A "Study" In Cooperative Subsurface Oil & Gas Development Rights

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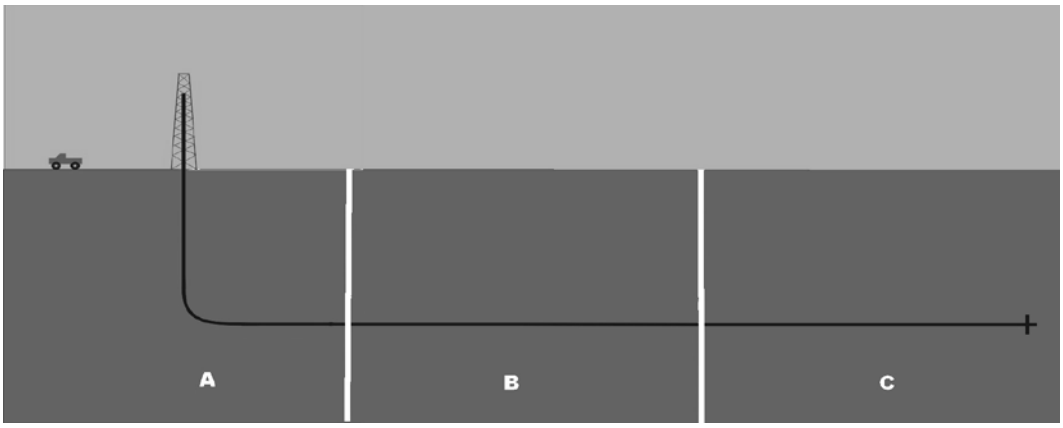
--Study—n. … 7 : a literary or artistic production intended as a preliminary outline, an experimental interpretation, or an exploratory analysis of specific features or characteristics. (Webster's Ninth New Collegiate Dictionary (1983) p. 1170.)



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This paper and its contents are intended to spark thought and discussion on the topics addressed. Nothing in this paper should be taken as an expression of an opinion concerning the current state of the law, nor to suggest that the law certainly or even probably will develop in any specific way.

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1. Introduction

In 1935, the California Supreme Court rejected the so-called "*ownership in place*" theory concerning the legal classification of interests in oil and gas, rejecting the concept of ownership of oil and gas *per se* as a corporeal interest in real property. (*Callahan v. Martin* (1935) 3 Cal.2d 110; *Dabney-Johnston Oil Corp. v. Walden* (1935) 3 Cal.2d 637.) The Court held that one cannot come any closer to actually owning oil and gas prior to their production than owning "the exclusive right on his premises to drill for oil and gas, and to retain as his property all substances brought to the surface on his land." (*Callahan*, *supra*, at p. 117.) In essentially the same breadth, the Court held that ownership of such oil and gas rights, when "severed" or separated from fee simple title either by grant or reservation in fee, also includes certain incidental or implied, appurtenant rights, namely: "…a right to such possession of the ***surface*** as is necessary and convenient for the exercise of the [oil and gas rights], but … no general estate in the ***surface***." *(Dabney-Johnston v. Walden* (1935) 4 Cal.2d 637, 649-650; emphasis added.) Similarly, in the context of an oil and gas lessee's rights, the Court held that: "If the oil and gas lessee is not granted exclusive possession of the ***surface*** by the terms of the lease, he has nevertheless a right to such possession as is necessary and convenient for the exercise of the… [oil and gas rights] which, in fact, may preclude any other ***surface*** possession."[1] (*Callahan v. Martin* (1935) 3 Cal.2d 110, 122; emphasis added.)

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[1] The fee simple interest encumbered by severed and separately owned oil and gas rights is routinely referred to as the "surface interest" and its owner as the "surface interest." I prefer to avoid that usage because it suffers from the unique disadvantage of both overstating and understating what is involved. As we shall see below, limits have been established on fee simple title at great altitudes. Even if, as this paper will argue, limits or qualifications also should be recognized on fee simple title at substantial depths, it remains the case that fee simple title is not confined to the surface but is generally said to extend for "an indefinite distance upwards as well as downwards." (Cal. Civ. Code, § 659.) This section is doubtless based on the ancient common law Latin maxim: "*Cujus est solum ejus est usque ad coelum et ad inferos*," meaning, "The owner of the soil owns to the heavens and also to the lowest depths." *Alameda County Water Dist. v. Niles Sand & Gravel* (1974) 37 Cal.App.3d 924, 934, fn. 11.) This has been the recognized law of the State of California from earliest times. (See, e.g., *Billings v. Hall* (1857) 7 Cal.1, 7—"'For what,' says Lord Coke, 'is land but the profits thereof?'" The matters there litigated included the claim that a statute of limitations impaired rights under a "grant of the Mexican government, to John A. Sutter, of the tract known as New Helvetia," of which the land in question was a part, and in doing so violated the Treaty of Guadalupe Hidalgo—which ended the Mexican American War and brought California into the Union.) At common law, the owner of the soil held to an indefinite extent both upwards and downwards." On the other hand, the so-called "surface" owner does not "own" the surface of the land as against the oil and gas rights owner—at least not in the sense that the mineral encumbered fee owner can exclude the mineral rights owner from the surface of the land. ("The ownership of a thing is the right of one or more persons to possess and use it to the exclusion of others." Cal. Civ. Code, § 645.) Fee simple title continues to extend to significant heights and substantial depths even after a separation or severance of what then become "severed" and separately owned oil and gas or other mineral rights and interests. I have previously suggested that fee simple title following such a mineral severance can be appropriately termed the "mineral encumbered fee simple" interest. Recognizing that 'mineral encumbered fee simple' lacks the ease of expression of 'surface interest' (to say nothing of the latter's prevalence in common usage), I am open to other descriptive phrases that do not grossly understate or overstate the nature of the rights of the two interests *vis à vis* each other. However, rather than stubbornly ignore common usage, I will refer in this paper to a "surface" owner or the "surface" interest—intending in these a reference to a fee simple interest encumbered by severed and separately owned mineral rights.

This begs two related questions: *First*, "Do the rights associated with ownership of oil and gas rights in specific land permit the entry, use and improvement of the ***surface*** of that land to support the exercise of oil and gas rights in other, separate and distinct land? That question was answered, first, in a specific factual context in a trilogy of decisions in *Bourdieu v. Seaboard Oil*,[2] and then, more generally, in *Wall v. Shell Oil*.[3] Simply stated, ownership of oil and gas rights in specific real land permits only such entry, use and improvement of the ***surface*** of that land necessary and convenient to exercise of the oil and gas rights in that land, and permits no entry, use or improvement of that ***surface*** associated with the exercise of oil and gas rights in other, separate and distinct land. This I refer to as a "***Tract Specific Rule***" – permitting mineral-related entry, use and improvement of a specific mineral tract only for the exercise of the oil and gas rights within that specific tract.

The second related question, in which this writing is most interested, is:

> *"Does that Tract Specific Rule apply just as strictly to the* ***subsurface*** *entry, use and improvement associated with ownership of oil and gas rights in a specific tract for the exercise of oil and gas rights in other, separate and distinct tracts?"*

This question has not received a definite answer in California.[4] In fact, something like it seems to have been posed directly only once. *Cassinos v. Union Oil Company of California* (1993) 14 Cal.App.4th 1770, involved allegations of subsurface trespass in the disposal of water produced in association with crude oil. The lessee, Unocal, disposed of associated water from its several leases in the area by injection into the subsurface of one specific oil and gas lease. Those lessors (*i.e.*, Escolle acting through Cassinos) claimed this was a trespass upon their real property interest. As the decision states, "The parties urge this court to consider who owns the right to inject offsite wastewater into [the Escolle Lease subsurface] for a purpose other than operating the Escolle mineral lease." (*Id*., at p. 1778.) However, since the Court found that Unocal's trespass and resulting injury to Escolle constituted a trespass, without any need to determine ownership of the injection right, it expressly declined to "decide who owns the injection right, which would be a question of first impression in the State of California." (*Ibid*.)

Thus, the question remains, "Whether the "***Tract Specific Rule***" is properly confined to *surface* use and improvement?" To what extent, if at all, may the owners of oil and gas rights in one

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2 ***Bourdieu I*** -- (1940) 38 Cal.App.2d 11; ***Bourdieu II*** -- (1941) 48 Cal.App.2d 429; and ***Bourdieu III*** -- (1944) 63 Cal.App.2d 201.

3 *Wall v. Shell Oil Company* (1962) 209 Cal.App.2d 504.

4 The focus of this paper is on California law, and I pretend no special familiarity with the law of other jurisdictions. I have found no specific judicial authority from another jurisdiction directly addressing the point of this discussion. I am grateful to John Harris, Dave Ossentjuk and Julie Carter not only for their patience in discussing my conclusion about the lack of on-point case authority from other jurisdictions, but also for the willingness each of them has shown over time to join with me in conversations which often cannot have been in their particular self-interest or particularly interesting. My special thanks to Cliff Conkle for not merely his past kindnesses to me along the same lines, but for bringing to my attention "*Horizontal Drilling and Surface Damage*," Grimes, Richard A., The Eugene Kuntz Conference on Natural Resources Law & Policy, November 7, 2008 (accessible at www.tapl.org/en/art/149). That article will not figure further in the present discussion but may certainly be of interest to anyone wishing to pursue the topic more broadly (or, most certainly, in the Oklahoma context).

separate and distinct tract of land enter into, use and improve the *subsurface* of that tract in connection with the enjoyment of oil and gas rights in another separate and distinct tract? [5]

Surface mineral-related entry, use and improvement can include a variety of improvements and activities. However, *subsurface* entry, use and improvement in the exercise of oil and gas rights is essentially limited to well bores and materials, fixtures and equipment placed in or passing through well bores, and within such well bores the withdrawal of substances from, and injection of substances into, the subsurface of the land. The creation and operation of an entirely *subsurface* portion of a well bore within or through specific land in order to obtain production from (or inject into) other lands is typically referred to as a "***pass-through***" by the well bore. I will refer to such land as "***pass-through land***." For present purposes the withdrawal of substances from land through wells can be generically referred to as "*production*," without need to distinguish among the various substances that might be produced. Similarly, the injection of substances through wells into the subsurface of land, which may include a variety of specific substances injected for a variety of purposes, can be for present purposes referred to broadly as "*injection*," without distinguishing among the substances involved or the specific purposes of their injection. What is significant here is that the "production" and "injection" involved are associated with exercise of oil and gas rights. I will use the phrase "***Pass-Through Rights***" to include both (a) pass-through drilling, the pass-through of a well bore entirely into, through and beyond the subsurface of a tract of land, and (b) pass-through operation, the production (or injection) of substances through such a well bore into (or from) the subsurface of a tract of land, and other operations within a well bore associated with the exercise of oil and gas rights.

This paper is intended as a first step toward a principled and coherent argument that oil and gas rights ownership in specific land includes ***some*** Pass-Through Rights—some rights to enter into, use and improve the *subsurface* of that land in the exercise of oil and gas rights in other land. Such an argument must address the Tract Specific Rule either: (i) by suggesting that *subsurface* entry, use and improvement of specific land is not limited to what is necessary and convenient to exercise of oil and gas rights in that land, or (ii) by suggesting that subsurface entry, use and improvement of specific pass-through land for the exercise of oil and gas rights in separate and distinct land may in some circumstances be accepted as "necessary and convenient" for the exercise of the oil and gas rights in the pass-through lands, as that phrase is used in *Callahan* and *Dabney-Johnston*. This paper does not consider the first alternative, partly because I think it may be particularly difficult to form a persuasive argument for the first alternative, but mostly because I think adoption of a rule such as suggested by the first alternative would constitute a development of the law for which there is little if any practical need.[6]

I will focus on the second alternative. Focusing on what I will refer to and describe below as "cooperative" oil and gas development—the cooperative exercise of oil and gas rights—I suggest that *subsurface* entry, use and improvement by the owners of severed and separately held oil and

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5 Implicit in this question is that such joint cooperative use and improvement of the subsurface of the separate tracts by the owners of severed oil and gas rights therein would be without the consent—or even over the objection—of the owners of the fee simple interest (so-called "surface" owners) in those tracts of land.

6 Rather than require subsurface oil and gas development to be "necessary and convenient" to enjoyment of the oil and gas rights interests in pass-through lands, it could be extended to permit development in any way "necessary and convenient" to the enjoyment of the oil and gas rights interests in any of the land involved. I do not intend here to suggest that possibility does not merit consideration.

gas rights in separate and distinct lands within a potentially productive area for the purpose of cooperatively exploring for and extracting the oil and gas recoverable from those lands, without interfering with the surface owner's entry into, use and improvement of its land, is sufficiently "necessary and convenient" to the exercise of their individual rights that their oil and gas rights interests should be held to include the right to participate in such cooperative *subsurface* oil and gas rights development.

This paper was not conceived as a dispassionate, balanced inquiry. My objective from the outset—well or poorly achieved—has been to set forth at least the essential features of a principled and coherent argument for including in the ownership of severed and separately held oil and gas rights the right to participate along with the owners of such rights in other lands in cooperative subsurface oil and gas development throughout such lands and to jointly explore for and produce such oil and gas as may be recoverable from their lands. That objective was not formed capriciously. It reflects my personal sympathies (bias, if you will). I believe that the owners of oil and gas rights should be able to participate in cooperative *subsurface* exercise of those rights, with no material impact on non-mineral use and improvement of the lands involved, and thereby jointly realize the benefits of that joint effort, without the consent or agreement of "*surface*" owners.

I will not be surprised if my audience generally shares that bias. However, something more than a widely shared preference is necessary to justify a rule of law. A court or legislature should be interested not only that a rule of law is consistent with the broadly shared interests and expectations of those on whom it will operate but also that it can be supported in principle. Whether or not the rule suggested here is preferred by one person or an industry; it is another matter, and equally important, to provide a principled and coherent argument in its favor.

I want to emphasize that the position argued for here is without question not established law in the State of California. I do not mean to suggest that it certainly, or even probably, will become established law in this State. I am suggesting that I believe it should be the law and trying to provide what I hope will be a principled and coherent argument in its favor.

One at least superficially persuasive point against cooperative *subsurface* oil and gas development is provided by the numerous authorities unambiguously establishing that mineral interest owners may not (without consent of the surface owner) subject the *surface* of specific land to mineral-related use and improvement beyond that which is associated with exercise of the oil and gas rights in that same specific land—and so may not burden the surface of land with use and improvement associated with exercise of the oil and gas rights within other lands in the area. This, of course, is a mere restatement of the Tract Specific Rule of mineral-related use and improvement.

However, as already noted (but which always seems surprising), there is no clear California authority expressly extending the Tract Specific Rule to *subsurface* development. I will suggest here that the competing interests, rights and expectations of oil and gas rights owners and surface owners, and the interests and expectations of society in general—including an interest in the conservation of resources, can be promoted, and reconciled by: (a) distinguishing between surface and subsurface mineral-related use and improvement, (b) confining a narrow Tract Specific Rule of mineral-related use and improvement to *surface* use and improvement, and (c) recognizing a more expansive *subsurface* Pass-Through Right incidental to and included in

the ownership of oil and gas rights, and permitting *subsurface* mineral-related use and improvement incidental to cooperative development and production of oil and gas resources throughout areas consisting of several distinct oil and gas rights ownerships.

I begin, in Part 2, below, with an overview of the established principles of oil and gas law with which such an expansive *subsurface* Pass-Through Right must be reconciled, followed, in Part 3, by an overview of specific principles pertaining to mineral-related use and improvement, before turning, in Part 4, to specific consideration of an argument for "cooperative" subsurface oil and gas development of separate and distinct tracts of land.

2. Relevant Fundamentals of California Oil & Gas Law

The two fundamental principles of oil and gas law that enter into this discussion are the "Rule of Capture" and the "Doctrine of Correlative Rights." While they do not directly conflict, there is a certain tension created by the interplay of these two fundamental principles.

-- *The Rule of Capture*

The development of California oil and gas law owes much to the deliberate and express effort of California courts to take into account their perceptions (and in some instances their misperceptions) about both (i) the physical and geophysical nature or native condition of oil and gas "in place" within the subsurface where it has accumulated in nature and (ii) the scientific and engineering principles involved in oil and gas exploration, discovery and production. That development had its roots in a practical functional consideration of the role of those natural or native features in the recovery of oil and gas.

> "'... when a well is developed the oil may be tributary to it for a long distance through the strata which holds it. This flow is not inexhaustible, no certain control over it can be exercised, and its actual possession can only be obtained, as against others in the same field, engaged in the same enterprise, by diligent and continuous pumping. It is the property of anybody who can acquire the surface right to bore for it, and when the flow is penetrated, he who operates his well most diligently obtains the greatest benefit, and this advantage is increased in proportion as his neighbor similarly situated neglects his opportunity.' The same rule would apply to natural gas." (*People v. Associated Oil Co.* (1930) 211 Cal. 93, 101-102.)

Note in this discussion three specific thoughts. These are: (i) that oil (and gas) are (or become) "the property of anybody who can acquire the surface right to bore for it," and (ii) that actual possession of oil and gas "can only be obtained, as against others … engaged in the same enterprise, by diligent and continuous pumping," and (iii) that "he who operates his well most diligently obtains the greatest benefit, and this advantage is increased in proportion as his neighbor similarly situated neglects his opportunity." These thoughts, particularly that oil and gas are or, more correctly, become "the property of anybody who can acquire the surface right to bore for it," provide the central foundation for what is generally referred to as the "***Rule of Capture***." In *People v. Associated Oil* these notions are expressed more as factual propositions than as a rule of law. However, they find clear expression as a rule of law in *Callahan v. Martin* (1935) 3 Cal.2d 110, referring to prior California decisions which "unequivocally declare that the

owner of the land does not have an absolute title to oil and gas in place as corporeal real property, but, rather, *the exclusive right on his premises to drill for oil and gas, and to retain as his property all substances brought to the surface on his land*." (*Id*., at p. 117; emphasis added.)

The matter is more directly and emphatically stated in *Dabney-Johnston v. Walden*, where the Court states: "The owner of land has the exclusive right on his land to drill for and produce oil." (*Dabney-Johnston Oil Corp. v. Walden* (1935) 4 Cal.2d 637, 649.) Under California law, ownership of oil and gas rights consists essentially of the "operating right" "to drill for oil and gas, and the "revenue" right to retain as one's own all substances brought to the surface in those operations. These form the central or primary, and indispensible, component of the ownership of oil and gas rights in California, and are the core of what it means to own "***oil and gas rights***" in California The only sense in which under California law one can own an interest concerning oil and gas that has not yet been produced, or recovered from the ground, is the ownership of those rights. Oil and gas themselves—as distinguished from "rights" to them—cannot be owned under California law until brought to the surface. Ownership of oil and gas *per se* begins when they are produced, at which time they become the personal property of the one who has produced them. (*Pacific Gas and Electric Company v. Zuckerman* (1987) 189 Cal.App.3d 1113, 1137.)

-- The Doctrine of Correlative Rights

The potential subsurface flow of oil and gas naturally leads to a recognition of (and occasionally an overemphasis upon) the migratory or "fugacious" nature of oil and gas. In this respect, oil and gas has much in common with groundwater—another valuable but migratory subsurface substance. Although groundwater law was well established before any substantial commercial production of oil and gas in this state, the development of California oil and gas law owes very little to groundwater law apart from a few limited common concepts and terms. (*See, e.g., Katz v. Walkinshaw* (1903) 141 Cal. 116, 136-137; and *Western Gulf Oil Co. v. Superior Oil Co.* (1949) 92 Cal.App.2d 299, 307-308.) The reasons for this general absence of resort to groundwater principles for oil and gas rules appear to be that:

(i) public interest in the use and conservation of oil and gas resources has not given rise to such pervasive regulation of its use and conservation as have been developed with respect to groundwater;

(ii) oil and gas have little value or use in the form produced, but require varying degrees of treatment, processing and refining to yield a commercially valuable production; and

(iii) oil and gas have limited value for application/use within the specific lands from which they may be produced.[7]

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[7] "It does not necessarily follow that a rule for the government of rights in percolating water must also be followed as to underground seepages or percolations of mineral oil. Oil is not extracted for use in agriculture, or upon the land from which it is taken, but solely for sale as an article of merchandise, and for use in commerce and manufactures. The conditions under which oil is found and taken from the earth in this state are in no important particulars different from those present in other countries where it is produced. There is no necessary parallel between the conditions respecting the use and development of water and those affecting the production of oil. Whether in a contest between two oil-producers concerning the drawing out by one of the oil from under the land of the other we should follow the rule adopted by the courts of other oil-producing states, or apply a rule better calculated to protect oil not actually developed, is a question not before us and which need not be considered." (*Western Gulf, supra,* 92 Cal.App.2d, at p. 307, *quoting Katz, supra,* 141 Cal., at p.137.)

One important concept common to groundwater law and the law of oil and gas is the "***Doctrine of Correlative Rights***." In a groundwater context, 'Correlative Rights' refers to a right of each landowner overlying a source of groundwater to a reasonable use of that water for their own land, without interfering with or reducing the flow or water to the land of another, provided that one owner has no right in doing so either (i) to a diversion of water for sale or transportation to other lands or (ii) to injure the water bearing strata. (*Katz v. Walkinshaw* (1903) 141 Cal. 116.)

In an oil and gas rights context, Correlative Rights may be said to include the right of each person owning land over an oil and gas bearing formation (i) to produce from their lands without waste their fair share of that oil and gas and (ii) to be protected against waste of and damage to a common source of supply. (*8 Williams & Meyers, Oil and Gas Law, Manual of Terms,* "Correlative Rights," pp. 214-215.) [8] Thus, both in a groundwater context and an oil and gas context, 'Correlative Rights' involves a fair sharing of the resource, avoidance of waste, and avoidance of damage to the reservoir. But, for seemingly obvious reasons, in the oil and gas context Correlative Rights does not involve a prohibition against "a diversion…for sale or transportation to other lands."

