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**MINERAL TERMS-SOME PROBLEMS IN THEIR USE AND DEFINITION**

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**INTRODUCTION**

The proper use of mineral terms in legal documents is becoming quite complex due to the growing practice of separately leasing and conveying or reserving various mineral deposits. This practice is especially prevalent in transactions involving federally owned lands and some state lands and is of particular concern to landowners whose titles trace back to federal grants or patents, to land attorneys, and to members of the mineral industry in the Rocky Mountain region.

The problems of mineral terminology are of major importance to anyone working with or interpreting deeds, patents, mineral leases, and mining claim agreements. Furthermore, the attorney drafting instruments involving mineral interests or advising clients concerning procedures and practices in the mineral industry, is expected to have an understanding of legally acceptable mineral terms and the problems to be anticipated in the misuse of mineral terms.

The problems of mineral terminology are somewhat confused by the fact that legal meanings and definitions of certain mineral terms sometimes vary from the common and accepted definitions of the same or similar terms as used in science or industry. Therefore, in applying mineral terminology to legal documents, complete reliance cannot necessarily be placed upon dictionary or glossary definitions, or in the opinions of the technical experts who may be unfamiliar with contrary legal interpretations and locally accepted meanings.

Courts favor an interpretation of technical terms which will reflect the actual intent of the parties to a disputed transaction.[[1]](#footnote-2)1 Unless all parties are sophisticated and alert to the precise meanings of a term commonly accepted in the mineral industry or in science, courts will place great weight upon the *locally* accepted meaning of a disputed mineral term, assuming, rightly or wrongly, that all parties are aware of local practices-[[2]](#footnote-3)2 In the Rocky Mountain region, where federal public land laws are the root of virtually all private land titles, local practices and terms may vary from standards established in common-law jurisdictions not influenced by the public land laws.

**Conflicting Positions of Lessor and Lessee**

There is often a basic conflict of interest between the landowner-lessor and a mineral lessee which, if understood at the outset, may explain some of the problems discussed in this article. The lessor, whether a governmental agency or an individual, is giving up potentially valuable rights when mineral interests are leased, and generally there is a desire to guard against conflicts with existing or contemplated uses of the retained interests in the property. The lessor sometimes takes the position that it is in his best interest to retain the maximum possible interest in the property, including certain interests in the mineral estate, since he may expect to use his retained interests or sell or lease them to another for additional consideration.

Mineral production is a very specialized business and prospective mineral lessees are generally interested in a specific mineral deposit, such as coal, or ***oil*** and gas, or gold, which there is reason to believe may be recovered from the property. If the lessee has any interest in other minerals, it is usually a result of his desire for protection of his rights to the specific mineral deposit. Only rarely does he consider the possibility of subleasing or producing any other unknown minerals which may be found on the property during the course of exploration.

It therefor becomes quite natural for a lessee, interested principally in a specific type of mineral deposit, to ask for a mineral lease only to such deposits, and a lessor, anxious to retain the maximum interest in his property, to grant a lease to the specific mineral, without regard to practical problems he may be creating for the lessee and, indirectly, for himself. If the lease later becomes very valuable, it will be vulnerable to the efforts of outsiders who may seek conflicting mineral leases or to a lessor who may seek to oust his lessee by demanding strict compliance and an accounting for other unleased minerals discovered or produced in the course of operations.

The practice of separately leasing various mineral deposits poses some difficult practical problems and requires much consideration of the possible or probable adverse consequences. For reasons which are not always apparent, the Federal Government, in the conduct of its mineral leasing or conveyancing policy, has become a very zealous landlord. Because of its dominance as a landowner in the "public land states" comprising the Rocky Mountain region, the Federal Government has emerged as the most important factor in setting local standards for mineral leasing terminology and practices.

The purpose of this article is to review the development of federal and nonfederal mineral leasing or conveyancing practices and to comment upon a few selected problem areas of current interest.

**BACKGROUND**

The federal public land laws[[3]](#footnote-4)3 form the basis of virtually all state and private land titles in the Rocky Mountain region of the western United States and are still applied to vast areas of federally owned forest and desert land- The historical development of the public land laws relating to mineral lands and mineral deposits is well documented, and there are numerous interpretations by courts and administrative tribunals[[4]](#footnote-5)4 which have been incorporated into these laws. It comes as a natural development that mineral terminology and definitions used in the public land laws have been widely adopted by the local population and incorporated into subsequent development in local laws relating to minerals.

The public land laws relating to mining and mineral leasing developed too late in the history of the United States to be a significant factor in the mineral laws of states in the Mississippi Valley and eastward and were never applied in the Republic of Texas.[[5]](#footnote-6)5 In the eastern states, mineral law developed along lines adopted from the common-law practices of England and the original American colonies- Mineral terms and distinctions among minerals, which are so prevalent in the public land regions of the West, seldom have any counterpart in mineral terminology evolved in the central and eastern portions of the United States. Some of the most quoted court decisions relating to mineral interests on privately owned lands arose in the jurisdiction of eastern, midwestern and southern states, which were not influenced by the public land laws.

Before relying on practices or legally accepted mineral terminology reported in decisions of jurisdictions following the English common law, special care should be taken to consider how the federal public land laws relating to mining and mineral leasing might influence a local jurisdiction in the Rocky Mountain region.

The rapid and highly technical development of various segments of the mineral industry has consistently out-distanced legal concepts relating to mineral law. The result is the development of terminology and practices within the mineral industry which have yet to be acknowledged by the courts and which the courts may not choose to follow. To the same degree, terms and practices in everyday use among scientific and technical circles may be foreign to or in contradiction with established and legally accepted terms in certain jurisdictions.

**Development of Federal Mineral Law**

The early federal mining laws tended to adopt local customs and applied uniformly to all classes of minerals then known. A study of the development of these federal mineral laws, however, reveals a definite trend toward the separation of certain minerals from the main body of general minerals and the creation of some mineral conflicts unknown in the common law. The early mineral law[[6]](#footnote-7)6 applied to "veins and lodes" and was not readily applicable to valuable minerals found in unconsolidated surface deposits known as "placers-" Thus, there soon developed separate mining laws regarding placer mineral deposits,[[7]](#footnote-8)7 and the controversy regarding what is a "lode deposit" and what is a "placer deposit" has grown steadily during the interval since 1870.

In 1873, vacant lands containing coal deposits were separated from other mineral deposits covered by the general mining laws, and declared subject to outright purchase.[[8]](#footnote-9)8

The controversy, which began in Pennsylvania, as to whether ***oil*** and gas deposits were "minerals" extended in time to federal lands, and, in 1897 special legislation was enacted which confirmed that ***oil*** and gas deposits could be located as minerals under the general mining laws-[[9]](#footnote-10)9 Similarly, the general mining laws were extended to cover building stone deposits whose character as "minerals" had been disputed.[[10]](#footnote-11)10 In 1901, the general mining laws were extended to include salt deposits and saline lands-[[11]](#footnote-12)11

***Mineral Reservations in Land Patents***

In 1909 and 1910, Congress provided for the first mineral reservations in patents to agricultural lands by authorizing "limited patents" which reserved coal deposits to the United States.[[12]](#footnote-13)12 In 1914, Congress extended this concept by providing that "phosphate, nitrate, potash, ***oil***, gas and asphaltic minerals" should be reserved to the United States in patents of agricultural lands withdrawn, classified or valuable for those deposits-[[13]](#footnote-14)13 However, the 1910 and 1914 legislation made no provision for the ultimate development or disposal of any mineral deposits reserved to the United States. In 1916, Congress provided that certain grazing lands could be patented with a reservation to the United States of "coal and other mineral deposits."[[14]](#footnote-15)14

