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UNITIZATION OF OIL AND GAS RESERVOIRS: A REPLY TO PROFESSOR MERRILL

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IN "Compulsory Oil and Gas Unitization,"[1] Professor Maurice H. Merrill launched an attack on unitization of oil and gas reservoirs in the form of a sharply critical review of the decision by the United States Court of Appeals for the Seventh Circuit in favor of the defendant in *Peter Fox Brewing Co. v. Sohio Petroleum Co.*[2] Terming his review the "hypothetical judgment" of a mythical court of justice, Professor Merrill stated that, if the questions involved were determined improperly, "the effect of the precedent, if we allow it to go unexamined, may be most unfortunate."[3] On the other hand, if Professor Merrill's disagreement with the decision was based upon an erroneous concept of the facts of the case, it would be even more unfortunate if his review were permitted to stand unchallenged.[4]

The case involved an "overriding royalty" that had been reserved in an assignment to the defendant of oil and gas leases covering approximately one thousand acres of then undrilled lands in the West Edmond Field of Oklahoma. Each of the leases reserved to the lessor, as royalty, one-eighth of the oil and gas that might be produced. The overriding royalty reserved in the assignment consisted of one-half of the remaining seven-eighths of the production from the leases, less a deduction for each month of production equal in value to two hundred dollars for each producing well drilled under the leases; the overriding royalty, like the landowner's royalty, was not chargeable with any part of the development and operating expenses. During 1943 and 1944, defendant drilled and completed for production under the assigned leases a total of twenty-three wells which were completed for production from the Hunton Lime formation. Prior to the 1943 assignment, well-spacing orders that had been issued by the Corporation Commission of Oklahoma—the state's regulatory agency for oil and gas production—had prohibited the

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1. Merrill, *Compulsory Oil and Gas Unitization: Effect on Overriding Royalty Obligations*, 62 MICH. L. REV. 381 (1964).

2. 296 F.2d 274 (7th Cir. 1961).

3. Merrill, *supra* note 1, at 381.

4. The writer of this reply participated in the trial and argument of the cited case on behalf of the defendant. He, therefore, does not claim the same degree of impartiality attributed by Professor Merrill to his court of judicial review.

drilling of more than one well on any quarter-quarter section. In compliance with these orders, no more than one well was drilled by the defendant on any forty-acre tract.

In 1945, the Oklahoma Legislature adopted a unitization statute, which authorized the Corporation Commission to order the unitized operation of an entire reservoir of oil and gas.[5] Pursuant to this statute, the entire Hunton Lime formation, underlying nearly thirty thousand acres of land in the West Edmond Field, was unitized by an order of the Commission which became effective October 1, 1947.[6] In that order, the Commission prescribed a "plan of unitization" that treated each quarter-quarter section within the unitized area as a separately owned tract, assigned to each such tract a percentage interest that was found by the Commission to represent the tract's fair and equitable share of the quantity of oil and gas recoverable from the reservoir, and required the allocation to each tract of that portion of all unit production that was equal to its percentage interest. The plan also provided for allocation of all expenses among the tracts in proportion to their respective percentage interests and imposed upon the lessee of a tract the obligation to pay the amount of expense allocated to the tract. Both the statute and the plan required that the quantity of oil and gas so allocated to a tract be considered as production therefrom "for all intents, uses and purposes" and that the allocated quantity be distributed among, or the proceeds thereof paid to, those entitled to share in production from the tract "in the same manner, in the same proportions, and upon the same conditions" that they would have shared in the production from the tract, or the proceeds thereof, "had not the unit been organized."

Prior to this unitization, the computation of plaintiffs' overriding royalty had been based upon actual production from the twenty-three wells drilled by defendant, but, thereafter, the computation was based upon the production allocated, in accordance with the plan of unitization, to the tracts on which the wells were located. From time to time, beginning in 1951, some of the wells on these tracts were abandoned as no longer needed under unitized operation. However, the monthly per well deduction was continued in respect of each of the twenty-three tracts, whether or not a producing well was actually located thereon.

