S.C. 181 et seq.): coal, oil, oil shale, gas, gilsonite, phosphate, potash, and sodium in the public domain and disposed lands in which mineral rights were retained. Mineral Leasing Act for Acquired Land (30 U.S.C. 351 *et* seq.): above minerals and sulphur in acquired lands. Reorganization Plan No. 3 of 1946 (60 Stat. 1097): all other minerals in acquired national forests and grasslands.	Materials Act of 1947 (30 U.S.C. 601-604): "common varieties" of sand, stone, gravel, cinders, and clay on public lands. Surface Resources Act of 1955(30U.S.C.611-615): excludes above minerals from the scope of the General Mining Law.	Outer Continental Shelf Lands Act (43 U.S.C. 1331-1356): all minerals in the submerged lands of the outer continental shelf beyond the territorial waters of the 50 States.	Deep Seabed Hard Minerals Resources Act (30 U.S.C. 1401-1473): manganese nodules on the deep seabed outside the continental shelf or resource jurisdiction of any nation.
Initiative	Miner	Miner or the Department of the Interior	Miner	Miner or the Department of the Interior, pursuant to a 5-year leasing program.	Miner
Prospecting	"Free and Open"	By permit or license from the Department of the Interior. Prospecting permits not issued for oil or gas.	Not applicable	Lessee's exploration plan, subject to approval by the Department of the Interior.	By license from the National Oceanic and Atmospheric Administration.
Establishing Tenure	Discovery of a valuable deposit within limits of claim. Marking and recording claim as required by Federal and State law.	Entering into a lease. Noncompetitive lease to first qualified applicant where mineral potential is unknown. Preference-right lease to prospector who discovers a valuable deposit. Competitive bid for leases in known mineral areas.	Disposal by sale. Use of a site may be communal or nonexclusive. Miner does not acquire a property right.	Entering into a lease granted after competitive bidding.	Obtaining a permit upon demonstrating financial and technological capability.
Maintaining Tenure	$100 worth of labor or improvements annually on each claim until a patent is issued.	Compliance with terms of lease, including payments, diligent exploration and development, safety, resource conservation, and environmental protection.	Not applicable	Compliance with terms of lease, including payment, rate of production, safety, protection of fish, wildlife, and environment.	Diligent development, minimum expenditures, maintaining recovery for the duration of the permit.
Area Limits	*Lode claims:* 1500 feet x 600 feet. *Placer claims: 20* acres or up to 160 acres for an association claim. No limit on the number of claims that a person may locate.	Coal: size of individual lease determined by Secretary of the Interior, 46,080 acres in any one State, 100,000 acres nationwide. Sodium: 2,560 acres in any one lease, 5,120 acres in any one State, may be raised to 15,360 acres if necessary for economic mining. *Phosphate: 20,480* acres nationwide. Oil *or gas:* 640 acres per lease unit, 246,080 acres in any one State except Alaska where the limit is 300,000 acres in each of two leasing districts. Oil *shale or gilsonite*: *5,120* acres. *Sulphur*: in Louisiana and New Mexico, 640 acres per lease. Potash: 2,560 acres per lease.	Not applicable	Oil *or* gas: 5,760 acres unless a larger area is necessary to comprise a reasonable economic production unit. *Sulphur and other minerals:* size determined by the Secretary of the Interior.	Size and location chosen by miner. Must comprise a logical mining unit.

Table C-1.—Comparison of Federal Mineral Statutes—Continued

	Entry and patent system	Mineral leasing systems	Materials sale system	Continental shelf leasing system	Deep seabed system
Term	An unpatented mining claim may be held indefinitely.	*Coal: 20* years and as long thereafter as coal is produced annually in commercial quantities. *Phosphate and Potash: 20* years and for as long thereafter as lessee complies with terms and conditions of lease. Oil *and gas: 5* years for competitive and 10 years for noncompetitive leases and for as long thereafter as there is production in paying quantities. Oil *shale:* indeterminate period. *Sodium: 20* years with a preference right to renew for additional 10 year periods.	Not applicable	*Oil and gas: 5* years (10 years if Secretary finds that a longer period is necessary to encourage development) and for as long thereafter as oil or gas is produced in paying quantities. *Sulphur:* 10 years and as long thereafter as sulphur is produced in paying quantities. *Other minerals:* prescribed by Secretary.	20 years and for as long thereafter as minerals are recovered annually in commercial quantities.
Assignability	An unpatented mining claim may be leased, sold, mortgaged, or inherited.	All or part of a lease may be assigned with Department of Interior permission.	Not applicable	A lease may be assigned with Department of Interior permission.	A permit or license may be transferred with NOAA approval.
Payment	$2.50 or $5.00 per acre patent fee.	Minimum rents and royalties established by statute, actual rates set by competitive bid. Coal: rent set by regulation (currently $3.00 per acre), minimum royalty of 12.5 percent for surface mines, may be less for underground mines, cash bonus. *Phosphate:* minimum rent $.25 per acre in the first year, $.50 in the second year, and $1.00 per acre in the third and subsequent years, credited against a minimum royalty of 5 percent of gross value of output. Oil *and gas:* minimum annual rent $.50 per acre, rising to $1.00 per acre after oil or gas in paying quantities are discovered, minimum royalty of 12.5 percent, cash bonus. Oil *shale:* minimum annual rent of $.50 per acre, credited against a royalty set by the Secretary. Rent and royalty may be waived for the first 5 years to encourage production. *Sodium and potash:* minimum rent $.25 per acre in the first year, $.50 in the second year and $1.00 in the third and subsequent years credited against a minimum royalty of 2 percent of gross value of production.	Fair market value of material taken. No charge to governmental and nonprofit entities.	*Oil and gas:* competitive bidding in which the royalty rate, cash bonus, work commitment, or profit share or any combination of them maybe the biddable factor. Minimum royalty of 12.5 percent. *Sulphur:* competitive bid on cash bonus, minimum royalty of 5 percent of gross value of production, rent prescribed by Secretary. *Other minerals:* competitive bid on cash bonus; royalty and rent prescribed by Secretary.	Administrative fee to cover the cost of reviewing and processing applications. Tax of 3.75 percent on imputed value of resources removed pursuant to permit.

