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I. Introductory Remarks.

The purpose of this brief outline it to raise some questions and suggest some problems that may arise as a consequence of the drilling of so-called horizontal wells, particularly in those cases where the ownership of the lands on which and under which such wells may be located are either separately owned, or otherwise fragmented.

The answers some of the questions raised will be discussed by other members of the symposia of which this is a part. Consequently, the writer has pleasure of asking questions as to which he has no answer, or which, after complete analysis may in fact prove to be easily avoided or largely irrelevant.

II. Characteristics of so-called "horizontally drilled" wells as they differ from what might be called an "ordinary oil and gas well."

Most, if not all, of the problems created by so-called "horizontal" wells arise from two features which separate them from "ordinary" oil and gas wells as they have been known for most of the time those substances have been exploited. These features arise from the fact that the wells are intentionally drilled "horizontally" in the sense that after reaching the productive formation they are drilled horizontally into the formation for an indefinite distance and completed along the length of the formation. However, contrary to what the name may imply, they are not drilled vertically to the formation and then make a "90" degree into it. Rather they essentially go down at an angle, gradually turning until they penetrate the target formation and then go through it horizontally.

Because of the way they are drilled, the point at which they are first completed in the productive formation may be several hundred feet away from the "surface location" of the well (measured horizontally.) Furthermore the productive areas may extend away from the point where the formation is first penetrated for a distance of several thousand feet. Finally, and as a matter of efficiency, it is not uncommon for several such "wells" to be located at or near each other on the surface and to then cause them "fan out" like fingers to drain the formation under a large area of the adjoining property. It is the writer's understanding that this type of development permits the operator to conduct a number of necessary operations more or less simultaneously in the several well bores, which, in turn contributes to the efficiency of the production procedures.

The "legal" problems arising from such operations are a consequence of the fact that the actual production from such wells may thus be occurring through so-called "surface locations" not underlain by the producing area, and that the production may in fact be occurring from well "bores" extending outwardly a mile or more under a number of different tracts with differing ownership.

III. Some problems engendered by "off tract" completions – i.e. -- directionally drilled wells where none of the production occurs from within the tract on which the well's "surface" facilities are located.

A. Before the technology was developed to permit such "intentional" efforts to produce from wells horizontally penetrating the productive formation, the cases where wells were started on one tract and completed under another – popularly called "directionally drilled wells" -- were rare, and unless they occurred inadvertently – i.e. by a well "wandering off" the premises in course of drilling – they ordinarily resulted from problems in fixing the surface location because of the nature of the lands on which they were to be drilled. Ordinarily such wells were only rarely encountered and the problems they presented were handled by special contracts and leases.[1]

B. The characteristics of the so-called horizontal wells, mentioned above, can give rise to perhaps new and unique problems when the ownership of the land under which the well is drilled is "fragmented" either geographically from a variety of ownerships or by the existence of a variety of ordinary real rights upon or in the separately owned tracts in which they are drilled and completed.

C. This presentation will concern itself with identifying a few of such problems – without necessarily attempting to solve them, or to even suggest methods by which their effect can be reduced – which will be the subject of the later presentations in this series.

IV. Fundamental source of the problems.

A. As will become apparent, most of the problems that will be noted arise from the law regulating the exploration and production of oil and gas as it is presently codified in both the Civil and Mineral Codes, and to some extent in the Revised Statutes regulating conservation and unitization. These, with very rare exceptions do not contemplate that a well will be producing from lands not underlain by the pool or reservoir in which it is completed. It is probably safe to say the unexpressed assumptions underlying such legislation is that the exploitation of oil and gas will result from a well being drilled more or less vertically – or at least on one

[1] An excellent discussion of the consequences of such "directionally drilled" wells is found in Revels, "Selected Problems Associated with Directionally-Drilled Wells", 47th Annual Institute On Mineral Law, L.S.U.(2000).

tract of land, although it may also be drawing its production from adjacent tracts that might be separately owned.