In 1954, after nearly seven years of unitized operation, plaintiffs'

5. OKLA. STAT. tit. 52, § 287.1 (1961). The statute was held valid in Palmer Oil Corp. v. Phillips Petroleum Co., 204 Okla. 543, 231 P.2d 997 (1951).

6. Order No. 20212, Corp. Comm'n No. 1355.

suit was commenced. Their complaint demanded a judicial decree revising the terms of their overriding royalty agreement by eliminating the monthly per well deduction, alleging at length that the 1943 assignment had contemplated development and operation of the assigned leases by "competitive" methods in reliance on the skill and initiative of defendant, that unitization had substituted for the judgment of the defendant the judgment of the operating committee provided for in the plan of unitization, and that, under unitized operation, plaintiffs had received from the overriding royalty "less monthly revenue" than they would have received if competitive operations had been continued. The substance of these allegations was incorporated in Professor Merrill's statement of the facts of the case, it being stated in his review that "the allocable production under the unitized operation has resulted in less monthly revenue to the tracts under the Agreement than was realized under individual operation" and also that the effect of unitization had been "to alter to the detriment of *F* the obligations upon which he could rely to keep the production up to levels which would assure a return to him after the per-well deductions had been made."[7] These statements are directly contrary to the evidence presented on trial of the case.

There was, of course, no dispute about the actual income from the overriding royalty; it was stipulated that between October 1, 1947, when unitization became effective, and December 1958, plaintiffs had actually received 878,084 dollars. However, determination of the income that would have accrued to the overriding royalty had there been no unitization necessarily required an estimate of the quantities of oil and gas that would have been produced from the twenty-three tracts under "competitive" operations; this estimate could be made with accuracy because of the production data available by 1959, the time of trial. For the purposes of this estimate, plaintiffs engaged a qualified and experienced reservoir engineer whose testimony, supported by numerous exhibits, was presented at the trial. This expert witness estimated that, if competitive operations had been continued, the income accruing to the overriding royalty between October 1, 1947, and December 31, 1958, would have amounted to *only 390,336 dollars.*[8] Thus, plaintiffs' own evidence showed that unitized operation had produced *two and one-fourth times as much income* to the credit of the overriding royalty as would have accrued thereto had there been no unitization.

7. Merrill, *supra* note 1, at 385, 397.
8. Record, app. p. 162.

Forced to concede that, instead of being injured, they had been substantially benefited by unitization, plaintiffs still demanded relief on the ground that defendant had profited even more, contending that the overriding royalty should be adjusted so that the percentage of increase in income to the plaintiffs should be equal to that of the increase to defendant. In asserting this as a ground for relief, plaintiffs ignored the stipulated fact[9] that, after deducting the cost of drilling, equipping, and operating the twenty-three wells, defendant's net income for the period before unitization was only 1,095 dollars, while the income accruing to the overriding royalty during the same period amounted to 1,444,759 dollars. The court of appeals quite properly disposed of plaintiffs' contention by the following statement, which was severely criticized in the "concurring opinion" included in Professor Merrill's article:[10]

> "We do not deem relevant the argument advanced concerning the relative profits of the parties. The rights of parties fixed by contract are not governed by comparing their subsequent relative gains or losses."[11]

Plaintiffs also argued that, in any event, the monthly per well deduction should not have been made in respect of tracts having wells that had been abandoned, although they readily agreed that the portion of unit production allocated to such tracts was properly considered as "produced from" such tracts within the meaning of the assignment reserving the overriding royalty. Rejecting this argument also, the court of appeals found that the statute and the plan of unitization "require the assumption that the amount of unit production allocated to a tract be considered as 'production from' such tract, even though there is no well actually located on the tract, and the further assumption that a producing well is located on every tract."[12]

It should be noted that the court's opinion did not mention the benefit derived by the plaintiffs from unitized operation. The decision was based solely on the ground that self-executing provisions of the statute and the plan of unitization had modified the agreement between plaintiffs and defendant by substituting allocated production for actual production and precluded further modification by judicial decree. Whether unitized operation had benefited

9. Record, supplemental app. p. 17.
10. Merrill, *supra* note 1, at 416-18.
11. Peter Fox Brewing Co. v. Sohio Petroleum Co., 296 F.2d 274, 281 (7th Cir. 1961).
12. *Ibid.*

or harmed the plaintiffs was not material, in view of the basis for the decision. The fact that plaintiffs had profited greatly from unitization is emphasized here only because Professor Merrill's argument is based upon the assumption that the case demonstrated the harmful effect of unitized operation on an overriding royalty interest and similar interests.