***Mineral Leasing Act of 1920***

In 1920, Congress enacted legislation which departed from previous federal mining law by providing that deposits of "coal, phosphate, sodium, ***oil***, ***oil*** shale, or gas" on public lands or reserved in patents were to be subject to disposition exclusively by separate mineral leases-[[15]](#footnote-16)15 The above-named mineral deposits, with the addition of potassium,[[16]](#footnote-17)16 have come to be known as the "leasing act minerals" and are so referred to in this article- The 1920 legislation reserved to the United States the right to extract a separate mineral gas, helium, from all gas produced on federal lands.[[17]](#footnote-18)17

The general mining laws and the Mineral Leasing Act apply to vacant public domain lands. By the late 1930s, the Federal Government had reacquired certain private lands which could not be prospected or leased for minerals under existing statutory authority. In 1946, the Interior Department was authorized to separately lease *all mineral deposits* on "acquired lands" through the newly created Bureau of Land Management.[[18]](#footnote-19)18 Under the Mineral Leasing Act for Acquired Lands of 1947,[[19]](#footnote-20)19 socalled leasing act minerals on acquired lands were made leaseable under separate laws upon terms substantially identical to the Mineral Leasing Act of 1920- Other minerals on acquired lands remained leaseable under the 1946 authority.

In 1947, the Disposal of Materials Act[[20]](#footnote-21)20 authorized the outright sale of certain surface vegetative and mineral resources on federal lands, principally common clay- In 1955, this legislation was amended to provide for disposal by outright sale of "common varieties of sand, stone, gravel, pumice, pumicite and cinders" on federal lands.[[21]](#footnote-22)21

Finally, in 1960, the leasing act minerals were enlarged by the addition of asphalt and bituminous substances which, despite their petroleum origins, were to be leased separately from ***oil***, gas, and ***oil*** shale deposits.[[22]](#footnote-23)22

After nearly one hundred years of federal legislation affecting minerals on public lands, there has evolved a complicated system providing for acquisition of rights to various minerals under (1) either lode or placer mining claims on public domain lands, (2) separate mineral leases for "leasing act minerals" on public lands, and for all types of minerals on acquired lands, or (3) out-right purchase of separate common varieties of certain nonmetallic minerals-

**Mineral Leases on State Lands**

All of the states in the Rocky Mountain region received substantial grants of land from the Federal Government for support of common schools and certain other purposes.[[23]](#footnote-24)23 In 1927, unsatisfied land grants to the western states were extended to cover mineral lands, provided that the states retained title to all mineral deposits and made provision to lease such deposits to qualified individuals-[[24]](#footnote-25)24 As a result, the states in the Rocky Mountain region have adopted legislation to provide for mineral leases of all mineral deposits on state lands. There is little actual uniformity among the Rocky Mountain states in their mineral leasing programs, but all of the states have relied upon and followed to some degree the practices of the federal mineral leasing program.

It is a general practice for states to grant separate leases for deposits of ***oil*** and gas and deposits of coal in state lands. Some of the states provide for separate leases for other classes of mineral deposits, and the state of Utah requires separate leases for a wide range of mineral deposits.[[25]](#footnote-26)25 It is a general practice in all of the western states, however, to include all metallic mineral deposits in a single mineral lease-

**Mineral Leases on Privately Owned Land**

***Oil*** and gas leases used by private landowners are generally printed forms drafted by the petroleum industry and purchased from stationery stores or supplied by ***oil*** companies seeking leases. Many of the printed ***oil*** and gas leases are patterned closely after leases widely used in Texas, Oklahoma, and states outside the Rocky Mountain region. Frequently, leases for ***oil*** and gas will purport to include "other minerals," with varying degrees of attention to details regarding royalties and easements for exploration and production of minerals other than ***oil*** and gas. (See N. 50.)

Despite the many sources of printed lease forms, there is a recognizable uniformity among ***oil*** and gas leases. This same uniformity cannot be found in leases involving mineral deposits other than ***oil*** and gas, and, for the most part, mineral or mining leases granted by owners of private land and mining claims are a matter of individual agreement.[[26]](#footnote-27)26 Leases for minerals other than ***oil*** and gas may be general in nature and cover "all minerals," but it is becoming more commonplace for private landowners to lease various minerals separately, following the mineral leasing practice on surrounding or nearby federal lands- Private landowners are no less alert to the fact that maximum revenues can be derived by an owner who leases only what the prospective lessee demands, while retaining all other minerals for leasing to someone else at a later date for additional bonus, rental or minimum royalty.

Owners of fee lands who lease mineral deposits frequently encounter problems of conflicting surface uses by landowner and mineral lessee.[[27]](#footnote-28)27 Conflicting surface uses on mining claims under lease are less of a problem since the surface is seldom used or valuable for farming, homesites, or related purposes-

**SPECIFIC PROBLEM AREAS**

Some definite problem areas exist in the use and definition of mineral terms in the Rocky Mountain region. The specific problem areas discussed below largely concern federal leasing practices, but the same problems occur to a lesser degree on nonfederal lands as well. In many instances, a problem of precise mineral terminology arises first on federal lands, is resolved, and the solution adopted by state agencies issuing mineral leases or by courts interpreting private transactions.

**Use of the Term "Minerals"**

The most common term used to reserve or convey interests in the mineral estate is the general term "minerals." The legally accepted meaning of the term "minerals" in deeds and mineral leases is well documented in numerous court decisions, textbooks and articles, and will be commented upon only briefly in this article.[[28]](#footnote-29)28

There is general agreement that terms such as "minerals," "mineral rights," and "mining rights" used in conveyances have a broader legal meaning than commonly found in technical and scientific definitions-[[29]](#footnote-30)29 One widely reported legal definition for the term "mineral," when so used, is any substance occurring in the earth having sufficient value separated from its situs to be mined, quarried, or dug for its own sake or for its own specific use.[[30]](#footnote-31)30

From an early date, federal laws referring to "minerals" have been very broadly interpreted to include virtually every known substance found in the earth which has sufficient value to warrant the cost of its extraction-[[31]](#footnote-32)31 It is not surprising, therefore, that the western states, which were carved from the federal public domain, have adopted broad, all-inclusive interpretations of the term "minerals," in contrast to the sometimes narrow interpretations adopted in the midwestern and eastern states.

At one time, ***oil*** and gas were controversial "minerals," but today only a few jurisdictions in the eastern United States take the position that ***oil*** and gas are not included within the term "minerals" when used alone. The majority position is to construe a general reference to "minerals" to include ***oil*** and gas unless there was a demonstrated intention to the contrary.[[32]](#footnote-33)32

Recent controversies in a few jurisdictions center around whether certain surfacial deposits, such as limestone, sand, gravel, caliche, and clay deposits are "minerals-"[[33]](#footnote-34)33 Such deposits often virtually constitute the surface of the land, and their removal without compensation to the surface owner poses a severe equitable problem for the courts.[[34]](#footnote-35)34

It is a legal maxim that "hard cases make bad law," and some striking examples of both "hard cases" and "bad law" can be found in many jurisdictions faced with preventing unjustifiable loss or damages arising from the sudden discovery of valuable minerals on land where the mineral estate has been severed from the surface estate- In attempting to justify the position taken by some of these courts or to reconcile mineral definitions from different jurisdictions (or even within the same jurisdiction), it is generally helpful to distinguish between rights to minerals referred to in a *deed* and similar rights referred to in a *mineral lease*. Historically, a deed is more strictly construed against the grantor,[[35]](#footnote-36)35 whereas a lease is generally construed most strictly against the lessee.[[36]](#footnote-37)36 In researching supporting authorities, therefore, one must look to the nature of the transaction to determine where the burden lay to adequately describe a mineral substance sought to be included within the general term "minerals-"

**Petroleum Substances**

***Oil***, gas, and petroleum substances have been the source of much litigation during the past 100 years, and a whole field of law has grown up around the producing segment of the petroleum industry.

