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# MINERAL RIGHTS *and* MINING LAWS

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**By KENNETH K. LAU**  
*Research Associate*

*assisted by*  
**HENRY AWANA and**  
**ARTHUR KOMORI**

*Report No. 3 • 1957*

**ROBERT M. KAMINS, Director**

**LEGISLATIVE REFERENCE BUREAU**

**UNIVERSITY OF HAWAII**  
**HONOLULU 14, HAWAII**

HOUSE RESOLUTION NO. 92

REQUESTING THE LEGISLATIVE REFERENCE BUREAU TO MAKE A STUDY OF DEEDS AND OTHER GRANTS MADE BY THE KINGDOM OF HAWAII, THE REPUBLIC OF HAWAII AND THE TERRITORY OF HAWAII IN ORDER TO DETERMINE PAST PRACTICES IN RESERVING RIGHTS OF WAY AND MINERAL RIGHTS IN THE LANDS DISPOSED OF, AND THE PERSONS, OR CLASSES OF PERSONS, IF ANY, ENTITLED TO ENJOY THOSE RIGHTS.

BE IT RESOLVED by the House of Representatives of the Twenty-Eighth Legislature of the Territory of Hawaii that the Legislative Reference Bureau is hereby requested to make a study of deeds and other grants made by the Kingdom of Hawaii, the Republic of Hawaii, and the Territory of Hawaii in order to determine past practices in reserving rights of way and mineral rights in the lands disposed of, and the persons, or classes of persons, if any, entitled to enjoy those rights; and

BE IT FURTHER RESOLVED that the Legislative Reference Bureau is requested to submit a report of its study to the Twenty-Ninth Legislature of the Territory of Hawaii not later than ten days after the convening of the regular session in 1957; and

BE IT FURTHER RESOLVED that a certified copy of this Resolution be sent to the Legislative Reference Bureau, the Bureau of Conveyances, and to the Territorial Archivist.

ADOPTED: April 29, 1955

## SUMMARY

This study was prepared to determine past practices of the Hawaiian Kingdom, Republic and Territory in reserving mineral rights in lands disposed of. A review of the royal patents and land patents issued by the successive governing bodies indicate that past practices of both the Kingdom and Republic of Hawaii were uniform in "excepting and reserving to the Hawaiian Government, all mineral or metallic mines of every description." The earlier land patents of the Territory did not contain any reservation of minerals, but the current practice is to incorporate a comprehensive reservation in favor of the Territory.

Problems of legal interpretation arise when a reservation in general language is applied to a specific situation. The general rule is that in a grant between two private parties all circumstances will be considered to determine the intention of the parties. However, in a grant by a sovereign government, a strict rule of construction is applied and all ambiguities are resolved in favor of the sovereign.

Potential development of a mining industry in Hawaii bring into focus conflicting interests involving many factors, such as damage to forest reserves and watersheds, relative economic benefits from alternative uses of mineral lands, relative property rights in situations where surface rights and mineral rights are held by different owners, the interest of the Territory in developing new industries, and the interest of commercial firms in developing new sources of raw materials.

This study also reports on three areas of state legislation that may be of value in illustrating how other jurisdictions have sought to reconcile such conflicts. These include (1) legislative and regulatory provisions of western and southwestern states governing the leasing of mineral lands, and the laws of several governments in reserving minerals to the state; (2) problems of strip mining and the laws of eastern mining states that regulate strip mining; and (3) the various state severance taxes imposed on the extraction of minerals.

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## INTRODUCTION

House Resolution No. 92 of the regular session of the Twenty-Eighth Legislature called for the determination of past practices of the Kingdom of Hawaii, the Republic of Hawaii and the Territory of Hawaii in reserving rights-of-way and mineral rights in the lands disposed of as indicated by a study of deeds and other grants made by them. The two areas of rights-of-way and mineral rights are separate and distinct, and this report will be confined to the problem of mineral rights. In general, it may be stated that no pattern of past practices has been determined as to reservation of rights-of-way, but that a uniform practice in the reservation of mineral rights was exercised by the Hawaiian Kingdom and Republic.

Since the adoption in 1955 of House Resolution No. 92, widespread interest has been generated by the possibility of developing a mineral industry in the Territory. The exploitation of minerals on a commercial scale has not been practiced and presents a subject of legislative interest on which there is a minimum of background and experience in Hawaii. Therefore, in addition to answering the basic request of the resolution on the reservation of mineral rights, this report presents elements of legislative provisions of a number of states pertaining to various aspects of mining. The situation in Hawaii has many factors peculiar to the islands, so these laws are presented only as illustrative examples.

## *Chapter 1.*

# **Reservation of Mineral Rights in Hawaii**

### *Reservation and Ownership of the Mineral Interest*

The deeds and grants by which the Hawaiian Kingdom, Republic and Territory disposed of governmental lands consist of the royal patents and land patents issued from time to time by these successive governing bodies. Copies of all patents are on file, in numerical order, in the office of the commissioner of public lands of the Territory of Hawaii; to date more than 13,000 patents have been issued. In the preparation of this study there was conducted an extensive sampling and spot-checking of the volumes, or books of grants, in which the patents are filed. The vast majority of the patents are in printed form, with appropriate spaces provided for filling in the names of the grantees, the description of the land, sketch maps of the land granted, and other data.

**UNDER KINGDOM AND REPUBLIC**      The records indicate that the past practices during the Kingdom of Hawaii and the Republic of Hawaii were uniform in reserving mineral rights to the government. Dispositions of lands by the government during those years contain a reservation in the following language appearing after the description of the land being granted:

"excepting and reserving to the Hawaiian government all mineral or metallic mines of every description."

Many of the early grants were in the Hawaiian language. The corresponding reservation in the Hawaiian grants was worded as follows:

"Aka, ma koe i ke aupuni na mine minerala a me na metala a pau."

During the period from September 3, 1846, when the first royal patent was issued,<sup>1</sup> until August 2, 1900, when the

first patent was issued by the Territory of Hawaii,<sup>2</sup> over 4000 patents were issued by the Kingdom of Hawaii and the Republic of Hawaii. It is not practicable to determine with any degree of accuracy the total amount of land granted by these patents to which the reservation of mineral rights applied. One estimate had placed the sale of government lands between 1848 and 1876 to be in the neighborhood of 500,000 acres.<sup>3</sup> Most of the land sales in the earlier years were of moderate area, but a few covered large tracts of land.<sup>4</sup> The estimated total probably comprised a major portion of the total acreage granted prior to 1900.

**UNDER THE TERRITORY** Beginning with the land patents issued by the Territory of Hawaii in 1900, the reservation of minerals was omitted. This omission lasted until 1955, during which period over 8,000 land patents were issued. Most of the land covered by the patents were relatively small parcels.

In 1955, a comprehensive reservation was incorporated in many of the land patents issued by the Territory of Hawaii, and is found in patents presently issued. The reservation usually follows a reservation of water rights and as currently incorporated is phrased in the following language:

RESERVING, ALSO to the Territory of Hawaii in perpetuity, all rights to clay, minerals, mineral substances, oils and natural gases of every sort and description that may be upon the surface or in or under the land above described, together with the right to enter upon said land for purposes of mining, drilling or otherwise capturing, collecting or extracting the same and of transporting such raw or processed materials off said land.

As to past practices, then, the royal patents of the Kingdom of Hawaii and the land patents of the Republic of Hawaii were uniform in reserving "all mineral or metallic mines" to the "Hawaiian Government." Land patents of the Territory of Hawaii did not incorporate reservations of mineral rights until recent years, when comprehensive language was used.

LEGAL AND  
BENEFICIAL  
OWNERSHIP

As indicated, the early reservations were to the "Hawaiian Government. " When Hawaii became a territory of the United States, it ceded and transferred to the United States all public, government or crown lands, and all other public property together with every right and appurtenance thereto. This was accomplished by the Newlands resolution,<sup>5</sup> the pertinent sections of which read as follows:

Whereas the Government of the Republic of Hawaii having, in due form, signified its consent, in the manner provided by its constitution, to cede absolutely and without reserve to the United States of America all rights of sovereignty of whatsoever kind in and over the Hawaiian Islands and their dependencies, and also to cede and transfer to the United States the absolute fee and ownership of all public, Government, or Crown lands, public buildings or edifices, ports, harbors, military equipment, and all other public property of every kind and description belonging to the Government of the Hawaiian Islands, together with every right and appurtenance thereunto appertaining: Therefore,

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That said cession is accepted, ratified, and confirmed, and that the said Hawaiian Islands and their dependencies be, and they are hereby, annexed as a part of the territory of the United States and are subject to the sovereign dominion thereof, and that all and singular the property and rights hereinbefore mentioned are vested in the United States of America.

The existing laws of the United States relative to public lands shall not apply to such lands in the Hawaiian Islands; but the Congress of the United States shall enact special laws for their management and disposition: Provided, That all revenue from or proceeds of the same, except as regards such part thereof as may be used or occupied for the civil, military, or naval purposes of the United States, or may be assigned for the use of the local government, shall be used solely for the benefit of the inhabitants of the Hawaiian Islands for educational and other public purposes.

The Newlands resolution accomplished the cession of the islands to the United States in 1898. The Hawaiian Organic Act establishing the structure of government for the Territory of Hawaii was passed two years later. The United States supreme court<sup>6</sup> has described the effect of the Newlands resolution in the following words:

Though the resolution was passed July 7, the formal transfer was not made until August 12, when, at noon of that day, the American flag was raised over the government house, and the islands ceded with appropriate ceremonies to a representative of the United States. Under the conditions named in this resolution, the Hawaiian Islands remained under the name of the 'Republic of Hawaii' until June 14, 1900, when they were formally incorporated by act of Congress under the name of the 'Territory of Hawaii.' .... (p. 209-11)

\* \* \*

The main objects of the resolution were, 1st, to accept the cession of the islands theretofore made by the Republic of Hawaii, and to annex the same 'as a part of the territory of the United States, and subject to the sovereign dominion thereof;' 2d, to abolish all existing treaties with various nations, and to recognize only treaties between the United States and such foreign nations; 3d, to continue the existing laws and customs regulations, so far as they were not inconsistent with the resolution, or contrary to the Constitution, until Congress should otherwise determine. From the terms of this resolution it is evident that it was intended to be merely temporary and provisional; that no change in the government was contemplated, and that, until further legislation, the Republic of Hawaii continued in existence. Even its name was not changed until 1900, when the 'Territory of Hawaii' was organized. The laws of the United States were not extended over the islands until the organic act was passed on April 30, 1900, when, so careful was Congress not to disturb the existing condition of things any further than was necessary, it was provided, sec. 5, that only 'the laws of the United States which are not locally inapplicable shall have the same force and effect within the said territory as elsewhere in the United States.' (p. 214-15)

The Organic Act, which was enacted by Congress on April 30, 1900, became effective on June 14, 1900. It provides

for a land board and a commissioner of public lands of the Territory of Hawaii. It continues in force the laws of Hawaii relating to public lands until Congress otherwise provides; specifies that proceeds from the sale, lease or other disposal of public land shall be applied to such uses and purposes for the benefit of the inhabitants of the Territory as are consistent with the Newlands resolution; places all lands in the possession, use, and control of Territory under the management of the commissioner of public lands; and empowers the commissioner, with the approval of the governor and land board, to promulgate rules and regulations. Pertinent sections of the Organic Act are set forth in Appendix A.