Table C-1.-Comparison of Federal Mineral Statutes—Continued

	Entry and patent system	Mineral leasing systems	Materials sale system	Continental shelf leasing system	deep seabed system
Allocation of Income	Not specified	*On public domain: 50* percent to State, 40 percent to reclamation fund, 10 percent to U.S. Treasury. *In Alaska: 90* percent to State. *On acquired land:* in the same manner as other income from the affected lands (varies by management agency).	In the same manner as other income from the affected lands (varies by management agency).	Credited to miscellaneous receipts of the U.S. Treasury.	Fee credited to miscellaneous receipts of the U.S. Treasury. Tax credited to Deep Seabed Revenue Sharing Trust Fund.
Conflicting Uses	Exclusive possession of the surface limited to use for mining purposes. Non-conflicting surface uses by others may continue.	Coal leases must be compatible with a comprehensive land use plan considering the effects on the surrounding area or community. All leases on acquired land require the consent of the surface management agency and are subject to conditions assuring that the primary purpose for which the lands were acquired is maintained. No leasing in national parks or monuments or in incorporated municipalities.	Consent of surface management agency required. Excludes land in national parks and monuments and Indian lands.	Leasing program must consider economic, social, and environmental values and potential impacts on fisheries, navigation, and other resources of the outer continental shelf.	Permits and licenses are exclusive as against any U.S. or reciprocating State citizen. Activities may not unreasonably interfere with freedom of the seas, conflict with any international obligation of the U. S., lead to a breach of the peace, or pose a safety hazard.
Environmental Protection	Not specified	Coal leases may not be granted without consideration of environmental impacts. Otherwise, not specified.	Disposal of materials can't be detrimental to the public interest.	The leasing program must consider the environmental value of renewable and nonrenewable resources and the environmental impact of exploration and development. The timing and location of leasing must balance the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impacts on the coastal zone. Detailed environmental studies required prior to leasing. Monitoring continues during the term of the lease to identify and measure changes in environmental quality.	NOAA must prepare an environmental impact statement when issuing a permit or license. Stable reference areas are to be established by international agreement. All permits and licenses are conditioned on protection of the environment and conservation of resources.

Table C-1.—Comparison of Federal Mineral Statutes—Continued

	Entry and patent system	Mineral leasing systems	Materials sale system	Continental shelf leasing system	Deep seabed system
State and Public Involvement	Activities are subject to State and local laws not inconsistent with the laws of the United States.	Statute may not be construed as affecting the right of State or local governments to regulate or tax lessees of the United States. Land use plans for coal leasing are to be prepared in consultation with State agencies and the public. Proposed coal leases in national forests must be submitted to the governor of the affected State for review. If the governor objects, leasing is delayed for six months while the Secretary reconsiders the lease on the basis of the governor's comments.	Disposals from land withdrawn in aid of a State, municipality, or public agency can be made only with the consent of the State, municipality, or agency.	State civil and criminal laws not inconsistent with Federal law apply to those areas of the continental shelf which would be within the State if its boundaries extended seaward. The Secretary shall enforce safety, environmental, and conservation laws in cooperation with the States. State comments are to be invited and considered when gas and oil leasing programs are prepared and when proposed lease sales and development and production plans are being reviewed. State recommendations are to be accepted if the Secretary determines that they provide a reasonable balance between the national interest and the well-being of State citizens. Activities affecting land or water use in the coastal zone of a State having a coastal zone management plan require State concurrence.	Public notice and comment (including hearings) are required when permits and licenses are issued, transferred, or modified.

SOURCE: Office of Technology Assessment, 1987.

deposits available only through prospecting permits and leases. This move was a major departure from earlier policy, replacing free entry and disposal with a discretionary system. As initially adopted, prospecting permits could be issued to the first qualified applicant wishing to explore lands whose mineral potential was unknown. Discovery of a valuable deposit entitled the prospector to a preference-right lease to develop and produce the mineral if the land was found to be chiefly valuable for that purpose. Known mineral lands could be leased by advertisement, competitive bid, or other methods adopted by the Secretary of the Interior.