In the Rocky Mountain region, the development of ***oil*** and gas law has been a difficult blending of practices adopted from the ***oil*** fields of Texas, Oklahoma, Pennsylvania, and other regions, and the various laws enacted by Congress regulating the public lands of the West. The most difficult problems occur where petroleum deposits are found in areas of mixed public and private ownership.

Court decisions defining rights to minerals on private lands have little or no effect upon the federal laws and regulations governing rights to minerals on federal land or minerals reserved to the United States in private land patents.[[37]](#footnote-38)37 This poses severe problems to the private landowner and to the landman or attorney trying to understand and work with these two vastly different legal systems, which are supposed to apply to tracts of land which sometimes adjoin-

***Oil and Gas***

The terms "***oil***" and "gas" have been precisely defined with regard to federally owned deposits in the Rocky Mountain region. The United States Geological Survey defines "***oil***" as:

Any liquid hydrocarbon substance which occurs naturally in the earth, including drip gasoline or other natural condensates recovered from gas, without resort to manufacturing process.[[38]](#footnote-39)38

Some early court decisions reveal an oversimplified and rather naive concept of fugitive liquid ***oil*** occurrences in nature, referring to "pools" of ***oil*** and underground streams of ***oil***- These early concepts tend to linger in some jurisdictions, but the 1894 decision of *Gird v. California* ***Oil*** *Co*. showed an insight into petroleum occurrences which would do credit to many modern courts:

It is undoubtedly true that petroleum, with its natural gas, unlike other mineral deposits, is movable by virtue of its own inherent force, as well as by virtue of its liquid character, and that this gas [*sic*] may be, and is, greatly assisted by pumps. The evidence shows, too, that, if fresh water gains access to the ***oil*** rock, it will drive out of the rock all of the gas and ***oil***, and will do this for great distances....But, as the normal condition of petroleum is one of repose, and not of motion,...it belongs to the rock in which it is imbedded....[[39]](#footnote-40)39

The United States Geological Survey defines "gas" as:

Any fluid, either combustible or non-combustible, which is produced in a natural state from the earth and which maintains a gaseous or rarefied state at ordinary temperature and pressure conditions-[[40]](#footnote-41)40

The ordinary rarefied or gaseous hydrocarbons found in the earth are referred to generally as "natural gas." Noncombustible gases occurring in the earth, such as carbon dioxide, hydrogen sulphide, helium, and nitrogen, are generally referred to by their proper chemical names. Often, however, noncombustible gases are found in combination with combustible gases, and the mixture is referred to generally as "natural gas," without any attempt to distinguish between the combustible and noncombustible gases.

As an example of a nonhydrocarbon gas deposit, Pan American Petroleum Corporation drilled on federal lands in Emery County, Utah,[[41]](#footnote-42)41 and discovered a pay zone reported to be 520 feet thick at a depth of 8,000 feet in Mississippian beds which tested 20 million cubic feet of gas per day- However, the gas was reported to be practically noncombustible, containing 73 percent nitrogen, 25 percent carbon dioxide, one-half to one percent helium, and was rated at only 12 B.T.U. In a nearby gas field in Utah, several wells produce almost pure carbon dioxide gas, which for decades has been made into "dry ice" and sold commercially.

***Semisolid Bitumen, Bituminous Sands***

"Bitumen" is a term sometimes used to refer to asphalt and related viscous, residual ***oil*** deposits. Bitumen may include a wide variety of petroleum substances ranging from liquids to solid petroleum minerals. The term bituminous, as it has come to be commonly used, is applied to deposits variously known as asphalt, residual ***oil***, sand asphaltum, tar sands, or bituminous sands, which are distinguished from ordinary liquid ***oil*** on the basis of physical characteristics, principally high viscosity and immobility.

In the Rocky Mountain region, semisolid bitumen and related highly viscous petroleum substances are distinguished from "liquid" ***oil*** as a result of federal mineral leasing practices. As early as 1914, the Federal Government distinguished between "***oil***" and "asphaltic minerals" in reserving the same in patents of agricultural lands.[[42]](#footnote-43)42 The Mineral Leasing Act of 1920[[43]](#footnote-44)43 contained express and exclusive provisions for separately leasing deposits of "***oil***," "***oil*** shale," and "gas-" All other petroleum substances, principally semisolid and solid bitumens, remained subject to mining location under the general mining laws. In 1926, lands containing "asphalt, gilsonite, elaterite or other like substances" in Colorado and Utah were withdrawn from settlement, location, sale or entry and were "reserved in aid of legislation."[[44]](#footnote-45)44

In 1960, the Mineral Leasing Act of 1920 was amended to provide for leasing of deposits of:

Native asphalt, solid and semisolid bitumen, and bituminous rock (including ***oil***-impregnated rock or sands from which ***oil*** is recoverable only by special treatment after the deposit is mined or quarried).[[45]](#footnote-46)45

In a letter dated November 22, 1963, and addressed to Senator Wallace Bennett of Utah, John A- Carver, Jr., then Assistant Secretary of the Interior, commented upon the federal distinction between semisolid bitumen (tar sands) and ***oil***:

It is the position of the Department that ***oil*** and gas leases, whether issued prior to or subsequent to September 2, 1960 under Section 17 of the Mineral Leasing Act (30 U.S.C. 226) cover and are limited to the extraction of deposits of mobile ***oil*** and gas fluids, where recovery is contemplated and made by the movement of ***oil*** or gas through reservoir rock, through wells and thence to the surface.

The employment of pressure maintenance, fluid injection, fireflooding or other artificial means to increase recovery by stimulating flow to the well bore is within the purview of an ***oil*** and gas lease, the lessee being entitled to make maximum recovery from the leasehold.

On the other hand, tar sands, from which production is had by mining or quarrying are deposits "from which ***oil*** is recoverable only by special treatment". They are within the purview of 30 U.S.C. 241, and may be extracted only under leases issued thereunder.

In an official memorandum dated February 24, 1965, Thomas J. Cavanaugh, Associate Solicitor of the Department of the Interior for Public Lands, further explained the distinction between ***oil*** and bituminous substances covered by the 1960 Amendment, referred to in his memorandum as "tar sands":

The Mineral Leasing Act Revision of 1960 nowhere appears to have intended to diminish the rights of ***oil*** and gas lessees....

