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Compulsory Unit Operation of Oil Pools*

SOME attention should be given to definitions. The term "unit operation" may have at least two meanings. One meaning is the merging of titles and the development and operation of the unitized area, as if it were one tract of land held under a single oil and gas lease, according to a definite program intended to accomplish a maximum recovery from the pool as a whole at a minimum of cost. It is incomplete when the royalty owners do not also merge their titles to their oil and gas rights in the area, and is complete when they do. The other meaning is not accompanied by any merger of titles, but the development and operation of the area is in accordance, as nearly as reasonably practicable, with such a program. This second conception may be nothing more than a cooperative development and operation plan, but in this paper it is regarded as more than that. If there cannot be unit operation without a merger of titles, it would seem that the state cannot require unit operations, for it cannot require a merging of titles; but if it may consist in requiring each and all of the leaseholders to develop and operate or to submit to a development and operation according to some such common plan as is referred to above without at the same time requiring a merger of titles, it would seem that unit operation may be required by the state. Whether the states have this power is the subject to be herein considered. If the state can so bind the several lessees, it also can so bind the several lessors.

The writer does not know what would be an ideal plan for the development and operation of a pool; but it takes into account the fact that the accumulation of gas and oil is not uniform throughout the formation; that often free gas, highly compressed, occupies the upper portions of the reservoir, the oil with compressed gas in solution coming next in order; that at places oil is not overlain by free gas, and sometimes there are peaks where free gas is not immediately underlain by any oil; and the

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fact that these substances are held under a uniformly distributed pressure, generally referred to as "rock pressure." It also recognizes that the most efficient utilization of this naturally existing reservoir pressure in the recovery of the oil requires that there be no operation of wells completed into areas where gas only has accumulated, for this diminishes the pressure, withdraws gas which could migrate to oil-bearing areas, and draws gas out of solution with oil, all to the detriment of oil recovery; and that there shall be only an operation of wells which are completed into oil-saturated areas. The gas would be thus recovered along with the recovery of the oil, and at the same time there is a most beneficial use of the rock pressure. Some believe that it is preferable that the oil lowest down the slope shall be extracted first. The superiority of unit operation over proration as we know it today is obvious. Among other differences, proration ignores an orderly development of a field, whereas unit operation recognizes and enforces it.

Police Power

The authority of a state to intervene and correct evils of the type we are discussing is called its "police power." This power of a state is vested in its legislature, and is to be manifested by the enactment of laws. Blackstone defines this power as the due regulation of the domestic order of the kingdom whereby the inhabitants of a state are bound to conform their behavior to the rules of propriety, good neighborhood, and good manners, and to be decent, industrious and inoffensive in their respective stations. Cooley says that it includes regulations by which the state seeks to establish for the intercourse of citizens with citizens those rules of good manners and good neighborhood which are calculated to prevent a conflict of rights, and to insure to each the uninterrupted enjoyment of his own so far as is reasonably consistent with a like enjoyment of rights by others. It has been said that all police power rests upon the common law maxim that every person shall be required so to use his property as not to injure the rights of others.

There are at least four conditions which obtain in the oil industry which might well justify an exercise of the police power of the state, if the power extends that far, to enforce the unit operation of oil fields or something analogous to it, whenever it cannot be had by agreement. These are:

First: The existence in oil fields of so many separate individual holdings, in small tracts of land;

Second: The migratory nature of oil and gas deposits, and the presence of pressure with them in the reservoir beneath; the tremendous value of this pressure, whenever it is placed under proper control, in the

recovery of the oil and the inestimable harm that can grow out of its wastage;

Third: The desire of the individual lessee to obtain through wells on his lease and to keep all that he can get of the oil and gas beneath, when and as fast as he may choose, without regard to the situation of his neighbors, and without regard to market conditions; which, less politely stated, may be termed human greed; and

Fourth: Distrust.

Due particularly to the third and fourth of these conditions, widespread unit operation by agreement seems to be difficult, if not impossible, of accomplishment. And yet, an ordinary conception of right and wrong should satisfy everyone that each land proprietor in a pool is entitled to a fair proportionate part, and no more, of the recoverable reservoir content if at the same time he can be required to share on a like basis in the cost of its recovery.