Although the Organic Act provides that the laws of Hawaii relating to public lands shall continue in force until Congress otherwise provides, the United States supreme court has indicated that where a claimed title to public lands of the United States is involved, the federal courts are not bound to follow Hawaiian decisions. In a case involving the ownership of Palmyra Island, the court said:

We take judicial notice of the laws of Hawaii prior to its annexation as a part of our domestic laws. The rules under which the Hawaiian people lived under the monarchy or republic define, for the sovereign of today, the rights acquired during those periods. While in matters of local law the federal courts defer to the decisions of the territorial courts, we are dealing here with a problem of federal law--the United States seeks to quiet its title to land now claimed by virtue of Hawaiian cession. The federal rights are partly dependent upon the Hawaiian law prior to annexation. Therefore while the Hawaiian law, as it existed before the annexation of the Territory, is controlling on rights in land that are claimed to have had their beginnings then the federal courts construe that law for themselves. The federal courts cannot be foreclosed by determinations of the Hawaiian law by the Hawaiian courts. They will lean heavily upon the Hawaiian decisions where a claimed title to public lands of the United States is involved. The roots of respondents' claim spring from Hawaiian law. As their claim to Palmyra continued after the United States acquired in 1898 whatever rights Hawaii then had, the validity of respondents' claim must be judged, also, in the light of the public land law of the United States.<sup>7</sup>

MINERAL RIGHTS: In summary, it is seen that the mineral rights were reserved to the "Hawaiian Government" in the early grants. The Hawaiian Government SUMMARY ceded to the United States all of its lands and other public property together with every right and appurtenance thereunto appertaining. However, the Newlands resolution and the Organic Act provided that the revenues and proceeds from the disposal of public lands should be used for the benefit of the inhabitants of the Territory of Hawaii for educational and other public purposes; Hawaiian laws relating to public lands were continued in force until changed by Congress; and all lands in the possession, use, and control of the Territory were to be managed by the commissioner of public lands. In response to the question in House Resolution No. 92 as to who are "the persons or classes of persons, if any, entitled to enjoy those rights" it may be said that the legal title is in the United States,<sup>8</sup> the possession, use and control are in the Territory, and the people of the Territory are "the persons, or classes of persons" entitled to the benefits that may flow from those rights.

LANDS UNDER STATEHOOD Beginning with the admission into the union of Ohio as a state in 1803, most states acquired substantial portions of their public lands in the form of "school lands," whereby certain sections of each township were set apart by the Federal Congress and "placed in the hands of the State Legislature for proper care and direction."<sup>9</sup> If Hawaii should attain statehood under the provisions of an Act of Congress based on the bill recently introduced in the current session of the U. S. House of Representatives, the United States would, with certain exceptions, grant to the new state of Hawaii "absolute title to all public lands and other public property in Hawaii title to which is in the United States immediately prior to ... admission."<sup>10</sup>

### *Nature and Interpretation of the Reserved Mineral Interest*

The foregoing discussion sets forth the general findings in response to House Resolution No. 92. In view of the extensive interest generated by the possibility of developing a mining industry in Hawaii, it seems appropriate to mention some of the legal complexities that may arise in relation to

a given parcel of land, the original grant of which contained a mineral reservation. Attempt will not be made to fully answer the questions raised, and their discussion is not to be regarded as the rendition of a legal opinion on the subject which would be quite outside the province of this report.

#### NATURE OF THE INTEREST

What is the nature of the mineral interest, and how is it related to the ownership of the land? In general, it may be stated that the mineral interest can be severed from the ownership of the land and a separate and distinct ownership of it vested in another party. The following exposition of general legal concepts is pertinent:

It has been recognized for many years that a landowner may create a separate legal interest or estate in the oil and gas or other minerals under his land apart from the interest or estate in the land itself. Such separation is called a severance of the mineral estate and may be accomplished either by a direct grant of the mineral interest, which is called a mineral deed, or by a grant of the land with an express reservation or exception of the mineral interest or estate.

The nature and extent of the separate interest or estate that is created by a landowner in the minerals underlying the surface is dependent upon the intent expressed in the particular instrument creating such separate interest or estate and may be an estate for years, for life, or in fee.

The validity of grants and exceptions or reservations which purport to sever the mineral estate from the surface estate is determined by the same rules that are applicable to grants, reservations and exceptions of other interests in real property . . . . That is, a deed purporting to convey the mineral rights under a tract of land or a deed purporting to convey the fee in land and reserve the mineral rights therein must comply with the same formalities of conveyance that would be required in the particular jurisdiction if the land itself were the subject of the grant, reservation or exception.

When a separate estate in minerals is created either by a mineral deed or by a reservation or exception in a deed conveying the fee in the land such estate is a present interest in realty and as such becomes vested at the time of such conveyance, reservation or exception and is an estate

of equal dignity with the surface estate. Nor is such estate subject to termination for non-user or abandonment in Arkansas .... However, in Louisiana, which seems to be the only state so holding, the mineral interest is treated as a mere servitude which by statute is terminated by abandonment or non-user for a certain period of years ....

When by appropriate conveyance or conveyance with a reservation or exception, the mineral estate is separated from the surface estate, separate and distinct estates are created which are held under separate and distinct titles. Unless limited by the instrument creating it or by the interest held by the grantor the mineral estate thereby created is a freehold estate of inheritance, subject to the laws relating to other freehold estates in realty.

When the surface and the mineral estates in land are severed they remain entirely independent and possession of one does not constitute possession of the other .... Title to the mineral estate can not be acquired by adverse possession of the surface estate alone. After such severance the title to the mineral estate may be acquired by adverse possession only by openly, adversely, and continuously operating a mine or drilling thereon for the statutory period .... However, there is at least one case ... which held that if the occupant of the surface claims under a deed which purports to convey title to the entire property, his possession should be characterized by the terms of the instrument under which he holds, and that he should be deemed to have possession of the whole property, including the mineral rights. However, the great weight of authority is to the effect that if subsequent to the severance of the mineral estate from the surface estate a conveyance of the land is made in which no reservations or exceptions of the minerals are set forth, that conveyance will not extinguish the rights of the mineral owner nor vest any of the mineral rights or the possession thereof in the grantee of such conveyance. Nor may such mineral estate, after severance, be forfeited for failure to pay taxes thereon unless taxes have been assessed against it as an estate separate from the surface estate.<sup>11</sup>

WHAT MINERALS ARE RESERVED	What minerals are covered by the reservation and exception in Hawaiian patents of "all mineral or metallic mines of every description"? The generality of this phraseology may
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raise serious problems of construction when applied to a given situation. If the original grant of land were between two private parties, the general rule of construction applied would be that the intent of the parties controls, and the question would be whether it was within the contemplation of the parties that the particular mineral in question was to be included in the original reservation or exception.

The use of the word "mines" in the Hawaiian grants (employing the phrase "mineral or metallic mines") may contribute an additional element of ambiguity in an attempt to apply the reservation to a given mineral, particularly if the mineral were of a type normally recovered by surface as contrasted with underground mining operations--thus:

Whether or not a conveyance or reservation of 'minerals' includes those which are not commercially workable by underground mining operations and are recoverable only by the open pit or strip method depends upon several factors, such as all of the terms of the instrument, the character of the land and of the minerals, and, in cases of ambiguities, extrinsic evidence of the surrounding circumstances and other facts throwing light on the intention of the parties .... Similarly, the use of the word 'mines' in conjunction with 'minerals' may indicate an intention to exclude minerals recoverable only by quarrying or open pit methods. However, substances removable by open pit methods have been held in other cases to be included in a reservation, notwithstanding the conjunction of the term 'mines' with 'minerals.'<sup>12</sup>

Concerning bauxite, an Arkansas case held that bauxite was not included in the reservation in a private grant made in 1892, wherein the grantor reserved "all coal and mineral deposits in and upon the said lands, with the right ... to enter upon said lands, and to mine and remove any and all coal and mineral deposits found thereon." The Arkansas supreme court held that bauxite was not known to exist in Arkansas at the time of the original reservation and therefore the parties did not intend to reserve bauxite from the conveyance of the surface. The Arkansas court said:

While bauxite may be said to be a mineral it differs in an important aspect from ordinary minerals. It is a clay

formation which contains alumina in very small particles. This alumina is extracted by a complicated refining process and forms the basic ingredient of aluminum.

'Bauxite is a term given to an earth that contains alumina in sufficient quantities to make it worth working for the extraction of aluminum ....'

Generally, the operation of mining bauxite is not a subterranean one, but is accomplished by digging of open pits .... Manifestly, such an operation would destroy the value of the land for farming purposes, or any other purpose. To give the contract ... the construction asked ... the railroad company would have had the right ... the day after Carson paid for his farm home, to enter upon it and utterly destroy its value without any liability upon the part of the railroad company for damages. Such a construction, under the situation of the parties shown here, would be an extremely unreasonable one.<sup>13</sup>

The doctrine of the intention of the parties and the ruling of the Arkansas supreme court on bauxite would not necessarily apply to the situation in Hawaii. Here, two additional factors are present. One is that the legal title to the mineral interest may be vested in the United States, with the Territory of Hawaii entitled to its use, possession and control. Such would be the logical extension of the line of reasoning discussed above relating to the public lands and other public property ceded to the United States, and to the concepts of the severability of the mineral interest, its transferability, and its non-extinguishment because of non-user. If the claimed legal title were in the United States, the doctrine enunciated in the Fullard-Leo case (cited above) dealing with title to Palmyra island may be applied--to the effect that the public land law of the United States would be controlling, at least in the ultimate determination of title.