After quoting the United States Geological Survey definitions of "gas" and "***oil***" cited above,[[46]](#footnote-47)46 the Associate Solicitor continued:

Consequently, it is apparent that the Congress enacted Section 7 of the 1960 Revision to provide a means for leasing hydrocarbons which, since they occur naturally in a solid or semisolid condition in the earth or in ***oil***-impregnated rock from which they cannot be recovered without special treatment after the rock is mined or quarried, are not subject to leasing under the ***oil*** and gas provisions of the Mineral Leasing Act-

Congress thought that it was granting authority for the mining of hydrocarbons which had not previously existed. No one seems to have regarded the mining of hydrocarbons as authorized under ***oil*** and gas leases, although the mining of ***oil*** and gas is not expressly excluded from the ***oil*** and gas leasing provisions of the Mineral Leasing Act....

Whether it would be possible to mine any of these liquid and gaseous substances is immaterial; the important fact is that the ***oil*** and gas lease would give the lessee no authority to mine solid or semisolid hydrocarbons. Since a tar sands lease would give a lessee a right to mine only the solid and semisolid hydrocarbons, there would thus appear to be no conflict between the two leases.

In summary, we say that the line between ***oil*** and gas, on the one hand, and tar sands, on the other, becomes essentially a question of whether the ***oil*** in the substance from which it is extracted occurs in the earth as a fluid (either gaseous or liquid) or whether it occurs naturally in the earth as a solid or semisolid. We have a statement as to specific substances which are covered by tar sands leases, and, unless an ***oil*** and gas lessee is able to show that ***oil*** in one of those substances occurs as a fluid in the ground, he cannot exploit it. It is subject to exploitation by the tar sands lessee only.

Left largely unanswered is the problem of who shall have the right to extract ***oil*** or asphalt from bituminous deposits found at depth and, therefore, not economically susceptible to conventional "mining and quarrying." Exponents of bituminous sand leasing believe that commercial extraction of such deposits can be achieved by in situ methods employing the application of heat or diluents to the deposit in place and extraction of the liquefied asphalt or bitumen through closely spaced wells. The techniques are reported to be quite similar to certain secondary recovery methods now being employed to recover residual ***oil*** in depleted ***oil*** fields in the United States.

***Oil Shale***

***Oil*** shale, a sedimentary rock containing organic material which is capable of yielding a waxy ***oil*** by destructive distillation, is a much discussed topic in the petroleum industry. Reported ***oil*** reserves contained in known deposits of ***oil*** shale in Colorado, Utah, Wyoming, Idaho, Montana, and Nevada are little short of fantastic.[[47]](#footnote-48)47

Thick sections of ***oil*** shale beds in northwestern Colorado have been tested to yield up to 50 gallons of ***oil*** per ton of rock, but surface exposures of ***oil*** shale beds contain no free ***oil*** or gas- As a practical matter, the term "***oil*** shale" is seldom confused with the term "***oil***" or "gas." Nevertheless, the Federal Government has concluded that since the main product of ***oil*** *shale is* ***oil***, the term "***oil***," at least as used in reservations in agricultural patents, may properly be construed to include ***oil*** shale deposits.[[48]](#footnote-49)48 The term "***oil***" as used in other federal statutes and the Mineral Leasing Act has not been so interpreted to include ***oil*** shale deposits.

In the Uinta Basin of Utah, liquid ***oil*** is produced from nonmarine sediments by conventional drilling operations in beds known to contain rich ***oil*** shale deposits, and in most cases, the liquid ***oil*** and gas is believed to have originated from the ***oil*** shale deposits by natural processes.[[49]](#footnote-50)49 Potential controversy may occur when attempts are made to produce ***oil*** from deeply buried ***oil*** shale deposits by destructive distillation through the application of intense heat in areas where *free* ***oil*** is known or believed to occur near the ***oil*** shale deposits-

**Hydrocarbon Substances**

The term "hydrocarbons" is widely used in legal instruments dealing with ***oil*** and gas deposits and also with coal deposits. It must be remembered that there are two distinct categories of hydrocarbon substances: (1) liquid hydrocarbons, including ***oil***, gas, and other liquid or semisolid petroleum substances, and (2) solid hydrocarbons, including coal, lignite, and possibly also certain "solid" petroleum substances such as gilsonite, asphaltites, and solid bitumens.

Careless use of the general term "hydrocarbons" in a legal instrument may lead to possible ambiguity where none was intended. In the ***oil*** industry, the term generally is used to refer to liquid hydrocarbons and it is sometimes overlooked that the term can also include coal deposits. As a result, a lease of "***oil*** and gas and other hydrocarbons," followed by language describing easements for drilling, pumping, and laying pipelines, and specifying royalty payments based upon production of ***oil*** or gas, may be grounds for finding ambiguity in the instrument.[[50]](#footnote-51)50 A court so inclined could then go beyond the terms of the instrument and apply legal rules of construction which give rise to interpretations never intended by the parties-

The legal draftsman should also be aware that coal, since it is a hydrocarbon, may be capable of being converted into gaseous or liquid hydrocarbon fuels similar to the conventional end products of ***oil*** and gas deposits. Prior to the discovery of large deposits of natural gas, illuminating gas was commercially produced from coal. Experimental programs of the U.S. Bureau of Mines for burning coal beds in place in the ground to produce flammable gases may in time become commercially important. Also, "coal ***oil***" is a petroleum substance which was produced from coal before the discovery of naturally liquid ***oil*** deposits in the earth. Many resinous coal deposits are believed capable of producing liquid ***oil*** and other petroleum substances more economically than ***oil*** shale deposits, and may become an important source of liquid petroleum in the future.

As commonly used in the industry, the term "coal" refers to combustible, carbonized, organic deposits occurring as stratified beds in the earth. Coal is used principally as a fuel and is formed from the remains of vegetation by partial decomposition and compaction. Many varieties of coal are recognized, ranging from lignite, subbituminous and bituminous coal to anthracite and cannel coal.

Because coal is a well known and long recognized valuable hydrocarbon deposit, if coal is intended to be included (or excluded) in a legal document, it would be advisable to specifically refer to "coal" rather than to rely upon the use of the more general term "hydrocarbons" alone.

**Mineral Salts**

Mineral salts occurring in brines or as solid minerals are found as surface deposits in arid regions and have been discovered at considerable depths while exploring for ***oil***, gas, sulphur, and other minerals. The growth of the chemical and fertilizer industries have created a demand for certain mineral salts which were little known a few years ago. As a result, there is little established uniformity in the terminology relating to mineral salts, saline deposits and evaporites in the mineral industry. Generally, the term "mineral salts" is applied to mineral compounds which, like common salt (sodium chloride), are more or less readily soluble in water. Mineral salts may be composed of chlorides, sulfates, borates, nitrates, carbonates, or even silicates of sodium, potassium (potash),[[51]](#footnote-52)51 and a large number of other chemical elements, including calcium, magnesium, lithium, and copper-

"Saline deposits" is a general term applied to sedimentary beds ranging from pure mineral salts to slightly salty sediments. Although most mineral salts are deposited by evaporation of brines, not all "evaporite minerals" are referred to as "salts." Gypsum, anhydrite, and caliche are common occurring "evaporites" which are often free from soluble mineral salts.

***Sodium and Potassium Deposits on Federal Lands***

The Mineral Leasing Act provides elaborate procedures for separately leasing mineral salts of sodium and potassium on federal lands.[[52]](#footnote-53)52 The provisions covering potassium leases apply also to salts of sodium, magnesium, aluminum, or calcium which may be associated with potassium deposits, but sodium leases are not as broad-[[53]](#footnote-54)53 Other mineral salts on federal lands, except those containing sodium and potassium or associated with potassium salts, may be appropriated under the general mining laws.