Competitive Versus Unitized Operation

Professor Merrill argues that only the "competitive race to produce" adequately protects the royalty owner, whose income (like that of the overriding royalty owner) depends solely upon the quantities of oil and gas accruing to his interest, both interests being free of expenses. Actually, the kind of competition advocated by Professor Merrill has been outlawed for many years in Oklahoma and most of the other producing states. Since 1915, Oklahoma has had proration statutes under which the Corporation Commission issues orders fixing the "allowable" production from each field or reservoir and "prorating" the allowable production among the wells in the field; the allowable production may be based either upon market demand or upon the quantity of oil or gas that can be produced from the reservoir without unnecessary dissipation of the reservoir energy.[13] Since 1935, it has also had a "well spacing" statute under which the Corporation Commission is authorized to issue orders prescribing the spacing of wells by establishing "drilling" units of uniform size for each reservoir and prohibiting the drilling of more than one well on any drilling unit; when the drilling unit is composed of two or more separately owned tracts of land, a "pooling" of tracts may be ordered by the Commission in a manner that permits the owner of each interest to share in the production from the one permitted well.[14]

The effect of these well-spacing and proration orders is to eliminate the "competitive race to produce." In the West Edmond Field, for example, the Commission prescribed forty-acre spacing and, at various times prior to unitization, fixed a uniform rate of allowable production for all wells in the field. Under these circumstances, the most diligent and efficient operator could not legally produce

13. Okla. Stat. tit. 52, §§ 231-52, 271-79 (1961). The statute enacted in Oklahoma on Feb. 13, 1915, was the first proration statute. It was upheld in Julian Oil & Royalty Co. v. Capshaw, 145 Okla. 237, 292 Pac. 841 (1930), and in Champlin Refining Co. v. Corporation Comm'n, 286 U.S. 210 (1932).

14. Okla. Stat. tit. 52, § 87.1 (1961). The state's first well-spacing statute was enacted in 1935. It was upheld in Patterson v. Stanolind Oil & Gas Co., 182 Okla. 155, 77 P.2d 83 (1938).

from any forty-acre tract a single barrel of oil in excess of the quantity his neighbors were permitted to produce.

The conditions that occasioned the enactment of state conservation laws are vividly portrayed in *Legal History of Conservation of Oil and Gas,* published in 1938 by the Section of Mineral Law of the American Bar Association.[15] In the days of unregulated competition, each operator drilled wells as fast as he could and produced oil therefrom at the highest possible rate in order to capture for himself as much oil as possible. Even when the production exceeded the capacity of transportation facilities or the market demand, the operator continued to produce at maximum rates, sometimes building metal or wooden storage tanks, but more often running the oil into pits dug out of the ground or into ponds enclosed by earthen dikes. The inevitable consequence was the waste of vast quantities of oil through evaporation, leakage, and destruction by fire—an ever present hazard of open storage. Even greater quantities were lost in the reservoir, because too many wells and production at excessive rates dissipated the reservoir energy or caused water encroachment or other conditions that made continued production unprofitable. Many an oil reservoir was abandoned after recovery of no more than fifteen per cent of the oil in place.[16]

This waste was largely due to ignorance concerning the nature and mechanics of the petroleum reservoir, which is still referred to as a "pool" for the reason that, in the early days, oil was thought to exist in underground lakes or pools. Eventually, it was learned that oil existed in the intergranular or pore space of a stratum of otherwise solid rock. It was also learned that the primary requisite to the accumulation of oil in commercial quantities is the existence of a barrier that prevents further movement of oil that has migrated through the stratum. Once the oil is thus trapped, it is securely locked in a reservoir from which it cannot escape otherwise than through openings provided by wells drilled into the reservoir.[17] The energy required to force the oil through the rock stratum into a well is provided by forces such as gas compressed in the reservoir, or "water drive"; because of these forces, oil may exist in the reservoir under pressures of hundreds of pounds per square inch. When this natural energy is gone, the oil remaining in the reservoir is forever lost, except to the extent that it may be produced by means of water flooding or repressuring through injection of gas or like

15. LEGAL HISTORY OF CONSERVATION OF OIL AND GAS (ABA ed. 1938).
16. PETROLEUM CONSERVATION (Buckley ed. 1951).
17. *Id.* at 48.

operations, which frequently are not feasible and necessarily involve great expense.