The second factor is that the original grants or land patents were made by the Kingdom of Hawaii and the Republic of Hawaii, both sovereign bodies. Instead of attempting to determine the intent of the parties, another rule of construction may be applied, which is that in construing grants made by a sovereign, all ambiguities are resolved in favor of the grantor.<sup>14</sup> In a case which applied this doctrine the supreme court of the United States gave a very liberal interpretation to the word "minerals," extending it to include granite.<sup>15</sup>

The case involved an act of Congress dealing with land grants to railroads, which excluded mineral lands from its operation, except for iron and coal. The grant in question was made in 1864, and covered certain public land "not mineral." The case involved the right to remove and dispose of granite. The court said:

The word 'mineral' is used in so many senses, dependent upon the context, that the ordinary definitions of the dictionary throw but little light upon its signification in a given case. (p. 530)

The Court rejected one contention that the word "mineral" was synonymous with "metalliferous." It felt that "valuable mineral deposits" should be construed to include non-metallic substances, among which are alum, asphaltum, borax, guano, diamonds, gypsum, resin, marble, mica, slate, amber, petroleum, limestone, building stone, and coal. In various state decisions the court found evidence to support the theory that valuable stone also was a mineral. The court called attention to the general principle of strict construction to be followed in grants from the sovereign. This construction, the Court said,

shall support the claim of the government rather than that of the individual. Nothing passes by implication, and unless the language of the grant be clear and explicit as to the property conveyed, that construction will be adopted which favors the sovereign rather than the grantee. (p. 534)

#### FOOTNOTES

1. Royal Patent No. 1, Vol. 1, p. 1.
2. Land Patent No. 4385, Vol. 22, p. 1.
3. House of Representatives, Report No. 305, 56th Congress, 1st Sess. 64 (1900), incorporating a report on "Hawaiian Land Systems and Transactions Thereunder," by J. F. Brown, Agent of Public Lands, Honolulu, H.I., December 12, 1899.
4. Ibid., at 105, incorporating a report by Hon. Sanford B. Dole, President of Hawaii, on "Hawaiian Public Lands."
5. Joint Resolution to provide for annexing the Hawaiian Islands to the United States, approved July 7, 1898, 30 Stat. at L. 750.
6. Hawaii v. Mankichi, 190 U.S. 197, 47 L. Ed. 1016, (1903).

7. United States v. Fullard-Leo, 331 U.S. 256, 269-270, (1947).
8. The Territory has taken this position in relation to public lands in at least one instance. See Territory v. Gay and Robinson, 25 Hawaii 651 (1920) at 653, wherein the Territory, as plaintiff in an ejectment action, contended that "the fee simple title of said crown lands is in the United States of America, and the Territory of Hawaii is entitled to the use, possession and control thereof."
9. James A. Rhodes, A Short History of Ohio Land Grants, p. 22.
10. H.R. 49, 85th Congress, 1st Sess. sec. 5(b) (1957).
11. Arkansas Legislative Council, Research Memorandum No. 1, Legal Status of Severed Mineral Rights, (Sept. 14, 1955), pp. 1-3.
12. 36 American Jurisprudence, Sec. 35, 1956 Cumulative Supplement, Footnote 6.
13. Carson v. Missouri Pacific Railroad Co., 212 Ark. 963, 967, 209 S.W. 2d 97 (1948).
14. Wm. E. Colby, "Mining Law in Recent Years," 37 California Law Review 592, 610 (December, 1949).
15. Northern Pacific Railroad Co. v. Soderberg, 188 U.S. 526 (1902). See also Burke v. Southern Pacific Railroad Co., 234 U.S. 669 (1914), and Great Northern Railway Co. v. U.S., 315 U.S. 262 (1942).

## *Chapter 2.*

### **Elements of Mineral Legislation**

#### *Hawaiian Law Pertaining to Leasing of Public Lands*

**GENERAL LEASING PROVISIONS**      The Hawaiian Organic Act and the Revised Laws of Hawaii contain general provisions governing the leasing of public lands. The commissioner of public lands is authorized to perform any acts and, with the approval of the land board and governor, make rules and regulations to carry out the provisions of the Organic Act and the land laws of Hawaii.<sup>1</sup> These provisions appear broad enough to provide the basis upon which mineral lands of the Territory could be leased by the commissioner of public lands, and in the absence of specific provisions of law governing the leasing of mineral lands, the statutory provisions governing general leases would presumably apply. General leases of public lands may be made at the discretion of the commissioner of public lands, at public auction, for any number of years not to exceed 21 years; no general lease may contain a privilege of renewal, nor be made for any land already under a lease which has more than two years to run.<sup>2</sup> However, previous to the last two years of the term of any general lease, the commissioner shall with the approval of the governor decide whether the premises under lease shall be demised under a new lease or be reserved for other disposition.<sup>3</sup> He may in his discretion insert in all general leases "such conditions looking to protection of forests, protection of neighboring lands from debris, wash, and vegetable pests, protection of trees along roads or otherwise as shall seem to him desirable in the public interest."<sup>4</sup>

**LEASE LIMITATION**      Serious question has been raised as to whether or not the 21-year limitation on leases of territorial lands should be lengthened, particularly in relation to the leasing of lands containing bauxite deposits. The limitation of a 21-year term may or may not be deterrent to a potential lessee, depending in large part upon the

probable cost of mining operations. This in turn would be dependent upon the location, accessibility, concentration and quality of the bauxite, and upon the terms and conditions of the lease which bear directly upon the cost of operation, such as the amount of lease rental, the royalty payments, and the nature and extent of the reclamation procedures required. An important factor external to the leasing arrangement which bears upon the cost factor lies in the type of projected operation, such as whether the mining concern plans to extract the ore and export it to the Mainland, or whether it plans to invest in a processing plant in the Territory.

Very few states lease their mineral lands for more than 20 years. However, even if the 21-year limitation in Hawaii is not absolutely prohibitive, longer terms would give greater encouragement to potential lessees. Possible solutions are to extend the maximum term for this type of lease (bauxite mining), or to provide for renewal privileges if the mining operations have been conducted in a satisfactory manner.

### *State Statutes Governing Mineral Leases*

Many states have statutory provisions specifically governing the leasing of mineral lands within their borders, with authority in the appropriate administrative agency to prescribe the administrative procedures. Some statutes are general in nature and govern the leasing of state-owned oil and gas resources as well as other minerals; others have provisions governing oil and gas separate from those governing minerals. In recent years, some states have enacted laws especially governing the prospecting, discovery and leasing of uranium and other fissionable minerals, and rare or precious minerals.

The more common provisions found in the statutes and in the rules and regulations of some western and southwestern states are of interest. The situation in Hawaii is obviously different from that of these states in many respects--such as in the nature of the minerals, the topography of the land, the size of the land area, climatic conditions, and in the different historical background of land laws and land ownership--both as to publicly and privately held land. However, in view of the minimal experience of Hawaii in this area of legislation

and regulation, some knowledge of how other states have handled basic aspects of the problem of leasing mineral lands may be instructive.

For purposes of overall perusal and comparison, the basic provisions of the laws and regulations of the states of Arizona, California, New Mexico, Oklahoma, Texas, Utah, Washington, and Wyoming are set forth in tabular form in Appendix B. Some of the provisions which the various state laws have in common are provisions governing the leasing procedures, the maximum or minimum area that may be included in a single lease, the terms of the lease, the rental per annum, and the amounts of royalty payments. These laws are usually administered by the department of public lands, variously called in the different states.

LEASING PROCEDURES	In most states the leasing procedures call for the submission of sealed bids. Some states give preference to the discoverer for a specified period of time; for instance, Arizona gives preference to the discoverer for 90 days, Texas for 60 days and California for 30 days. New Mexico and Utah both give preference to the first applicant, and if there are simultaneous applications New Mexico provides for submission of sealed bids or a public auction, whereas Utah provides for a drawing by the applicants. Oklahoma and Wyoming both provide for sealed bids but give preference to the discoverer to meet the highest bid.
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MAXIMUM AREAS OF LEASES	Most of these states provide a maximum limitation upon the number of acres a lease may contain. These maximum areas range from 20 acres for Arizona to 1280 acres for Wyoming. However, there does not appear to be any limitation upon the number of leases a person may secure from the state nor upon the total acreage covered by the leases, with the exception of Utah. In Utah, each lease must cover at least one quarter of a quarter section, or 40 acres, but no person may hold leases totalling more than 15,360 acres.
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LENGTH OF LEASES	The terms of mineral leases in the states included in Appendix B range from five to 20 years. In most cases, where the original lease term is short, the lessee is entitled to continue in
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possession as long as paying quantities are produced. Where the term of the lease is 10 or 20 years, there is usually a right to renew; for instance, of the following states providing for maximum terms of 20 years, Arizona gives the original lessee a preferred right to renew for another 20 years, California gives options of renewal for successive 10 year periods, and Wyoming gives the right of renewal for another 10 years.

**LEASE** Rentals for leases on mineral lands are usually  
**RENTALS** calculated as an annual charge per acre, and vary considerably--from a five cents per acre minimum in New Mexico to one dollar per acre in Oklahoma. Utah provides for a rental of 50 cents an acre, with a minimum of five dollars per lease, while Washington requires a rental of 10 dollars for each 40 acres.

**ROYALTY** Royalty payments are usually based on a per-  
**PAYMENTS** centage basis and also vary from state to state, depending in large measure upon the type of mineral and the method of computation. Discretion is often delegated to the state land department to set the rate, within limits set by statute. Rates are usually lower for non-precious minerals and higher for rare or precious minerals. California provides for a royalty of 20 per cent of the gross value of the minerals extracted by a prospector from lands on which minerals were not previously known to exist, until a lease is issued; thereafter the rate is set by the state lands commission. On known mineral lands the maximum royalty is 50 per cent of the average gross sale price of precious minerals and 25 per cent of non-precious minerals. In Utah, other than the royalty on oil and gas which is set at 12.5 per cent, (the common percentage for most oil and gas royalties in other states) the amount of royalty for minerals is determined by the state land board. Analysis of the various lease forms furnished by the state land board indicates the current rates to be as follows: for fissionable minerals 3.9 per cent to 17.4 per cent of the gross value per dry ton received; for non-fissionable minerals, 1 per cent to 15 per cent, with the rate set at 12.5 per cent until the lessee is otherwise notified; and for other mineral substances 12.5 per cent.

In addition to the comparative data presented in Appendix B, the rules and regulations of the state land board of Utah are

summarized in Appendix E to give a more detailed example of the application of laws governing the issuance of mineral leases. These regulations have been selected because they have recently been completely revised and appear to be comprehensive in scope.