Quite frequently, mineral salts with some valuable property contain sodium or potassium only as a minor constituent. In determining whether the Mineral Leasing Act or the general mining laws will apply to a mixed salt deposit, the United States Geological Survey has applied a general rule that the Mineral Leasing Act will control the disposition of such salt deposits unless the sodium or potassium values are negligible.[[54]](#footnote-55)54

In the Searles Lake area of California, large saline deposits are mined for borax and other borate minerals valuable for their boron content- Frequently, the borate mineral occurring near the surface is a mineral named "colemanite," a calcium borate which contains neither sodium nor potassium and is, therefore, a locatable mineral under the general mining laws. However, as mining progresses to moderate depths, borate minerals containing *sodium* are often encountered. A controversy then arises as to whether intimately mixed *sodium* borate minerals or calcium-*sodium* borate minerals may be extracted from mining claims located upon calcium borate minerals. At one time, borate minerals containing calcium borate with minor amounts of sodium were held to be locatable minerals.[[55]](#footnote-56)55 Recently, however, the attitude of the United States Geological Survey is reported to have shifted to favor application of the Mineral Leasing Act to all borate minerals containing any quantity of sodium.[[56]](#footnote-57)56

***Other Mineral Salts on Federal Lands***

Interest in magnesium chloride and lithium chloride salts found as minor but valuable constituents in saline brines associated with dry lake beds and saline deposits in Utah and Nevada has focused attention on a problem area in mineral salts- Where these magnesium- and lithium-bearing brines also contain appreciable amounts of potassium, the Mineral Leasing Act would permit their recovery and extraction under a mineral lease as salts associated with potassium. Sodium chloride, usually found in large proportions in these brines, is considered worthless and would be produced only as a necessary prerequisite to concentration and recovery of magnesium and lithium salts. Ultimately, the sodium salt would be flushed away as a waste product. If the lithium and magnesium salts were found in a deposit which contained neither potassium nor sodium salts, the deposit would be exclusively subject to location under the general mining laws. However, the close association of these lithium and magnesium salts with sodium salts, even where the sodium is a waste product, poses a severe problem as to the proper method to acquire these deposits on federal lands. As a protective measure, it would seem advisable to acquire both mining claims and mineral leases to keep out third parties until the federal position is clarified.

***Silicate "Salts"***

Silicates of potassium and sodium are expressly covered in the Mineral Leasing Act, and this creates some unique problems. Silicate minerals containing sodium and/or potassium are very commonplace and seldom have any value as ores of either sodium or potassium. Two exceptions are the minerals leucite and alunite which are potassium-aluminum silicates found in volcanic rocks. Both minerals are considered potential ores of both potash and aluminum. Many other silicate minerals containing minor quantities of sodium or potassium, such as feldspar and mica, are valuable in industry for properties not directly related to their sodium or potassium content. Quite frequently such deposits on public lands are located as mining claims without any thought being given to their sodium or potassium content and the possible application of the Mineral Leasing Act.

**Metallic Minerals**

A mineral which is principally valuable for a metal it contains is referred to as a "metallic mineral," even though certain nonmetallic elements in the mineral may also have value. Metal producing minerals are the classic minerals of legal literature, it being said that "all metals are minerals, but all minerals are not metals."[[57]](#footnote-58)57 Customarily metallic minerals are designated in legal instruments by the name of the principal *metal* of value they contain and rarely by the technical name of the *mineral*- Legal instruments customarily refer to deposits or "ores" of silver, copper, zinc, iron, or uranium, with little regard to the fact that these metals are seldom if ever found in a pure or uncombined form in nature. The term "ore," as used in legal instruments, does not infer actual economic value, but merely means rock or mineral potentially valuable for the named metal or mineral substance.

Certain metals commonly are found in nature combined with or in close association with certain other metals or nonmetals. Experienced mining men and scientists can accurately predict many of these associations with regard to a given locality or deposit. For example, the metal lead is frequently found in the same deposit with zinc, silver, copper, or all of them. This is due to chemical similarities of these metals and their affinity to seek the same environment for deposition and accumulation.

The greatest single problem of the landowner and attorney dealing with metallic minerals is the deceptively simple practice of separately conveying, leasing, or reserving separate metals which, while the names are dissimilar and do not imply any relationship with one another, are intimately combined in a mineral deposit.

A classic example of an attempt to separately convey metallic minerals which in nature are not separate and cannot practically be separated arose in 1848 and involved New Jersey Zinc Company in its early days. New Jersey Zinc Company acquired by deed "all the zinc and other ores, except franklinite and iron ores" in a tract of mineral land at Franklin Furnace, New Jersey. Another company acquired the reserved mineral interest of New Jersey's grantor and proceeded to mine the reserved franklinite ore. New Jersey Zinc obtained an injunction on the ground that franklinite was the principal ore of zinc in the deposit and therefore the reservation in the deed was fraudulent.

In the protracted litigation which followed, the courts recognized that zinc and franklinite ore were in close mechanical combination and could not be mined separately, so that one party or the other must take the entire deposit. The trial court took the position that at the time of the deeds, from 1848 to 1853, the deposit was known as "franklinite" and that this mineral actually predominated in the deposit, so that the reservation of "franklinite" defeated a grant of any other metals including zinc intimately commingled with franklinite.[[58]](#footnote-59)58

The decision was reversed on appeal- The appellate court noted that, at the time of the conveyance to New Jersey Zinc Company, a franklinite and iron vein was the only known mineral deposit on the lands and this vein had been mined for zinc for sixty years.[[59]](#footnote-60)59 New Jersey Zinc Company was awarded the property, but litigation broke out again, and the New Jersey Zinc Company lost a series of court contests with successors in title to the franklinite mining company.[[60]](#footnote-61)60 Ultimately, after many years of fruitless litigation, New Jersey Zinc Company solved its problems by merging with its opponents, so that the entire deposit once more became owned by a single party-[[61]](#footnote-62)61

Fortunately, the problems which may arise in separating metallic minerals by lease, conveyance, or reservation are avoided by the simple fact that such a practice is rare. However, the current federal practice of issuing separate leases for so-called hard minerals on acquired lands[[62]](#footnote-63)62 (i-e., metallic and other minerals, except so-called leasing act minerals referred to above) comes perilously close to the type of problem encountered in the *New Jersey Zinc* case. Furthermore, if a universal metallic mineral leasing system were to be imposed by the Federal Government to replace existing law permitting mining claims, this type of problem will increase many fold and have to be faced and solved.

**Nonmetallic and Common Variety Mineral Deposits**

In industry and science, the term "nonmetallic minerals" refers to a respectable segment of minerals which are valuable for reasons other than the production of a metal. Minerals, other than mineral fuels, which are used as a source of chemical products, fertilizers, ceramics, and a wide variety of construction and industrial purposes fall within this classification.

Many of the nonmetallic minerals are quite widespread in occurrence, but in certain localities may not justify the cost of extraction and transportation to available markets. As a result, these deposits are sometimes looked upon as not being "minerals" according to accepted definitions, particularly where they virtually constitute the total surface of the land.[[63]](#footnote-64)63

In the nomenclature of nonmetallic minerals, the usual practice is to refer to the general mineral name rather than to any predominate nonmetallic substance- Thus, legal instruments commonly refer to deposits of limestone, mica, clay, gypsum, asbestos, and feldspar. Sometimes, however, certain nonmetallics are identified in legal instruments by reference to a valuable component of the mineral, such as silica, borate, salt, sulphur, or phospate. In a few instances, a general reference to uses of the nonmetallic substance is employed to identify it in a legal instrument, as in the case of refractories, abrasives, and gem stones.