-- *Tension Between the Rule of Capture and the Doctrine of Correlative Rights*

While the Rule of Capture and the Doctrine of Correlative Rights do not conflict, and are certainly not inconsistent with each other, there is a certain tension between them. It has been observed in practice that overemphasizing the Rule of Capture can foster waste in various forms—most notably wasteful drilling of more wells than needed to recover the available production. Partly from such considerations, many oil and gas producing jurisdictions protect Correlative Rights in oil and gas through legislative, judicial and/or administrative measures that determine and impose such things as the location of wells, the allowed rates of production from wells, and the identities and respective interests of the persons who are entitled to share in the benefits of production. My understanding of such measures in other jurisdictions is that they represent an elevation of Correlative Rights while limiting application of the Rule of Capture.

California, on the other hand, has not historically exerted substantial direct control over such matters through formal proceedings. Instead, California generally follows an unfettered version of the Rule of Capture which, as expressed in *Callahan,* 3 Cal. 2d at 117, recognizes the exclusive right of the owner of oil and gas rights "to drill for oil and gas [on his premises], and to retain as his property all substances brought to the surface on his land." With such statements in mind, it is frequently stated that California law does not recognize or protect Correlative Rights. This is, I believe, a misstatement. For better or worse, California oil and gas law, *per se*, generally endeavors to protect Correlative Rights not by restraining the Rule of Capture, but by giving the Rule of Capture full and unimpeded play. As stated in *People v. Associated Oil*, "…he who operates his well most diligently obtains the greatest benefit, and this advantage is

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[8] Without appearing to have attempted a definition of 'Correlative Rights' in an oil and gas context, California courts have recognized and discussed those rights. "We reiterate that the legislation in question has lawfully vested in the superior court the power to determine what wastage of gas in the production of oil is reasonable or unreasonable. Whether such wastage be reasonable or unreasonable is a question of fact and should be determined in view of the necessity of one land owner to make productive use of his parcel, *in view of the equal right of the adjoining owners not to be deprived of correlative production from their parcels* and in view of the right of the public to prevent the waste of that which cannot be replaced." *People v. Associated Oil Co.* (1931) 212 Cal. 76, 81.)

increased in proportion as his neighbor similarly situated neglects his opportunity." (*People v. Associated Oil, supra*, 211 Cal. 93, at pp. 101-102.) California honors Correlative Rights by allowing, and often encouraging, each owner of oil and gas rights to drill and operate their individual wells as fully, efficiently and profitably as possible.[9] (*Western Gulf Oil Co. v. Superior Oil Co.* (1949) 92 Cal.App.2d 299, 307-308.)

On this specific point, California represents a conservative bastion of rugged individualism, while other, more progressive jurisdictions, such as Louisiana, Texas, Oklahoma, Wyoming and North Dakota, have to varying decrees "socialized" the production of oil and gas.

3. Mineral-Related Entry, Use and Improvement

As already noted, the right to explore for and produce oil and gas is in the first instance included in the ownership of real property. The landowner's "exclusive right on his premises to drill for oil and gas, and to retain as his property all substances brought to the surface on his land," constitute the primary oil and gas rights, and are frequently referred to as either oil and gas "operating rights" or as a "working interest." However, this right to drill and produce oil and gas, and retain the produced substances, may be separated or severed from fee simple title by either the grant of oil and gas rights or the reservation of oil and gas rights from the general conveyance of fee simple title. (*Dabney-Johnston v. Walden* (1935) 4 Cal.2d 637, 649-650.)

-- *The Implied Right of Mineral-related Entry, Use and Improvement*

When oil and gas rights have been thus separated or "severed" from fee simple title, it becomes important to determine the character and extent of entry, use and improvement of the property in question that is permitted for the owner of oil and gas rights.[10] In *Callahan v. Martin* (1935) 3 Cal.2d 110, the Court held that a right of entry was implicit in the grant or reservation of oil and gas rights. "The right exists by virtue of the unqualified grant to the assignee of an interest in oil to be produced from the land, in like manner as certain rights follow without express enumeration from an ordinary deed absolute of real property." (*Id.*, at pp. 126-127.) The Court considered and rejected a proposed distinction that would have held such a right of entry to be implied in the reservation but not in the grant of oil and gas rights.

> "In support of their contention that a right of entry cannot be implied under such circumstances as we have outlined above, respondent relies earnestly on *Morgan v. McGee*, 117 Okl. 212 [245 Pac. 888]. In that case the owner of land granted to another all oil and other minerals beneath the land. It was held that this assignment conferred no rights against the subsequent grantee of the fee, as a right of entry could not be implied. The court made a distinction between the situation where the owner of land conveys to another, reserving ownership of the oil and other minerals in himself, in which case a right of entry is implied (*Newbern v. Gould*, 162 Okl. 82 [19 Pac. (2d) 157]), and the

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9 With the perhaps unfortunate consequence that often the primary effective regulators of the oil and gas industry have no basic understanding of the industry, and are often narrowly focused on land use planning, environmental considerations, health and safety issues, electoral politics, etc.

10 See, generally, "What constitutes reasonably necessary use of the surface of the leasehold by a mineral owner, lessee or driller under an oil and gas lease or drilling contract?" (1974) 53 A.L.R. 3d 16.

> case where he assigns the oil and minerals to another, retaining ownership of the general estate in the land, in which case the right of entry must be expressed. We are of the view that *this distinction is not supported by reason*, and that the basis of the court's holding that a right of entry is implied upon a reservation by the landowner of oil and minerals to himself-that equity will not permit a right to fail for want of a remedy to enforce it-applies with equal force to a grant of such mineral rights." (*Id*., at p. 127. Emphasis added.)[11]

Thus, when oil and gas rights have been severed or separated from fee simple title, a right of entry implicit in the grant or reservation of oil and gas rights is added to the primary oil and gas rights "to drill for oil and gas, and to retain all substances brought to the surface" in those operations. However, exercising the rights to drill for oil and gas, and retain possession of the produced substances, is certainly going to involve something more than a mere right of entry. We need next to consider what manner and extent of use and improvement of mineral encumbered lands is implicit in the ownership of severed and separately held oil and gas rights.

-- Necessary and Convenient Entry, Use and Improvement

Since ownership of oil and gas rights includes a right to drill for and produce oil,[12] and since the ownership of oil and gas rights includes a right of entry (unless expressly denied or limited in the conveyance), it becomes necessary to ask, beyond mere entry, "*What is the measure or extent of permitted mineral-related entry, use and improvement of specific real property*?" The answer to that question requires an understanding of oil and gas rights as a ***purposeful*** interest in real property, akin to an easement, so that the measure and extent of entry, use and improvement of real property that is permitted the owner of oil and gas rights therein is dependent upon the specific connection between a contemplated use or improvement of the property and the ultimate purpose or objective for which such rights exist.

In *Dabney-Johnston v. Walden* (1935) 4 Cal.2d 637, 649-650, beyond holding that the right to drill for and produce oil and gas is an incident of the ownership of land, the Court held that "although the oil and gas in place doctrine is rejected, interests in oil rights which are estates in real property may be granted separate and apart from a grant of surface [*i.e.*, fee simple] title. The … [holder of oil and gas rights separately from or "severed" from fee simple title] *has a right to such possession of the surface as is necessary and convenient for the exercise of the [oil and gas rights], but he has no general estate in the surface*." (Emphasis added.) The most familiar 'general estate' in real property is fee simple title, which includes a right to any and all lawful use and improvement of the property. Similarly, in the context of an oil and gas lessee's rights to use and possession of the "leased" property, *Callahan* held that "Under the usual oil and gas lease the owner-lessor transfers to his lessee his right to drill for and produce oil and other substances. …. *If the oil and gas lessee is not granted exclusive possession of the surface by the terms of the lease, he has nevertheless a right to such possession as is necessary and convenient*

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11 We will consider below the significance of a judicial willingness to reject or soften rigid common law principles and distinctions that are "not supported by reason."

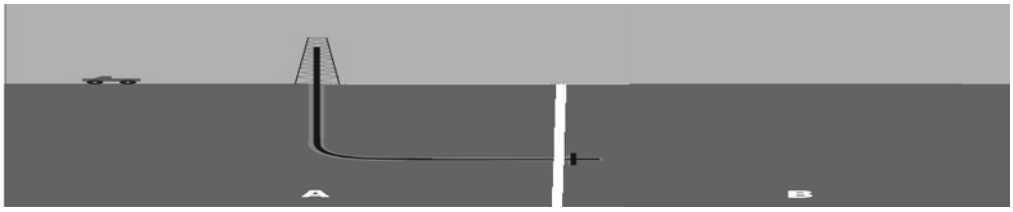
12 As already noted, this is only a partial description since the ownership of real property also includes in the first instance not only a right in the owner to drill for and produce oil and gas, but also the right "to retain as his property all substances brought to the surface on his land." (*Callahan v. Martin* (1935) 3 Cal.2d 110, 117.)

for the exercise of the… [oil and gas rights] which, in fact, may preclude any other surface possession." (*Callahan v. Martin* (1935) 3 Cal.2d 110, 122; emphasis added.)

Whether the burden of a specific surface entry, activity or improvement is allowed an oil and gas operator in specific land does not depend on the nature, duration, extent or location of the entry, activity or improvement, but upon the relationship between the entry, activity or improvement and the exercise of oil and gas rights in that land. Having a *general* estate or interest in the land, the owner of fee simple title is allowed any lawful improvement and make any lawful use of the property. But the entry, use and improvement permitted the owner of oil and gas rights is limited by the required connection between a contemplated entry, use or improvement and the exercise of oil and gas rights in the same land where that entry, use or improvement is made. If the oil and gas rights owner or lessee wishes to install and operate a water line, its right to do so is not determined by the dimensions, length or location of the line, or the substance transported in the line—but rather by whether the installation and operation of the line is necessary and convenient for exercise of the oil and gas rights in that specific land. If so, then it is permitted. Otherwise, it is not—however insubstantial the impact upon the burdened land.

-- Tract Specific Mineral-Related Entry, Use and Improvement

The implications of a Tract Specific Rule differ in two scenarios of oil and gas development involving *surface* use and improvement, on one hand, and *subsurface* use and improvement, on the other. The *surface* use and improvement scenario can be illustrated as follows:[13]



Given severance (separate ownership) of oil and gas rights and the fee simple ("surface") interest in Tract A, above, does use and improvement of the *surface* of Tract A in support of oil and gas operations in the *subsurface* of Tract B require consent of the surface owner in Tract A? A Tract Specific Rule, limiting use and improvement of land to what is associated with exercise of the oil and gas rights in that land, would require consent of the Tract A surface owner for such use and improvement of the surface of Tract A in support of subsurface operations in Tract B.

The *subsurface* use and improvement scenario is illustrated by the following.

[13] I am deeply indebted to Bill Osmond, Bright and Brown's IT Administrator, for the graphics in this paper (other than those—such as on the following page—which appear to have been created by a third-grader—for which I accept responsibility).

Given separate ownership of oil and gas rights and the surface interest in Tract B, whose consent is required for use and improvement of the *subsurface* of Tract B in support of oil and gas operations in the *subsurface* of Tract C such as depicted above? Here again, a strict Tract Specific Rule, limiting use and improvement of specific land to that which is associated solely with exercise of the oil and gas rights within that same land, would require consent of the Tract B surface owner for such use and improvement of the subsurface of Tract B in connection with the subsurface exercise of oil and gas rights in Tract C.

These two examples assume that the tracts involved are not merely in separate and distinct "fee simple" ownership, but that each of them is a separate and distinct "*mineral tract*." The phrase "mineral tract" refers to a tract of land that is an historically single oil and gas rights ownership. Depending upon the circumstances and facts of their creation, surface and oil and gas rights ownership may or may not share common boundary lines. Below is a depiction in cross-section of three tracts (Tracts A, B and C) in each of which the mineral interest and surface interest are separately owned.

Tract A	Tract B	Tract C
Mineral Encumbered Fee-A	Mineral Encumbered Fee-B	Mineral Encumbered Fee-C
Oil & Gas Rights-A	Oil & Gas Rights-B	Oil & Gas Rights-C

In the situation depicted above, use or improvement of either the surface or the subsurface of any separate tract in connection with exercise of the oil and gas rights in another tract raises the question whether consent of the oil and gas rights owner or of the surface owner (or both) is required for such use and improvement. In contrast, below is a depiction in cross-section of a single large mineral tract (Tract A-B-C) including within its exterior limits three smaller surface tracts (Tracts A, B and C).

Tract A	Tract B	Tract C
Mineral Encumbered Fee-A	Mineral Encumbered Fee-B	Mineral Encumbered Fee-C
Oil & Gas Rights A - B - C		

When several fee simple tracts are included in the exterior boundaries of one mineral tract, the mineral owner has the right to use and improvement of the surface throughout the mineral tract in the exercise of its rights—it may simply ignore the interior fee simple tract boundaries which have no meaning or significance for it. Since only one mineral tract is involved, there is no Pass-Through Rights issue in either surface or subsurface activity anywhere in that mineral tract. The oil and gas rights owner may drill and operate wells, produce and inject, from any location on the surface of the single mineral tract to points of production at any subsurface location through the tract. This particular ownership pattern does not figure greatly in the present discussion. From this point, our discussion mostly concerns situations involving the ownership of severed oil and gas rights within several distinct mineral tracts, a situation reflected in the following:

Tract A	Tract B	Tract C
Mineral Encumbered Fee-A	Mineral Encumbered Fee-B	Mineral Encumbered Fee-C
Oil & Gas Rights-A	Oil & Gas Rights-B	Oil & Gas Rights-C

This is essentially the situation encountered in the *Bourdieu* trilogy of decisions. *Bourdieu v. Seaboard Oil Corp.* involves a series of three reported California Court of Appeal decisions concerning claimed excessive mineral-related use and improvement of the surface of a specific tract of land—the *Bourdieu* Tract—incidental to oil and gas operations conducted within that and other tracts of land in the vicinity under a unit agreement.[14]

► ***Bourdieu I***

Plaintiff Bourdieu acquired fee simple title throughout Section 30, 21 S, 17 E, Fresno County (in the area later known as the North Dome of Kettleman Hills Oil Field), by a federal patent that reserved to the federal government all oil, gas and other mineral substances. Seaboard Oil and other defendants (hereafter simply "***Seaboard***") entered under a federal oil and gas lease that included the Bourdieu tract and substantial other acreage. Seaboard drilled wells, and made certain other improvements. Mr. Bourdieu sued, alleging that "in addition to using said facilities to handle oil and gas produced on said section 30, defendants were and are also using said facilities and structures, against the will of plaintiff, in connection with the handling of oil and gas from other lands distant from said section 30."[15] (*Bourdieu I*, 38 Cal.App.2d, at p. 15.) After sustaining demurrers, the trial court entered judgment in favor of Seaboard, from which Bourdieu appealed.

As discussed in the appellate decision, the federal statutes providing for such "splitting of estates" in federal land, impose a burden or servitude upon the fee simple (or "surface") estate, making it subject to such use of the "surface thereof as may be required for all purposes reasonably incident to the mining and removal of minerals therefrom," while obliging the mineral operator to compensate the fee simple owner for any damages caused by such mineral-related use and improvement. (*Id*., at p. 17.)

In addition to suing for the compensation due under the statute for permitted mineral-related use and improvement, *Bourdieu* sued for trespass in connection with the alleged use and improvement "in connection with the handling of oil and gas from other lands." This is the point of interest to us. Without deciding the specific extent of permitted mineral-related use and improvement, the court held that any "excessive" use (beyond that contemplated by the federal statute and conveyances made pursuant to it) was not merely compensable, as provided under the statute for permitted use and improvement, but was a trespass for which damages were recoverable. (*Id*., at pp. 21-22.)

In defense against the claim of excessive use, Seaboard "endeavored to justify this added use of [Bourdieu]'s land by requesting the court to take judicial notice of the unit plan agreement between the respondents and others, under which respondent Kettleman North Dome Association operates…the lands located in the North Dome of Kettleman Hills Oil Field." (*Id*., at p. 22.) The implication being that this unit agreement not only contemplated cooperative development and

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[14] ***Bourdieu I*** -- (1940) 38 Cal.App.2d 11; ***Bourdieu II*** -- (1941) 48 Cal.App.2d 429; and ***Bourdieu III*** -- (1944) 63 Cal.App.2d 201.

[15] The federal oil and gas lease involved covered some 2,560 acres consisting of all of Sections 20, 28 and 30, 3/4ths of Section 18, and the NE/4 of Section 32. (*Bourdieu II*, 48 Cal.App.2d, at pp. 436-437.)

operation of the unit area as a whole, but also expressly or by implication allowed the mineral-related use and improvement of the unit area as a whole—without regard to the several interior property lines among the various separately owned tracts in the overall unit area. The court rejected this attempted "cooperative development" defense, stating:

> "If we assume such an agreement [among oil and gas rights owners], it would not give the respondents the right to use appellant's land in any manner or for any purpose not provided in the homestead and leasing acts above referred to and respondents would still be liable for all damage, if any, caused by such additional use of appellant's land." (*Ibid*.)

The Court of Appeal held that "the use and occupancy of both parcels of appellant's land by respondents to handle oil and gas produced on other tracts of land is in the nature of a continuing trespass, and appellant may recover for such resulting damages as he has sustained within the three years next preceding the filing of this action." (*Id*., at p. 23.)

Bourdieu I stands for the propositions, *first*, that the federal statute involved (rather than any specific provision of California law) prevented the use and improvement of the surface of patented lands for purposes unrelated to mineral operations within those specific lands, and, *second*, that the owners in severalty of oil and gas rights in separate tracts of land cannot by agreement between them increase their overall rights to mineral-related use and improvement of any specific tract of land as against the surface owner in that same land. It may be inferred that such limitations on use may not be altered by agreement between mineral rights owners whether those limitations are imposed by statute, patent, conveyance or a general rule of law—such as the Tract Specific Rule.

► ***Bourdieu II***

In trial on remand, Seaboard denied that it made any use or improvement of the Bourdieu land in connection with operations beyond the area of its federal lease, while also denying that its improvements occupied any greater area than necessary for "purposes reasonably incident to the drilling of wells on Section 30 and the removal of oil and gas therefrom, except certain oil lines, etc., 'which were used to a slight degree in connection with some of the operations on other lands' covered by its lease." (*Bourdieu II*, 48 Cal.App.2d, at p. 434.) The central theme of this defense is that the physical extent or intensity of use and improvement within the Bourdieu tract was permitted *under the federal lease* which, as already noted, included substantial acreage beyond the Bourdieu tract. At the conclusion of the trial, after extended argument, the trial court directed the jury to return a verdict in favor of Seaboard, appearing to accept that defense.

Reversing, and remanding for trial on damages, the Court of Appeal rejected, as determined contrary to Seaboard on the first appeal, Seaboard's argument that it was permitted by its federal lease to use and improve the surface throughout all of the leased land in connection with oil and gas operations anywhere within those lands.[16]

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16 The determination in *Bourdieu I* that "the *use* and occupancy of both parcels of appellant's land by respondents to handle oil and gas produced on other tracts of land is in the nature of a continuing trespass, and appellant may recover for such resulting damages as he has sustained within the three years next preceding the filing of this action," had become the law of the case. (*Bourdieu II*, at p. 433, *quoting Bourdieu I*, at p. 23.)

Accordingly, beyond again declaring that the federal statute involved (rather than a principle of California law) prevented the use and improvement of the surface of patented lands for purposes unrelated to mineral operations within those same lands, *Bourdieu II* stands for the proposition that an owner of severed oil and gas rights—in that case the United States, but also any private party—cannot by lease or other agreement subsequent to its severance of oil and gas rights from surface ownership, enlarge its lessee's permitted use and improvement of the surface of the specific land involved in that severance.

► ***Bourdieu III***

In further trial on remand, the jury awarded Bourdieu $8,000 for Seaboard's wrongful use of the surface of his property, from which judgment Seaboard again appealed. Apart from matters Seaboard raised on appeal which were held to have been determined against it in *Bourdieu I* and *Bourdieu II*, the principle question of concern for us in *Bourdieu III* is the operator's argument "that there is no evidence that [it] used or occupied more land than would be required for the operation of section 30 as a separate parcel." (*Bourdieu III*, 63 Cal.App.2d, at p. 205.) Rejecting this argument, the court responded that "The question of the wrongful use of the land was *not confined necessarily to the amount of land used*, but *also to the extent of the claimed wrongful* use of the homestead." (*Id*., at p. 206; emphasis added.)

Thus, *Bourdieu III* stands for the proposition that if the oil and gas operator's surface entry, use and improvement supports the exercise of oil and gas rights in other separate and distinct mineral tracts, it is to that extent wrongful and actionable even if the overall land area used and improved is no greater than would be required solely for entry, use and improvement associated with exercise of oil and gas rights within the surface-impacted tract.

Three aspects of the *Bourdieu* trilogy should be emphasized. The first is that the limitation of mineral-related use and improvement of the Bourdieu tract to that necessary for oil and gas operations within that tract, is based upon the court's interpretation of federal statutes, and patents under them—and not upon a general principle of California oil and gas or real property law. The second point is that the discussion is limited to mineral-related use and improvement of the *surface* of the Bourdieu tract—with no mention of any *subsurface* use or improvement. The third is that the court's rejection of a broader right to mineral-related use and improvement, such as Seaboard argued for, seems to be ultimately founded in substantial part on considerations of fairness to Mr. Bourdieu—as reflected in the following:

> "If [the operator's] argument is sound, it would be entitled to occupy all of respondent's homestead after 1930, construct facilities of all types, numbers and sizes, and use the entire surface of the homestead as long as the facilities were a part of the 'unit operation of the field' *and not pay the homesteader for the additional burden*. This use could be carried on indefinitely and long after all of the oil had been produced and taken from the homestead." (*Bourdieu III*, at p. 204; emphasis added.)

In *Bourdieu III*, the notion of an uncompensated burden on his land provided a basis for limiting mineral-related use and improvement through a Tract Specific Rule, on the theory that the land owner should not suffer a broader use and improvement of the surface of land without compensation. Conversely, as we see immediately below, in *Standard Oil Co. v. J. P. Mills*

Organization (1935) 3 Cal.2d 128, essentially the same consideration provided a basis for California's adoption of the so-called Rule of Apportionment, on the theory that since the oil and gas lessee *is* permitted to enter into, use and improve all the subdivided land, under a pre-existing oil and gas lease, compensation to each owner *is required* for that entry, use and improvement.