### *Reservation of Mineral Interest by Government*

The statutes of some of the states in the United States, the provinces of Canada, and the states of Australia reserve the mineral deposits in state-owned lands to the government, and provide that such deposits are subject to sale only on a rental and royalty basis. This section summarizes the statutory provisions of some American and foreign jurisdictions, without attempting to be exhaustive or complete in coverage.

#### IN THE UNITED STATES

In California, all mineral deposits in public lands are reserved from sale except upon a rental or royalty basis.

Furthermore, in the sale of public lands, the right to prospect and use the surface for mining purposes is also reserved to the state. When any mineral lease is to be issued, the state may reserve the right to lease, sell, or otherwise dispose of the surface of the lands embraced by the lease before the offering of the lease. Preferential rights to a permit or lease covering mineral deposits are accorded to the owner of lands on which the minerals have been reserved to the state.<sup>5</sup>

In Montana, the sale of state lands that are considered likely to contain valuable mineral deposits, except sand, gravel, building stone, brick clay or other earth materials used in building or construction work is prohibited. Such valuable mineral deposits are reserved from sale except upon a rental or royalty basis, and the right of entry for mining purposes is also reserved.<sup>6</sup>

In Nevada, mining for valuable minerals is declared of paramount interest to the state and a public use. Any of the mineral lands of the state may be explored and mined under local rules and the laws of the United States. Since the state recognizes the reservation of all minerals in the federal government under land grants issued to the state, title to such interests must be obtained from the United States, and the sale of such lands by the state is subject to the reservation in favor of

the United States. Furthermore, any unfenced and unimproved private land may be prospected for valuable minerals, but the owner must be compensated for any damage done to his improvements.<sup>7</sup>

In New Mexico, leasing of minerals on state lands on a royalty basis is provided for in the constitution. Sale of state lands known to contain valuable minerals in paying quantities is prohibited by statute. Reservations of the right to execute leases for mining purposes and the right to grant rights of entry are to be included in all leases of state lands for grazing and agricultural purposes. Leases may be issued for prospecting and development of any lodes or deposits of metals or minerals in rock in place upon or in any lands now belonging to the state or which it may hereafter acquire.<sup>8</sup>

In Utah, all state lands containing coal or other minerals are reserved from sale, except in the cases of riparian owners who have made valuable improvements below the water's edge. They are entitled to purchase such lands and other lands necessary for the reasonable use and enjoyment of such improvements with coal and mineral rights reserved to the state. All coal and mineral deposits in state lands are reserved from sale, except on a rental and royalty basis. Any purchaser of state lands takes his interest subject to such reservation and to another lessee's right of prospecting, mining and reasonable use and occupancy of the surface for mining purposes. A lessee of valuable mineral deposits shall not injure, damage or destroy the improvements of the surface owner or lessee, who has a right of compensation or indemnity for all damage to the surface and improvements.<sup>9</sup>

IN CANADA In the Province of Manitoba, in the absence of express provision to the contrary, mines and minerals, together with the right to enter, locate, prospect, mine for, and remove minerals, is reserved to the Crown out of every disposition of Crown land. Crown lands may be leased with or without an option to purchase.<sup>10</sup>

In the Province of British Columbia, all of the mineral rights in the Crown lands are reserved to the Crown, and subject to leases for terms of 20 years, except in the cases of lode or underground mining where Crown grants of the minerals are allowed in fee simple. In placer mining, a lease

system is used. The law providing for this type of lease permits the government to write into the terms of the lease within a broad general framework such requirements as the existing situation would seem to warrant. This may include such matters as protection of either navigable or fish spawning waters, and questions relating to domestic water supplies, pollution and tailing dumps.<sup>11</sup>

**IN AUSTRALIA** The individual states and the Commonwealth of Australia in its territories control almost all mineral rights, which belong to the Crown, regardless of the ownership of the land. Such minerals may be mined on a rental and royalty basis. There is no severance, occupation, mining or use tax but lessees are required to compensate owners of the land for any damage to or interference with property. Strip mining operations are restricted by requirements to avoid pollution of streams, and in some instances to replace the soil after the completion of the mining operation.<sup>12</sup>

**IN NEW ZEALAND** In New Zealand, the Crown owns much of the land on which mining is conducted and has also retained the mineral rights to a good deal of the land placed under private ownership. Land and mining laws have always been drafted with a view to preventing the alienation of known mineral deposits of economic importance. The non-metallic minerals, however, were often alienated from the Crown in the early years because their value was not known. The minerals owned by the Crown may be mined on a rental and royalty basis. There is no severance, occupation, mining or use tax. Strip mining is confined to the coal industry and so far there has been no threat of serious erosion or pollution.<sup>13</sup>

#### FOOTNOTES

1. See Appendix A for pertinent provisions of the Organic Act.
2. Revised Laws of Hawaii 1945, sec. 4544.
3. *Ibid.*, sec. 4547.
4. *Ibid.*, sec. 4545.
5. California Public Resources Code, Part 1, Chapter 5, secs. 6401, 6402, 6803, and 6893.
6. Montana Revised Codes, 1947, as amended, secs. 81-701 and 81-901.
7. Nevada Compiled Laws, 1929, as amended, secs. 4154, 4155 and 4156.

8. New Mexico Constitution, Article XXIV, sec. 1, and New Mexico Statutes, 1953, Chapter 8, Public Lands, secs. 8-826, 8-829 and 8-901.

9. Utah Code, 1953, as amended, Title 65, State Lands, Chapter 1, State Land Board, secs. 65-1-14, 65-1-15 and 65-1-20.

10. Manitoba Revised Statutes, Chapter 57, The Crown Lands Act, 1954, secs. 2, 5 and 9.

11. Letter dated January 3, 1957, from the Minister of Mines, Province of British Columbia, to the Legislative Reference Bureau.

12. Letter dated January 3, 1957, from the Bureau of Mineral Resources, Department of National Development, Commonwealth of Australia, to the Legislative Reference Bureau.

13. Letter dated January 17, 1957, from the Mines Department, Commonwealth of New Zealand to the Legislative Reference Bureau.

## *Chapter 3.*

### **Open Pit or Strip Mining**

#### *General Problems of Strip Mining*

**MINERALS IN HAWAII** Interest in the possibility of developing a mineral industry in Hawaii stems from recent studies indicating the existence of various minerals of potential commercial value. These minerals are near the surface of the land.<sup>1</sup> Of the minerals believed to exist in quantity, titanium and bauxite are of greatest current interest, with bauxite commanding serious attention from several mining and aluminum manufacturing companies. Appendix F presents an extract from a recent article by G. Donald Sherman which discusses the various minerals in Hawaiian soils.

It has been indicated that the extraction of surface minerals in Hawaii, and in this particular instance bauxite, would be done by the open pit or strip mining process. This is a process whereby earth-moving equipment removes the topsoil, and mechanical shovels or scoops load the mineral bearing clays into transporting vehicles. The specific techniques and type of equipment employed vary with the nature of the minerals, width and depth of deposits, topography of the land and the composition of the soil.

**CONFLICTING INTERESTS** Problems connected with strip mining, particularly of coal, have commanded widespread interest in the United States, and have been the subject of serious controversy in several states.<sup>2</sup> Such controversies have been heightened by the large increase in strip mining of coal during recent years, now practiced in about half the states in the country. This increase has been due to a number of factors, in the main economic, which have been summarized as follows:

1. Strip mining is naturally a less complicated process than underground mining.

2. Strip mines use larger units of machinery than underground mines with resulting savings in labor costs.
3. The interval between initial investment and coal production in strip mines is comparatively short.
4. Strip mines recover a higher percentage of the coal than underground mines.
5. Strip mining equipment can be used for other purposes and it is therefore almost entirely salvageable.
6. The cost per ton for labor is substantially less than of underground mining.<sup>3</sup>

In Hawaii, the development of a surface mining industry would likewise bring into focus a number of conflicting interests. Among some of the factors may be mentioned the mentioned the following: (1) mining on territorial lands presently utilized as water or forest reserves raises problems of possible denudation, erosion and destruction of the watershed; (2) mining on private lands raises problems of the relative rights of the parties concerned, and the weighing of the relative economic benefits from alternative uses of the land; (3) the Territory has a basic interest in developing new industries and broadening its economic base, but at the same time must realize fair value for its resources and conserve its forest reserves and watershed; and (4) commercial companies have a basic and legitimate interest in developing new supplies of raw materials and operating profitably, at the same time wishing to contribute to the long range interests of the Territory. To the extent that these conflicts can be reconciled, a sound public policy will be evolved. Some examples of state legislation attempting to reconcile such varying interests in relation to the strip mining of coal may be illuminating.

At the present time at least six states have statutes regulating strip mining operations. They are the large and contiguous coal mining states of Indiana,<sup>4</sup> Kentucky,<sup>5</sup> Maryland,<sup>6</sup> Ohio,<sup>7</sup> Pennsylvania<sup>8</sup> and West Virginia.<sup>9</sup> Another state, Illinois,<sup>10</sup> had enacted regulatory legislation in 1943, but the statute was declared unconstitutional in 1947 by the Illinois supreme court and was repealed in 1949.

### *State Strip Mining Laws*

The laws governing strip mining in the foregoing states were enacted to regulate the mining of bituminous coal, but

the Maryland law also applies to fire clay.<sup>11</sup> They cover, in common, certain aspects of the strip mining operations. The approach of the laws is to require operators engaged in strip mining to first apply for a permit, accompanied by the payment of an application fee. In addition, a bond is posted to insure the proper reclamation of the area mined, and the reclamation requirements are set forth in the laws. The basic provisions of the statutes are summarized in tabular form and set forth in Appendix C.

Four of the six state statutes apply to operators who remove, or intend to remove, more than 250 tons of coal in any period of 12 successive calendar months. The West Virginia law does not specify a minimum tonnage, so presumably applies to all stripping operations, whereas the Indiana law governs operations involving annual production of more than 2500 tons.

APPLICATIONS,	All of the laws provide that operators must
BONDS, FEES,	apply for permits to operate over one-year
PENALTIES	periods. The applications uniformly ask

for the name and address of the operator, a description of the land involved, and an estimate of the acreage to be strip mined. Some states also require information on ownership of the surface area, ownership of the coal to be mined, and the source of the applicant's legal right to mine the coal. A further requirement is that the applications be accompanied by maps showing locations of the areas to be mined.