The lack of uniform terminology in the field of nonmetallic minerals requires that reference be made to some reputable technical treatise to determine the customary meaning and usage of the proper terms. As a precaution, the legal draftsman ought to discuss a selected term with a qualified expert to determine if there are possible confusing or unsuspected meanings. The names of nonmetallic minerals are especially susceptible to divergent local usages. Thus, "isinglass" may mean mica; "paint rock" may mean any one of several mineral substances used by Indians or pioneers as a pigment or dye; and "granite" or "marble" may mean any one of several widely differing rocks bearing little resemblance to one another or to typical granite or marble.

On federal public lands, various nonmetallic minerals may fall under the general mining laws,[[64]](#footnote-65)64 the Mineral Leasing Act,[[65]](#footnote-66)65 or the Disposal of Materials Act;[[66]](#footnote-67)66 and care must be exercised to determine which law applies-

***Common Varieties***

In 1955, Congress amended the Disposal of Materials Act of 1947[[67]](#footnote-68)67 to provide for disposal of "common varieties" of mineral materials including, but not limited to, sand, stone, gravel, pumice, pumicite, and cinders- "Common varieties" are defined by federal regulations[[68]](#footnote-69)68 to mean deposits having no distinct or special economic or commercial value. Therefore, uses, locality, and other economic factors must be determined before a "common variety" classification of a given deposit can be made.

The term "common variety minerals" has come into existence and is widely used by Federal Government administrators and mining people alike. The writer submits that, as a matter of law, there are no "common variety minerals," only "common varieties" of minerals. The test of whether a mineral deposit is a "common variety" is one of fact, turning upon uses, economic value, special properties and accessibility to markets, and not a test of law as is sometimes advocated. One need only refer to the language of the legislation, its legislative history, and its formal interpretation in the federal regulations to confirm this conclusion. Administrative zealousness, however, has outstripped the existing regulation and statutory definitions of "common variety." Some recent administrative decisions of the Interior Department appear to hold, in effect, that there are no "uncommon varieties" of stone or sand and gravel.[[69]](#footnote-70)69 While such decisions might bind the parties and influence future decisions by the same tribunal, they would not have the effect of overruling the plain meaning of the statute or federal regulations which establish the factual tests of economic value and special uses-

**CONCLUSION**

This article grew out of research by the writer into the area of conflict between ***oil*** leases and leases for "bituminous sands" on federal and state of Utah lands. The writer observed that the same problems, perhaps in a slightly different form, appear whenever associated or similar minerals within the land are separated by a lease, conveyance or reservation. Sometimes the problem can be traced to a confusion over dissimilar sounding terms which actually refer to essentially a single mineral or mineral deposit, as in the *New Jersey Zinc* "franklinite" case. Sometimes the problem stems from a strained interpretation by a court or administrative tribunal trying to solve another seemingly unrelated problem without thinking through the long-term consequences, as with the federal interpretation that "***oil*** shale" means "***oil***," and certain court cases involving surface mineral deposits. Generally, however, the problem traces back to a disregard by the lawmaker or the legal draftsman for natural factors which make a separation of certain mineral deposits impossible or unworkable, as is the case of associated mineral salt deposits and the federal "***oil***" and "bituminous sands" leasing conflict.

In the Rocky Mountain public land states the dominant factor in the area of mineral leasing and conveyancing has been the United States Government. A study of the history, development, and current practices under federal laws and regulations governing mineral disposals reveals a distinct trend toward the separation of minerals. Most of the problems studied for this article arise from the division of various minerals under federal laws, and these problems can be observed spreading into mineral leasing practices on state-owned and private lands.

Although the problems discussed in this article are not new and may occur over wide areas, they appear to have received very little attention except on a caseby-case basis, and then often before inconspicuous administrative tribunals. The concept of dividing the mineral kingdom into separate compartments for purposes of exploration and extraction, under legal precepts which do not take into proper account the workings of nature, is not trivial matter to the parties involved or ultimately to the entire mineral industry at home or abroad.

**Projecting the Trend**

There is every reason to believe that the complex problems of mineral terminology in legal documents will become even more complex in the future. The trend toward separate leasing of minerals by the Federal Government, certain state governments, and private landowners will probably continue to increase. In the federal public domain areas of the Rocky Mountain region, conflicts among Mineral Leasing Act mineral deposits are becoming numerous and the title uncertainties of unpatented mining claims are a disgrace. Whether by accident or not, the solutions being offered by the Interior Department often create more problems than they solve. "Marketability tests" and "common variety" definitions lend nothing to the stability of titles of unpatented mining claims upon which sizable industries are based and fortunes are invested.

The Public Land Law Review Commission has been established to investigate many of these problems and hopefully to suggest solutions to existing problems and practices in the hope of avoiding future pitfalls. Some have pointed to the current problems and uncertainties of the general mining laws to propose a universal mineral leasing program for federal lands. On need only look at the acquired lands mineral leasing policies applied so widely to federal lands in the eastern United States to observe that a universal mineral leasing system has only different but no less numerous problems of its own.

Admitting that the policy of severing minerals from one another is a practice laden with problems, there are some obvious partial solutions to certain of these problems:

(1)   Awarenes of the problem areas by both mineral lessee and lessor;

(2)   Efforts to simplify naturally complex procedures and terminology, and to achieve where possible some degree of uniformity; and

(3)   Flexible, sympathetic administration of procedures by administrative agencies and the courts.

As an attorney, the writer is aware of the discouraging effects which title problems have in any organized plan for mineral development. The capital investment and sustained enthusiasm needed to convert minerals in the ground into usable products and gainful employment demand the wholehearted cooperation of all parties to any transaction. When Government is both arbiter and lessor, the failure to resolve critical title uncertainties arising from needless and avoidable conflicts is particularly unjustifiable.

Hopefully, the Federal Government, mindful of its domination of land and mineral policies in the Rocky Mountain region, will take notice of the problems created by legally separating minerals from one another. The existing problems demand a workable solution, and sound administration of federal lands and minerals require that foreseeable conflicts be anticipated and avoided wherever possible. It has been amply demonstrated that federal mineral policy, once established, inevitably spreads to the state and private sectors in this region.

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1. 1Intent of the parties controls interpretation, and where this can be ascertained from the instrument, arbitrary rules of law as to construction will not be invoked. Western Dev. Co. v. Nell, 4 Utah 2d 112, 288 P.2d 452 (1955). See also Notes, 5 O. & G.R. 419 (1955); Atwood v. Rodman, 355 S.W.2d 206 (Tex. Civ. App. 1962); 9 *Wigmore, Evidence* §§ 2458, 2463 (3d ed. 1952).