This can be seen from the following provisions of the Mineral Code.

1. Article 6 of the Code, defining the rights of landowners with respect to "fugitive minerals," declares in part, that the ownership of land:

> does not include ownership of oil, gas, and other minerals occurring naturally in liquid or gaseous form, . . . [but that] The landowner has the exclusive right to explore and develop *his property for the production of such minerals and to reduce them to possession and ownership.*[2]

2. Article 8 then declares that:

> A landowner may use and enjoy his property in the most unlimited manner for the purpose of discovering and producing minerals, provided it is not prohibited by law. He may reduce to possession and ownership all of the minerals occurring naturally in a liquid or gaseous state that can be obtained *by operations on or beneath his land* even though his operations may cause their migration from beneath the land of another.

B. While the above articles do not explicitly prohibit operations under the land of another (presumably with his consent) when the application of the articles is carried over into the realm of mineral servitudes, they seem to have a somewhat different import.

Thus Article 15 defining a "mineral servitude" declares that:

> A landowner may convey, reserve, or lease *his right to explore and develop his land* for production of minerals and to reduce them to possession.

The remaining articles regulating the mineral servitude also appear to contemplate that the servitude is being exercised upon or with reference to production from the "tract" or the "land" covered by it, unless there is a "unitization" and even then the unexpressed assumption of most of the articles is that if such unitization exists, the "pooled" or "unitized" area will only include the area "over" or within which the producing reservoir is located.[3]. Also, it is further assumed that the effects upon the servitude from "off tract" activities will result from those conducted upon or with reference to the "*tract*" covered by the servitude included in the unit.

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[2] M.C. Art. 6 Also, unless indicated to the contrary in the text, emphasizes to the text has been made by the writer.

[3] It might be noted here that R.S. 30:9 authorizing the formation of units by the commissioner of conservation define a unit as the "area that can efficiently and economically be drained by one well." Other provisions consistently refer to the unit as comprising a part of the "pool" or reservoir in which the oil and gas is confined.

These provisions can easily lead to the conclusion that if a landowner deliberately grants to another the right to conduct drilling and production activities upon his land for the purpose of exploiting or producing oil and gas from a reservoir underlying a neighboring tract in which he (or his land) will not participate, the "servitude" so granted, while not invalid, is not a "mineral servitude" regulated by Article 15 et seq. Correlatively, if a "mineral servitude" is granted by a landowner, the servitude owner would not have the right to either deliberately drill a well onto an adjoining tract for the purpose of producing from the same – at least in the absence, perhaps of a validly formed unit covering both tracts, or unless the right is expressly granted by the landowner. Similarly, one might question the right of a "mineral servitude owner" to conduct operations on (or under) property not owned by the person granting the servitude.

As long as it appears that a well commenced upon a tract for completion under another tract, is intended to draw from a reservoir underlying that on which the well is located, and that unitization of both tracts is either contemplated or occurs promptly, it is doubtful that any problems will occur. As to "horizontal wells" the writer understand it is presently the "practice" to ask the commissioner to unitize the area within which it is contemplated that the horizontal wells currently being drilled will be completed. Also, if the area unitized is such that the well is located upon a tract from which some part of the unitized production is or will be occurring no problem would appear to be present.

However, the situation is not so clear, the writer would suggest, if the well's location and the production facilities are upon a tract from which the production is not occurring – even if it is "put into" the unit, or if there are several wells producing from adjacent tracts in such a manner that the area they occupy is entirely disproportionate to what would be required to produce the oil and gas underlying the tract upon which they are located.

Some of these questions can, perhaps, be illustrated by the following case, although it is not directly related the drilling of a "horizontal" well. Suppose two or three years ago, "A" owned a tract along a bayou, whose banks are high and where the adjoining lands (owned by others) gradually slope away into the marshes that are unsuitable for the location of ordinary oil and gas operations. "A" sold his land to "B", reserving "all of the oil, gas and other minerals, in and under" the lands sold. Oil Company now wants to drill a well from the high ground (owned by "B") into the marshes to produce from a potential reservoir whose limits are presently unknown, even if it exists. It is, however, unlikely from the information available, that the tract owned by "B" on which the so-called "surface facilities" of the well are to be located, will be either productive or even unitized if the reservoir exists.