-- The Rule of Apportionment

When lands in single ownership, subject to a single oil and gas lease, are subdivided and sold off in severalty, on what basis should subsequent lessor royalty accrue among the individual purchasers? The competing rules are that either (i) each of the new owners will be entitled to royalties on all (and only) the production from wells within its specific separately owned parcel (an example of a tract specific *revenue* rule), or (ii) each of the new owners will be entitled to share on some basis in the royalties on all production from wells throughout the entire lease tract (a rule of allocation or apportionment).

The latter alternative, the "***Rule of Apportionment***," was adopted by the California Supreme Court in *Standard Oil Co. v. J. P. Mills Organization* (1935) 3 Cal.2d 128.

> "…[J.P. Mills Organization, the owner, of land subject to an oil and gas lease] … subdivided the [land] into 83 lots, all of which were sold under a plan of subdivision…. [¶]…The sums deposited in court represent amounts due for oil produced from lots 68 and 83, owned by appellants…. By virtue of their ownership of the lots from which the oil was produced, they contend that they are entitled to [all of these funds] to the exclusion of the owners of other lots….[¶] Where a parcel of land subject to a single oil and gas lease is subdivided by deeds which contain no reference to oil rights, there is a conflict of authority in the few cases where the question has arisen as to whether the landowner's royalty on oil thereafter produced goes entirely to the owner of the section on which the oil has been brought to the surface, or is to be apportioned among the several lot owners.
>
> "We are of the view that the decisions holding for the rule of apportionment best accord with the principles laid down in *Callahan v. Martin*, *supra*, this day decided, and in other decisions of the courts of this state, as to the nature of the interest of the landowner, his lessee, and assignees of oil royalty. Therefore, in the instant case, during the continuance of the oil lease to which [the land] was subject at the time of its subdivision…, even in the absence of any provisions in regard to oil rights in the deeds to the 83 lots of approximately equal size, each lot owner would be entitled to 1/83 of 1/6 landowner's royalty, or 1/498 part thereof for each lot owned.
>
> " … [oil and gas lease rent or royalty] is [a return for the right to take oil from the land whence the oil is taken], but it is just as clearly something more than that. Besides paying for the oil taken out, it holds the lease on all of the land and oil included within its boundaries. It maintains the lessee's right to carry his operations to every part of the tract and precludes operation or mining on any part of it by the owner and everybody else except assignees of the lessee. How then can it be said to be only pay[ment] for the oil taken out? ….. Any intelligent layman on the street knows it does more than that and no lawyer can maintain his client's case in any court, upon the proposition that the royalty only pays for the

> oil taken out.'… [¶]…The owners of separate parcels into which the fee [simple interest] in the land has been subdivided have no right to drill upon their lots while the lease continues, and cannot require the lessee to drill offset wells on their lands, since the burden the lessee assumes by the lease cannot be enlarged. The oil brought to the surface upon one of the several parcels into which the property has been subdivided may in fact be drawn from beneath the surface of the other parcels." (*Id.*, at pp. 131, 133 and 135; *citations omitted throughout.)*

The Court based its adoption of the Rule of Apportionment in significant part on the fact that the pre-existing lease remained in force throughout the leased land, unaffected by subdivision and sale in severalty of the individual lots, so the mineral rights in each of the resulting tracts remained burdened by that pre-existing lease. The Court recognized that the lessee's rights throughout the leased land were unaffected by the new ownership in severalty of the oil and gas lessors/fee simple owners—resulting from the subdivision and sale of the already leased lands—since the lands in question remained a single mineral tract under the pre-existing lease. The Rule of Apportionment recognizes that the leased land remains a single mineral tract under the lease and so treats the owners "in severalty" of separate tracts subject to the lease *as if* they remained instead owners in common of proportionate undivided interests throughout the leased land.

The practical effect of this is that the separateness of distinct mineral tracts, created by the post-lease subdivision of leased land, is "ignored" (during the lease term) —constructively preserving the pre-existing single mineral tract in respect to the lessee's rights (and obligations).[17]

In reasoning that is strikingly similar to the reasoning in the *Bourdieu* decisions, *Standard Oil v. J.P. Mills* adopted the Rule of Apportionment in recognition that otherwise the lands of persons who acquired non-productive lease tracts would continue to be burdened by the pre-existing lease, subject to use and improvement associated with it, but neither sharing in lease revenue nor able to enter into separate oil and gas leases upon their own lands. Such "excessive" use and improvement were *not* permitted in *Bourdieu* because the burdened land did *not* share in the revenue benefits of the operations, while in *Standard Oil v. J.P. Mills Organization* the revenue benefits of the operations were required to be apportioned among all of the lands involved *because* all of those lands remained subject to the burden of the lease following subdivision.

-- The Doctrine of Accommodation

Wall v. Shell Oil Company (1962) 209 Cal.App.2d 504, makes explicit what was left implicit in *Standard Oil Co. v. J. P. Mills Organization*, namely, that subsequent purchasers who acquire fee simple title within a portion only of lands that are subject to a pre-existing oil and gas rights severance take subject to the rights of the oil and gas rights owner to place its improvements and conduct its operations throughout those lands as a whole without regard to the interior property lines created by subsequent subdivision.

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[17] It may be important to keep in mind that uniform mineral ownership throughout more than one fee simple tract does not necessarily imply a single mineral tract. Once lands have been subdivided into separate and distinct mineral rights tracts, subsequent accumulation of the oil and gas rights throughout into a single ownership does not re-create a single mineral tract, but merely a single ownership of the several mineral tracts. A purchaser of the oil and mineral rights in a specific tract, may only enter, use and improve its surface for the exercise of the mineral rights in that tract.

> "[The] purchaser of a [lot in a] subdivision…, taking with notice of the prior sale and reservation of rights, takes knowing that his surface ownership may be burdened in part, and, *in very rare cases perhaps, in its totality*, by the reasonable exercise of the rights of the owner of the oil and mineral estate; and this without regard to whether or not the oil or mineral underlies the particular [lot], or whether the facilities located thereon serve facilities located without the [lot], so long as they do not lie beyond the original tract." (*Wall, supra*, at p. 513. Emphasis added.)
>
> "…the owner of the oil and mineral estate cannot be required to spread his facilities over a [subdivided] tract solely in order that a pro rata burden must fall on each [lot]."(*Id.*, at p. 518.)

The *Bourdieu* decisions and *Standard Oil v. J. P. Mills Organization* considered mineral-related entry, use and improvement throughout an extended tract of land from the point of view of the benefit to and burden upon the surface owner. *Bourdieu* adhered to a Tract Specific Rule because the owner of a single tract did not share in the overall benefits of unit-wide operation; while *Standard Oil v. J. P. Mills Organization* required that each owner of a subdivision lot share in the ongoing benefits of lease operations because they each continued to suffer the burden of those operations. *Wall* also explicitly reaffirmed the Tract Specific Rule of mineral-related surface entry, use and improvement as a general proposition of California law:

> "…where the owner of a parcel of land sells a portion thereof reserving or excepting the oil and mineral rights therein, or where a person purchases the oil and mineral rights in a specific tract of land, the *surface* area of such lands may be subjected only to such burdens as are reasonably necessary to the full enjoyment of the mineral estate in such particular specific parcels and the *surface* area may not be burdened by installations or surface fixtures designed to serve oil producing facilities located [outside those] parcels." (*Id.*, at p. 513.)

But the court in *Wall* went beyond merely reaffirming a Tract Specific Rule of mineral-related surface entry, use and improvement, to more broadly discuss the respective limits imposed on the potentially conflicting rights of the surface and oil and gas rights owners, from the application of what may be broadly characterized in the common law as a "***Rule of Reasonableness***." As applied in the specific context of the potentially conflicting rights and interests of the surface and oil and gas rights owners, the Rule of Reasonableness gives rise to the "***Doctrine of Accommodation***."

> "The law is clear that '[t]he grantee of the profit has a right to such possession of the surface as is *necessary and convenient* for the exercise of the profit, but he has no general estate in the surface.' Reasonableness in the exercise of rights is a fundamental tenet of the law, whether in the field of real property or in the countless other areas of personal relationships. It is true also that the necessary and convenient use of the surface in the exercise of the profit 'in fact may preclude any other surface possession....' [¶] It is equally clear that, as conditions change, the 'reasonableness' of

> any particular exercise of a right may also change. An act which would be reasonable in the wilderness might be totally unreasonable in an urban area. The owner of oil rights has a right to develop them, and the owner of the surface area has a right to develop that. Society has an interest in both such developments. Though the right of the owner of land subject to a prior oil and mineral estate is subordinate thereto, yet he may exercise and develop his rights of ownership to the fullest, even though this exercise may in some degree affect the rights of the oil and mineral owner, so long as they do not prevent his enjoyment of his prior rights or unreasonably interfere therewith." *Wall v. Shell Oil Co.* (1962) 209 Cal.App.2d 504, 516-517.

I take from these statements the following propositions of significance to the present discussion:

1. "The oil and gas rights owner has a right to develop them."
2. "The surface [mineral encumbered fee simple] owner has a right to develop that."
3. "Society has an interest in both such developments."
4. "As conditions change, the 'reasonableness' of any particular exercise of a right may also change," so that "An act which would be reasonable in one setting or context might be totally unreasonable in another setting or context."[18]

I would add, as also relevant to the present discussion, these further propositions:

1. The oil and gas rights owner has a legitimate interest in cooperative mineral-related development, surface or subsurface, when it will maximize efficient and cost effective production while minimizing cost and expense (and other adverse impacts) of oil and gas operations.
2. Society has an interest in cooperative oil and gas development, surface or subsurface, to maximize ultimate recovery and avoid waste of hydrocarbon substances, while minimizing land devoted to oil and gas use and improvement and maximizing that available for other worthwhile use.
3. As the surface owner's ability to occupy, use and improve the land becomes increasingly abstract, theoretical and insubstantial with increasing depth beneath the surface, so the surface owner is less affected by, and has less reason for objection to, cooperative *subsurface* mineral-related development than cooperative mineral-related development on the *surface*.
4. Each oil and gas rights owner within a potentially productive area has a "correlative right" to produce without waste their fair share of oil and gas and to be protected against waste of and damage to a common source of supply. That correlative right, while not absolute, is enforceable within limits against not only other oil and gas

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[18] Or, more broadly, when the circumstances are different the rule and the result may also be different. ("When the reason for a rule ceases, so should the rule itself." Cal. Civ. Code, § 3510.)

rights owners in the same area, but also surface owners and owners of other affected property rights in the area.

5. The right and interest "of the public to prevent the waste of that which cannot be replaced," concerns not merely the waste of hydrocarbon reserves, but the waste of available land area and other natural and economic resources. (*People v. Associated Oil, supra,* 212 Cal. 76, at p. 81. See fn. 8, p. 7, above.)

6. The societal interest in permitting cooperative *subsurface* mineral-related development is relatively greater than the societal interest in permitting cooperative mineral-related development on the *surface,* due to the lesser adverse impacts for the surface owner of *subsurface* entry, use and improvement.

The validity and relevance of these propositions in the context of cooperative subsurface oil and gas development will figure prominently in the following discussion of the implications for that subject of developments in the law concerning: (i) allegations of trespass from the overflight of real property, (ii) cooperative subsurface coal mining in Appalachia, (iii) the established right of one North Dakota oil and gas lessee to drill a horizontal well through the subsurface of another lessee's land—over the other's objection, and (iv) the conclusion of the California Court of Appeal that "the general grant of minerals in, on or under the property includes a grant of geothermal rights."

4. An Argument for "Cooperative" Subsurface Oil and Gas Development

As already noted, the authorities discussed above concerning rights to mineral-related entry, use and improvement, and their limits, are focused expressly on the use and improvement of the "*surface*" of property. Recall that in *Dabney-Johnston v. Walden* (1935) 4 Cal.2d 637, 649-650, the Court held that the owner of oil and gas rights "has a right to such possession of the *surface* as is necessary and convenient for the exercise of the profit, but he has no general estate in the *surface*." (Emphasis added.) Similarly, discussing the oil and gas lessee's rights, *Callahan* held that "If the oil and gas lessee is not granted exclusive possession of the *surface* by the terms of the lease, he has nevertheless a right to such possession as is necessary and convenient for the exercise of the profit which, in fact, may preclude any other *surface* possession." (*Callahan v. Martin* (1935) 3 Cal.2d 110, 122; *emphasis added*.) Such statements culminated in *Wall v. Shell Oil*'s succinct affirmation of the Tract Specific Rule of mineral-related entry, use and improvement—in language also limited to entry into, use and improvement of the surface:

> "…[following severance of surface and oil and gas rights ownership within a specific parcel], the *surface* area of such lands may be subjected only to such burdens as are reasonably necessary to the full enjoyment of the mineral estate in such particular specific parcels and the *surface* area may not be burdened by installations or surface fixtures designed to serve oil producing facilities located [outside those] parcels." (*Id.,* at p. 513.)

In suggesting that ownership of oil and gas rights in specific land includes ***some*** right to enter into, use and improve the *subsurface* of that land in connection with the exercise of oil and gas rights in other lands, I do not mean to suggest that *subsurface* entry, use and improvement is not limited to that associated with exercise of oil and gas rights in that land, but rather to suggest that cooperative *subsurface* entry, use and improvement of specific "pass-through" land in

association with the exercise of oil and gas rights in separate and distinct land may nevertheless be sufficiently "necessary and convenient" for the exercise of the oil and gas rights in the pass-through lands to satisfy that limitation as expressed in *Callahan* and *Dabney-Johnston*.

Accepting, as a general proposition, that permitted mineral-related entry, use and improvement on the *surface* of a specific mineral tract does not include entry, use and improvement in support of oil and gas operations outside that specific mineral tract, I suggest that the measure and extent of the permitted *subsurface* entry, use and improvement of property in the exercise of oil and gas rights should be greater in extent than the permitted *surface* entry, use and improvement in the exercise of those rights—not because different principles are involved, but because the principles involved differ in their consequences in those differing contexts.[19] I do not believe the fundamental principles relevant to the lawful extent of *subsurface* mineral-related entry, use and improvement of property either will or should differ from the principles relevant to entry, use and improvement of the *surface*, but rather that the application of those principles in the two differing contexts will permit, as *necessary and convenient to the exercise of oil and gas rights*, solely *subsurface* entry, use and improvement which is greater in measure and extent than is the case concerning *surface* entry, use and improvement for the same purposes.

Before getting into the merits of that discussion, it seems appropriate to consider briefly just what it is that is contemplated in "cooperative subsurface development of the oil and gas rights within two or more separate mineral tracts."

a. The Circumstances and Character of Cooperative Subsurface Development

Every oil and gas operator desires to maximize its production. That is also a central objective of the state agency with primary responsibility for oversight of the oil and gas industry.[20] And the need to control costs incurred in recovering hydrocarbons is a significant if implicit factor in maximizing recovery of hydrocarbons. In a world where the oil and gas operator cannot set the

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19 "I can no more be persuaded that the government can constitutionally take no strong measure in time of rebellion, because it can be shown that the same could not be lawfully taken in time of peace, than I can be persuaded that a particular drug is not good medicine for a sick man, because it can be shown not to be good food for a well one." (A. Lincoln, "Letter to New York Democrats" (June 12, 1863) The Political Thought of Abraham Lincoln (1967) Richard N. Current editor, Bobbs-Merrill Company, The American Heritage Series.)

20 "The [State Oil and Gas S]upervisor shall also supervise the drilling, operation, maintenance, and abandonment of wells so as to permit the owners or operators of the wells to utilize all methods and practices known to the oil industry for the purpose of increasing the ultimate recovery of underground hydrocarbons and which, in the opinion of the supervisor, are suitable for this purpose in each proposed case. To further the elimination of waste by increasing the recovery of underground hydrocarbons, it is hereby declared as a policy of this state that the grant in an oil and gas lease or contract to a lessee or operator of the right or power, in substance, to explore for and remove all hydrocarbons from any lands in the state, in the absence of an express provision to the contrary contained in the lease or contract, is deemed to allow the lessee or contractor, or the lessee's or contractor's successors or assigns, to do what a prudent operator using reasonable diligence would do, having in mind the best interests of the lessor, lessee, and the state in producing and removing hydrocarbons, including, but not limited to, the injection of air, gas, water, or other fluids into the productive strata, the application of pressure, heat or other means for the reduction of viscosity of the hydrocarbons, the supplying of additional motive force, or the creating of enlarged or new channels for the underground movement of hydrocarbons into production wells, when these methods or processes employed have been approved by the supervisor, except that nothing contained in this section imposes a legal duty upon the lessee or contractor, or the lessee's or contractor's successors or assigns, to conduct these operations." (Cal. Pub. Res. Code, § 3106(b).)

sale price for produced hydrocarbons, the amount of costs incurred in production will directly limit the amount of money that any operator is prepared to spend in recovering that frequently studied and discussed "next barrel of oil." The costs incurred pursuing that next barrel directly affects an operator's willingness to pursue it. "Cooperative oil and gas development" is a broad description of various contractual and operational strategies or measures that have been adopted among oil and gas operators to maximize recovery of hydrocarbons by, among other things, holding down the broad spectrum of costs associated with production.

Cooperation between owners of oil and gas rights in adjoining lands takes many forms, not all of which are included in '*cooperative oil and gas development*' as that phrase is used here. *Callahan* and *Dabney-Johnston* established that ownership of an oil and gas interest in California consists primarily of '*operating rights*,' namely, the rights to drill for and produce oil and gas, as well as the '*revenue right*' of the owner of an oil and gas interest to "*retain as his property all substances brought to the surface on his land.*" (*Callahan*, *supra*, 3 Cal.2d at p. 117; *Dabney-Johnston*, *supra*, 4 Cal.2d at p. 649.) The forms of cooperation between oil and gas rights owners can be analyzed and categorized in terms of the extent to which each form involves a sharing or cooperation in the exercise of their individual operating rights and revenue rights.

For example, the "line well agreement" is a fairly rudimentary (but not unimportant) form of cooperation between adjoining owners of oil and gas rights to limit the number and location of their respective producing wells relative to the common boundary line between them. The line well agreement involves cooperation in the exercise of the operating rights of what are otherwise competing oil and gas rights owners, to achieve the dual purpose of minimizing both drainage (migration of hydrocarbons) between the properties involved and their respective drilling and operating costs. But the line well agreement does not involve any sharing or cooperation in their revenue rights—each still retains as his property all substances brought to the surface on his land. For that reason, the line well agreement is not a form of cooperation which I consider 'cooperative oil and gas development' as that phrase is used here.

It is important in my thinking to restrict "cooperative oil and gas development" to those forms of cooperation among oil and gas rights owners that involve not only a sharing or cooperative exercise of their respective operating rights but also a sharing or cooperative exercise of their revenue rights through the imputation to them of ownership in common rather than their actual ownership in severalty. Doing so reflects an implicit mutual understanding and agreement of the oil and gas rights owners involved that their cooperative oil and gas development fosters and protects the correlative right of each of them (i) to produce from their lands without waste their fair share of that oil and gas and (ii) to be protected against waste of and damage to a common source of supply." (*8 Williams & Meyers, Oil and Gas Law, Manual of Terms*, "Correlative Rights," pp. 214-215.) Those forms of cooperation between owners of oil and gas rights in adjoining lands which I consider relevant to the present discussion, each at least potentially involving sharing or cooperation in the exercise of both operating and revenue rights, include: (i) the joint lease and its close cousin—the community lease, (ii) pooling and its big brother—unitization, and (iii) the extended reach horizontal well. Each of these forms of cooperative oil and gas development involves the blurring or even total ignoring of the separate mineral tract boundaries between properties (an "erasing," if you will, of interior boundaries) with the effect that the properties involved are operated to a greater or lesser extent as if they were a single mineral tract and, most commonly, the respective revenue rights of separate owners are shared in such a way that their individual interests in production are not based on their ownership in

severalty of the separate tracts but upon a deemed or imputed ownership in common throughout the area of cooperative development.

-- The Joint Lease and Community Lease

A joint lease is merely a single oil and gas lease entered into by the owners in severalty of oil and gas rights in separate mineral tracts. The lease might expressly state that the lessee is permitted to conduct operations throughout the surface and subsurface of the leased land without regard to the underlying separateness of the underlying tracts, but in my experience that understanding and intent of the parties is left implicit in the terms of the lease. Thus, the terms of the lease itself provide for cooperation between the lessors, through their lessee, in the exercise of their operating rights. That fact, and the sharing of revenue rights also frequently left implicit in the joint lease are reflected in the following from *Higgins v. California Petroleum & Asphalt Co.* (1895) 109 Cal. 304, 309:

> "Had they been tenants in common, Higgins would still be entitled to a part of the rent proportionate to his undivided portion of the demised premises, but as they are not tenants in common he is entitled, in the absence of an express or presumed agreement to the contrary, to a portion of the royalty proportionate to the comparative value of his distinct part of the demised premises; and in this case the terms of the lease warrant the presumption that each lessor was to receive one-half of the royalty…. [¶ The royalty of fifty cents on each ton of [bituminous] rock mined was, by the terms of the lease, to be paid to the lessors, not to the individual lessor from whose land the rock may have been mined. The lease does not restrict the mining to any particular part of the deposit at any time. The lessee has had the right, at all times since the execution of the lease, to mine any part of the deposit, and will continue to have such right until the expiration of the term of twenty years…."

Of course, the parties may include express provisions on these subjects which should control. That was the case in *Clark v. Elsinore* (1934) 138 Cal.App. 6, where an imputed ownership in common was found to result from the express lease provision: "…all of the lessors herein shall participate in the bonuses, rentals and royalties covering all of the demised premises in the proportion that their respective interests shall bear to the whole of said demised premises." (*Id*., at p. 8.) But a claim of imputed ownership in common was rejected in *Petroleum Midway Co. v. Moynier* (1928) 205 Cal. 733, where the parties had modified the lease to provide: "Each well shall be drilled wholly on one lot and the owner of that lot shall be the only participant in the royalty from such well, be it oil, gas or both…." (*Id*., at p. 738.)

I include within the phrase "cooperative oil and gas development," for present purposes, only those joint leases which by their express terms or by implication provide for the imputation of ownership in common among the lessors.