Application fees vary from \$ 50 to \$ 500, or possibly more for those states where maximum fees are measured by the area to be mined. For instance, Kentucky and Ohio call for fees of \$ 50 plus \$ 10 for each acre applied for. An application to strip mine 100 acres would presumably require an application fee of \$ 1050.

The laws also call for the posting of surety bonds, either at the time of application, or when the permit is issued, to insure the faithful performance of the requirements of the law. An option is usually allowed the operator to deposit either cash or United States government securities of equal amount. The amounts of bond vary, and are usually measured by the number of acres to be mined. Three states set a \$ 1000 minimum; two of these establish a fee calculated at \$ 200 per acre, and

the third at \$ 500 per acre. Kentucky provides for a variable bond of \$ 100 to \$ 250 per acre, with the exact amount to be determined by the state administrator, taking into account various factors that affect the reclamation problem.

Proceeds from the registration fees and the forfeiture of bonds are usually held in separate funds to be utilized for the administration and enforcement of the law, and to pay for reclamation and reforestation operations on land affected by strip mining. In some instances, the proceeds are to be first applied to the specific area covered by the bond forfeited, wherever practicable.

Penalties for violating the law through failure to register and obtain a permit vary considerably, the most severe penalties being imposed by Maryland, where the minimum is \$ 5000 and maximum \$ 10,000. West Virginia provides for a fine of \$ 1,000, or imprisonment up to one year, or both.

**RECLAMATION REQUIREMENTS** The laws generally require that specified reclamation procedures be carried out.

The common requirements are that the operator must cover the exposed face of unmined coal; grade, level and round off peaks and ridges of spoil banks; fill in deep depressions; provide for drainage; remove refuse and debris; and plant trees, shrubs or grasses. In some states, the planting plan and procedure must be first approved by the administrative agency. In most instances, planting must be done within one year after completion of operations. Discretion is usually allowed the administrator to extend the time, upon good cause shown, or to allow planting over another area of at least the same size previously stripped by the operator. The purpose of the latter provision is apparently to allow operators the option to reclaim areas that may have been stripped by them prior to the enactment of the statute and hence not covered by its provisions.

**ADMINISTRATING AGENCY** The laws usually designate an agency to administer the law, and clothe the executive officer of the agency with discretionary authority. Indiana places administration in the department of conservation, with its director as administrator, Maryland in the director of the bureau of mines, and West Virginia in the chief of the department of mines.

Kentucky created a strip mining and reclamation commission of three members: the commissioner of conservation as chairman, the chief of the department of mines and minerals, and the director of strip mining and reclamation. The last post was created by the strip mining statute, and the incumbent serves as executive officer of the Commission.

Ohio established a division of reclamation in the department of agriculture, to be administered by a chief of division. In addition, a reclamation board of review was created to consider appeals from persons claiming to be aggrieved or adversely affected by an order of the chief of the reclamation division. This review board is made up of five members appointed by the governor, and hold office for staggered terms of five years. The board must include a representative of the coal strip mine operators, a public representative, and persons experienced in modern forestry practices, in agronomy, and in earth-grading problems.

In Pennsylvania, the law is administered by two departments. The department of mines has responsibility for general administration and procedures, while the department of forests and waters oversees the reclamation and reforestation aspects of the program. Each of these departments is headed by a secretary, in whom administrative discretion is vested.

### *Constitutionality of Strip Mining Laws*

The state laws governing strip mining operations apply to privately conducted operations on privately owned land. The operator may own the land, or he may lease the right to mine upon land owned by another. Furthermore, the laws apply to strip mining of bituminous coal, and do not apply to open pit mining of sand, stone or clay, or to deep mining of coal. The constitutionality of the statutes of Illinois and Pennsylvania has been tested in the supreme courts of those states; the Illinois high court declared the statute of that state unconstitutional, whereas the high court of Pennsylvania upheld the constitutionality of the Pennsylvania statute.

ILLINOIS      The unconstitutional Illinois statute, since re-  
STATUTE      pealed, required any person or firm engaged in  
open cut or strip mining to level the spoil ridges  
so that the contour of the land would be approximately the

same as before the mining operation was begun. The leveling had to be done progressively as the field was mined, so that no more than three spoil ridges were unleveled behind the open cut being used for coal removal. When the mining was completed, the operator was required by the act to level the remaining ridges, except that he was not required to totally fill the final cut if the adjacent spoil ridge would not fill that cut. He was further required to obtain a permit from the department of mines and minerals as a condition precedent to operating a strip mine, and to post a bond with the department to insure faithful compliance with the terms of the act. The department was authorized to refuse to issue permits, or to suspend or revoke existing permits, upon failure to comply with the act. Provision was also made for a hearing to be held in connection with such refusal to issue, suspend or revoke.<sup>12</sup>

A case was brought by a number of strip mine operators against the director of mines and minerals to enjoin the enforcement of the law on grounds that it was unconstitutional. The plaintiffs, who collectively owned 30,000 acres of land, alleged: that the total stripped and strippable property was only .092 per cent of Illinois farm land; that the cost of compliance with the act would wipe out the margin of profit and render worthless some \$31,000,000 worth of equipment; that leveling equipment was not available because of wartime scarcities; that the leveling to the original contour was unreasonable; and that 96 per cent of the strip mine companies in Illinois were already engaged in reclamation programs.

The Illinois supreme court gave considerable weight to the factual testimony adduced before the lower court, pointing out the extensive evidence presented by the mine operators and the sketchiness of the evidence presented by the state officials, and upheld the contention of the mine operators. It said:<sup>13</sup>

Conceding the plenary power of the legislature to enact laws for the preservation of the public health, it does not appear that the act here involved was intended to accomplish that purpose. The act requires the coal strip-mine operator to restore the property to approximately the original contour. If the land originally contained ponds or swamps, presumably they too must be restored. Furthermore, the act permits the leaving unfilled of the final cut,

if the adjacent spoil ridge will not fill it, and yet this final cut is the chief place where the pools of water collect .... The rights of property cannot be invaded under the guise of a regulation for the preservation of health when such is clearly not the object and purpose of the regulation .... If the act required the elimination, by draining or filling, of all ponds or pools of water left behind in the strip mining process, it might reasonably be assumed that it was intended for the protection of the public health, but the requirements of the present act do not appear to have a reasonable relation to that purpose. (p. 846-47)

\* \* \*

Appellant also contends that the act is sustainable as a conservation measure. As a matter of fact, there was evidence that 96 per cent of the strip mine operators in Illinois were already engaged in long time reclamation projects of their own, designed to make use of the mined areas without leveling the ridges. However, appellant contends that the legislature may determine, as a conservation measure, that the chief economic value of the land which is to be preserved is its value as land capable of cultivation, or as stated in his brief, "the legislature of Illinois may make a choice between cultivated or 'row' crops and forestry." There are two answers to that argument aside from the fact that this does not appear from reading the act. In the first place, the restoration of the land to its original contours is not conclusive that it will be suitable for cultivation of row crops .... Secondly, the State has no authority, under the guise of a conservation theory, to compel a private owner, at his own expense, to convert his property to what it considers to be a higher or better use .... (p. 847)

\* \* \*

But even if the act were valid as a measure designed to protect the public health, or as a conservation measure, it is fatally defective as an unreasonable discrimination against coal strip-mine operators .... There is no reasonable ground for distinguishing between the strip-mine operator who mines coal and any other strip-mine operator, when considered with reference to the object sought to be attained, whether that object is public health or conservation of 'row' crop land. It is the method of mining employed, not the nature of the product removed, which produces the undesirable result from a health or conservation standpoint,

and the object of the legislation is to prevent the use of that method. The act, by attempting to distinguish between operators on the basis of the mineral produced, thereby sets up an unreasonable classification and is, for that reason, invalid. (p. 848)

**PENNSYLVANIA STATUTE** The Pennsylvania supreme court, on the other hand, held that the "Bituminous Coal Open Pit Mining Conservation Act" of that state was a "general" and not "special" law, and hence constitutional. In a similar attack against that statute, the basic provisions of which are summarized in Appendix D, a mine operator brought a bill in equity against the state secretary of mines to enjoin enforcement of the law. The court gave great weight to the factual findings of the chancellor who heard the case, including findings indicating basic differences between surface mining and deep mining operations, differences between bituminous and anthracite coal, and differences between strip mining of bituminous coal and other mining operations. In answer to various contentions of the mine operator that the statute was unconstitutional, the court ruled that:

The 'Bituminous Coal Open Pit Mining Conservation Act' does not violate the constitutional provision prohibiting enactment of any local or special law regulating labor, trade, mining, or manufacturing, since it is legislation for a class and hence a 'general' and not 'special law' and the classification of open pit mining as distinguished from other mining is founded on real distinctions;

The fact that the act results in additional cost of operation does not render it unconstitutional as depriving mine operators of property without due process of law in the absence of evidence that the act imposes on operators any financial burden out of proportion to the benefits to be achieved;

The act does not violate the constitutional provision as to uniformity of taxation, regardless of whether the registration filing fee of \$100 which each operator of a bituminous coal open pit mine is required to pay is a filing fee, license fee, or tax, since a valid basis for classification exists in the substantial differences between bituminous coal mining by open pit method and other mining and quarrying and the fee must be paid by every operator in the class; and

a 'license fee' is a charge imposed by the sovereign in exercise of its police power upon a person within its jurisdiction for the privilege of performing certain acts and has for its purpose the defraying of the expense of regulating such acts for the benefit of the general public, and it is not the equivalent of or in lieu of an 'excise' or 'property' taxes, which are levied by virtue of the government's taxing power solely for the purpose of raising revenue.<sup>14</sup>

In summary, the Illinois supreme court found the statute of that state defective because it did not appear to have a reasonable relation to the purpose of preservation of health, because the government tried to determine the chief economic value of the land after strip mining, and because the act was an unreasonable discrimination against coal strip-mine operators.<sup>15</sup> The Pennsylvania court, on the other hand, found that a real distinction existed between strip mining of bituminous coal and other types of mining operations, and that the requirements of the law did not impose unreasonable burdens upon the operators. The outcome of the cases was influenced to some extent by the nature of the factual testimony adduced by the parties before the respective trial courts, as each supreme court commented extensively on the findings of fact by the courts below; to some extent the outcome was influenced by the estimates of the two courts of the deleterious effects of strip mining operations and the reasonableness of the statutes in their attempts to alleviate the possible evils.