Although conservation through proration and well spacing has greatly increased the percentage of recovery from oil reservoirs, it was gradually recognized that, in the case of many, and perhaps most, reservoirs, only unitized operation of the entire reservoir would permit maximum recovery. As stated in *Petroleum Conservation:*

> "Unit operation frees the operation of a pool of those restrictions that might otherwise be imposed by the conflicting interests of the individual owners. Under unit operation there is no conflict of interests, but, instead, a joint and common interest in carrying out the operation as efficiently and economically as possible for the maximum recovery."[18]

Under unitization, the owners of interests in a particular tract of land exchange their right to the oil and gas produced from that tract for the right to a portion of the total production from the reservoir. This exchange makes it possible to ignore surface boundary lines of the lands underlaid by the reservoir; well locations are determined solely by reservoir characteristics, instead of being dictated by requirements imposed by separate ownership of lands; and each well may be produced at the rate calculated to utilize the energy of the reservoir to maximum advantage. Unitization also makes possible a greatly increased recovery through injection of water, gas, or other fluids to maintain or augment reservoir pressure. Application of these "secondary" recovery methods ordinarily require unitization because they cause movement of oil and gas within the reservoir in a manner that would be detrimental to certain tracts and beneficial to others under individual operations.

The benefits to be derived from unitization had been demonstrated by units formed by voluntary agreement before enactment of the Oklahoma unitization statute of 1945. Even today, unitization requires voluntary agreement in most states, as only a few have enacted statutes authorizing a state regulatory agency to order unitized operation. Too frequently, unitization by voluntary agreement is unattainable; because virtual unanimity on the part of both royalty owners and lessees is necessary for adequate control of the reservoir, a small minority of interest owners may be in a position to block unitization by purely voluntary agreement.

This difficulty is eliminated by statutes that provide for unitiza-

18. *Id.* at 281.

tion that is sometimes referred to as "compulsory" because it does not require unanimous agreement. However, the Oklahoma statute requires the written consent of at least sixty-three per cent in interest of both royalty owners and lessees to give effect to an order of the Commission; the comparable statutes of Arkansas[19] and Louisiana[20] require the concurrence of seventy-five per cent in interest of both royalty owners and lessees. Actually, unitization under these statutes is compulsory only in the same sense that formation of a drainage district, a sanitary district, or the like is compulsory when put into effect by the vote of a majority of the affected landowners. Moreover, the statutes require findings to the effect that unitization is necessary in order to conduct a method of operation that is not possible under individual operations, that the proposed unit operation is feasible, and that it will prevent waste and may be expected to produce oil and gas not otherwise recoverable. These requirements, together with the opportunity afforded to all interested parties to be heard, provide adequate safeguards against abuse of the statutory authority to order unitized operation.

The successful result achieved by the West Edmond Unit is typical of the experiences of virtually all unitized operations and demonstrates that the royalty owner no longer has any reason to fear unitization. As stated in *Petroleum Conservation:*

> "As far as the royalty owner is concerned, the effect is not only to maintain his income at a higher level for a longer period than he could expect without unit operation, but also to protect his income from the risks associated with individual operation."[21]

Twenty years ago, many royalty owners viewed unitization with the same suspicion as does Professor Merrill. Since then, unitized operation of an entire reservoir has proved its merits so conclusively that today the knowledgeable royalty owner welcomes it for the very good reason that he knows it will put more money in his pocket through an increased recovery.

19. ARK. STAT. ANN. § 53-115 (1947).
20. LA. REV. STAT. § 30-5 (1950).
21. BUCKLEY, *op. cit. supra* note 16, at 294.