In such a case, from whom should Oil Company obtain a "lease" or other right to drill and conduct his operations that are intended to test the supposed reservoir and produce it if it exists? The landowner, "B" who does not "own" the minerals under his land ground, or "A" who created a servitude in which, in the words of the Code, he "*reserved the right to explore and develop his land* for production of minerals and to reduce them to possession." In other words and more simply stated, does A have the right to grant to Oil Company the right to conduct operations to explore and develop the adjoining premises? The writer would suggest that most persons would say he does not.

The presence of the bayou and marsh in the preceding example, merely helps focus upon the problems inherent in the implicit geographic assumptions of the Mineral Code. To what extent can a "mineral owner" i.e. owner of a mineral servitude, intentionally grant to anyone a lease or other right to use the lands over which his servitude exists, to conduct drilling and production activities upon adjacent lands. And, although the writer has assumed as most persons do, that "unitization" will solve the problem – is that necessarily true? Can "A" who has no rights to drill for and conduct operations on and under an adjoining tract of land do so, even if he has the permission or consent of the owners of those tracts? How can one whose rights are limited to "exploring for and producing" from a tract of land, grant to another the right to use the land to explore for and produce from an adjacent tract?

Again, illustrative of the problems inherent in what might be called the "geographic assumptions" of the Mineral Code, is Art. 116 which declares that:

> A mineral lease may be granted by a person having an executive interest in the mineral rights *on the land leased.*

An executive interest is in turn, defined as a mineral right that includes the right to lease. Article 105 then, by a somewhat circular provision, declares that the owner of an executive right may lease his right "to the same extent . . . as if he were the owner of mineral servitude." The writer would suggest that, in the case just presented, it can logically be argued that only the landowner could grant a lease over the lands through which a well might reasonably pass without penetrating a productive area. Furthermore, how can a mineral servitude owner grant a lease to drill under and produce from a tract of land other than that which is covered by his servitude?

Without belaboring the matter unduly, it can be observed again that the Mineral Code declares that "a mineral servitude is the right of enjoyment of land belonging to another for the purpose of exploring for and producing minerals and reducing them to possession and ownership[4]"

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[4] M.C. Art 21

and that "except as provided in Article 25, a mineral servitude may be created only by a landowner who owns the right to explore for and produce minerals when the servitude is created[5] and finally, that the servitude owner may "use only so much of the land as is reasonably necessary to conduct his operations".[6]

The problem if it exists, has perhaps been exacerbated by the 2006 amendment to Section 11 of the Mineral Code to provide in subsection B(1) the following:

> .... a reservation of mineral rights must include mention of surface rights in the exercise of the mineral rights reserved, if not otherwise expressly provided by the parties.
>
> Subsection B (2) then declares:
>
> (2) In the absence of particular provisions in the instrument regulating the extent, location and nature of the rights of the mineral owner *to conduct operations on the property*, the requirements of this Subsection are satisfied by inclusion of the following language in the reservation of mineral rights: "The transferor (Seller) shall . . . shall use only so much of the land, including the surface, as is reasonably necessary to conduct his operations. . . . The transferee (Buyer) recognizes that by virtue of the mineral reservation herein made, the mineral owner shall have the right to use so much of the land, including the surface, *as is reasonably necessary to explore for, mine and produce the minerals.*"

It is not difficult to postulate that the "minerals" referred to in the last part of the provision are those "in, on or under" the premises being sold and that are reserved. Section B(1) as noted clearly refers to the transfer in question as "reserving" mineral rights and of the "surface rights" to the mineral rights reserved. Take as a whole, one would have difficulties in postulating that the rights "reserved" include rights to exploit minerals as to which the seller had no interest.