   Intent of parties must be considered in construing a deed. Birmingham v. McCoy, 358 P.2d 824 (Okla. 1960), citing 16 Am. Jur., "Deeds," § 174 (1938), and other Oklahoma decisions. [↑](#footnote-ref-2)
2. 2Terms in a mineral lease or deed are to be understood in their ordinary and popular sense, unless used by the parties in their technical sense or unless a special meaning is given to them by usage, in which case the latter must be followed. Cronkhite v. Falkenstein, 352 P.2d 396 (Okla. 1960). [↑](#footnote-ref-3)
3. 3The "public land laws" are those federal laws governing the public domain and codified in Titles 30 and 43 of the United States Code. [↑](#footnote-ref-4)
4. 4The principal federal tribunals concerned with mineral law are the U.S. Department of the Interior and its subordinate agency, the Bureau of Land Management (formerly the General Land Office). Decisions of the Interior Department considered of general importance are reported in "Interior Decisions" (formerly "Land Decisions"), printed by the U.S. Government Printing Office in Washington, D.C. These and other decisions of the Secretary and the Director, Bureau of Land Management, are reported in the Gower Federal Services, published by the Rocky Mountain Mineral Law Foundation, Boulder, Colorado. [↑](#footnote-ref-5)
5. 5Federal mineral law began in 1866, but did not reach full development until 1872. The Mineral Leasing Act was adopted in 1920. [↑](#footnote-ref-6)
6. 6Act of July 26, 1866, 14 Stat. 251. [↑](#footnote-ref-7)
7. 7Act of July 9, 1870, 16 Stat. 217, 30 U.S.C. § 52 *et seq*. (1964). [↑](#footnote-ref-8)
8. 8Act of March 3, 1873, 17 Stat. 607, as amended by the Acts of June 6, 1900, 31 Stat. 658, and April 18, 1904, 33 Stat. 525. See Schofield, 41 L.D. 224. See also Act of July 1, 1864, 13 Stat. 343, which provided for disposal of coal lands. [↑](#footnote-ref-9)
9. 9Act of February 11, 1897, 29 Stat. 526. Dunham v. Kirkpatrick, 101 Pa. 36, 47 Am. Rep. 676 (1882), is the leading case in the controversy as to the mineral character of ***oil*** and gas. [↑](#footnote-ref-10)
10. 10Act of August 4, 1892, 22 Stat. 348, 30 U.S.C. § 161 (1964). [↑](#footnote-ref-11)
11. 11Act of January 31, 1901, 31 Stat. 475, 30 U.S.C. § 162 (1964). [↑](#footnote-ref-12)
12. 12Act of March 3, 1909, 35 Stat. 844, 30 U.S.C. § 81 (1964); Act of June 22, 1910, 36 Stat. 583, 30 U.S.C. §§ 83-85 (1964). [↑](#footnote-ref-13)
13. 13Act of July 17, 1914, 38 Stat. 509, 30 U.S.C. § 121 *et seq*. (1964); see also the Act of March 4, 1933, 47 Stat. 1570, 30 U.S.C. § 124 (1964), relating to lands containing sodium and/or sulphur. [↑](#footnote-ref-14)
14. 14Act of December 29, 1916, 39 Stat. 862, 43 U.S.C. § 299 (1964). [↑](#footnote-ref-15)
15. 15Mineral Leasing Act of February 25, 1920, 41 Stat. 437, 30 U.S.C. § 181 (1964). [↑](#footnote-ref-16)
16. 16Potassium deposits were covered by the earlier Act of October 2, 1917, 40 Stat. 297, which was in effect during 1920, but was repealed and replaced by the Act of February 7, 1927, 44 Stat. 1057, 30 U.S.C. §§ 281-287 (1964). [↑](#footnote-ref-17)
17. 1741 Stat. 457 (1920), 30 U.S.C. § 181 (1964). [↑](#footnote-ref-18)
18. 18Section 402 of Reorganization Plan No. 3 of 1946, 60 Stat. 1099. This very general authority has been greatly enlarged upon by federal regulations found in 43 C.F.R., Pt. 3220 (1965). [↑](#footnote-ref-19)
19. 1961 Stat. 913 (1947), 30 U.S.C. §§ 351-359 (1964). [↑](#footnote-ref-20)
20. 20Disposal of Materials Act of July 31, 1947, 61 Stat. 581. [↑](#footnote-ref-21)
21. 21Act of July 23, 1955, 69 Stat. 367, 30 U.S.C. §§ 601-606 (1964), commonly referred to as the "Multiple-Use Act" or "Public Law 167." [↑](#footnote-ref-22)
22. 2274 Stat. 781 (1960), 30 U.S.C. §§ 181, 241 (1964). [↑](#footnote-ref-23)
23. 23Individual grants were made to each state upon admission into the Union, beginning with Ohio in 1802. As a rule, the grants were made as part of enabling legislation for each respective state, pursuant to various laws codified in 43 U.S.C. §§ 851-873 (1964). [↑](#footnote-ref-24)
24. 24Act of January 25, 1927, 44 Stat. 1026, 43 U.S.C. § 870 (1964). [↑](#footnote-ref-25)
25. 25Rule 11 of the Utah State Land Board (1965 ed.) provides for separate mineral leases for six categories of minerals, the sixth category being separate leases for individual substances not enumerated in the first five categories. [↑](#footnote-ref-26)
26. 26See Swenson, "An Analysis of Mining Options and Leases," 8 *Rocky Mt. Min. L. Inst*. 47 (1963). [↑](#footnote-ref-27)
27. 27See Ingraham, "The Meaning of 'Minerals' in Grants and Reservations," 30 Rocky Mt. L. Rev. 343 (1958); Emery, "What Surface Is Mineral and What Mineral Is Surface," 12 Okla. L. Rev. 499 (1959). [↑](#footnote-ref-28)
28. 28See Martz, "Conveyancing of Mineral Interests," in 3 *American Law of Mining*, Ch. 15 (1964); Ingraham, N. 27 *supra; Kuntz,* ***Oil*** *& Gas*, Ch. 13 (1964); *Ricketts, American Mining Law*, Ch. IV (1948 ed.). [↑](#footnote-ref-29)
29. 29See Martz, N. 28 *supra*, §§ 15-16. [↑](#footnote-ref-30)
30. 30Slightly modified by the writer from *Ballentine, Law Dictionary* 818 (1948 ed.), cited in Martz, N. 28 *supra*, and Ingraham, N. 27 *supra*. [↑](#footnote-ref-31)
31. 31On federal lands, "minerals" is broadly interpreted to include nonmetallic substances and valuable stone. Northern Pacific Ry. v. Soderberg, 188 U.S. 526 (1903); see also instances cited in 1 *Ricketts, American Mining Law* § 11 (1948 ed.); Pacific Coast Marble Co. v. Northern Pacific Ry., 25 L.D. 233 (1897); Mullen v. United States, 118 U.S. 271 (1886). [↑](#footnote-ref-32)
32. 32Minority and majority rules, with supporting cases, are discussed in *Kuntz,* ***Oil*** *& Gas* § 13.3 (1964). [↑](#footnote-ref-33)
33. 33Deposits of limestone, clay, caliche, and surface shale have held not to be "minerals" within intent of parties. Atwood v. Rodman, 355 S.W.2d 206 (Tex. Civ. App. 1962). Gravel is simply a part of the soil and not a "mineral." Bambauer v. Manjoulet, 29 Cal. Rptr. 874 (Ct. App. 1963). Bauxite, limestone, and uranium ore in surface deposits may not constitute "minerals." See Notes, 18 O. & G.R. (1963), and cases cited therein. But on federal lands, sand and gravel are "minerals." Layman v. Ellis, 52 I.D. 714 (1929). [↑](#footnote-ref-34)