The community lease is simply an extended area joint lease. Its use has been largely confined to urban areas during the 1940s-1960s. Although a variety of practical and theoretical considerations have resulted in its fall into disfavor, there remain scattered producing community

leases in the L.A. basin to this date. As with joint leases generally, community leases typically provide for shared or cooperative exercise of both operating and revenue rights. The following lease provision quoted in *Tanner v. Title Insurance and Trust Co*. (1942) 20 Cal.2d 814, 818, seems fairly typical:

> "Said Lessors agree to, and they do hereby, pool their interest in this lease, and agree that during the continuance of this lease each owner of land subject thereto shall share in all benefits accruing to the whole lease in the ratio which the acreage owned by said Lessors bears to the entire acreage leased. This provision as to apportionment of benefits to be operative, notwithstanding the surrender by the Lessee of any land described herein."

If the parties so desire, a community lease could expressly provide for the accrual of revenue on a tract basis reflecting the lessors' ownership in severalty, rather than on the basis of imputed ownership in common. However, there have been sufficient judicial decisions and statements concerning community leases that it might be simpler and less confusing to refer by some other title to what would otherwise be a "community lease" but which includes significant non-standard provisions, and limit the use of "community lease" to those leases which essentially conform to what appears to have been settled concerning them.[21] Here again, as was said of joint leases above, I include within the phrase "cooperative oil and gas development," for present purposes, only those community leases which by their express terms or by implication provide for the imputation of ownership in common among the lessors.

-- Pooling and Unitization

Without expressly saying so, pooling and unitization address some of the practical and theoretical problems associated with the joint or community lease, notable among these is the practical difficulty of establishing in advance, at the time of making the lease, the extent of a relevant potentially productive area for cooperative development. Both pooling and unitization permit the establishment of potentially productive areas for cooperative development at any time. "Pooling" is generally taken to refer to the incorporation into a single "operating area" of a relatively small area, sometimes 40 acres or even less, and almost never more than 660 acres, which is typically developed by 1 or 2 wells. "Unitization," on the other hand, generally refers to the incorporation into a single operating area of a substantially greater area—most often all or nearly all of the area overlying a potentially productive area that is separated by faults or other

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21 *See, e.g., Tanner, supra*, at pp. 818-819. "The distinguishing feature of a lease under which several landowners lease their respective lots as one tract, with the sole and exclusive right to the lessee to drill for and produce oil upon any part of it, is that each owner shares proportionately in the royalties irrespective of the lot or lots upon which oil is discovered. The owners of lots upon which no well is drilled share equally the fruits of the common venture with the lessors whose land proves productive. Also, it is often found that certain lots are either non-productive or cannot be economically used by the lessee. Under those circumstances it is usual to provide for the withdrawal of such land from the lease in order that it may be devoted to profitable uses. In the event of a release, the rights of the owners of the surrendered lots to continued participation in royalties from production upon the land remaining under the lease must be considered. Accordingly, community oil leases commonly provide for the apportionment of benefits among all owners, notwithstanding the surrender by the lessee of any of the lands subject to the lease."

"sealing" geologic features from other lands. That said, there is no true bright-line distinction between pooling and unitization, any more than there is between a depression and a hole.

Both pooling and unitization invariably provide for a sharing or cooperative exercise of both operating and revenue rights. A typical pooling provision in an oil and gas lease might address operating rights and revenue rights in the following manner:

> "Production, drilling or reworking operations anywhere on any operating unit…shall be treated as production, drilling or reworking operations on the Leased Land. There shall be allocated to the Leased Land the proportion of the pooled production from any such operating unit (whether or not such production is from the Leased Land) that the number of surface acres covered by this Lease and included in such unit bears to the total number of surface acres in such unit; royalties shall be paid hereunder only upon that portion of such production so allocated, and as to pooled production from land in such unit such royalties shall be in lieu of any other royalties."

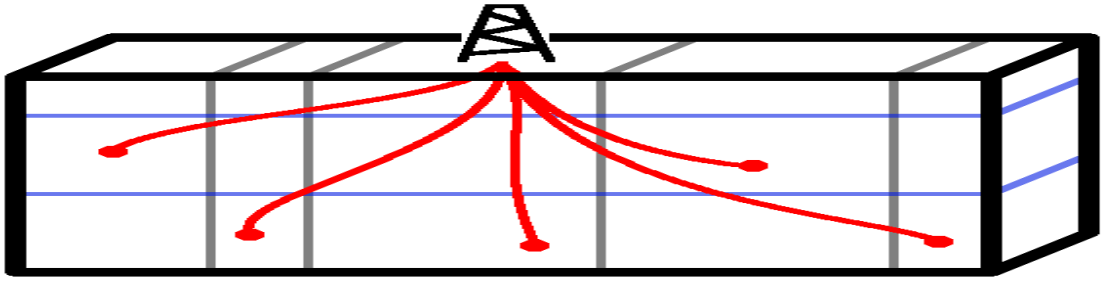
Usually with much greater detail than in a lease pooling clause, a unit agreement (including, typically, a companion unit operating agreement), provides for a sharing or cooperative exercise of oil and gas operating rights throughout the unit area. Similarly, a unit agreement invariably provides for revenue participation based on an imputed ownership in common. The following is typical:

> "All Unitized Substances produced and saved shall be allocated among the several Unit Tracts in accordance with their respective Tract Participation Factors as in effect during the period that the Unitized Substances were produced. The amount of Unitized Substances allocated to each Tract, regardless of whether more or less than the actual production of Unitized Substances from such Tract, shall be deemed for all purposes to have been produced from such Tract."

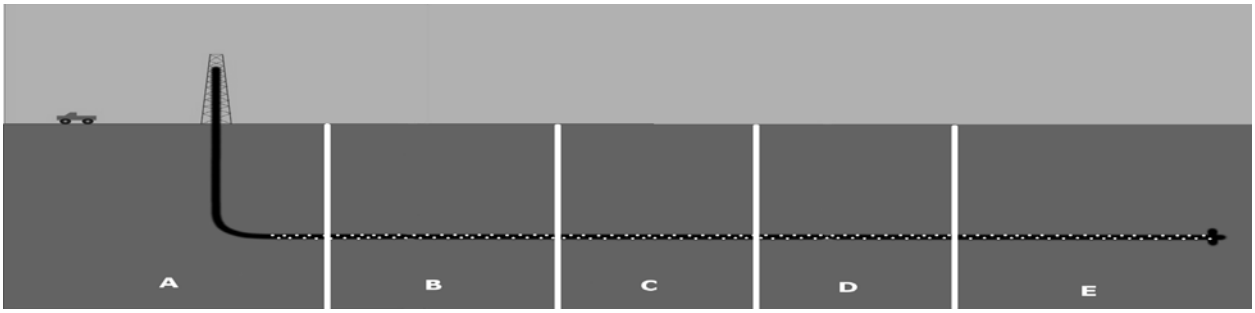
-- The Extended Reach Horizontal Well

More recently, the drilling of wells with an extensive horizontal component, open to production over perhaps several thousand feet or more, has been developed as a highly productive and efficient means of cooperative oil and gas development.

The extended reach horizontal well differs significantly from the other forms of cooperative oil and gas development discussed above in that it is both a drilling and completion technique and a device requiring the imputation of production to the respective mineral tracts involved. Nothing inherent in the joint/community lease, pooling or unitization requires anything other than vertical wells. All of these forms of cooperative development have been and continue to be in various settings carried out without resort to anything other than vertical wells. However, and particularly in urban settings where surface space and associated impacts are particularly important, unit operations from a central controlled operating area from which a number of wells are "slant-drilled" or "directionally drilled" to disparate subsurface points of production, as represented by the following, have become the norm:



Just as joint/community leases, pooling and unitization do not necessarily require vertical or directionally drilled wells, so also directionally drilled wells do not require joint/community leases, pooling or unitization. The contractual form and the operational choice are completely severable and independent of one another. The same cannot be said of the extended reach horizontal well. Where a horizontal well is drilled through the subsurface of separate and successively adjoining mineral tracts and open to production within two or more of them, as depicted below, there is implicit in the operational reality both a sharing or cooperation in the exercise of the oil and gas *operating* rights within the separate tracts and a sharing or cooperation in the oil and gas *revenue* rights—through some allocation of the overall production among the several tracts representing a sharing of the oil and gas revenue rights in them.



This follows from the fact that, although it is understood and accepted (or at least assumed in a context where those involved are not much prone to idle assumptions) that the horizontal well is obtaining production from all of the lands involved, there is no practical means at present to determine precisely the production from each tract over any period of time. The resulting allocation of production provision may involve nothing more than the following:

> "…unless Lessee shall have combined all such productive land into a pooled operating unit, Lessee shall pay royalty hereunder upon production obtained thereby from the Leased Land, which shall be determined on the basis of the portion of the total linear feet over which the well is open to production during the relevant period within the Leased Land and within the Outside Land, respectively."

One further observation concerning horizontal well development. Consider the depiction above. Does it not appear that the entire length of the well within each affected tract is "necessary and convenient" to exercise of the oil and gas rights in that tract? Other than the well site tract (A), the entire length of the wellbore within each tract is "open to production" within that tract. Is it not therefore justified as an exercise of oil and gas rights in each tract even under a strict Tract

Specific Rule? The difficulty for that proposition is presented by the decision in *Bourdieu III*. Recall that the principal question of concern for us in *Bourdieu III* was the operator's argument "that there is no evidence that [it] used or occupied more land than would be required for the operation of section 30 as a separate parcel." (*Bourdieu III*, 63 Cal.App.2d, at p. 205.) Rejecting this argument, the court responded that "The question of the wrongful use of the land was *not confined necessarily to the amount of land used*, but *also to the extent of the claimed wrongful* use of the homestead." (*Id*., at p. 206; emphasis added.) *Bourdieu III* stands for the proposition that entry, use and improvement of the surface in support of the exercise of oil and gas rights within other separate and distinct mineral tracts is to that extent wrongful and actionable even if the overall land area used and improved is no greater than would be required solely for the same entry, use and improvement in the exercise of oil and gas rights within the impacted mineral tract. Since the well bore within each affected tract (other than the "furthest out") is used not only to recover production from that tract but also from other "further out" tracts, it runs afoul of a strict Tract Specific Rule such as described in *Bourdieu III*.

The implications of "cooperative oil and gas development" (as here understood) are reminiscent of what we encountered above, in *Standard Oil Company v. J. P. Mills Organization* and then in *Wall v. Shell Oil*, in the context of the subdivision of lands after the leasing or other severance of the oil and gas rights. Following the subdivision of lands subject to pre-existing oil and gas development rights (absent other express agreement among the parties): (i) the lessors or other revenue rights owners remain entitled to an apportionment of royalties upon production from the pre-existing mineral rights tract as a whole—without regard to the specific subdivision tract from the subsurface of which specific production is obtained,[22] and (ii) the oil and gas operator may continue to use and improve the entire surface of the burdened lands for the exercise of the oil and gas rights throughout them, whether or not specific facilities located within a specific lot in a subdivision serve production from beneath that specific lot, "so long as they do not lie beyond the original [mineral] tract."[23]

In my view, the competing interests and expectations of oil and gas rights owners and surface owners, and the interests of society in general—including an interest in the conservation of resources, can be promoted, and reconciled by recognizing that ownership of oil and gas rights includes a *subsurface* Pass-Through Right, thus allowing subsurface mineral-related entry, use and improvement, incidental to cooperative oil and gas development and the production of oil and gas resources throughout an area consisting of several distinct oil and gas rights ownerships.

"Conservation" of resources has been widely accepted as a worthy objective that is promoted by cooperative oil and gas development.[24] Yet the focus of that discussion has been primarily, if not entirely focused on the "conservation" of hydrocarbon resources—avoiding waste and

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22 *Standard Oil v. J. P. Mills Org., supra*, 3 Cal.2d 128, at pp. 132-133.

23 *Wall v. Shell Oil*, 209 Cal.App.2d 504, at pp. 513-514.)

24 "Whereas, in the interest of the public welfare and to promote conservation, prevent unreasonable waste and increase the ultimate economic recovery of oil, gas and associated hydrocarbon substances in the Unitized Formations as herein defined, and to protect the owners of interests therein, it is deemed necessary and desirable to enter into this agreement to provide for the cooperative development and operation of the Unitized Formation as a unit in order to conduct secondary recovery, pressure maintenance or other recovery programs as herein provided…." (Unit Agreement, Signal Hill West Unit, Long Beach Field, Los Angeles County, California.)

maximizing the economic recovery of oil, gas and other hydrocarbon substances.[25] Without questioning the importance of conserving hydrocarbon resources, I submit that cooperative subsurface oil and gas development also tends to "conserve" real property assets by limiting the amount of surface area devoted to mineral-related improvements and activities. This tends also to serve a very real societal and private interest in maximizing the surface area available for other equally useful and valuable non-mineral-related improvements and activities.

It is an inherent feature of cooperative oil and gas development (as here understood) that it involves an entry into, use and improvement of one distinct mineral tract in such a manner as to support the exercise of oil and gas rights in one or more other distinct mineral tracts. However, as we learned in *Wall v. Shell Oil*, the owner of oil and gas rights "in a specific tract of land" may subject "the *surface* area of such lands…only to such burdens as are reasonably necessary to the full exercise of the mineral estate in such particular [tract] and the *surface* area may not be burdened by installations or surface fixtures designed to serve oil producing facilities located [outside that specific tract]." (*Wall, supra*, at p. 513.) With that and similar statements in mind, I hope to suggest a principled and persuasive argument for limiting the strict application of such a Tract Specific Rule to the *surface* of lands, permitting a "***Cooperative Development Rule***" for *subsurface* oil and gas development within separate and distinct mineral tracts. Just as the rules adopted in *Standard Oil v. J. P. Mills* and *Wall v. Shell* maintain the constructive existence of a single mineral tract following the subdivision of land, so also a Cooperative Development Rule would constructively create a single mineral tract, from actually distinct mineral tracts, for subsurface entry, use and improvement in connection with the cooperative exercise of oil and gas rights throughout an area of potentially productive lands.

My concern, thus, is with the question:

"In what circumstances, if any, may the owner of severed oil and gas rights in Mineral Tract B make or consent to the subsurface pass through of Tract B in connection with the exercise of oil and gas rights in the subsurface separate and distinct Mineral Tract C—without the consent (or even over the objection) of the surface owner of Tract B?"

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25 "The [state oil and gas] supervisor shall so supervise [oil and gas operations]…so as to prevent, as far as possible, damage to life, health, property, and natural resources; damage to underground oil and gas deposits from infiltrating water and other causes; loss of oil, gas, or reservoir energy, and damage to underground and surface waters suitable for irrigation or domestic purposes by the infiltration of or the addition of, detrimental substances [….¶…and] to permit the owners or operators of the wells to utilize all methods and practices known to the oil industry for the purpose of increasing the ultimate recovery of underground hydrocarbons and which, in the opinion of the supervisor, are suitable for this purpose in each proposed case. " (Cal. Pub. Res. Code, § 3106(a) and (b).)

Surprising as it may seem, we begin our search for an answer to that question not by looking down into the subsurface—and not by reviewing cases in any mineral rights context—but by looking up into the heavens, and considering limitations on the vertical extent of fee simple ownership reflected in the "overflight trespass" cases.

(i) The "Overflight Trespass" Cases

I chose to place initial emphasis in my inquiry not on authorities addressing directly the nature and extent of mineral-related entry, use and improvement of real property, but on seeking out and evaluating accepted limitations on the character and extent of rights that are included in outright fee simple ownership of land in a non-mineral context. I have concluded that the "overflight trespass" cases provide helpful insights—although the limitations on '*ownership'* developed in these cases may superficially seem to have little or no direct application in the context of subsurface oil and gas operations—being predicated upon considerations of overflight at great heights above the surface and the separation by such great height from any potential practical interference with entry, use or improvement by the surface owner.

We already encountered, in footnote 1 above, the ancient Latin maxim of land ownership: "*Cujus est solum ejus est usque ad coelum et ad inferos*." ("The owner of the soil owns to the heavens and also to the lowest depths.") The overflight trespass cases represent a direct and successful challenge to literal ownership *ad coelum* (to the heavens) on the basis of considerations that seem to me also relevant to the claim of literal ownership *ad infernos* (to the lowest depths).

► ***Bernstein v. Skyviews*** **(1978) QB 479**

The owners of Skyviews had over a 17-year period taken aerial photographs of properties throughout the English countryside, offering the photographs for sale to the property owners. In 1974, they flew over and photographed Lord Bernstein's "country house in Kent," then wrote him offering to sell the photograph. Lord Bernstein was not amused. He advised them by return mail that he considered their actions "a gross invasion of privacy and demanded that they hand over or destroy all negatives and prints of his house." There followed a series of letters—burdened by misfortune[26]—with the result that Lord Bernstein's solicitors commenced an action alleging trespass into Lord Bernstein's airspace, claiming that "as the owner of the land is also owner of the air space above the land, or at least has the right to exclude any entry into the air space above his land." In this they relied upon the doctrine of ownership *ad coelum*.[27]

The Court acknowledged that the *ad coelum* doctrine had been cited and relied upon in a number of English decisions, but observed that "an examination of those cases shows that they have all been concerned with structures attached to the adjoining land, such as overhanging buildings,

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26 Lord Bernstein's initial letter was not seen by the proprietor of Skyviews, but was replied to by an 18-year old employee of recent hire. "She wrote thanking Lord Bernstein for his letter and offering to sell him the negative for £15." This, as the court noted, "was a very polite letter to write to someone wanting to buy a photograph, but it was a most inappropriate letter to write to Lord Bernstein."

27 Land, air and aircraft being pretty much the same everywhere, I begin with this relatively recent decision of an English court because it shows a willingness of the courts that introduced the *ad coelum* doctrine into the common law to limit its practical application in a specific context of interest to me. In fact, the decision suggests an even earlier source for the *ad coelum* doctrine, referring to it as "a colorful phrase often upon the lips of lawyers since it was first coined by Accursius in Bologna in the 13th century."

signs or telegraph wires, and for their solution it has not been necessary for the judge to cast his eyes towards the heavens; he has been concerned with the rights of the owner in the air space immediately adjacent to the surface of the land."

Of course, the Court recognized that a landowner has certain rights in the overlying air space. The decision includes specific mention of "the right to lop the branches of trees that may overhang his property," and also to remove signs projecting beyond neighboring land (in one case a distance of 4' 8" and in another a mere 8"). *Bernstein* observes that in the latter decision the court relied on a treatise taking the position that "trespass will be committed by [aircraft] to the air space if they fly so low as to come within the area of ordinary user." Thus, as noted in *Bernstein*, "The author of the treatise is careful to limit the trespass to the height at which it is contemplated an owner might be expected to make use of the air space as a natural incident of the user of his land." (*Citing* Winfield on Tort (6th ed. 1954) at p. 380.) *Bernstein* concludes from that discussion that, while "it may be a sound and practical rule to regard any incursion into the air space at a height which may interfere with the ordinary use of the land as a trespass,…*wholly different considerations arise when considering the passage of aircraft at a height which in no way affects the use of the land*." (Emphasis added.)

Rejecting literal ownership *ad coelum* is only a first step to reaching a decision in *Bernstein*. If the vertical extent of ownership above the surface is limited, where does it end? As *Bernstein* expresses it, "The problem is to balance the rights of an owner to enjoy the use of his land against the rights of the general public to take advantage of all that science now offers in the use of air space." *Bernstein*'s solution declares, "This balance is in my judgment best struck in our present society by restricting the rights of an owner in the air space above his land to such height as is necessary for the ordinary use and enjoyment of his land and the structures upon it, and declaring that above that height he has no greater rights in the airspace than any other member of the public."

Thus, *Bernstein* definitely did not find that an overflight trespass committed by Skyviews was not actionable, or that the injury inflicted by such a trespass was too negligible to deserve a remedy. *Bernstein* held there to have been no trespass—or more correctly that no such trespass was possible, because the rights of Lord Bernstein from his ownership of the land did not extend to the heights involved in that entry. Trespass to real property is in essence "the unlawful interference with its possession." (5 *Witkin, Summary of California Law* (10th ed.) "Torts," § 693, p. 1018.) *Bernstein* held that Lord Bernstein's right to possession, and in some sense at least also his "ownership," of the land did not, indeed could not, extend upward to the heights involved. At that height, as the court stated, "*he has no greater rights in the airspace than any other member of the public*." (Emphasis added.)

► *Hinman v. Pacific Air Transport and United Airlines Transport* [28]

Plaintiffs sued as "the owners and in possession of 72-1/2 acres of real property in the City of Burbank, Los Angeles County, California, together with [as they claimed] a stratum of air-space superjacent to and overlying said tract and extending upwards to such an altitude as plaintiffs may reasonably expect now or hereafter to utilize, use or occupy said airspace." (*Hinman v. Pacific Air Transport* (9th Cir. 1936) 84 F.2d 755, 756.) As described in the decision, the

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28 *Hinman v. Pacific Air Transport and United Airlines Transport Corporation* (9th Cir. 1936) 84 F.2d 755.

plaintiffs' case rested "upon the assumption that as owners of the soil they have an absolute and present title to all the space above the earth's surface, owned by them, to such a height as is, or may become, useful to the enjoyment of their land." They claimed this right "to an indefinite [altitude], but not less than 150 feet." (*Id*., at p. 757.)

The defendants were commercial aircraft operators, and it was alleged that they "daily, repeatedly and upon numerous occasions have disturbed, invaded and trespassed upon the ownership and possession of…[plaintiffs' land, operating their] aircraft in, across, and through said airspace at altitudes less than 100 feet above the surface; that plaintiffs notified defendants to desist from trespassing on said airspace; and that defendants have disregarded said notice, unlawfully and against the will of plaintiffs, and continue and threaten to continue such trespasses." (*Id*., at p. 756.)

The aircraft-operators claimed it to be "settled law in California that the owner of land has no property rights in superjacent airspace, either by code enactments or by judicial decrees and that the *ad coelum* doctrine does not apply in California." The court rejected that claim, citing its review of California statutes and cases disclosing, in its words, "nothing therein to negative the *ad coelum* formula." The court further noted that if the *ad coelum* doctrine were accepted, and literally construed as the law, it would greatly simplify the task before them.

However, the Court also rejected any such literal application of the *ad coelum* doctrine as established law, expressing the conclusion concerning any such literal application that "it is not the law, and that it never has been the law." (*Ibid*.) Rather, in the opinion of the Court, the doctrine of ownership from the center of the earth to the heavens "was never taken literally, but was a figurative phrase to express the full and complete ownership of land and the right to whatever superjacent airspace was necessary or convenient to its enjoyment" (i.e., its use and improvement). (*Ibid*.)