Prospecting permits are no longer available for oil, gas, or coal. Lands known to contain these substances may be leased only by competitive bid. Non-competitive leases may be issued to the first qualified applicant for lands outside the known geologic structure of a producing oil or gas field. The Secretary has broad discretion to impose conditions for diligence, safety, environmental protection, rents and royalties, and other factors needed to protect the interest of the United States and the public welfare.

Like the Mining Law of 1872, the Mineral Leasing Act of 1920 is applicable only to the public domain (for the most part, land which has been retained in Federal ownership since its original acquisition as part of the territory of the United States). The Mineral Leasing Act for Acquired Land was enacted in 1947 and made the fuel, fertilizer, and chemical minerals in acquired land available under the provisions of the Leasing Act of 1920. Permits and leases on acquired land (mostly national forests in the Eastern States) can be issued only with the consent of the surface management agency and must be consistent with the primary purpose for which the land was acquired. Hardrock minerals in acquired national forests and grasslands are available under similar conditions.

Materials Sales System

The Materials Act of 1947 made "common varieties' of sand, stone, gravel, cinders, and clay in Federal lands available for sale at fair market value or by competitive bidding. The Surface Resources Act of 1955 removed these materials from entry and patent under the General Mining Law. The miner does not acquire a property right to the source of these materials, and the use of a site may be communal or nonexclusive. Governmental and nonprofit entities are not charged for material taken for public or nonprofit purposes.

Offshore Mineral Management

Outer Continental Shelf Lands Act

The Outer Continental Shelf Lands Act (OCSLA) was adopted in 1953 and provides for the leasing of mineral resources in submerged lands that are beyond State waters and subject to U.S. jurisdiction and control (table C-1). The law's primary focus is on oil, gas, and sulphur but Section 8(k) authorizes the Secretary of the Interior to lease other minerals also occurring in the outer continental shelf.

Oil and gas leases are granted to the highest bidder pursuant to a 5-year leasing program. The program is based on a determination of national energy needs and must also consider the effects of leasing on other resources, regional development and energy needs, industry interest in particular areas, and environmental sensitivity and marine productivity of different areas of the continental shelf. The size, timing, and location of proposed lease sales and lessees' proposed development and production plans are subject to review by affected State and local governments. Recommendations from State and local governments must be accepted if the Secretary determines that they provide for a reasonable balance between the national interest and the well-being of local citizens. A flexible bidding system is provided in which the royalty rate, cash bonus, work commitment, profit share, or any combination of them may be the biddable factor.

A comprehensive program is not required for minerals other than oil and gas, and bidding for leases is limited to the highest cash bonus. It is unclear to what extent the law's coordination and environmental protection provisions apply to these other minerals. Leases under OCSLA are not explicitly limited to U.S. citizens by the statute, but such a limitation has been imposed by regulation. See 30 CFR 256.35(b).

Deep Seabed Hard Minerals Resources Act

The fifth legal system was adopted in 1980 as an interim measure pending the entry into force of a law of the sea treaty binding on the United States. The Deep Seabed Hard Minerals Resources Act (DSHMRA) applies to the exploration for and commercial recovery of manganese nodules in the seabed beyond the continental shelf or resource jurisdiction of any nation. In contrast with the other laws, where the United States asserts jurisdiction based on territorial control, DSHMRA's

jurisdiction is based on the power of the United States to regulate the activities of its citizens outside its territory.

Licenses for exploration and permits for commercial recovery are granted by the Administrator of the National Oceanic and Atmospheric Administration for areas whose size and location are chosen by the applicant. The applicant must prove financial and technological capability to carry out the proposed work, and the designated area must comprise a "logical mining unit. The Administrator is required to prepare an environmental impact statement prior to granting a license or permit. To help gauge the effects of mining on the marine environment, stable reference areas are to be established by international agreement. Permits and licenses are conditioned on protection of environmental quality and conservation of the mineral resource.

Because the United States does not claim ownership of the seabed or minerals involved, DSHMRA does not require rent or royalties. Only an administrative fee, sufficient to cover the cost of reviewing applications, is charged. In addition, a 3.75 percent tax on the value of the resource recovered is levied. Proceeds of the tax are assigned to a trust fund to be used if U.S. contributions are required once an international seabed treaty is in effect.

All commercial recovery must be by vessels documented under U.S. law. At least one U.S. vessel must be used to transport minerals from each mining site. Land processing of recovered minerals must be within the United States unless this requirement would make the operation uneconomical. Minerals processed elsewhere must be returned to the United States for domestic use if the national interest so requires.

Before the United States ratifies an international seabed treaty, DSHMRA calls for reciprocal agreements with nations that adopt compatible seabed regulations. The agreements would require mutual recognition of the rights granted under any license or permit issued by a reciprocating state. The United States has signed agreements with France, Italy, Japan, the United Kingdom, and West Germany.