#### FOOTNOTES

1. "Recent studies have shown that the weathering surface horizons are rich in the oxides of iron, aluminum, and titanium, and that the enrichment of our surface horizons with these oxides has been due to the tropical soil forming process ... laterization." G. Donald Sherman, Some of the Mineral Resources of the Hawaiian Islands, Special Publication No. 1, Hawaii Agricultural Experiment Station, University of Hawaii, p. 5 (June 1954).

2. "The strip mining industry has created a controversy among various interests concerning its continuance and/or its regulation, such as:

1. The public interest in utilizing coal resources, balanced with maintaining the surface value for production, taxes, and scenic purposes. In this conflict of interest members of the public have taken each side according to which interest they believe outweighs the other.

2. The strip mine owner's interest in profitably recovering the coal without regulation.
  3. The adjoining landowner's interest in retaining the productive, market, and scenic value of his property.
  4. The underground mine operator's interest in the passage of legislation regulating strip mining to avert competition and increase production costs of strip mine operators."
- Kentucky Legislative Research Commission, Strip Mining in Kentucky, (Research Publication No. 5, 1949), p. 13.
3. Ibid.
  4. Indiana Statutes Annotated, (Burns 1952 Replacement), Title 46, Mines and Minerals, Chapter 15, Strip Mines.
  5. Kentucky Revised Statutes Service, (Baldwin's 1955 Issue), Chapter 350, Strip Mining.
  6. Maryland Laws 1955, Chapter 635.
  7. Ohio Revised Code Annotated, (Baldwin's 1953), Chapter 1513, Reclamation of Strip Mined Land, as amended by 1956 Cumulative Issue.
  8. Pennsylvania Laws 1945. Act 418.
  9. West Virginia Code Annotated, 1955, Chapter 22, Mines and Minerals, Article 2A, Strip Mining.
  10. Illinois Laws 1943, Vol. 1, p. 913, repealed by Act approved July 1, 1949, Laws 1949, p. 1588, Text of statute not available; reference taken from footnote in Northern Illinois Coal Corporation, et. al. v. Medill, 397 Illinois 98, 72 NE 2d 844 (1947).
  11. Letter dated January 21, 1957, from Director of Bureau of Mines, State of Maryland, to the Legislative Reference Bureau.
  12. From a summarization by the Court in Northern Illinois Coal Corporation, et al v. Medill, note 10, supra.
  13. Ibid., 72 NE 2d at pages indicated.
  14. Dufour v. Maize, et al, 358 Pennsylvania 309, 56 A 2d 675 (1948), from headnotes.
  15. The soundness of the Illinois decision has been questioned. See notes, "State Legislation: Regulation of Strip Coal Mining," 23 Indiana Law Journal 168 (1948).

## *Chapter 4.*

### **Severance Taxes<sup>1</sup>**

#### *The Facts*

Mineral resources within a state or territory offer both opportunities and problems with respect to their taxation. Since 1920, and particularly since World War II, states have found their general property taxes inadequate means of taxing these resources and have instead imposed special levies collectively referred to as severance taxes. Currently 26 states have severance taxes in force.<sup>2</sup> In ten states, as the following table indicates, the taxes apply only to oil and natural gas: these states include Georgia, North Carolina and Tennessee, where the levies were adopted on a standby basis, to be effective upon the discovery and exploitation of oil and gas.

Table 1  
TAXATION OF NATURAL RESOURCES  
UNDER STATE SEVERANCE TAXES

RESOURCE	STATES IMPOSING TAX
Oil and gas only	14 - California, Florida, Georgia, Indiana, Kansas, Kentucky, Michigan, Mississippi, Nebraska, North Carolina, North Dakota, Tennessee, Texas, <sup>a</sup> Wyoming
Iron only	1 - Minnesota
Iron, oil and gas	1 - Alabama
Coal, oil and gas	1 - Colorado
Minerals, generally	9 - Arkansas, Idaho, <sup>b</sup> Louisiana, Montana, Nevada, New Mexico, Oklahoma, South Dakota, Utah

<sup>a</sup>Also tax on sulphur.

<sup>b</sup>No tax on oil or gas.

**TONNAGE AND VALUE TAXES** Nine states currently impose one form or another of severance taxes upon mineral extracted from lands within their jurisdictions. As Table 2 shows, the provisions of these taxes vary greatly, but in general two approaches can be discerned: in some states (such as Alabama) the tax is applied on a tonnage basis; in other jurisdictions the tax is ad valorem, usually some percentage of the gross value of the mineral extracted. In all states but Kentucky, the severance taxes are administered by state, not local, authorities.

It will be noted that Arkansas, only mainland state in which bauxite is currently being mined, has a tax of 10 cents per 2,000 pound ton produced. It has been estimated that the aluminum industry in the United States annually consumes 1.8 million tons of domestic bauxite ore as compared with 5 million tons of imported foreign ore.<sup>3</sup> Assuming that the rate of domestic mining of bauxite approximates the rate of industry consumption, and assuming further that all of the domestic ore is mined in Arkansas, the annual severance tax from this source would approximate \$ 180,000.

**GENERAL TAXES IN MINING** Other states apply general taxes to mineral production, sometimes in addition to special severance taxes. Of the nine states listed in Table 2, all impose local property levies against mines, except in Nevada (where the severance tax is a kind of property tax) and in Oklahoma. New Mexico levies its gross income tax--1/4 per cent in the case of metallic ores--to mines, in addition to the severance tax. Minnesota, however, which has a heavy tax on iron ore (13.8 per cent of net value, plus 13.8 per cent of royalties), exempts mines from its net income tax--but not the general property tax. Wisconsin, conversely, applies its corporate income tax and property tax to mines, but has no severance tax.

### *The Arguments*

**ARGUMENTS PRO** Severance taxes have been advocated as being superior to general property taxes on two different grounds: they are easier to administer and they are more likely to encourage conservation of the natural resources taxed. The first argument is based upon the difficulty under a property tax of making an accurate as-

**Table 2**  
**STATE SEVERANCE TAXES ON MINERAL PRODUCTS**  
**(as of January 1957)**

STATE		BASE, RATE AND MEASURE OF TAX	REVENUES: 1956 <sup>a</sup>
Arkansas	Metal ores (bauxite, barite, titanium, etc.) .....	10¢ per ton <sup>b</sup>	
	Coal .....	1¢ " ton	
	Sand, dimension stone .....	1¢ " ton	
	Crushed stone, clay, etc. ....	1/2¢ " ton	
	Other (sulphur, salt, etc.) ....	4% of gross value	<u>\$ 4,354,000</u>
Idaho	Metal ores and coal .....	3% of net proceeds	<u>92,000</u>
Louisiana	Metal ores .....	10¢ per ton	
	Marble .....	20¢ " ton	
	Sand, stone, gravel .....	3¢ " ton	
	Sulphur .....	\$ 1.03 " long ton	<u>73,484,000</u>
Minnesota	Iron ore .....	12% of net value of ore mined and 12% of royalties; plus surtax of 15% of tax on both.	
	Taconite, iron sulphites .....	5¢ per ton of concentrate	<u>34,707,000</u>
Montana	Metal ores .....	1/4% to 1% of gross value	
	Micacious minerals .....	5¢ per ton	
	Cement plaster, gypsum .....	5¢ " ton	
	Cement .....	4¢ " bbl. of 376 lbs.	
	Carbon black .....	1/8¢ " lb.	
	Coal .....	5¢ " ton in excess of 50,000	<u>1,660,000</u>
Nevada	All mines .....	property tax applied to net proceeds of mines.	<u>104,000</u>
New Mexico	Copper .....	1/2% of gross value	
	Other metals .....	1/8% of gross value	
	Coal .....	1/8% of gross value	<u>7,139,000</u>
Oklahoma	Metal ores .....	3/4% of gross value	<u>32,118,000</u>
South Dakota	Mineral products .....	4% of gross value; first 100,000 tons exempt.	<u>684,000</u>
Utah	Metal ores .....	1% of gross value above \$ 50,000.	<u>2,471,000</u>

<sup>a</sup>Including yield from tax on oil and gas; source, U.S. Bureau of the Census, State Tax Collections in 1956 (G-SF 56-No. 4).

<sup>b</sup>Throughout table, short ton of 2,000 lb. is intended, unless otherwise indicated.

essment of sub-surface deposits. Many states do include mines under their general property taxes and with varying degrees of success; however, it would seem that a tax on production would be less difficult to assess.

The conservation argument is based on the assumption that mine operators would be motivated by relatively fixed annual property taxes to speed up the exploitation of their deposits

and so minimize the amount of tax per ton or per dollar of sales. An accelerated schedule of mining, in turn, might lead to skimming the cream of the deposits, leaving a portion of the resource unutilized.

A different argument for severance taxation is that the entire state or territory should benefit from the taxation of mines, and it would under a centrally administered severance tax. The property tax, however, in Hawaii as on the mainland, goes to local governments.

**ARGUMENTS**     The chief point to be made against the severance tax is that its yield is likely to fluctuate more than the revenues from a property tax applied to mineral deposits. It can also be said that a severance tax based either on gross revenue or on volume of output is not an entirely satisfactory measure of allocating tax burdens --but the same point can be made of property taxes. The severance tax, however, may have to be supplemented with a property tax because it does not apply to mineral lands which are not in production.

In Hawaii, application of the general excise (gross income) tax to mining operations would in effect comprise a severance tax, generally comparable to the mineral taxes of Idaho and of the last four states listed in Table 2. If such application were to be made, a basic policy question would be the appropriate rate of taxation--whether it should be the 1-1/2 per cent tax currently imposed on producers and manufacturers, or some other percentage. The range of ad valorem rates shown in Table 2 indicates the spread, and therefore unsatisfactoriness as a model, of mainland practice.

#### FOOTNOTES

1. This chapter, written by Robert M. Kamins, is largely based on Severance Taxation, Research Report No. 35, 1956 of the Ohio Department of Taxation; State Tax Guide (Chicago: Commerce Clearing House); round table on "State and Local Taxation of Mineral Resources, in Proceedings of the National Tax Association, 1948, pp. 222-71.