In summary, and stated perhaps unduly simplistically, could a person who has reserved a servitude described in Articles 21 – 21, completely appropriate the use of land over which the servitude exists, for the location of facilities to produce oil and gas from hundreds of acres of neighboring lands? Even more relevantly, can the State, through its police power to unitize the production, impose upon lands of the landowner in such all of the burdens of the facilities being utilized produce, process and dispose of the production from such neighboring lands that are, relatively speaking, totally unnecessary and disproportionate to the benefits

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5 M.C. Art. Art. 24

6 M. C. Art. 22.

he is deriving from them – least without some sort of compensation for their use?

V. Problems arising from existing fragmentation of ownership of the land.

The writer has noticed that several of the "oil and gas leases" he has seen in current usage that appear to contemplate horizontal drilling, address some of the problems discussed above concerning what might be called the "surface location" question by having the lessor grant a "servitude" to the lessee, to locate the "surface facilities" necessary to produce from horizontal wells and which is declared to be given separately and independently of the lease. Most also stipulate that the servitude will extend beyond the term of the lease in which it is found. It is quite clear from these that the lessee is attempting to obtain an ordinary "predial servitude" for the location of his production, storage and distribution facilities, resulting from any "horizontal drilling" activities and without regard to the extent, if any to which the leased premises may contribute to the production.. Provisions such as those mentioned; appear to be intended to, and will if effective, resolve the questions mentioned in the preceding section as to the correlation of ordinary mineral rights with the questions and limitations that may arise in the case of mineral rights and servitudes, from "off tract" operations. However, apart from the questions mentioned above concerning the relative rights of the landowner and mineral servitude owner, to grant leases for what might be called "off tract operations," deliberately characterizing such right as a form of predial servitude -- which appears to be the purpose of the provisions mentioned – can in itself give rise to problems, if the ownership of the land is itself divided or fragmented.

The importance of properly characterizing such a servitude as being "mineral" or only ordinary or "predial" and carefully considering the consequences of the differences, arises from the fact that one can make an excellent argument that unless the rights granted in the servitude contemplate that the production it affects must be occurring at least partially from a formation located under the tract over which it is imposed, it is not, in all likelihood, a "mineral right". The distinction implicit in characterizing the right a mineral or a predial servitude partially, at least, arise from the following:

1. Mineral servitudes or leases, derived from co-owners individually, appear to be valid,[7] although if they are derived from less than the owners of 80% of the land, they may require consent of the other co-owners to conduct operations on the land.[8]

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7 M.C. Art. 164

8 Id.

2. On the other hand, a predial servitude on land owned in indivision may only be established with consent of all of the co-owners – if less than all create it, the contract is not null, but may not be exercised until consent of all co-owners is obtained.[9]

3. The 1990 revision of the Civil Code appears to make the imposition of any real right on a thing, without the consent of all the co-owners at least a relative nullity.[10]

B. Finally, one might mention in passing, that if the owners of land or even the Commissioner of Conservation, can include in a unit a well located upon lands under which the reservoir does not extend or from which the reservoir is not being drained – as it appears may be the case with some of the "horizontal" wells – can the other owners of the area, whose lands are admittedly being drained object to the fact that the production from their lands is being given to persons who do not own an interest in the producing zones. Whether it is being done either by virtue of the agreement of lessees, or of servitude owners who have no such authority, or by order of the commissioner would appear to be irrelevant. Furthermore can the Commissioner establish units and in effect, give production to persons whose lands are not overlain by the "pool" from which the well is producing. Fortunately the answer to these are beyond the scope of the present comments, and will, the writer is certain will be answered by other contributors to this symposium.

[9] C.C. Art. 714 If the land is later partitioned the servitude is suspended until the co-owners part is established. If he gets part, it affects his part. If he acquires it all by virtue of licitation. It covers all of the land and is extinguished if the creator gets none. See. CC 714–718.

[10] Art. 801. Use and management by agreement: "The use and management of the thing held in indivision is determined by agreement of all the co-owners."