But the reasoning of the complaint did not rest upon any such literal construction of the *ad coelum* doctrine. Rather, as the Court explained, plaintiffs did not "seek to maintain that the ownership of the land actually extends by absolute and exclusive title upward to the sky and downward to the center of the earth. They recognize that the space claimed must have some use, either present or contemplated, and connected with the enjoyment of the land itself." (*Ibid*.) But even this claimed limited right to prevent the intrusion of aircraft upon not only actual present use and improvement, but even that which is merely potential or contemplated future use and improvement, was more than the Court could accept.

The decision took as its point of departure the view that "Title to the airspace unconnected with the use of land is inconceivable. Such a right has never been asserted. It is a thing not known to the law." (*Ibid*.) California law specifically includes in the ownership of land a right to exclude others from the land, i.e., the right "to use it to the exclusion of others." (Cal. Civ. Code, § 654.) What the plaintiffs were claiming was a right, included in their ownership of the land, to exclude aircraft from the airspace above their land whether or not entry into the airspace actually interfered with their use and improvement of the land. The decision, recognizing that plaintiffs' claimed use of the land was limited to heights below 150 feet, phrased the issue as what use of the land by them would have been necessary "to perfect" such title to the airspace throughout their land to such a height. "Must the use be actual, as when the owner claims the space above the earth occupied by a building constructed thereon; or does it suffice if [plaintiffs] establish

merely that they may reasonably expect to use the airspace now or at some indefinite future time?" (*Id*., at pp. 757-758.)

In responding to that question, the decision found the *ad coelum* doctrine limited to provide only "that no one can acquire a right to the space above [the owner of land] that will limit him in whatever use he can make of it as a part of his enjoyment of the land. To this extent his title to the air is paramount. No other person can acquire any title or exclusive right to any space above him." (*Id*., at p. 758.) But as to ownership of airspace, with the implication of a right to exclude others from intruding into it, the court held that, "We own so much of the space above the ground as we can occupy or make use of, in connection with the enjoyment of our land. This right is not fixed. It varies with our varying needs and is coextensive with them. *The owner of land owns as much of the space above him as he uses, but only so long as he uses it. All that lies beyond belongs to the world*." (*Ibid*. Emphasis added. Compare the statements in *Bernstein*, *supra*, that at the heights involved in aircraft overflight Lord Bernstein "*has no greater rights in the airspace than any other member of the public*." Emphasis added.)

This reasoning brought the court to conclude in the matter before it that "traversing the airspace above appellants' land is not, of itself, a trespass at all, but it is a lawful act unless it is done under circumstances which will cause injury to appellants' possession." (*Id*., at pp. 758-759.) Thus, *Hinman* limited the circumstances in which overflight of land is actionable trespass to those which are injurious to the land itself or which constitute "an actual interference" with the owner's possession or beneficial use of the land. (*Id*., at p. 758.) Such a rule is consistent with the language in *Bernstein v. Skyviews* "restricting the rights of an owner in the airspace above his land to such height as is necessary for the ordinary use and enjoyment of his land and the structures upon it." *Drennan v. County of Ventura* (1974) 38 Cal.App.3d 84, adopting the language of the Restatement of Torts, made explicit what is left implicit in *Bernstein* and *Hinman*—the overflight of land "is a trespass if, but only if, both entry into the immediate reaches of the airspace next to the land is involved *and* the entry interferes substantially with the owner's *actual* use and enjoyment of his land." (*Id*., at pp. 87-88. Quoting the Restatement Second of Torts, § 159, subd. (2), comment (k).)

This limitation of overflight trespass to instances of interference with *actual* possession, use and enjoyment is significant because trespass to real property generally may be predicated upon interference with not only *actual* but also *constructive* possession. (5 Witkin, *Summary of California Law* (10th ed.) "Torts," § 695, p. 1020.) The distinction between actual and constructive possession is explained in *Lofstad v. Murasky* (1907) 152 Cal. 64, 68:

> "Actual possession" is a term of well-understood legal meaning, and is used in opposition to the other term "constructive possession" or "possession in law." The distinction between these classes of possession is so well defined and so generally recognized that it is hardly necessary to proceed to any great extent in pointing it out. In a general way it may be said that constructive possession is that which exists in contemplation of law without actual personal occupancy of the property; such a possession as in contemplation of law proceeds from the vesting of the paramount title or follows in the wake of legal title, or, as more exactly defined, 'constructive possession, or possession in law as it is sometimes called, is that possession which

> the law annexes to the legal title or ownership of property when there is a right to the immediate actual possession of such property, but no actual possession.'"

Hinman, *Drennan* and *Bernstein* can be read to exclude the very idea of constructive possession from the context of claimed overflight trespass. But I would suggest reading them in that way is not the most helpful to understanding what is going on. If, instead, we understand constructive possession as extending beyond the height of actual physical possession at a specific time to include the greater heights within which entry of a specific aircraft, by virtue of its specific impacts, interferes with the owner's possession and use of the land, then we can better appreciate *Hinman*'s observation that "the very essence and origin of the legal right of property is dominion over it. Property must have been reclaimed from the general mass of the earth, and it must be capable by its nature of exclusive possession. Without possession, no right in it can be maintained." (*Hinman*, *supra*, at p. 758.) Understood in this way, *Hinman*, *Drennan* and *Bernstein* seem to limit "constructive possession" in the overflight context not to any specific and unvarying altitude but to the altitude at which the circumstances and conditions of a specific overflight "will cause injury to [the owner's] possession." (*Hinman*, *supra*, at pp. 758-759.)

However, *Hinman*, *Drennan* and *Bernstein*, certainly would find no actionable trespass from the overflight of land at such an altitude as to involve no actual interference with the beneficial use and enjoyment of the land. But do not think that the "surface" owner is left without significant rights in respect to overflights of his land. *United States v. Causby*, discussed immediately below, shows that the "surface" owner has significant rights in respect to overflights while suggesting that the concept of constructive possession retains definite, albeit limited, significance in the overflight context above heights of actual possession, and even above heights at which actual possession seems feasible in existing circumstances.

► *United States v. Thomas and Tinie Causby* [29]

Causby was an inverse condemnation action decided by the Supreme Court in the late stages of the Second World War. Thomas and Tinie Causby owned 2.8 acres near Greensboro, North Carolina. They had a dwelling and various other structures involved for the most part in their operation of a chicken ranch (i.e., the kind where chickens are raised). Their neighbors included an airport, with a northwest-southeast runway ending slightly over 2,000 feet from both the Causby's barn and their house. The glide path of the runway ran directly over their property, and a 30:1 glide ratio (ratio of ascent/descent to horizontal travel) for use of the glide path brought aircraft over the property at 83 feet—67 feet above the house, 63 feet above the barn and 18 feet above the highest tree. The military use of the airport, under a 1942 lease renewable until 1967 or "six months after the end of the national emergency," included bombers, transports and fighters. The impacts of the military flights on the Causbys and their chickens are described in the decision:

> "Since the United States began operations in May, 1942, its four-motored heavy bombers, other planes of the heavier type, and its fighter planes have frequently passed over [the Causby's] land and buildings in considerable numbers and rather close together. They

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29 *United States v. Causby* (1946) 328 U.S. 256.

> come close enough at times to appear barely to miss the tops of the trees and at times so close to the tops of the trees as to blow the old leaves off. The noise is startling. And at night the glare from the planes brightly lights up the place. As a result of the noise, [the Causbys] had to give up their chicken business. As many as six to ten of their chickens were killed in one day by flying into the walls from fright. The total chickens lost in that manner was about 150. Production also fell off. The result was the destruction of the use of the property as a commercial chicken farm. [The Causbys] are frequently deprived of their sleep and the family has become nervous and frightened." (*Causby*, *supra*, at p. 259.)

Because of the nature of the action, trial was had in the United States Court of Claims, which held that the United States had taken an easement over the property and valued the easement taken (the property value taken or destroyed) at $2,000.00. On appeal, the government claimed for the United States "complete and exclusive national sovereignty in the air space" over the country, that "flights…made within the navigable airspace without any physical invasion of the property of the landowners," involve no taking of property, and that "the landowner does not own superadjacent airspace which he has not subjected to possession by the erection of structures or other occupancy." (*Id*., at p. 260.)

The Supreme Court's analysis of that claim begins with the blunt statement that the "ancient" *ad coelum* doctrine "has no place in the modern world." (*Id*., at p. 261.) Thus, "flights over private land are not a taking, unless they are so low and so frequent as to be a direct and immediate interference with the enjoyment and use of land." (*Id*., at p. 266.) However, citing *Hinman*, the decision states that "The landowner owns at least as much of the space above the ground as he can occupy or use in connection with the land." (*Causby*, *supra*, at p. 265, citing *Hinman*, *supra*, at p. 755.) Further, even accepting that the airspace is a public highway, "…it is obvious that if the landowner is to have full enjoyment of the land, he must have exclusive control of the immediate reaches of the enveloping atmosphere. Otherwise buildings could not be erected, trees could not be planted, and even fences could not be run. The principle is recognized when the law gives a remedy in case overhanging structures are erected on adjoining land." (*Ibid*., citations omitted.)

> "The fact that [a landowner] does not occupy [the immediate reaches of the enveloping atmosphere] in a physical sense—by the erection of buildings and the like—is not material. …the flight of airplanes, which skim the surface but do not touch it, is as much an appropriation of the use of the land as a more conventional entry upon it. We would not doubt that if the United States erected an elevated railway over [the Causby] land at the precise altitude where its planes now fly, there would be a partial taking, even though none of the supports of the structure rested on the land. The reason is that there would be an intrusion so immediate and direct as to subtract from the owner's full enjoyment of the property and to limit his exploitation of it. While the owner does not in any physical manner occupy that stratum of airspace or make use of it in the conventional sense, he does use it in somewhat the same sense that space left between buildings for the purpose of light

> and air is used. The superadjacent airspace at this low altitude is so close to the land that continuous invasions of it affect the use of the surface of the land itself. We think that the landowner, as an incident to his ownership, has a claim to it and that invasions of it are in the same category as invasions of the surface." (*Id*., at pp. 264-265.)

I consider *Causby*'s recognition that the "surface" owner must have "exclusive control of the immediate reaches of the enveloping atmosphere," to be recognition of the continued relevance of the concept of constructive possession in the overflight context, while limiting constructive possession in this context to altitudes which although above the owner's actual entry, use and improvement must be maintained free of air traffic in order to preserve the owner's right to possession and enjoyment of his land.[30] This reading of *Causby* seems to me to extend the potential constructive possession of a landowner into altitudes so great that no actual entry, use and improvement by the holder of legal title to land is physically possible, provided only that overflight at such altitudes actually interferes with the owner's entry, use and improvement within the area below.

► *Application of the "Overflight Trespass" Cases*

The overflight trespass cases are helpful in their limitation of the rights of property ownership to heights at which they are able to enter, use and improve their property or at which overflight interferes with their entry, use and improvement of the property. But there are at least two significant difficulties in attempting to directly apply the law limiting overflight trespass to a justification of a Cooperative Development Rule for subsurface oil and gas development.

In the first place, overflights of land, however frequent, are each limited in time and effect. Each overflight is of limited duration and creates no lasting alteration of the land. In contrast, cooperative subsurface oil and gas operations would involve creation of well bores which are at least long enduring enough to be considered permanent. And, of course, the objective of the operation is production and injection—the permanent withdrawal of hydrocarbons and/or injection of substances. These physical alterations are certain to endure longer than any conceivable overflight of land.

Furthermore, the limitation of overflight trespass reached in the overflight trespass cases represents a general right of the public at higher altitudes. In the language of *Hinman*, "The owner of land owns as much of the space above him as he uses, but only as long as he uses it. *All that lies beyond that belongs to the world*." (*Hinman, supra*, at p. 758. Emphasis added.) I have no thought of establishing a right of the public in general to conduct subsurface oil and gas operations in the land belonging to others,[31] but only a right of the person or persons who control oil and gas rights throughout a specific area to conduct cooperative subsurface oil and gas

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30 I recognize that the discussion here, and reference to all of the decisions involved in the discussion as "trespass overflight" cases, ignores otherwise important distinctions between the common law torts of trespass and nuisance, and distinctions between those torts and concepts of governmental taking by direct or inverse condemnation. As important as those distinctions are in other contexts, my purpose here is to explore broadly limitations on the rights of a "surface" owner in respect to air traffic in the airspace above his property, without specific regard for the particular theory upon which that owner might seek relief.

31 Such as may have been established in North Dakota under *Continental Resources, Inc. v. Farrar Oil Company*, discussed in part (iii), below.

operations throughout that area.[32] The rules and concepts developed in the context I refer to as "extralateral subsurface coal mining" seem to directly address both of the difficulties, discussed above, with application of the rulings in the overflight trespass cases to establishing a Cooperative Development Rule for subsurface oil and gas development.

(ii) Extralateral "Cooperative" Subsurface Coal Mining Rights in Appalachia; After Misstepping into the "Apex Rule"

My initial thinking on the subject of cooperative subsurface oil and gas development stemmed from consideration of the "***Apex Rule***," described in *Ames v. Empire Star Mines Co., Inc.* (1941) 17 Cal.2d 213, 216, as "the right of miners…to follow a vein which had its apex upon the surface of their land as it dipped down extralaterally beneath the surface of adjoining government land."[33] This rule finds expression, for example, in a common provision of federal patents making them "subject to the right of the proprietor of a vein or lode to extract and remove his ore therefrom, should the same be found to penetrate or intersect the premises hereby granted, as provided by law." When it applies, the Apex Rule gives the owner of mining rights in one tract of land the right to pursue a vein with its apex in that tract into successively adjoining tracts, and thus, ultimately, to operate in successively adjoining tracts—and to remove ore that had been initially in place within successively adjoining tracts—all without the consent or over the objection of any owner within those successively penetrated tracts.

But there is a strong practical objection to reliance on the Apex Rule to provide a basis for cooperative subsurface oil and gas entry, use and improvement. The Apex Rule involves a far broader right than required for our present purposes. The Apex Rule, we might say, is "intrusive" not "cooperative." As already noted, the Apex Rule extends the ownership of ore in place within one tract of land (the apex site) to ownership of ore within successively adjoining tracts, and permits entry into those other tracts and removal of the ore from them. In contrast, I envision only that the persons who already otherwise own or control oil and gas rights throughout several distinct but contiguous mineral tracts may jointly enter into, use and improve the subsurface throughout that area in connection with their cooperative exercise of those oil and gas rights without regard to the specific subsurface point(s) therein from which production is obtained (or injection is completed).

Such a rule, paraphrasing *Wall v. Shell Oil*, should allow those mineral rights owners in the cooperative subsurface exercise of their oil and gas rights, to locate wellbores and other

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[32] Of course, the fact that we are considering a private—rather than a public—right for cooperative subsurface development does not mean that the general public has no interest in both the existence and the exercise of such a private right. The statement in *Bernstein v. Skyviews, supra*, that, "The problem is to balance the rights of an owner to enjoy the use of his lands against the rights of the general public to take advantage of all that science now offers in the use of air space," seems just as relevant to discussion of cooperative subsurface oil and gas operations throughout privately owned land as to discussion of "the use of air space" for aircraft overflight of private land.

[33] Black's Law Dictionary (7th ed. 1999), p. 93: "The principle that a vein of ore may be mined if it extends beyond the vertical boundaries of the surface claim on which the vein apexes. –Also termed *extralateral rights*." Thus, the mining rights extend from the apex of the vein to its terminus even into and through separate tracts of land, permitting entry into and extraction of ore from successively adjoining tracts of land without the consent or even over the objection of the "owners" of such separate tracts. The rule effectively extends the ownership of ore in place within one (apex) tract to include ownership of ore within other tracts.

subsurface improvements, anywhere in the subsurface of that area— although specific subsurface entry, use and improvement within one tract supports production (or injection) within another tract—so long as such subsurface entry, use and improvement is reasonably "necessary and convenient" to their cooperative subsurface operations. (*Wall*, *supra*, at p. 513.)

There is, though, another point implicit in the Apex Rule which is more promising for our present needs. This implicit point entails merely rights of *extralateral operation* rather than *extralateral mineral ownership*. *Consider*: If the Tract A owners of mining rights have the right to pursue a vein which apexes on Tract A into and through the subsurface of successively adjoining Tract B and Tract C, then they must also have the implicit right to pass through the subsurface of successively adjoining tracts of land and a right, conversely, to transport their ore thus extracted back through the successively adjoining tracts to the tract on which the mine shaft surfaces—that is a right to use the well shaft within the subsurface of intervening tracts in support of operations within the subsurface of each separate and distinct successively adjoining tract. This might be depicted as follows (*but substituting the mouth of a mine shaft for the derrick)*:

Not only does it appear that such a right exists in the context of coal mining, but it appears to also involve just the distinction between *surface* and *subsurface* use and improvement which I have in mind. Such a rule was first suggested to me by American Jurisprudence, Second, Vol. 53A, in the topic "Mines and Minerals." In section 197, p. 450, we find that "unless the right [to use the surface of the land in connection with mining operations carried on in adjoining premises] is given by terms of the [mining] lease or otherwise, the lessee is *not* entitled to use of the *surface* of the land or the structures thereon to reach and remove minerals from adjoining lands." (Emphasis added.) The same rule is expressed in section 319, p. 554, as a limitation on the rights of mineral ownership, "In the absence of an agreement to the contrary, the owner of minerals underlying a tract of land *has no right* to use the *surface* thereof in aid of mining operations on adjacent, adjoining, or other tracts or land." (Emphasis added.) There is, thus, under these authorities (absent express contrary agreement), no right of cooperative *surface* entry, use and improvement in the mining context.

On the other hand, with respect to *subsurface* use, we find in section 322, pp. 559-560, that "…the space left after minerals have been removed is the property of the mine owner until all the minerals have been removed,[34] and he or she may put it to any use for any purpose he or she may desire, such as the use of the passages chambers and spaces left after removal of part of the minerals for the transportation of minerals from adjacent lands, provided, of course, the hauling

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[34] More will be said below concerning the apparent limitation of this right to the period "until all the minerals have been removed" and the implications of an apparent limitation of such use to shafts created by extraction of coal in the specific tracts involved.

does not unreasonably injure or interfere with the part of the land retained by the grantor." Of course, "the space left after minerals have been removed" is the subsurface mine shaft. And this passage states that the mine owner has the right to use that subsurface mine shaft within one tract in support of coal mining operations in successively adjoining tracts of land.

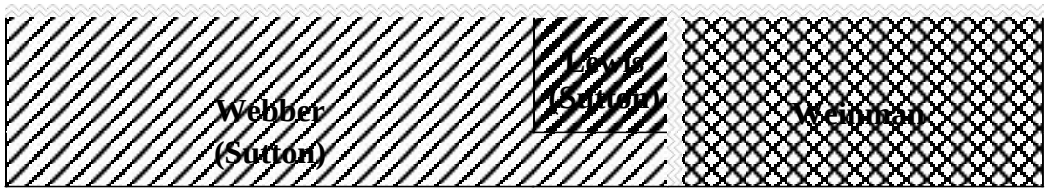
Briefly stated, this *AmJur* discussion raised the hope of directly addressing both of the difficulties identified above for attempting to directly apply the law limiting overflight trespass to a justification of a Cooperative Development Rule for subsurface entry, use and improvement of a right in connection with oil and gas operations. This *AmJur* discussion suggests both: (i) the existence of a mineral-related right to substantial and enduring subsurface use and improvement in connection with the enjoyment of mineral rights in other, separate and distinct mineral tracts, and (ii) the recognition that such subsurface cooperative development rights are confined to the mineral rights owner(s), rather than extended to the general public.

► *The Webber and Vogel Decisions—and "Oops!! What about Lillibridge?"*

Vogel v. Webber (1893) 159 Pa. 235, 28 A. 226 ("***Webber I***") and *Webber v. Vogel* 189 Pa.156, 42 A. 4 ("***Webber II***") involved coal mining rights in two adjoining tracts of land—one a 15-acre tract, originally owned by Lewis. Lewis conveyed to Sutton "all the merchantable coal underlying" the 15-acre tract of land, with "the free and uninterrupted right of way into, upon, and under said land, at such points and in such manner as may be proper or necessary for the purpose of taking and carrying away the coal, and also the tracks and tramways in the pit or pits opened in the seam." (*Webber I*, 159 Pa., at p. 242.) The coal interest in the entire 15 acres (the "*Sutton Tract*") was ultimately conveyed to Weinman[35] and leased by him to Vogel.

We learn in *Webber II* that Weinman, the grantee from Sutton and lessor of Vogel, also owned [i.e., fee simple including unsevered coal rights] a second, adjoining tract of land underlaid with coal, which he had also leased to Vogel." (*Id*.) I refer to this adjoining tract as the "*Weinman Tract*." Lewis, meanwhile, conveyed the fee simple ("surface") interest in a 13-acre portion of the Sutton Tract to Webber, "who, of course, took subject to the deed to Sutton." (*Webber II*, 189 Pa., at pp. 157-158.) I refer to this 13-acre tract of Webber surface title as the "*Webber Tract*" and to the remaining 2-acre tract of Lewis surface title as the "*Lewis Tract*." Thus, the entire 15-acre "*Sutton Tract*" includes the 13-acre Webber Tract, and a 2-acre "*Lewis Tract*."

This ownership may be depicted *schematically* as follows:



We also know from *Webber I* that all of this land had at one time been owned by Kelly who, mine owner Vogel argued in *Webber I*, had "engaged in mining the coal beneath them as one tract, and, while so engaged, used a road or way running from a pit nearly on the line between the tract bought by Weinman and part of the tract bought by Lewis, across Weinman's tract, and near to the pit on [Webber's] land, and thence to the turnpike." (*Webber I*, 159 Pa., at p. 243.)

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35 Spelled "Weinmann" in *Webber I* but "Weinman" in *Webber II*. I will follow the spelling in *Webber II*.