2. Excluding Oregon and Virginia, which have severance taxes limited to timber.

3. Business Week, Nov. 3, 1956, pp. 191 and 194.

## APPENDICES

## *Appendix A.*

### HAWAIIAN ORGANIC ACT

Extracts of Provisions Dealing with Public Lands  
(From draft copy of the 1955 revision of the Laws of Hawaii)

Sec. 73 (a) (3). The term "public lands" includes all lands in the Territory of Hawaii classed as government or crown lands previous to August 15, 1895, or acquired by the government upon or subsequent to such date by purchase, exchange, escheat, or the exercise of the right of eminent domain, or in any other manner; except (1) lands designated in section 203 of the Hawaiian Homes Commission Act, 1920, (2) lands set apart or reserved by Executive order by the President, (3) lands set aside or withdrawn by the governor under the provisions of subdivision (q) of this section, (4) sites of public buildings, lands used for roads, streets, landings, nurseries, parks, tracts reserved for forest growth or conservation of water supply, or other public purposes, and (5) lands to which the United States had relinquished the absolute fee and ownership, unless subsequently placed under the control of the commissioner and given the status of public lands in accordance with the provisions of this Act, the Hawaiian Homes Commission Act, 1920, or the Revised Laws of Hawaii of 1915;

\* \* \*

Sec. 73 (c). The laws of Hawaii relating to public lands, the settlement of boundaries, and the issuance of patents on land commission awards, except as changed by this Act, shall continue in force until Congress shall otherwise provide ....

\* \* \*

Sec. 73 (e). All funds arising from the sale or lease or other disposal of public land shall be appropriated by the laws of the government of the Territory of Hawaii and applied to such uses and purposes for the benefit of the inhabitants of the Territory of Hawaii as are consistent with the joint resolution of annexation, approved July 7, 1898.

\* \* \*

Sec. 73 (q). All lands in the possession, use, and control of the Territory shall hereafter be managed by the commissioner, except such as shall be set aside for public purposes as hereinafter provided; all sales and other dispositions of such land shall be made by the commissioner or under his direction, for which purpose, if necessary, the land may be transferred to his department from any other department by direction of the governor, and all patents and deeds of such land shall issue from the office of the commissioner, who shall countersign the same and keep a record thereof. Lands conveyed to the Territory in exchange for other lands that are subject to the land laws of Hawaii, as amended by this Act, shall, except, as otherwise provided, have the same status and be subject to such laws as if they had previously been public lands of Hawaii. All orders setting aside lands for forest or other public purposes, or withdrawing the same, shall be made by the governor, and lands while so set aside for such purposes may be managed as may be provided by the laws of the Territory; the provisions of this paragraph may also be applied where the "public purposes" are the uses and purposes of the United States, and lands while so set aside may be managed as may be provided by the laws of the United States. The commissioner is hereby authorized to perform any and all acts, prescribe forms of oaths, and, with the approval of the governor and said board, make such rules and regulations as may be necessary and proper for the purpose of carrying the provisions of this section and the land laws of Hawaii into full force and effect.

*Appendix B. PROVISIONS OF STATE LAWS GOVERNING MINERAL LEASES\**

STATE	LEASING PROCEDURE	AREA LIMITATIONS	TERMS OF LEASES	RENTAL PER ANNUM	ROYALTY
Arizona	Preference to discoverer for 90 days. If none has superior right, by sealed bid.	20 ac. per claim; one person may hold several leases.	20 yrs.; preferred right to renew for 20 years.	\$15 per claim	5% of net value of minerals produced.
California	Sealed bid for lease on known mineral land. Preference to discoverer for 30 days on unknown mineral land.	160 ac. max. for unknown mineral lands; no limit upon known mineral land.	20 yrs., option of renewal for successive 10-year periods.	\$1 per ac. for unknown mineral land; set by commission on known mineral land.	20% of gross value until lease issued; then set by commission. 50% max. for precious minerals. 25% max. for non-precious minerals.
New Mexico	Preference to first applicant. If simultaneous, either by sealed bid or public auction.	640 ac. max. per lease. No limit on number of leases per person.	3 yrs. primary term; 2 yrs. secondary term, and as long as paying quantities produced.	5¢ per ac., min. primary term; 50¢ per ac. min. secondary term.	5% gross returns for rare, precious minerals. 2% gross returns for other minerals.
Oklahoma	Sealed bid. Preference to discoverer to meet highest bid.	160 ac. max. per lease.	5 yrs. and as long as paying quantities produced.	\$1 per ac.	5% min. of gross receipts of sale, or market value.
Texas	Preference to discoverer for 60 days. Then by sealed bid.	1500' by 600' max. (approx. 20.6 ac.)	Right to possession as long as work continues. Right to patent after 5 yrs. at \$10 per ac.	50¢ per ac.	6-1/4% of net value of production, or of gross receipts of sale.
Utah	Preference to first applicant. If simultaneous, award by drawing.	40 ac. min. per lease. 15,360 ac. max. per person.	10 yrs., and as long as paying quantities produced.	50¢ per ac., with \$5 min.	Set by land board; current rate 12-1/2% of gross receipts for non-fissionable minerals.
Washington	To prospector upon discovery of sufficient quantities.	80 ac. max. per lease.	20 yrs.	\$10 each 40 ac.	1% to 4% of net receipts of sales.
Wyoming	Sealed bid. Preference to discoverer to meet highest bid.	1280 ac. max. per lease.	10 yrs.; right of renewal for another 10 yrs.	\$1 per ac.	Fixed by board of land commissioners, 5% min.

\*Sources: Statutes, rules and regulations, and land commissions forms of the respective states

*Appendix C. PROVISIONS OF STATE LAWS GOVERNING STRIP MINING OF COAL\**

STATE	OPERATIONS SUBJECT TO LAW	APPLICATION FEES FOR PERMITS	PENALTY FOR FAILURE TO REGISTER	PERFORMANCE BOND OR DEPOSIT	UTILIZATION OF PROCEEDS FROM FEES AND FORFEITURES	ADMINISTRATION OF LAW
Indiana	2500 tons min. per year	\$ 100 for less than 10 ac.; graduated in \$ 100 incre- ments to \$500 for 100 and over.	\$ 1,000 min. 5,000 max.	\$1,000 min. plus \$ 200 for for each ac. over 5 ac.	Deposit of cash bond re- tained by Department, used to perform re- quirements if operator fails.	Department of Conservation; di- rector of department has dis- cretionary authority.
Kentucky	250 tons min. per year	\$ 50, plus \$ 10 for each ac.	\$ 100 min. 5,000 max.	\$100 to \$250 per ac., as deter- mined by com- mission.	Held in "Strip Mining Reclamation Fund." Used for administra- tion of law and recla- mation of land.	Strip Mining and Reclamation Commission of 3 members; director of strip mining and reclamation is executive offi- cer.
Maryland	250 tons min. per year	\$ 200	\$ 5,000 min. 10,000 max.	\$400 min. \$100 per ac., but each per- mit limited to 4 ac. max.	Held in "Bituminous Coal Open Pit Mining Recla- mation Fund." Used for foresting or re- claiming land.	Bureau of Mines; director of bureau has discretionary au- thority.
Ohio	250 tons min. per year	\$ 50, plus \$ 10 for each ac.	\$ 300 min. 1,000 max.	\$1,000 min. at \$200 per ac.	Held in "Strip Mining Reclamation Fund." Used for reclaiming land.	Division of Reclamation, with a chief of division in the De- partment of Agriculture. Rec- lamation Board of Review of 5 members.
Pennsylvania	250 tons min. per year	\$ 100	\$ 5,000 max.	\$ 2,000 min. at \$ 200 per ac.	Held in "Bituminous Coal Open Pit Mining Recla- mation Fund." Used for foresting and re- claiming land.	Department of Mines as to gen- eral administration; Depart- ment of Forests and Waters as to reclamation. Each depart- ment headed by a secretary.
West Virginia	All operations, i. e. no mini- mum tonnage specified.	\$ 50	\$ 1,000 and/or up to 1 yr. imprisonment.	\$1,000 min. at \$500 per ac.	Held in "Strip Mining Fund." Used in ad- ministration of law and to reclaim land.	Department of Mines. Chief of department has discretionary authority.

\*Sources: State statutes cited in chapter 3, "Open Pit or Strip Mining."

## *Appendix D.*

### PENNSYLVANIA, SUMMARY OF "BITUMINOUS COAL OPEN PIT MINING CONSERVATION ACT" (Pennsylvania Laws 1945, Act 418)

Purpose. The Pennsylvania "Bituminous Coal Open Pit Mining Conservation Act" is deemed to be an exercise of the police powers of the state for the general welfare of the people by providing for the conservation and improvement of areas of land affected by the strip mining of bituminous coal, to aid in the protection of bird and wild life, to enhance the value of such land for taxation, to decrease soil erosion, to aid in the prevention of the pollution of rivers and streams, to prevent combustion of unmined coal and generally to improve the use and enjoyment of said lands.

Registration. Before an operator begins, he must register with the department of mines by filing a certificate, giving identifying information and an estimate of the number of acres of land that will be affected during one year after the date of filing. There is a filing fee of \$100 which accompanies the application, or any renewal.

Bond. As part of the registration the operator must file a bond in the amount of \$200 per acre for the number of acres which the operator estimates will be mined; however no bond shall be less than \$2,000. The bond may be a surety bond signed by the operator and a corporate surety licensed to do business in the state or the operator may deposit cash or federal securities instead of a surety bond.

Reports. (1) An operation report must be filed within 30 days after starting the removal of the overburden (top soil); (2) a completion report must be filed within six months after the operation is finished or abandoned; (3) if an operation is not completed or abandoned within one year, an annual report must be filed within 60 days after the end of the year.

Renewal certificate. If the operator continues beyond the period for which the certificate was filed, a renewal certificate must be filed together with a bond or deposit as in the case of the original certificate.

Restoration. Within one year after the operation is completed, the operator must cover the exposed face of unmined coal, level and round off the peaks and ridges of spoil banks to permit planting of trees, grasses or shrubs.

Planting. Within one year after termination of operations the operator must plant trees, shrubs or grasses; the secretary of forests and waters may extend the period. Such planting must be in accordance with a plan or procedure prescribed by the secretary of forests and waters. The operator may, with the approval of the secretary, plant a similar area of land previously affected by open pit mining instead of the area covered by the bond.

Planting report. When the planting is completed, the operator must file a planting report. The secretary of forests and waters then inspects the premises within one year. If he finds that the planting is satisfactory, he so certifies to the department of mines which releases the bond.

Objections to planting and procedure. If the secretary of forests and waters does not approve the planting, he so notifies the operator, who is required to take steps to remove the objections.

Judicial recourse. Any operator who is aggrieved by the law or administrative regulation may file a petition in the court of common pleas of the county where the land is located to seek relief.

Penalty. Any operator who fails to register is guilty of a misdemeanor and may be fined not more than \$ 5,000.

Applicability. The law does not apply to any operator who does not mine more than 250 tons of coal in a period of 12 successive calendar months.