34. 34Sand, gravel, and common stone are frequently excluded as "minerals," but they seem to fit the legal definition of "mineral." Ingraham, "The Meaning of 'Minerals' in Grants and Reservations," 30 Rocky Mt. L. Rev. 343 (1958). [↑](#footnote-ref-35)
35. 35"A deed is construed most strongly against the grantor, and a reservation [of minerals] is construed more strictly than a grant." Radke v. Union Pacific Ry., 138 Colo. 189, 334 P.2d 1077 (1959). [↑](#footnote-ref-36)
36. 36This is particularly the case with ***oil*** and gas leases. Halbermel v. Mong, 31 F.2d 822 (6th Cir. 1929); Hall v. Augur, 82 Cal. App. 594, 256 P. 232 (1927). For mining leases, see Niles Land Co. v. Chemung Iron Co., 234 Fed. 294 (8th Cir. 1916); Tustin v. Philadelphia & Reading Coal & Iron Co., 250 Pa. 425, 95 A. 595 (1915). [↑](#footnote-ref-37)
37. 37Even in the absence of federal statute or regulation, federal court decisions may constitute a "federal common law," permitting the Federal Government to ignore state laws. See Erie R.R. v. Tompkins, 58 I.D. 694 (1944), citing D'Oench, Duhme & Co. v. Federal Deposit Ins. Corp., 315 U.S. 447 (1942). [↑](#footnote-ref-38)
38. 3830 C.F.R. § 221.2(p) (1965). [↑](#footnote-ref-39)
39. 3960 Fed. 531, at 540 (S.D. Cal. 1894). [↑](#footnote-ref-40)
40. 4030 C.F.R. § 221.2(o) (1965). [↑](#footnote-ref-41)
41. 4115 Utah ***Oil*** Report, No. 7 (Feb. 13, 1965) published at Salt Lake City, Utah. [↑](#footnote-ref-42)
42. 4230 U.S.C. § 121 (1964); see N. 13 *supra*. Even earlier, asphalt (bitumen) was recognized as a separate mineral, in Tulare ***Oil*** & Mining Co. v. Southern Pacific R.R., 29 L.D. 269 (1899), citing official survey notes of 1874 and 1893; and Union ***Oil*** Co., 25 L.D. 351 (1897). [↑](#footnote-ref-43)
43. 4341 Stat. 437 (1920), as amended, 30 U.S.C. §§ 181-263 (1964). [↑](#footnote-ref-44)
44. 44Executive Order No. 4371, dated January 21, 1926. [↑](#footnote-ref-45)
45. 4541 Stat. 437 (1920), as amended, 30 U.S.C. §§ 181, 241 (1964). [↑](#footnote-ref-46)
46. 46See Ns. 38, 40 *supra*. [↑](#footnote-ref-47)
47. 47See United States Geological Survey Bulls. 641, 691, 729, and 1072-0, and numerous U.S. Bureau of Mines Bulletins and Reports on ***oil*** shale. [↑](#footnote-ref-48)
48. 48Smallhorn ***Oil*** Shale Refining Co., 52 I.D. 329 (1928). [↑](#footnote-ref-49)
49. 49Hunt, "Origin of Hydrocarbons in the Uintah Basin, Utah," 38 American Ass'n of Petroleum Geologists Bull. 1671-1698 (1954). [↑](#footnote-ref-50)
50. 50The modern trend is to interpret "minerals" in light of appropriateness of easements and royalty provisions in lease or deed. Western Dev. Co. v. Nell, 4 Utah 2d 112, 288 P.2d 452 (1955). See also Ingraham, "Meaning of 'Minerals' in Grants and Reservations," 30 Rocky Mt. L. Rev. 343 (1958). [↑](#footnote-ref-51)
51. 51The preceding elements and compounds are expressly enumerated in the Mineral Leasing Act, 41 Stat. 447, 524 (1920), as amended, 30 U.S.C. §§ 261-262, 281-285 (1964). [↑](#footnote-ref-52)
52. 5241 Stat. 447 (1920), as amended, 30 U.S.C. §§ 261-262 (1964); 44 Stat. 1057 (1927), 30 U.S.C. §§ 281-285 (1964); and federal regulations in 43 C.F.R., Pts. 3140, 3150 (1965). [↑](#footnote-ref-53)
53. 53The original 1920 act provided for leasing salts of "sodium *dissolved in or soluble in water, and accumulated by concentration*, in lands belonging to the United States." 41 Stat. 447 (1920). The italicized words were omitted by amendment in 1928, 45 Stat. 1019. Sodium leases have never carried rights to salts "associated" with sodium salts. [↑](#footnote-ref-54)
54. 54The position of the United States Geological Survey with regard to this matter appears to be much stricter than reported in the *U.S. Borax* case, N. 55 *infra*. [↑](#footnote-ref-55)
55. 55United States v. U.S. Borax Co., 58 I.D. 426 (1943). [↑](#footnote-ref-56)
56. 56The attitude of the Geological Survey is not contained in any published form known to the writer, but is apparent from the Government's brief filed in the case of ***Kern*** County Land Co. v. Udall, Civ. No. 2525-ND, S.D. Cal. At this writing, the case was undecided. [↑](#footnote-ref-57)
57. 571 *Ricketts, American Mining Law* § 7 (1948 ed.), and cases cited in N. 1 therein. [↑](#footnote-ref-58)
58. 58New Jersey Zinc Co. v. New Jersey Franklinite Co., 13 N.J. Eq. 322 (1861). [↑](#footnote-ref-59)
59. 59New Jersey Zinc Co. v. Boston Franklinite Co., 15 N.J. Eq. 418 (1862). [↑](#footnote-ref-60)
60. 60Meredith v. Zinc & Iron Co., 55 N.J. Eq. 211, 37 A. 539 (1897); Lehigh Co. v. New Jersey Zinc Co., 55 N.J.L. 350, 26 A. 920 (1893); New Jersey Zinc Co. v. Lehigh Co., 59 N.J.L. 189 (1896). [↑](#footnote-ref-61)
61. 61*Shamel, Mining, Mineral & Geological Law* 49 (1907). [↑](#footnote-ref-62)
62. 62See 43 C.F.R., Pt. 3220 (1965). [↑](#footnote-ref-63)
63. 63See Ingraham, "Meaning of 'Minerals' in Grants and Reservations," 30 Rocky Mt. L. Rev. 343 (1958); see also cases cited N. 33 *supra*. [↑](#footnote-ref-64)
64. 6417 Stat. 91 (1872), as amended, 30 U.S.C. §§ 22-42 (1964), covering all minerals not covered by other laws. [↑](#footnote-ref-65)
65. 6541 Stat. 437 (1920), as amended, 30 U.S.C. §§ 181-265 (1964), covering nonmetallic deposits of sodium, potassium, phosphate, and, in Louisiana and New Mexico, sulphur. [↑](#footnote-ref-66)
66. 6661 Stat. 681 (1947), as amended, 30 U.S.C. §§ 601-603 (1964), covering "common varieties" of sand, stone, gravel, pumice, pumicite, cinders, and common clay. [↑](#footnote-ref-67)
67. 67Act of July 31, 1947, 61 Stat. 681, amended by Pub. L. 167, the Act of July 23, 1955, 69 Stat. 367, 30 U.S.C. §§ 601-606 (1964). [↑](#footnote-ref-68)
68. 6843 C.F.R. § 3511.1 (1965). [↑](#footnote-ref-69)
69. 69United States v. Kelly Shannon, GFS SO-1963-18 (Mining), A-29166 (April 12, 1963); United States v. D. G. Ligier, GFS SO-1962-33 (Mining), A-29011 (Oct. 8, 1962) and cases cited therein. [↑](#footnote-ref-70)