On that basis, mine owner Vogel argued in *Webber I* that "when Weinman purchased his tract the [benefit of that] servitude attached to it, and [Webber's] tract was servient to it; and that, as such is the case, the conveyance of Sutton to Weinman did not…operate to destroy [the] right [of Weinman, and of Vogel his lessee] to use the pit and the road or way [on Webber's land] to take out the coal from the adjoining [Weinman] tract." (*Id*.)

The court accepted the principle under which such an easement or servitude might have been created, stating: "Undoubtedly the principle is settled that, where an easement or servitude is imposed by the owner on one portion of his real estate for the benefit of another, a purchaser of it at a private or judicial sale without an express reservation takes the property subject to the easement or servitude." (*Id*.) However, the court found that principle inapplicable.

> "But the application of this principle to the present case fails. By the terms of the grant to Sutton, he became the owner of the merchantable coal under [Webber's] tract, and was entitled to mine the same; but he had no right to mine upon other lands, and use the pit for such mining operations, because his grant expressly limits his right to the coal mined and lying beneath the tract in question. Weinman, standing in Sutton's shoes, as his grantee, cannot successfully assert that because the former owner (Kelly) held the different tracts as one tract, and made a use of the road or way as stated, he has the right to tack that use of the road or way to this grant to mine coal, and thus make it the means of mining the coal upon other land, and transporting it over that of [Webber]. The former owner of the land, in the exercise of his ownership, hauled coal over this road or way, which passed by both pits to the turnpike. While an owner cannot accurately be said to have an easement upon his own land, yet he may alter the quality of two parts of his heritage; and having attached particular qualities to a part, and having conveyed it, if such qualities are palpable and manifest the purchaser takes it with the qualities which the owner has thus attached to it. [But i]n this case [Vogel], as lessee, claimed the right to mine and take coal out of the adjoining [Weinman] tract through the pit on [Webber's] land, and over it, *although his lessor had accepted the grant, which restricts the use of the pit and the right of way to the mining and hauling of the coal which underlies only the tract of [Webber]*. The use of the pit and of the right of way was specially restricted to the mining and to the hauling of the coal under the [Webber] tract." (*Webber I*, at pp. 243-244. Emphasis added.)

There we pick up the story in *Webber II*, where we find that in addition to the asserted "surface" servitude discussed in *Webber I*, Vogel in that prior proceeding had also "further claimed the right to transport, through the *underground* gangways in the [Webber] tract, the rock and gob excavated [within the subsurface of] the Weinman [tract], and deposit the same on the land of Webber, at the pit's mouth." (*Webber II*, at p. 158.) Thus, we learn that Vogel had all along actually claimed two species of right under his coal lease with respect to the [Webber] tract: *first*, a right to use and improvement of "the *surface* of Webber's land in working the coal on the Weinman tract," and, *second*, "the right to transport, through the underground gangways in the [Webber] tract, the rock and gob excavated on the Weinman Tract, and deposit the same on the land of Webber, at the pit's mouth." (*Id*.)

Even after the decision against him in *Webber I*, Vogel persisted in his claimed rights within the subsurface of the Webber tract, whereupon "Webber, claiming that his right [with respect to such subsurface use] was determined by the judgment in [*Webber I*]," sued to "restrain Vogel from transporting any of the coal mined in the Weinman tract under, through, or over the [Webber] tract; and from transporting any slack, refuse, or débris produced from the Weinman tract in the same way." (*Webber II*, at p. 4.) In considering the matter, however, the trial court noted what seemed to it a conflict between the decision in *Webber I* and the prior decision in *Lillibridge v. Lackawana Coal Co.* (1891) 143 Pa. 293, 22 A. 1035,[36] to which we now turn our attention.

By what the decision variously refers to as a "contract" and a "grant" or conveyance, Lackawana Coal acquired from Lillibridge "'all the merchantable coal' under the surface within certain land, 'with the sole and exclusive right to mine and remove the same,' and with this *habendum:* 'To have and to hold the coal in and under said land unto [Lackawana], its successors or assigns, *until the exhaustion thereof under the terms of this indenture*.'" (Emphasis added.) The court found this to be without question "an absolute grant in fee-simple of all the coal under the surface of the tract." Evidently, Lackawana also had complete ownership—surface and minerals—of two other tracts of land, located one immediately to the North and another immediately to the south of the Lillibridge tract (where Lackawana had acquired only the coal).

Lillibridge sought "to restrain [Lackawana] from removing coal belonging to Lackawana …[from Lackawana's northerly adjoining tract to its southerly adjoining tract], by moving the same through a tunnel or way made by [Lackawana] through one of the underlying veins of coal across [Lillibridge's] tract…, 200 feet below the surface, of considerable breadth, and 12 feet in height." (*Lillibridge*, *supra*, at p. 300.) Lillibridge acknowledged that Lackawana had created the subsurface tunnel or "way" in the subsurface of the Lillibridge tract by mining therein, in accordance with its agreement with Lillibridge, but claimed that, "having acquired the [northerly] adjoining property after the agreement with [Lillibridge] was made, has been and is taking out coal from the [northerly] adjoining tract through and over this tunnel or way," entirely through the subsurface breadth of the Lillibridge tract, and into the subsurface of the adjoining Lackawana tract to the South. (*Lillibridge*, *supra*, at p. 300.) Lillibridge sought to enjoin that specific subsurface activity as an illegal use of its property.

Before considering the specific result in the *Lillibridge* matter, and its potential significance to us, it seems proper to note some stark and potentially quite significant distinctions between the essential nature of the ownership of "coal" under Pennsylvania law and the ownership of "oil and gas rights" under California law. As expressed by the Pennsylvania Supreme Court in *Lillibridge*, "…we have emphatically decided that the coal or other mineral beneath the surface *is land*, and is attended with all the attributes and incidents peculiar to the *ownership of land*. We have held the mineral to be a *corporeal, and not an incorporeal, hereditament*; … and title to it may be acquired by adverse possession under the statute of limitations, though not by prescription, because it is *not an incorporeal right*. In short, *we have for nearly half a century judicially regarded the ownership of mineral, where it has been properly severed from the surface, as the ownership of land, to all intents and purpose*." (*Id*., at p. 299. Emphasis added.)

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[36] The judicial equivalent of, "What the ….?"

These statements concerning ownership of coal, in Pennsylvania, embody the very concepts and principles of ownership "in place" that were rejected by the California Supreme Court in 1935 with respect to ownership of oil and gas rights. The California decisions declare that the "owner of land *does not have an absolute title to oil and gas in place as corporeal real property*, but, rather, the exclusive right on his premises to drill for oil and gas, and to retain as his property all substances brought to the surface on his land," a right which is "essentially indistinguishable from an easement." (*Callahan v. Martin*, *supra*, 3 Cal.2d, at p. 117 (emphasis added); see, also, *Gerhard v. Stephens* (1968) 68 Cal.App.2d 864, 877.)

Based upon its own precedents and precedents in British mineral and mining law, the *Lillibridge* court refused the requested relief. After finding Lackawana Coal to be the owner not merely of the coal in place, but also of the tunnel or way created by removal of the coal, the court upheld Lackawana's right to the use of its property (i.e., that "space") through the intervening Lillibridge tract to transport coal mined from the subsurface of Lackawana's northerly adjacent tract and ultimately deliver the coal to the surface of Lackawana's southerly adjacent tract, while also recognizing, without deciding the question, that Lackawana might not have been permitted to similarly transport over the *surface* of the Lillibridge tract coal mined from other property.

Resuming discussion of *Webber II*, we find out Webber failed in his effort to restrain Vogel's use of its mine shaft through the subsurface of the Webber Tract for the transportation of coal extracted by Vogel from the Weinman Tract. Remember that the trial court had observed an apparent conflict between the 1893 decision in *Webber I* and the earlier 1891 decision in *Lillibridge*. Noting that apparent conflict and concluding that the *Webber I* court had not intended to overrule the *Lillibridge* decision without even mentioning it, the trial court's judgment upheld Vogel's "right to transport, through the underground gangways in the [Webber] Tract, the rock and gob excavated on the Weinman [tract], and deposit the same on the land of Webber, at the pit's mouth." Webber's appeal from that judgment is the subject of *Webber II*.

Addressing the specific claims of Webber on appeal concerning Vogel's claimed "right to transport, through the underground gangways in the [Webber] Tract, the rock and gob excavated on the Weinman [Tract], and deposit the same on the land of Webber, at the pit's mouth,"[37] the decision in *Webber II* held that "while the purchaser of coal [is] in good faith mining out his coal, his right to the use of the space made vacant by his workings as they progressed could not be successfully obstructed by the owner of the surface." (*Id*., at p. 5.) *Webber II* states that the mine owner's right to such extralateral or "cooperative" subsurface entry, use and improvement of the intervening land is limited in time to the period in which he is "in good faith mining out his coal" within that intervening tract, and that his purchase and mining of the coal does not give the mine owner "an undisputed and perpetual right of way under another's land…[since]…the

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[37] Prior to addressing the actual merits of the appeal in *Webber II*, the decision explained the neglect of *Webber I* to have addressed the parties' conflicting claims concerning subsurface entry, use and improvement: (i) observing that the "the main contention…[addressed in *Webber I* had been the claimed] right of Vogel to deposit slack and refuse from the Weinman tract on Webber's land at the mouth's pit, and to haul coal over the surface of the [Webber] land to the Greensburg turnpike," (ii) that "neither party considered the hauling of coal through the underground gangways as of much consequence," (iii) that the *Lillibridge* decision "was not mentioned in the [*Webber I*] opinion, and was not cited by counsel [in the earlier appeal]," and (iv) that the trial court had correctly concluded that "it was not the intention of this court [in *Webber I*] to overrule [*Lillibridge*]." (*Webber II*, at p. 4.)

owner of the land above and below has a right to the reversion of the space occupied by the coal *within a time contemplated by the parties when they sever that peculiar part of the land* from its horizontal adjoiners." (*Ibid*. Emphasis added.)

Accordingly, while we see established in *Lillibridge* and *Webber II* a right of entry, use and improvement within the subsurface of successively adjoining tracts in connection with cooperative mineral operations within the successively adjoining tracts, that right is limited to the period of continued "mining of coal in good faith." These decisions definitely recognize the existence in specific mineral rights owners, rather than in the general public, of mineral-related rights to substantial and enduring subsurface use and improvement in connection with the enjoyment of mineral rights in separate and distinct mineral tracts. After discussing two more "cooperative" coal mining cases, we will consider further the implications of this possible limitation of such rights to the period of continued "mining of coal in good faith."

► *The Moore v. Lackey (Kentucky)—and Fisher v. West Virginia Coal & Transport Co. (West Virginia)*

In *Moore v. Lackey Mining Co.* (1929) 215 Ky. 71, 284 S.W. 415, the Kentucky court relied upon the Pennsylvania court's decision in *Webber II*, discussed above, in stating that "The distinction between the use of the *underground* passages made in removing coal, whether owned or under lease, and the use of the *surface*, is clearly drawn, and the established principles from opinions dealing with the question are well stated in the text of 40 Corpus Juris, § 612, p. 1012, reading" in part as follows.

> "*Use of Premises in Connection with Adjacent Mines*. Unless there is a provision in the lease to the contrary, a lessee of mineral has the right…to use the gangways and passageways cut through the mineral lying under the leased premises for the purpose of going to and removing mineral owned by the lessee under adjacent lands, particularly where the lessor's property is not interfered with or injured. ….
>
> "*Use of Surface*. Except to the extent that the right to use the surface of the leased premises in connection with adjacent mining operations is expressly granted or necessarily implied, a mining lessee cannot use his surface rights or privileges for the purpose of taking out mineral from other lands, not owned by the lessor; nor has he the right to prepare the mineral mined from other lands at the lessor's breaker, or to use the timber leave, or the water leave, for the purpose of such outside mining operations, or use the openings and apertures on the leased land to mine adjacent lands not owned or demised by the lessor." (*Moore v. Lackey*, *supra*, 284 S.W. 415, at p. 417.)

Substantially the same result was reached by the West Virginia court in *Fisher v. West Virginia Coal & Transport Co.* (1952) 137 W.Va. 613, 73 S.E.2d 633. "In the absence of a right arising out of contract, the corporate defendant has no right to use the surface of the 1-acre tract of land for transporting and processing coal admittedly mined from lands adjoining the 16-acre tract." (*Id*., at p. 638.) On the other hand, "…when the corporate defendant leased the coal in the 16-acre tract from the fee simple owner thereof, under the provision of a lease giving it that authority, it has the right to transport through the subterranean passageways coal mined from adjoining lands *so long as the coal underlying the 16-acre tract was not exhausted or abandoned*

and the mining operations were conducted with due diligence." (*Id*., at p. 639. *Emphasis added*.)

Thus, as in the earlier Pennsylvania decisions, we encounter again in *Fisher* essentially that same limitation of the subsurface rights in question to the period in which the "mining of coal in good faith" continues. It remains to be considered how great a difficulty that limitation represents for the application of cooperative subsurface coal mining rights to the establishment of a Cooperative Development Rule for with subsurface oil and gas operations.

► *Application of Extralateral "Cooperative" Subsurface Coal Mining Rights*

In the context of Appalachian coal mining, owners of "coal rights" within one tract of land have no right (without the consent or over the objection of the surface owners therein) to enter into, use or improve the *surface* of that land in connection with operations for the extraction of coal from other lands. Conversely, it seems equally well established in that context, that the owners of "coal rights" within successively adjoining tracts of land do have the right of *subsurface* entry, use and improvement of such tracts in connection with the extraction of coal from such tracts, at least in some circumstances and during some period, without or even over the objection of the "surface" owners within those lands.

That right of "cooperative subsurface entry, use and improvement," and the judicial decisions discussing it, directly address both of the difficulties identified above for application of the overflight trespass cases to establishing a Cooperative Development Rule for subsurface oil and gas development, since the subsurface rights affirmed by these decisions in a coal mining context involve both: (i) substantial and enduring subsurface entry, use and improvement in connection with the enjoyment of mineral rights in separate and distinct mineral tracts, and (ii) the recognition of such subsurface cooperative development rights in the mineral rights owner, rather than more broadly in the general public.

However, there also seem to be at least two other definite and potentially substantial difficulties standing in the way of an extension to subsurface oil and gas operations of the principle allowing extralateral or cooperative subsurface entry, use and improvement in a coal mining context. One such difficulty involves the limited duration of the coal owner's right of extralateral or cooperative subsurface entry, use and improvement. The second difficulty arises from the fact that the subsurface shaft or "space" being used in one tract of land for subsurface entry into and the removal of coal from another tract seems to have been in each instance created by the removal of coal from the first tract. If this were not merely a fact, but a "requirement," it would be a problem for direct application of subsurface cooperative development rights from a coal mining context to an oil and gas context because, depending upon the specific character of the oil and gas development involved, well bores are often drilled into and through successively adjoining mineral tracts with the intent of obtaining production from the "end tract" without any effort or intent to obtain production from any of the intervening pass-through lands.

I will discuss the limited duration of the mine owner's right to use mine shafts before considering the question of the initial "purpose of creation" of mine shafts as a potential limitation on their use in connection with coal mined from other lands.

► *Duration of the Right of Cooperative Subsurface Entry, Use and Improvement*

The duration of the coal owner's abstract right of subsurface "cooperative development" is discussed in *Fisher, supra*, with an explicit limitation of the coal owner's "right to transport through the subterranean passageways coal mined from adjoining lands" to the period lasting "*so long as the coal underlying the 16-acre tract was not exhausted or abandoned and the mining operations were conducted with due diligence*." (*Fisher, supra*, 73 S.E.2d, at p. 639. Emphasis added.) Thus, so far as involved in *Fisher*, once the mining operations on the intervening or pass-through lands are concluded—or they are no longer diligently prosecuted—the right of cooperative use and improvement ceases. The same limitation is similarly expressed in *Webber II*'s statement that "*while the purchaser of the coal was in good faith mining out his coal*, his right to the use of the space made vacant by his workings as they progressed could not be successfully obstructed by the owner of the surface." (*Webber II, supra*, 189 Pa., at p. 160. Emphasis added.) It seems reasonable to conclude that these specific statements are taken by the editors of *AmJur* to justify their statement that "The right to use the underground passageways in aid of mining other properties is generally held to be limited to the term during which the mineral owner is actively mining the granted minerals." (American Jurisprudence, Second, Vol. 53A, "Mines and Minerals," § 332, p. 560.) All the more so since *Fisher, supra*, is cited by the editors, without specific page reference, in support of that statement.

And yet, without questioning the accuracy of *AmJur*'s statement concerning the limited duration of the right in question, there is reason to consider it to be merely an accurate statement of a frequently appearing matter of *fact* rather than the expression of a restriction imposed by law. That conclusion appears from a closer reading of the grants of coal mining rights involved in the coal mining cases discussed above. *Lillibridge* describes the grant of coal as resulting in ownership of a "pure corporeal hereditament, the title in fee simple to which passes to a purchaser by apt conveyance." (*Lillibridge, supra*, 143 Pa. 293, at p. 302.) That description is suggestive of the conveyance of an interest in perpetuity. But the language of the conveyance involved definitely shows that not to have been the case. After characterizing the conveyance as having "created an estate in fee-simple in…the coal underlying the plaintiff's surface," *Lillibridge* quotes the instrument as including the conveyance of:

> "…'all the merchantable coal' under the surface, 'with the sole and exclusive right to mine and remove the same,' and with this *habendum:* 'To have and to hold the coal in and under said land unto the said party of the second part, its successors or assigns, *until the exhaustion thereof under the terms of this indenture*.'" (*Id*., at p. 300. Emphasis added.)

There is no such explicit statement of the intended duration of the grant or coal rights involved in the two *Webber* decisions. *Webber I* provides no suggestion of any such limitation, but *Webber II* includes the following discussion, suggesting that not only the instrument involved there, but such instruments generally, are intended and expected to convey an interest or rights of limited duration.

> "While there exists…an estate in fee simple in the severed coal, …*that estate, except in very rare cases, has no badge of perpetuity*. In nearly every case the instrument itself discloses the intention of the parties that the

> coal shall be mined; that is, *that the subject of the grant shall soon be exhausted or consumed*. …. It was intended to go no further in [*Lillibridge*] than to hold that, *while the purchaser of the coal was in good faith mining out his coal*, his right to the use of the space made vacant by his workings as they progressed could not be successfully obstructed by the owner of the surface; and *not that by the purchase of the coal he obtained an undisputed and perpetual right of way under another's land*. The owner of the land above and below has a right to the reversion of the space occupied by the coal *within a time contemplated by the parties* when they sever that peculiar part of the land from its horizontal adjoiners. (*Id*., at p. 160. Emphasis added.)

Thus, it seems reasonably certain that the limited duration of the coal owner's right in *Lillibridge* to use of its shaft for transporting coal mined in adjoining lands was the direct consequence of the specific duration of the grant there involved, and it seems nearly as certain that the same is true of the interest, rights and instrument involved in the *Webber* decisions. Nor is anything stated either by the Kentucky court in *Moore v. Lackey* or the West Virginia Court in *Fisher v. West Virginia Coal* to suggest that the grants there involved were not similarly limited in duration. Without more, I believe that we are justified in a tentative conclusion that both *Fisher*'s limitation of the coal owner's "right to transport through the subterranean passageways coal mined from adjoining lands" to the period lasting "*so long as the coal underlying the 16-acre tract was not exhausted or abandoned and the mining operations were conducted with due diligence*," and *Webber II*'s similar limitation of the coal owner's "right to the use of the space made vacant by his workings as they progressed … [without] obstruct[ion] by the owner of the surface," are statements of facts based on the limited duration of the interest granted, rather than expressions of a restriction in the law limiting use of shafts created in mining operations to a term more limited than the duration of the grant itself. (*Fisher*, *supra*, at p. 639. *Webber II*, *supra*, at p. 160. Emphasis added.)

Such confusion of a factual scenario common to a series of similar cases for a generally applicable rule of law is not unheard of in California. For example, consider the following from *Mitchell v. Exhibition Foods, Inc.* (1986) 184 Cal.App.3d 1033, 1042:

> "Defendants urge that we break this impasse [on a point of interpretation] by invoking the rule that 'uncertainties in agreements to renew leases are to be construed in favor of the tenant.' Although there are decisions to this effect (see, e.g., *McAulay v. Jones* (1952) 110 Cal.App.2d 302, 306 [242 P.2d 650]; *Erickson v. Boothe* (1947) 79 Cal.App.2d 266, 272 [179 P.2d 611], they appear to state a particularized variant of the familiar principle that ambiguities and uncertainties are to be construed against the party who created them in drafting the contract."

More recently, in *Vandenberg v. Superior Court* (1999) 21 Cal.4th 815, the Court corrected a long standing but mistaken inference of a general rule of construction from the fact-based result in a single prior matter, namely: a supposed rule in the interpretation of insurance policies under which a policy limitation on coverage to amounts an insured is "legally obligated to pay as damages," or comparable terms, is interpreted to refer to and include tort liability – but not liability in contract. (*Id*., at pp. 838-839.) After noting a "long line of decisions" supporting the existence of such a principle of construction, the Court held that "the nature of the damage and

the risk involved, in light of particular policy provisions, control coverage." In so ruling, the Court also expressly rejected "the *ex contractu/ex delicto* distinction, which [in the Court's words] derives from a misreading of the seminal case, *Ritchie v. Anchor Casualty Co*. (1955) 135 Cal.App.2d 245." (*Id*., at p. 839.)

There have been at least two instances of this confusion of frequently appearing facts for the law in California oil and gas law. *San Mateo Community College District v. Half Moon Bay Limited Partnership* (1998) 65 Cal.App.4th 401 was the second published decision of a California court ever to include the expression that oil and gas leases are to be construed "liberally in favor of the lessor and strictly against the lessee." (*Id*., at p. 409.) In support of that statement, *San Mateo* cited only *Lough v. Coal Oil, Inc.* (1990) 217 Cal.App.3d 1518, 1525—the first, and only other, published California decision ever to mention that expression. For its part, as it went where no California court had gone before, *Lough* cited a highly regarded treatise on the subject of oil and gas law—2 *Summers, Oil and Ga*s (permanent ed. 1959), § 372, pp. 485-502.