Disposition of funds. All funds received by the secretary of mines from registration fees, forfeiture of bonds and cash deposits are held in a separate fund called the "Bituminous Coal Open Pit Mining Reclamation Fund," to be used by the secretary of forests and waters for the sole purpose of foresting and reclaiming lands affected by strip mining.

## *Appendix E.*

### UTAH, SUMMARY OF RULES AND REGULATIONS GOVERNING THE ISSUANCE OF MINERAL LEASES

State Land Board of Utah  
In effect as of June 1, 1956

General information. Much of the public lands of Utah are the so-called "school sections" of each township, as designated by the federal government in its land grants for educational and other purposes at the time of admission to statehood. In cases in which state lands were sold to private individuals after May 12, 1919, all the mineral rights were reserved to the state by law. State mineral leases are issued only under such title as the state may hold, and the state does not warrant title. The lessee is not entitled to any refund in case of failure of title, but the State Land Board, in its discretion, may refund any unused portion of prepaid rent.

Applicant. Any person 21 years or over, or any firm, association or corporation qualified to do business in Utah is qualified to lease mineral rights to state land.

Application. An application must be submitted, setting forth certain information as to name and address of applicant, location and acreage of land, and amount of royalty offered. Priority is given to the first qualified applicant filing a proper application for a specific category of minerals. In the case of simultaneous applications (this is possible because all applications presented at the opening of a business day and all applications received in the first mail delivery are stamped received as of 8:30 a.m. of that day) a drawing is held between the qualified applicants.

Area. The minimum area of a lease is one quarter of a quarter section (40 acres). Separate leases are made for non-contiguous tracts, although such tracts may be applied for on one application. The maximum area any one individual or corporation can lease is 15,360 acres (25 square miles).

Mineral. Applications shall be for one or more of the following categories of mineral substances, with a separate application for each category:

1. Metalliferous minerals: includes only aluminum, chromium, cobalt, copper, gold, iron, lead, manganese, molybdenum, nickel, silver, thorium, tin, titanium, tungsten, uranium, vanadium and zinc.

2. Oil and gas

3. Building materials: includes only limestone, building stone, pumice, volcanic cinder, and sand and gravel.

4. Other mineral substances: includes those not defined above; for example a lease may be issued for coal, gypsum, calunite, gilsonite, rock asphalt, other solid hydrocarbons, salt, potash, potassium or other minerals.

Compliance. Leases may be cancelled for non-compliance with the law. Where the surface of the land has been sold or previous leases granted to others, the lessee is liable for damages thereto and injury to improvements thereon.\* The state land board may require the lessee to furnish bond in an appropriate sum should circumstances so warrant.

Term. The leases are for such period as determined by the state land board, but for not less than 10 years next succeeding the first day of the year within which the lease is granted and continue so long thereafter as minerals are produced in commercial quantities.

Bond. In the case of oil and gas leases, a bond in the sum of \$ 5,000 must be furnished by the lessee at the commencement of drilling operations. If the lessee is drilling or operating a number of wells within the state, he may submit a blanket bond of \$ 25,000. Such bonds may be increased in such reasonable amount as the state land board may decide after the discovery of oil or gas.

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\*In Utah, the same tract of land is sometimes leased for several purposes. "We have also found that we can make multiple use of the lands we own. For example, a single tract of land may be under several different leases at the same time. A stockman may lease the surface for grazing, while an oil company is drilling a test well under one of our oil and gas leases, another man may hold a lease for metalliferous minerals and yet another may be moving sand or gravel from a pit. This multiple use program has resulted in increased revenues to the state and has produced very little friction between the lessees holding leases on the same tract of land." Letter dated September 4, 1956 from Joseph P. McCarthy, Attorney, State Land Board, State of Utah to the Legislative Reference Bureau.

Rental. An annual rental at the rate of 50¢ per acre, with a minimum of \$ 5.00, must be paid in advance at the time of application, and on January 2 each year. Rental paid for any year may be credited against royalties accrued for that year, except in special situations.

Royalty. Royalty on oil and gas leases is 12-1/2 per cent of the reasonable market value at the well. The state land board may at its option require the payment of royalty in kind, F.O.B. at the lease site, of 12-1/2 per cent of the oil and gas produced.

Royalties on metalliferous minerals and on building materials and other mineral substances shall be as determined by the state land board. The state land board has apparently set the following rates, as evidenced by the applicable lease forms:

1. Fissionable minerals, 3.9 per cent to 17.4 per cent of the gross value per dry ton received, less any bonus, mine development and transportation allowance.
2. Non-fissionable minerals, 1 per cent to 15 per cent of the gross value per dry ton received; until otherwise notified, lessee pays 12-1/2 per cent.
3. Other mineral substances, 12-1/2 per cent of the gross amount received, or the gross value of the leased substances.

Surrender. A lease, or any part thereof, but not less than a quarter of a quarter section (40 acres) may be surrendered, and the rental will be reduced proportionately.

Commencement of operations. The lessee of an oil or gas lease may be required to commence drilling operations at any time after one year from the date of the lease. All other lessees are required to commence mining operations by December 31 of the year following the year in which the lease was approved.

Assignment. A lessee may assign all or part of his leasehold rights to any qualified persons or firm, with the approval of the state land board.

Fees. Certain fees are specified for filing and recording documents. These fees are nominal in amount; for instance, for filing each application, \$ 2; for making certified copies, \$ 2.50; for filing and recording each unit agreement, \$ 7.00; and the like.

## *Appendix F.*

### MINERALS IN HAWAIIAN SOILS

An Extract from G. Donald Sherman,  
"Studies on Minerals in Hawaiian Soils," Hawaii Farm Science,  
Vol. 5, No. 3, January 1957, pp. 1-2.

#### Discovery of Economic Minerals

In the course of these basic mineral studies at the Hawaii Agricultural Experiment Station, soil types were identified and classified according to their mineral composition. Some of the oxide minerals which were found in these soils occurred in sufficiently high concentrations to warrant their exploration as a commercial ore body.

Articles by HAES personnel in technical journals have brought this information to the attention of mining and metal firms. Geologists and engineers of more than twenty firms have made preliminary studies and explorations, and five firms have or are making both intensive and extensive exploration for titanium and aluminum deposits based on the mineral concentrations established and reported in the scientific publications of the HAES. Soils having high concentrations of aluminum, iron, titanium, nickel, and manganese oxides are reported in these publications.

The extent of these economic minerals in Hawaiian soils is as follows:

Alumina (Bauxite): The possibility of the occurrence of free aluminum oxide in Hawaiian soils was established by the chemical composition which showed a relatively high content of aluminum with a very low content of silica in the soil. The mineral gibbsite, the trihydrate of aluminum oxide, was identified by thermal methods in 1947 and by x-ray diffraction methods in 1951 by the HAES and its cooperating institution, the University of Wisconsin.

Gibbsite deposits are the most economical source of aluminum. Mineral studies have established that more than 300,000 acres of Hawaiian soils contain more than 10 percent gibbsite with a range to 75 percent. The average will probably be between 20 and 30 percent, which is a low-grade bauxite deposit.

The discovery of gibbsitic floats and aggregates in the spring of 1955 has added much to the economic possibilities of these aluminum-rich soils, since these were often neglected in soil mineral analysis. The soils in which more than 10 percent gibbsite has been found are shown in table 1.

While these soils are classified as low-grade bauxite ores, certain factors are in their favor for commercial development:

1. The potentially large tonnage of alumina amounting to hundreds of millions of tons present in these soils establishes these deposits as an ore body;
2. These soils have no quartz (free silica) and have a low content of combined silica; for instance, the soils of the Puhī Haiku, and Haliū families of the Kilauea area of Kauai contain less than one percent total silica;
3. The soil survey has mapped the areas of the aluminum-rich soils;
4. The mineral composition of the soil has been established which is an aid to exploration and processing;
5. The areas are accessible;
6. The ore is amenable to up-grading.

The final answer must come from mining engineers of the aluminum companies who must balance the recovery costs in Hawaii with the ultimate value of the product. The successful development of this mineral resource would be a tremendous financial dividend for a small investment in basic research at the University of Hawaii.

The development of a bauxite mining industry will create new problems; for instance, soil conservation practices and restoration of the productivity of the soil. Studies have been initiated to resolve these problems. The basic mineral composition of the soil should be improved with the removal of the relatively inert gibbsite. Jamaica has set a pattern in this field. They have required that the mining companies reconstruct the soil and plant it to mahogany. All three companies which are interested in these deposits must conform to this practice. Hawaii should follow this practice, since much of the area is in the Forest Reserve. It would make it possible for the Territory to replace one resource with another--a real commercial forest.

Titanium: Chemical analysis of Hawaiian soils revealed a very high titanium content averaging 5 percent. Certain soils showed distinct accumulation of titanium minerals. The Island of Kauai has the largest area of titanium-rich soils, with approximately 100 square miles or 20 percent of the total area showing more than 8 percent titanium oxide. The Islands of Kauai, Molokai, and Maui have substantial areas in which the titanium oxide content exceeds 20 percent. The economic possibilities of titanium deposits of the Islands were greatly enhanced when the titanium oxide mineral occurring in the soils was identified as anatase. The crystal structure of anatase lends itself to special uses such as special ceramic insulating coatings. One large company has explored the titanium deposits and has decided that they were too shallow and too irregular. Since then, two new deposits of anatase of greater uniformity have been discovered on Molokai and Maui. Two companies, one is a large liquor distiller, are still interested in titanium.

Iron Oxide: A number of iron oxide minerals have been identified and are found in high concentrations on Maui, Molokai, and Kauai. Iron oxide from some of the small iron ore deposits in which the mineral is goethite is used to filter artificial gas. The soils of the Ferruginous Humic Latosol have a high concentration of the iron oxide minerals--goethite, hematite, and maghemite.

Nickel: The nickel content of certain soils of the Low Humic Latosols is high for soils. The nickel is derived from the mineral olivine of our olivine basalts. The concentration is still too low for commercial development.

Manganese: All of the soils of the Low Humic Latosols have a high content of manganese. Pyrolusite concretions containing 20 to 40 percent manganese oxide occur in the soils of the Kahana and Wahiawa families. These soils would be considered a low-grade manganese deposit which would only be workable in case of an emergency.

Clays: The soils of the Islands have a wide range of clays. The mineral studies identify the different types of clay minerals. A good ceramic clay has not been found in Hawaii. The best ceramic clay in the Islands is the titanium-kaolin clay of the Knudson Gap on Kauai. There is some interest in using the white kaolin clays of Kauai as a sizing agent in the paper industry.