But an actual reading of the treatise shows that *Summers* provides no support for the expression. Indeed, it is precisely the confusion for a rule of law of a frequent but fact specific result, in a series of similar cases, to which *Summers* alludes in expressing the conclusion that the expression in question, "viewed as a statement of fact … may be true enough, but that *viewed as a rule of construction it has no sound foundation*." (*Summers*, § 372, p. 485. Emphasis added.) Thus, the expression in question simply confuses the fact that many matters of oil and gas lease interpretation have been decided against the lessee for a nonexistent and unfounded rule of construction requiring a bias in that direction.[38]

Furthermore, while the fact may be that Appalachian grantees of coal acquire a "fee simple" title to the coal in question, it seems probable if not certain that their interest in the land in question itself, from which they are to remove the coal, is in the nature of a determinable fee, to continue so long as the coal is "*not exhausted or abandoned and the mining operations [are] conducted with due diligence*." (*Fisher, supra*, at p. 639. Emphasis added.) The limited duration of their right to use the space made vacant by their workings to transport coal mined from adjoining lands, in such event, seems to be no more than the unsurprising consequence of the *fact* that after that time they have no remaining right, title or interest in or to the land itself. With no basis for suspecting otherwise, I tentatively conclude that if the coal owner's right of extralateral or cooperative subsurface entry, use and improvement ends at the depletion of coal reserves, or the

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[38] Anyone interested in whether California law includes any such rule of construction can refer to "*A Rule To Spare Them Reasoning*," John Quirk, California Real Property Journal, Vol. 18, No. 1 (Winter, 2000). As a general proposition, California law is that the same "elementary rules of construction, [apply] to oil leases as well as to other documents. (*Renner v. Huntington-Hawthorne Oil & Gas* (1952) 39 Cal.2d 93, 100. See, also, *Irvine v. MacGregor* (1928) 203 Cal. 583, 585: "In accord with familiar principles of interpretation, oil leases are construed according to their reasonable common-sense meaning." As to the more specific point of a required interpretation in favor of the lessor and against the lessee, see, e.g., *Union Oil Co. v. Union Sugar Co.* (1948) 31 Cal.2d 300, 318, interpreting a specific provision in an oil and gas lease amendment against the lessor, under the requirement of Civil Code section 1654 that "In cases of uncertainty not removed by the preceding rules…, the language of a contract should be interpreted most strongly against the party who caused the uncertainty to exist." As the court explained, "This rule on its face cannot support [a decision in favor of the lessor] in the present case….[since it cannot] be said that the lessee caused the uncertainty to exist, for the evidence is without conflict that the precise modification was suggested by defendant's president in language that was copied almost verbatim into the formal document."

cessation of diligent mining, this is simply because as a matter of fact the mine owner's entire right, title and interest has come to an end in those circumstances.

Application of the same principles to a subsurface Cooperative Development Rule in an oil and gas context, would result in the unproblematic fact that the oil and gas rights owners' rights of subsurface entry into, use and improvement of their respective mineral tracts for their cooperative development ceases if and when their oil and gas rights in the respective tracts expires or are terminated. This, I think, would not be the least bit troubling for the existence or exercise of such rights.

► *"Purpose" of Shaft Creation As a Potential Limitation on Use for Removal of Coal From Another Tract.*

The Appalachian coal mining cases discussed seem to either conclude or assume that the subsurface shaft or "space" being used in one tract of land for subsurface entry into and the removal of coal from another tract was created by the removal of coal from the first tract. Once again, it is unclear whether such is in each matter merely a correct statement of fact, on one hand, or the expression of a legal requirement. The more significant question for us is—whether a matter of fact or legal requirement—it represents a potential obstacle to recognition of a subsurface Cooperative Development Rule in an oil and gas context.

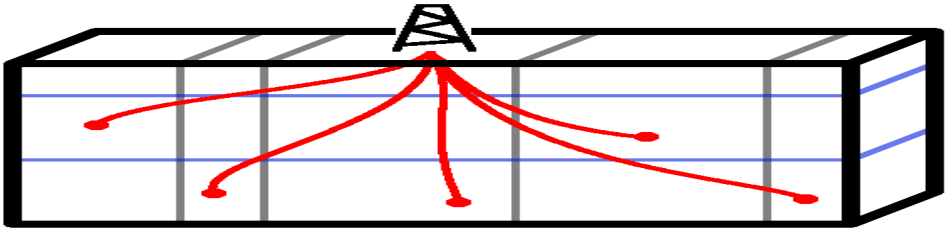
We have already seen *AmJur*'s statement that "…the mine owner…may put [*the space left after minerals have been removed* is the property of] to any use for any purpose he or she may desire, such as … the transportation of minerals from adjacent lands, provided, of course, the hauling does not unreasonably injure or interfere with the part of the land retained by the grantor." (American Jurisprudence, Second, Vol. 53A, in the topic "Mines and Minerals," § 322, pp. 559-560. Emphasis added.) *Lillibridge* mentions the plaintiffs' desire to restrain the defendant from transporting coal from other lands through a tunnel or way "produced by the mining operations of the defendant." (*Lillibridge*, *supra*, 143 Pa., at p. 300.) *Webber I* makes no mention of the subject, but *Webber II* explicitly affirms the right of the mine owner "to the use of *the space made vacant by his workings* as they progressed." (*Webber II*, *supra*, 189 Pa., at p.160. Emphasis added.)

Recognition of a right to use of subsurface shafts for the transportation of coal mined in other lands clearly supports an argument for a subsurface Cooperative Development Rule in the oil and gas context. But the extent of such support would be greatly limited if subsurface well bores can be used in cooperative oil and gas development (to transport production through intervening pass-through lands) only if such well bores were originally drilled specifically in the hope of obtaining production from those pass-through lands.

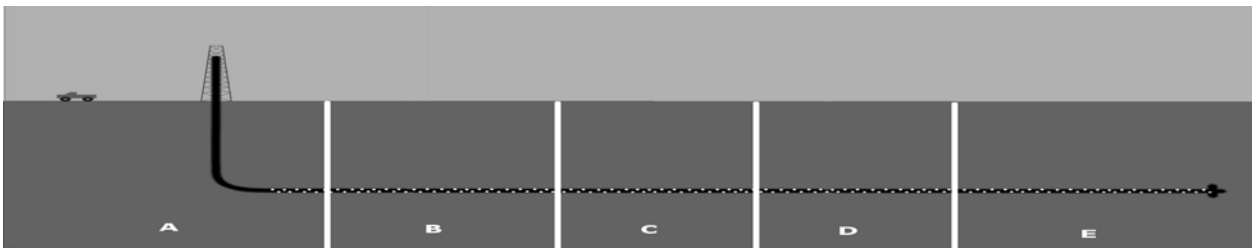
I suggest, though, that any such supposed "limitation" is actually nothing more than an ordinary and inherent aspect of coal mining operations. It seems to be part of the operational nature of coal mining (and other subsurface hard rock mining) that it progresses in a linear manner from an initial point of surface entry through successive subsurface areas for the removal of ore or other mineral substance. Cooperative subsurface use and improvement in coal mining necessarily involves the successive use of the space created by the removal of the mined substance in successively adjoining areas to reach and extract the mined substance from progressively distant tracts. I believe the "limitation" of a mine owner's use of subsurface shafts for the transportation of coal mined in other lands "to the use of *the space made vacant by his workings* as they

progressed," reflects the facts of coal mining operations rather than any abstract legal principal. (*Webber II*, *supra*, 189 Pa., at p.160. Emphasis added.) If that is so, then there is no sound legal basis for insisting upon the same or any similar limitation in the distinctly differing context of oil and gas operations. To the extent this is an inherent aspect of coal mining operations, it has no direct relevance to oil and gas operations which typically follow a very different development pattern.

It is common for the development of an extended oil and gas producing area to initially involve wells drilled at substantial spacing throughout the area. In an urban setting in particular, this might look something like the following:



Oil and gas development and production through more recently developed horizontal well methods may more closely resemble the "successive" development seen in coal mining, as for example:



But even in such cases, it is in no way anticipated that development and production—say, in Tract D above—will take place only after development and production in Tract B. Beyond that, once such a project has been put into production there does not seem to be any practical way, nor in day-to-day operation any perceived reasonable need, to determine whether Tract B or Tract C, for example, has been substantially depleted while Tracts D and Tract E remain productive. Simply stated, subsurface oil and gas operations differ from subsurface coal mining in that the former are not in any real sense prosecuted throughout an extended area by operations conducted within the "space made vacant by [the lessee's prior] workings as they progress," to paraphrase the statement in *Webber II*. (*Webber II*, *supra*, at p. 5.) On this point, I believe we can adopt as our own the statement: "We perceive no reason why, in this instance at least, the law must waltz blithely through distant elysian fields, too far from the real dance of life." (*Griffis v. County of Mono* (1985) 163 Cal.App.3d 414, 430.)

Moreover, despite the generally successive development logic of coal mining, it appears that even mine owners may legitimately stage or partially defer extraction in one tract with the effect (if not for the express purpose) of maintaining their rights to the use of shafts within that tract in transporting coal mined in other tracts. This is as plainly suggested in the *Fisher* court's description of the mineral lessee's operations, as follows:

> "...[the lessee] admits that it has temporarily suspended the mining of the coal underlying the 16-acre tract [through which its shaft passes] and has moved the machinery located in that part of its mine to other parts thereof; that it intends to mine the coal under the adjoining tracts [transporting them through its shaft on the 16-acre tract], and as the coal under those tracts is exhausted, and as it retreats or moves toward the opening located on the 16-acre tract of land, the coal in the 16-acre tract will be mined." (*Fisher, supra*, at p. 637.)

In addition, no practical need appears for a "successive development" limitation of cooperative subsurface oil and gas development. *Fisher, supra,* quotes with approval the statement of the West Virginia court accepting as established "…the [mineral lessee's] right to use the said passageways *in such manner as will not unreasonably interfere with the enjoyment by [the surface owner] plaintiff of his interest in the land.*" (*Fisher, supra,* at p. 639, quoting *Robinson v. Wheeling Steel & Iron Co.*, 99 W.Va. 435, 129 S.E. 311, 312; *emphasis added.*) *Moore v. Lackey, supra,* 284 S.W., at p. 417, suggests that the cooperative subsurface use of mined land is particularly unobjectionable "where the lessor's property is not interfered with or injured." (*Moore, supra*, 284 S.W., at p. 417.) Similarly, *Webber II* at least suggests that the limited duration of the coal mine owner's rights stems from a belief that such a limitation is required so that the "[surface owner] could tell when his estate would cease to be disturbed by workings underneath." (*Webber II, supra*, at p. 5.)

However substantial such concerns may be in the context of coal mining, it seems clear that there is little if any need for concern regarding potential adverse impact on the surface owner's use and improvement resulting from cooperative subsurface oil and gas entry, use and improvement. Indeed, even in the coal mining context, we have seen it suggested in *Webber II* that neither the mine owner nor the surface owner "considered the hauling of coal through the underground gangways as of much consequence," focusing their attention instead on the claimed excessive use of the surface. (*Webber II, supra*, at p. 4.)

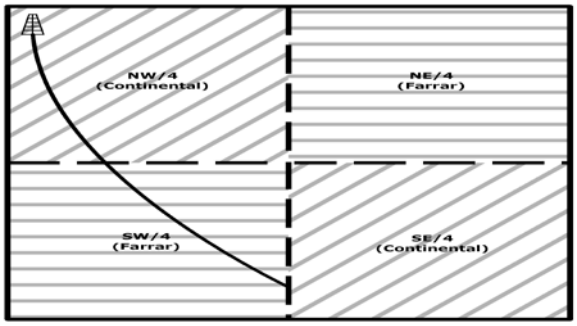
But there should be little or no concern for "surface" impacts from cooperative subsurface oil and gas development, which would consist entirely of (i) well bores of modest diameter and at substantial depth beneath the surface and (ii) tools and equipment and fluids within well bores. Recall the statements in *Wall v. Shell Oil* that "as conditions change, the 'reasonableness' of any particular exercise of a right may also change. An act which would be reasonable in the wilderness might be totally unreasonable in an urban area." (*Wall, supra*, 209 Cal.App.2d, at p. 517.) It can as correctly be said that the "reasonableness" of a the exercise of a right of subsurface cooperative mineral development may differ depending upon whether it involves mine shafts for coal mining or well bores for hydrocarbon production and injection.

It seems to me that cooperative subsurface entry, use and improvement in an oil and gas context is sufficiently limited if both: (i) the owners of oil and gas rights in distinct mineral tracts adopt a mutually acceptable Cooperative Development plan for the mutual protection of their Correlative Rights, and (ii) such development is limited so as to not prevent or interfere with the surface owner's non-mineral use and improvement. It would be particularly nice just now to encounter a judicial decision holding that "when necessary to prevent waste, to avoid the drilling of unnecessary wells, or to protect correlative rights," the drilling of a well through the subsurface of the land of another is not a subsurface trespass. That is what we have in the North

Dakota Supreme Court's decision in *Continental Resources, Inc. v. Farrar Oil Company* (1997) 559 N.W.2d 841.

(iii) Continental v. Farrar--Plaintiff Can Drill a Well Through Another Lessee's Separate Leasehold.

In *Continental Resources, Inc. v. Farrar Oil Company,*[39] the North Dakota Supreme Court upheld Continental's right to drill a well through the subsurface of Farrar's separate leasehold under a compulsory pooling order of the State's Industrial Commission. The facts involved are for the most part unexceptional, but take what may seem an abrupt turn to the radical. Continental held oil and gas leases on the NW/4 and SE/4 quarters of a section of land, while Farrar held oil and gas leases on the NE/4 and SW/4 of the same section. The Commission established spacing of two horizontal wells for each 640 acre unit. In response, Continental proposed to Farrar the drilling of a horizontal well from the northwest corner of Continental's NW/4 quarter, "drill[ing] vertically to a depth of 9,200 feet, and then South-Southwesterly and horizontally 4,385 feet through the NW/4 and SW/4, and end at a point near the N-S mid-section line about 660 feet from the south section line. (*Id*., at pp. 842-843.)



When Farrar refused, Continental petitioned the Industrial Commission to compel pooling of all interests for the proposed well. The Commission ordered the forced pooling of all oil and gas interests involved for the development and operation of the unit, in a pooling order that "directed the operator of the proposed well to conduct its operations to protect correlative rights; directed the operator to share with all interest owners, without unnecessary expense, their just, equitable, and proportionate share of production; directed each working interest owner to reimburse the operator for a proportionate share of reasonable actual costs of the well, plus a reasonable charge for supervision; and authorized the operator, if it carried a nonparticipating lessee's share of costs, to recover a risk penalty from the nonparticipating lessee, [and] reserving…power to the Commission to determine proper costs in the event of any dispute." (*Id*., at p. 843.)

Despite this forced pooling order, Farrar continued to resist development, and notified Continental it would treat penetration of its leasehold by the well as a subsurface trespass. Continental sued Farrar for a declaratory judgment that its proposed horizontal well would not be a subsurface trespass of Farrar's leasehold. The trial court held, and the Supreme Court agreed, "that the Industrial Commission's forced pooling order was a proper exercise of the state's police power that superseded the property law of trespass. The [trial] court ruled, if Continental complied with the rules and regulations of the Industrial Commission in drilling the well, the

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[39] (1997) ND 31; 559 N.W.2d 841; 1997 N.D. Lexus 30. I am indebted to John Harris for bringing this matter to my attention, but reserve to myself full responsibility for the use (or misuse) which is made of it here.

forced pooling order would preclude any claim by Farrar against Continental for a subsurface trespass even though the horizontal hole would transect much of Farrar's leased formation in the southwest quarter." (*Id*., at p. 844.) In its decision, the North Dakota Court determined that the forced pooling order, and North Dakota's 1953 Act for the Control of Gas and Oil Resources on which it was founded (the "***Resources Act***"): (i) superseded the common law rule of trespass, and (ii) did so without violating the separate "due process" and "just compensation" provisions of North Dakota's Constitution.

The Court recognized "the bottoming of a well on the land of another without his consent" as a subsurface trespass. (*Id*., at p. 844.) However, it found that the legislature adopted the administrative proceedings and authority in question under the Resources Act precisely to avoid difficulties presented by strict application of such common law concepts—including, particularly, rigid application of the Rule of Capture. (*Id*., at pp. 444-845.) Under the Resources Act, as the Court states, "Recognizing important physical factors affecting oil and gas production, the Commission is empowered to fix spacing units for a pool '*when necessary to prevent waste, to avoid the drilling of unnecessary wells, or to protect correlative rights*….' …[and] may fix spacing units for a pool by orders that 'specify the size and shape of each unit and the location of the permitted well thereon in accordance with a reasonably uniform spacing plan.' [¶] The Commission [also] has power to *compulsorily* pool all interests in the spacing unit for development and operations.'" (*Id*., at p. 845. Emphasis added. Citations omitted.) Accordingly, when the Commission acts within the scope of its powers under the Resources Act, conflicting private property rights are ignored—or more correctly, they are "taken."

Farrar's property rights were taken in that manner, and the Court also noted that property rights are protected by the due process and just compensation provisions of the state's constitution.[40] Yet, as the Court also noted, "…property rights are not absolute. See, for example, *N.D. Const., art. XII, § 5*: 'The exercise of the police power of this state shall never be abridged, or so construed as to permit corporations to conduct their business in such a manner as to infringe the equal rights of individuals or the general well-being of the state.'" (*Id*., at p. 845.) By reason of that constitutional provision, "property is subject to the police power of the state 'to impose such restrictions upon private rights as are practically necessary for the general welfare of all.'" (*Ibid*., citing *State v. Cromwell* (1943) 72 N.D. 565, 9 N.W.2d 914, 919.) Accordingly, the Court held, "The police powers exercised by the Commission here effectively superseded Farrar's right to use its oil and gas properties as Farrar pleases."[41] (*Id*., at p. 846.)

All of that discussion and analysis takes place in the context of one oil and gas lessee's state-authorized drilling of a well through the separate land of another lessee. This has echoes of the Apex Rule—authorized intrusion rather than cooperative entry, use and improvement. For that reason, it is of little or no direct interest to us. There is, though, one point briefly mentioned in

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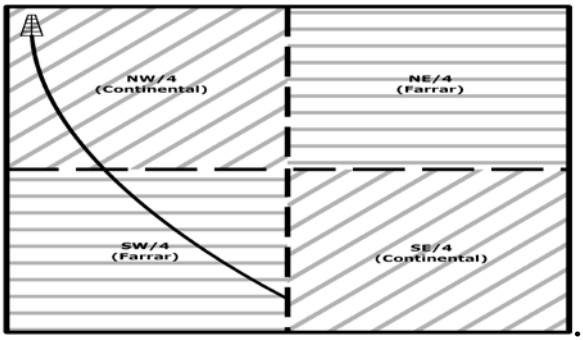
40 Citing *N.D. Const., art. I, § 1* ("inalienable rights" include "acquiring, possessing, and protecting property"); and. § 12 ("No person shall…be deprived of…property without due process of law."); and § 16 ("Private property shall not be taken or damaged for public use without just compensation….").

41 "Other parts of *NDCC 38-08-08* provide for the Commission's determination of cost-free royalties and cost-bearing working interests for unleased acreages that are force-pooled, and payment and recovery of reasonable actual costs of drilling and operating a well (including 'a reasonable charge for supervision'), and authorize the well owner to recover an additional risk penalty from a nonparticipating lessee." (*Id*., at p. 845.)

Continental v. Farrar that has implications for the present discussion, and that is where we turn our attention.

► ***Application of Continental Resources v. Farrar Oil .***

"…the Industrial Commission established temporary spacing…to be a maximum of two horizontal wells for each 640 acre unit. With this spacing ordered, Continental proposed to Farrar to drill the Hollingsworth No. 1-17 horizontal well in this section. …. Farrar refused the offer." (*Id*., at pp. 842-843.) But what if Farrar had *not* refused? Where would that leave the surface owner in the SW/4 of the section?



If the Act for Control of Gas and Oil Resources "supersedes Farrar's right to use its oil and gas properties as Farrar pleases," and since for all that appears the "forced-pooling" order would not have been needed had Farrar agreed to the proposed operations, it seems to follow that given only the Commission's well spacing order, any right of the surface owner to object to those operations—or seek compensation or other relief with respect to them—would have been superseded by the public need and desire "to prevent waste, to avoid the drilling of unnecessary wells, or to protect correlative rights…." (*Id*., at p. 845, citing *NDCC 38-08-07 (1)*.

At this point, it is important to note a distinction between the approach taken in the "trespass overflight" cases and that described in *Continental v. Farrar*. The trespass overflight cases involved a development, rather than a "superseding," of the common law of trespass. *Hinman* was able to conclude that no trespass was involved in the overflights, not by setting aside the common law of trespass, but by limiting the potential or "constructive" possession and therefore the ownership of the landowner to include only "so much of the space above the ground as we can occupy or make use of, in connection with the enjoyment of our land." (*Hinman, supra*, at p. 758.) The court did not ignore the common law of trespass. Rather, the court took a broader view of the purpose of the law and was willing to develop the common law of trespass in such a manner as to permit the law to serve rather than impede broadly shared interests and expectations.

> "We cannot shut our eyes to the practical result of legal recognition of the asserted claims of appellants herein, for it leads to a legal implication to the effect that any use of airspace above the surface owner of land, without his consent would be a trespass either by the operator of an airplane or a radio operator. We will not foist any such chimerical concept of property rights upon the jurisprudence of this country." (*Ibid*.)

If the propriety of cooperative subsurface oil and gas development is going to be decided on such a principled-practical basis, then what would help right now is California authority determining the mineral versus non-mineral (or "surface" owner) ownership of specific rights on the basis of practical considerations rather strict adherence to abstract legal theory. I believe we have just that in a 1977 decision of the California Court of Appeal concerning the question "whether geothermal resources belong to the owner of the mineral estate or the owner of the surface estate." (*Geothermal Kinetics, Inc. v. Union Oil Company of California* (1977) 75 Cal.App.3d 56, 58.)

(iv) "The General Grant of Minerals…Includes a Grant of Geothermal Rights, Including Steam Therefrom."

The facts in *Geothermal*[42] are straightforward. Geothermal held a lease under a 1951 grant of "all minerals, in on or under" 408 acres in "The Geysers" area of Sonoma County. Twelve years after that mineral grant, the "surface" owners leased to Unocal's predecessors in interest the right to "drill for, produce, extract, remove and sell steam and steam power and extractable minerals from, and utilize, process, convert and otherwise treat such steam and steam power upon, said land, and to extract any extractable minerals."[43] The issue predictably arose whether the geothermal rights had been included in the general mineral grant or were still held by the surface owners in 1963 and included by them in Unocal's "geothermal" lease. The question took on increased significance when Geothermal, "as holder of the leasehold of the mineral estate, drilled a geothermal well on the property at a cost of approximately $400,000." (*Id*., at p. 58.)

Unocal argued that "minerals must have physical substance," because definitions of "minerals" refer to 'substance' in some way, while the geothermal resource "is not steam, rocks or the underground reservoir but the heat transported to the surface by means of steam," so that this heat or energy is not a substance but "merely a property of a physical substance." (*Ibid*.) Since the general grant of minerals left in the grantors "everything in the property except for 'mineral' substances," Unocal concluded that the surface owners still held the geothermal resources in 1963, and that Unocal held the geothermal rights under the 1963 lease. (*Id*., at pp. 58-59.)[44]

The difficulty encountered by Unocal—its eventual undoing—was not any flaw in its reasoning, but the fact that the court agreed with the contention of Geothermal that the matter required a '*functional'* approach to the question rather than a "mechanistic approach based upon textbook definitions of the term mineral." (*Id*., at p. 59.) The decision describes this functional approach to the question as one which "focuses upon the purposes and expectations generally attendant to mineral estates and surface estates." (*Ibid*.)

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42 *Id.,* 75 Cal.App.3d 56, at pp. 58-59.

43 Unocal and others appealing from a decision of the trial court in favor of Geothermal are all referred to here simply as "Unocal."

44 Citing Civil Code section 829: "The owner of land in fee has the right to the surface and to everything permanently situated beneath or above it." Compare Civil Code section 659: "Land is the material of the earth, whatever may be the ingredients of which it is composed, whether soil, rock, or other substance, and includes free or occupied space for an indefinite distance upwards as well as downwards, subject to limitations upon the use of airspace imposed, and rights in the use of airspace granted, by law."

Geothermal argued that the relevant distinction was not between the intrinsic nature of geothermal resources and more conventional mineral substances, but between the commonly shared expectations concerning mineral-related entry, use and improvement of land and that associated with surface ownership. Concerning such expectations, Geothermal suggested that, since "the owner of the mineral estate [normally] seeks to extract valuable resources from the earth, whereas the surface owner generally desires to utilize land and such resources as are necessary for his enjoyment of the land, the geothermal resources should follow the mineral estate." (*Ibid*.) Such was also the court's conclusion.

Geothermal is not the first judicial decision we have encountered here to take such a functional or practical approach to determining the scope of a mineral conveyance. Having once concluded that a grant of merchantable coal within specific lands represents the conveyance of the substance in fee, as "a corporeal, and not an incorporeal hereditament," *Lillibridge* proceeded to reject any suggestion that "there is reason for calling it an incorporeal hereditament if the deed happen[s] to describe the grant as a right to enter, dig and carry away all the coal, instead of describing the coal without the customary circumlocution." (*Lillibridge*, *supra*, 143 Pa. 293, at p. 299 and p. 302.)

> "In all these cases, where the right rather than the thing is described, nobody is at a loss to know what is intended to pass. It is the thing that is bought and sold, and, when that is a coal-bed, it is an abuse of language, and an unnecessary application of legal distinctions, to call it an incorporeal hereditament." (*Id*., at p. 302, *quoting Caldwell v. Fulton*, 31 Pa.St. 475.)

Thus, *Lillibridge* held that whether worded as a grant of the coal *per se* or of rights with respect to the coal, the practical consequence—known and intended by all involved—is a conveyance of the corporeal substance. As we have already seen, in 1935 the California Supreme Court used precisely equivalent reasoning along the same practical lines to reach precisely the opposite specific conclusion. In *Callahan v. Martin*, the Supreme Court rejected the so-called "ownership in place" theory as applied to oil and gas. As described in that decision, jurisdictions adhering to that theory hold "that the owner of land has an estate in oil and gas beneath the surface in like manner as he has an estate in the surface; that oil and gas in place beneath the surface of land constitute a part of the land, and as such are real property, may be granted separate and apart from the surface, and when so granted vest in the assignee an estate in definite corporeal real property." (*Callahan*, *supra*, 3 Cal.2d, at p. 115.)

The court noted that the prior decisions of California courts had been equivocal on the subject, some intimating "approval of the oil and as in place doctrine," while others "unequivocally declare that the owner of land does not have an absolute title to oil and gas in place as corporeal real property, but, rather, the exclusive right on his premises to drill for oil and gas, and to retain as his property all substances brought to the surface on his land." (*Id*., at p. 117.) Explicitly adopting the latter position as California law concerning "the nature of the landowner's rights in oil and gas," the court also held that "an operating lessee under a lease [of oil rights] for a term of years, or for a term of years and so long as oil shall be produced in paying quantities, has an interest or estate in real property in the nature of a profit *a prendre*, which is an incorporeal hereditament, and that the assignee of a royalty interest in oil rights under an assignment by the

landowner also has an interest or estate in real property in the nature of an incorporeal hereditament." (*Id*., at p. 118.)

Seven months later, the Supreme Court was confronted with conveyances which, as reformed, "convey the stated percentage of oil, gas and other hydrocarbon substances in place, and existing within and beneath the lands described, as a permanent fractional interest in the land." The contention on appeal was that "by reason of the fact that [in *Callahan*] we have rejected the oil and gas in place theory as applied to oil rights, the instruments as reformed will not support the [decision of the trial court that the assignees of such have an enduring interest in the lands in question]." (*Dabney-Johnston Oil Corp. v. Walden* (1935) 4 Cal.2d 637, 648.)

Taking a broader view of the matter, the court took note of the imprecision in the language involved—and of the reasons for that imprecision.

> "The failure of those who are dealing in oil rights to precisely describe the nature of the interests granted is due in part to the recent development of the oil industry. The law pertaining thereto is still in a formative stage. An analysis of the nature of oil interests which may be created involves an application of the common-law rules which crystallized before there were extensive dealings in subsurface fugacious substances. In the several jurisdictions in this country there is a contrariety of description as to the nature of these interests, and in a single jurisdiction, as in this state, there are conflicting expressions as to the description of oil interests. (See *Callahan v. Martin, supra.*) It is not surprising, in view of the lack of a definite terminology descriptive of these interests, that those who are dealing in oil interests have difficulty in describing the interest transferred, and that ambiguous and uncertain instruments are presented to the courts for analysis." (*Id*., at pp. 650-651.)

On the specific point before it, the Court held that its rejection in *Callahan* of the "oil and gas in place doctrine," did not prevent giving effect to the intent of the parties in the challenged conveyances because "oil rights may be recognized and transferred as interests in real property on other theories which give due recognition to the fugacious character of the substances involved." (*Id*., at p. 649.)

On similar reasoning, the court in *Geothermal*, finding that "The parties to the general mineral grant had a general intention to convey those commercially valuable, underground, physical resources of the property," ultimately held: "In the absence of any expressed specific intent to the contrary, the scope of the mineral estate, as indicated by the parties' general intentions and expectations, includes the geothermal resources underlying the property." (*Geothermal*, *supra*, 75 Cal.App.3d, at p. 62.) As significant as that ultimate holding is, the point of particular significance to us is the analysis that brought the court to that conclusion.

We discussed above the fact that California oil and gas law owes much to the deliberate and express effort of California courts to take into account their perceptions (and in some instances their misperceptions) concerning both (i) the physical and geophysical nature or native condition of oil and gas "in place," as it has formed and accumulated in nature, and (ii) the scientific and engineering principles involved in oil and gas exploration, discovery and production. As there

noted, such an approach can be seen in the Supreme Court's decision in *People v. Associated Oil Co.* (1930) 211 Cal. 93, 101-102, which reflects the Court's practical thinking concerning the character of hydrocarbons in the ground and the process of their extraction that would ultimately form the basis for the Rule of Capture in California law.

The *Geothermal* decision takes a similar approach to evaluating the question whether geothermal rights are included in a broad grant of minerals, placing primary importance on the technical character of geothermal energy and the manner and conditions of its application.

> "Geothermal energy is a naturally occurring phenomenon whose origin is the heat of the interior of the earth. The geothermal resources of The Geysers [are] apparently due to a layer of molten or semi-molten rock, called "magma," which has risen from the interior of the earth to a depth of 20,000 to 30,000 feet. Above this mass of magma, which constitutes the basic heat source for the area, are protuberances of magma called "plugs" or "stocks," which may rise within 10,000 to 15,000 feet of the surface of the earth. This intrusion of hot magma expels gases and liquids which combine with ancient water trapped in the surrounding sediment to form a geothermal fluid or brine. This fluid converts to steam which circulates in a sedimentary formation and transports mineral and heat from the magma toward the surface. Convection currents cause water to rise and cool, forming a mineral shell of silica and calcium carbonate which seals off the magma intrusion from the surface. This shell is approximately 1,000 feet thick in the area of respondent's well. Immediately below this silicacarbonate seal is circulating geothermal steam and other gases; below these gases is boiling brine." (*Id.*, at pp. 59-60.)

Beyond consideration of the technical physical character of geothermal resources, the court also considered whether the geothermal resources were consequential to enjoyment of the surface interest and, conversely, whether ownership of the geothermal resources by the mineral owners would excessively impair enjoyment of the surface interest. As to the role of geothermal resources in enjoyment of the surface interest, noting that several courts "have held that the grant or reservation of a mineral estate does not include rights to surface or subsurface water," the decision finds that the "subsurface water" involved in those decisions was limited to groundwater, taking the view that "the ground water system and the geothermal steam reservoir are separate and distinct." (*Id.*, at p. 60), and discusses that distinction at some length:

> "…such cases concern water that is part of the normal ground water system. As the trial court found, the water and steam components of geothermal resources are part of a separate water system cut off from these surface and subsurface waters by a thick mineral cap. Only insignificant amounts of ground water enter the geothermal water system. Unlike the surface and subsurface waters, the origin of geothermal water is not rainfall, but water present at the time of the formation of the geologic structure. Because rainfall does not replenish geothermal water, it is a depletable deposit." (*Id.*, at p. 63.)

The *Geothermal* decision further observes that "Not only is there a sound geologic basis for distinguishing between the usual ground water system and geothermal waters, but the rationale

for recognizing the rights of the surface estate to these ground waters is largely inapplicable to geothermal waters," while also pointing out: "Several of the cases cited by appellants in support of the proposition that the surface estate includes rights to surface and subsurface waters, refer to the necessity of this water for the enjoyment of the surface estate." (*Id.*, at p. 63.) Taking note of those citations, the decision emphasizes at some length the court's sense of the sound practical basis for distinguishing between ground water and geothermal resources:

> "In the present case, the extraction of geothermal water for a domestic water source is impractical; the cost of [Geothermal's] well was approximately $400,000. In addition, geothermal water contains toxic minerals making it unfit for surface, agricultural or domestic use. Purification is not economically feasible. The water is so toxic that the Water Quality Control Board requires its reinjection deep into the earth. The analysis leading to the conclusion that geothermal resources are part of the mineral estate also leads to the conclusion that geothermal water is a mineral and thus, not part of the waters included in the surface estate. Recognition of rights of the owner of the surface estate to geothermal water would mean that resources consisting of hot rock without any fluid system belong to the mineral estate while fluid geothermal systems, like that in the present case, would be subject to a divided ownership with the surface estate owner having an interest in the water, and the mineral estate owner having an interest in any commercially valuable dissolved minerals. The difficulties of determining the type of system or systems on a particular property, as well as the confusion and complexity attendant to such an approach, are clear." (*Id.*, at pp. 63-64.)

The court found, on one hand, that "geothermal resources are not necessary or useful to surface owners other than as a source of electricity," while, on the other hand: "The production of the energy from geothermal energy is analogous to the production of energy from such other minerals as coal, oil and natural gas in that substances containing or capable of producing heat are removed from beneath the earth. In fact, the wells used for the extraction of the steam are similar to oil and gas wells." (*Id.*, at p. 60.)

Concerning any potential adverse consequences for the surface owner of including geothermal resources in a general grant of minerals, the decision states that "Generally, the parties to a conveyance of a mineral estate expect that the enjoyment of this interest will not involve destruction of the surface." (*Id.*, at p. 60.) On that subject, the court found that "The parties to the 1951 grant had a general intention to convey those commercially valuable, underground, physical resources of the property. They expected that the enjoyment of this interest would not destroy the surface estate and would involve resources distinct from the surface soil. In the absence of any expressed specific intent to the contrary, the scope of the mineral estate, as indicated by the parties' general intentions and expectations, includes the geothermal resources underlying the property." (*Id.*, at p. 62.)

Accordingly, the court affirmed the decision of the trial court that the rights to the geothermal resources were included in the 1951 general grant of the minerals, inasmuch as "A principal purpose of this conveyance was to transfer those underground physical resources which have commercial value and are not necessary for the enjoyment of the surface estate." (*Id.*, at p. 64.)

► *Application of Geothermal Kinetics v. Unocal*

The court in *Geothermal* did not reach its conclusion through rigid application of common law principles and classifications, but it also did not entirely disregard principle. A fundamental point in the *Geothermal* decision, and its feature of primary interest for us, is the Court's willingness to take a practical yet principled approach to the classification of geothermal resources as being either included in a general grant or mineral rights or retained by the surface owner following such a grant. With this, I believe that we have developed at least the central features of a principled and coherent argument for including in the ownership of severed and separately held oil and gas rights within separate adjoining mineral tracts to engage in cooperative subsurface oil and gas development without the consent—or even over the objection—of the surface owners within those tracts. In this, as already noted, subsurface 'oil and gas development' means and includes entry, use and improvement of the subsurface of land in connection with the exercise of the primary oil and gas rights to explore for and produce oil and gas (i.e., operating rights) and to retain as their own the resulting production (i.e., revenue rights). Such development is 'cooperative' as used here when it involves the joint collaborative exercise of both the oil and gas operating rights and revenue rights within the area of such subsurface development.

We take from the trespass overflight cases the insight that the upward extent of potential entry, use and improvement by a surface owner is limited. *Hinman* expressed this as, "The owner of land owns as much of the space above him as he uses, but only so long as he uses it. All that lies beyond belongs to the world." (*Hinman, supra,* 84 F.2d 758). No less significantly, the upward extent to which entry by others can interfere with or otherwise adversely affect the surface owner's potential entry, use and improvement is also limited. *Causby*, taking recognition that there is a zone above that of actual physical entry, use and improvement, in which the surface owner requires freedom from interfering intrusion. "The superadjacent airspace at this low altitude is so close to the land that continuous invasions of it affect the use of the surface of the land itself. We think that the landowner, as an incident to his ownership, has a claim to it and that invasions of it are in the same category as invasions of the surface." (*U.S. v. Causby*, *supra*, 328 U.S. 265.) But the justification for overflight, and for limiting the concept of trespass to permit it, is not simply the lack of adverse impact on the surface owner. The fuller, practical justification is provided in the following already noted passage from *Hinman.*

> "We cannot shut our eyes to the practical result of legal recognition of the asserted claims of appellants herein, for it leads to a legal implication to the effect that any use of airspace above the surface owner of land, without his consent would be a trespass either by the operator of an airplane or a radio operator. We will not foist any such chimerical concept of property rights upon the jurisprudence of this country." (*Hinman, supra,* at p. 758.)

In the Appalachian coal mining cases, we have seen just such a distinction between *surface* and *subsurface* mineral-related entry, use and improvement. We also saw in that context a right of the individual mineral owner, rather than the general public, has a right of subsurface entry, use and improvement involving substantial and enduring use and improvement. The Appalachian coal mining cases differ from the oversight trespass cases in that the former were decided primarily by the application of well established, technical legal principles without explicit refinement or adjustment to meet current needs or recent developments. But looking deeper, we

find in *Lillibridge* that as early as 1891 a court could ask why, as a matter of practical principle, the surface owner-plaintiff would even be concerned about the subsurface intrusion.

> "If the subject be further considered upon principle, it will be found difficult to understand that any property right of [Lillibridge] is invaded by the action of [Lackawana]. … the tunnel or way is cut through a vein of coal, 200 feet below the surface, and is 12 feet high, and it extends in the vein all the way from one side to the other of the [Lillibridge] tract. In this way or chamber…[Mr. and Mrs. Lillibridge] have no right or title. They have no access to it; they cannot use it; they are in no manner obstructed or injured by it. Nor can we understand how they are or can be injured in any other way. It is of no avail to say generally in the bill that they are injured. The injury must be stated specifically, so that a court may know what it is. This is not done, and we know not what the injury complained of is. How, then, can we enjoin the defendant? We are asked to enjoin against the removal of coal from the adjoining tract, but this is a matter with which the plaintiffs have no concern. They do not pretend to have any title or interest in that coal. They ask to enjoin removing that coal through the chamber or way made by the defendant through its own property, to-wit, the coal sold to them by the plaintiffs. Why or for what reason should we do this? The plaintiffs would gain nothing which they do not now have, if we did. No complaint is made in the plaintiffs' bill of either the deprivation or injury of any right growing out of the contract. The plaintiffs cannot possibly use any part of the space left by the removal of the coal, and hence they are not obstructed in the slightest degree." (*Lillibridge*, *supra*, 143 Pa., at pp. 302-303.)

There is, of course, no suggestion in *Lillibridge* that contrary practical considerations—had they been involved—would have led the court to alter or ignore the established law of the State of Pennsylvania bearing on the question before it. And yet, we can certainly conclude that the conclusions of the court in the application of that settled law were bolstered by its belief that Mr. and Mrs. Lillibridge did not suffer—and indeed could not suffer—any practical injury from the activity complained of, so that there would be no practical benefit to them from a grant of the relief they requested. Certainly, we cannot assume that the court troubled to include these observations without believing them to be in some measure consequential to their decision.

In the decision of the North Dakota Supreme Court in *Continental Resources v. Farrar Oil*, we have a contemporary decision affirming the right of one oil and gas lessee to drill a well into and through the subsurface of a separate adjoining lease without the consent—indeed over the objection—of that adjoining lessee. As to the claim of subsurface trespass, the Court found that any offended property right of Farrar had been superseded by lawful administrative action authorizing the drilling of the well pursuant to legislation permitting such action "when necessary to prevent waste, to avoid the drilling of unnecessary wells, or to protect correlative rights." (*Continental*, *supra*, 559 N.W.2d, at p. 845, quoting 38-08-07(1) of the Act for the Control of Gas and Oil Resources (which the Court refers to as the "Resources Act").) With respect to the state's constitutional prohibitions against the taking of property without due process and just compensation, the Court held those rights to be sufficiently honored in that instance by the state's constitutional provision subjecting property to the police power of the

state "to impose such restrictions upon private rights as are *practically* necessary for the general welfare of all." (*Ibid*. Emphasis added.)

However, the specific controversy in *Continental* has little actual significance for us. We are concerned with "cooperative" operations, not with one lessee's opposition to another's subsurface operations within the lands of the former. Further, even if we were concerned about such contested (rather than cooperative) operations, we could hardly expect a California court to adopt by its decision an administrative regulatory and permitting program as broad and complex as what is provided in North Dakota's Resources Act. Which begs the question, "Why include *Continental* in the discussion?" Simply this: It seems clear from the decision that had Farrar—the pass-through lands lessee—not objected when cooperative operations were first proposed, those operations would have been carried out cooperatively by Continental and Farrar. From all that appears in the decision, the surface owner within the pass-through lands would have had no actionable claim to prevent such operations or recover damages for their prosecution. Although in-depth review of the Resources Act may yield another conclusion, my tentative conclusion is that the Resources Act would permit cooperative subsurface oil and gas development, without the consent or even over the objection of surface owners, "when necessary to prevent waste, to avoid the drilling of unnecessary wells, or to protect correlative rights." This is a point which, based on the foregoing discussion, it seems to me reasonable to hope a California court would adopt by its decision.

In *Geothermal Kinetics* we saw a California court inclined to take a functional or practical approach to determining whether certain specific rights are included in a broad grant of "mineral rights." Pursuing such a functional approach, the court found that the parties to the broad grant of minerals "had a general intention to convey those commercially valuable, underground, physical resources of the property." (*Id*., at p. 60.) However, the court also found an intention of the parties to the mineral grant, that "the enjoyment of [the] mineral interest would not destroy the surface estate and would involve resources distinct from the surface soil." (*Ibid*.) Accordingly, the court affirmed the decision of the trial court that the rights to geothermal resources were included in a general grant of the minerals, inasmuch as "A principal purpose of this conveyance was to transfer those underground physical resources which have commercial value and are not necessary for the enjoyment of the surface estate." (*Id*., at p. 64.) Those findings and determinations are equally applicable to a cooperative right of subsurface oil and gas development without the consent-or even over the objection—of the "surface" owners, so long as actual interference with their entry into, use and improvement of the surface is avoided.

5. Conclusion

Unless I have deceived myself, the foregoing provides at least a credible first step toward a principled and coherent argument for a Cooperative Development Rule that would include in the ownership of severed and separately held oil and gas rights the right to participate along with the owners of such rights in other lands in a mutually acceptable plan for cooperative subsurface oil and gas development, throughout such lands, consisting of the cooperative exercise of their operating and revenue rights for the mutual protection and enjoyment of their Correlative Rights, at depths and otherwise in a manner such as to not prevent or interfere with the surface owners' present and feasible future entry, use and improvement of the land, without the consent or even over the objection of the surface owners. I do not claim that the foregoing suggests the only (or

necessarily the best) principled and coherent argument in support of that proposition. Neither would I suggest that equally principled and coherent arguments cannot be made to the contrary.

I truly welcome the idea that others may identify weaknesses in the foregoing and improve upon it or provide entirely different arguments in support of the same or similar proposition on the subject. It is even more to be hoped that others would challenge the central premise of the foregoing by presenting one or more equally principled and coherent arguments for a contrary proposition.

I want to conclude by reminding the reader that the foregoing is certainly not intended to suggest that the settled law in the State of California permits such cooperative subsurface oil and gas development, without the consent or even over the objection of the surface owner, or even to suggest that such necessarily or even probably will one day become settled law in this State. I mean only to urge further discussion of that subject.

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