The state is interested in two things, namely:

First: The conservation of the irreplaceable oil and gas deposits within its boundaries, and in their production without waste, either underground or surface, for the use and enjoyment of its inhabitants as and when needed by them, and this includes future generations. This interest is to be manifested by an exercise of the police power. There are two ways in which the citizens of the state may use and enjoy these substances. One consists in the profitable extraction thereof from the ground by landowners within the state, whose lands are located in the oil and gas fields, and their profitable sale, and the profitable refining of such of the oil so extracted as may be utilized in refineries located within the state; and the other is the use of the gas for domestic and industrial purposes and of the by-products of the oil in motor vehicles, and of both substances in various and sundry other ways by the inhabitants of the state. Thus the state is interested in the recovery of the maximum amount of these substances from each and every pool within its borders at a minimum of cost, and also that their production from time to time shall bear a reasonable relation to reasonable market demands.

Second: The state is equally interested in the protection of the several proprietors and their lessees of lands located within the oil pools within its boundaries against the extraction or the dissipation aud waste by any one or more of them of a disproportionate part of the oil and gas within the reservoir and in the accomplishment of a fair and equitable distribution among all of them of the recoverable oil and gas therefrom. It is as much a part of the duty of the state thus to protect the several proprietors in a pool as it is to protect the general public in the conservation of these natural resources. This interest is also to be manifested by an exercise of the police power.

Court Decisions

The courts have held that in the absence of legislative restraint the owner of land or his lessee may produce through his wells all of the oil and gas that he is able to extract from the reservoir beneath without regard to where in the reservoir he may draw from and that he becomes the absolute owner of all thereof that he reduces to possession. Until the legislature has provided that he shall not do so, his neighbors cannot enjoin him from so doing, nor can they recover damages on account thereof. Their sole remedy against drainage is the development and operation of their lands. These are the holdings of the courts both in states which have adopted the rule of ownership in place and those which deny ownership in place. The effect of these rules is to encourage rather than retard practices which lead to confusion, wasteful haste, duplication of development and operation, undue dissipation of gas pressure and a volume of production in no sense related to market demands. They are the antitheses of conservation, both physical and economic; but the fault does not lie with the courts, for the same courts have conceded the legislative power to alter these rules. Furthermore, the same courts have gone further and announced another rule which we who are interested in unit operation will find very helpful. They have held that oil and gas while in the ground belong to the owner of the land in which for the time being they lie and that the title thereto remains in him so long as they remain in his land; they recognize the migratory and fugacious character of these substances but concede that so long as they are positioned beneath the surface of the land of one owner they belong to such owner and not to anyone else, subject, it is true, to his loss of his title by no act of his own, without his consent and even without his knowledge, for they concede that whenever they escape and go into the land of another the title of the former owner disappears and becomes that of the landowner into whose land their new position has been taken. This is helpful because whenever we go back of the time when production is first had in a field, we are enabled to visualize the original right of each landowner therein as compared with that of all others. For all practical purposes no migration occurs until by the hand of man the formation is punctured and production commenced. Before there is any disturbance of the location of these substances in the reservoir, that is, prior to the time when the first well is drilled and operated, each land proprietor stands as the owner of, or, to say the least of it, equitably entitled to that quantity of the oil and gas which lies beneath the surface of his land. If it is practicable by some method of testing wells drilled at selected sites, examination of sand cores, etc., to estimate within reasonable bounds, not at all with mathematical accuracy, the fertility

of that portion of the producing formation which lies under the surface of the land of each proprietor, then it is possible to appraise quantitatively the rights of each to a distribution of the recovered oil and gas; or, there may be other standards for determining each man's fair part of what may be recovered. These are problems for the petroleum engineer. These suggestions anticipate unit operation with the inception of development; but, if it should come afterwards, the then existing underground status (by which all concerned would doubtless find themselves bound) might be ascertainable by similar methods.

The United States Supreme Court in the case of *Ohio Oil Co. v. Indiana*[1] gave to us the guiding principle when it said that from the peculiar nature of the right of each surface proprietor in a field and the objects upon which it is to be exerted, the legislative power can be manifested for the purpose of protecting all the collective owners by securing a just distribution to arise from the enjoyment by them of their privilege to reduce to possession. It made this guiding rule clearer when in the case of *Walls v. Midland Carbon Co.*[2] it said that "before that event occurs, indeed in prevention of it, the state may interpose its power to prevent a waste or a disproportionate use of either oil or gas by a particular owner in order to conserve the equal rights of other owners and advance the public interest," and stated that in the *Ohio Oil Co.* case it had been adjudged that the use by one owner of the surface affected the use of other owners and an excessive use of one diminished the use of others, and that hence the power of the state can be manifested for the purpose of protecting all by securing a just distribution to arise from the enjoyment by them of their privilege to reduce to possession.

It has been said that "the ultimate aim of proration and of unit operation should be to recover for each leaseholder only that oil which originally underlay his property; that proration and unit operation will do away forever with legalized piracy which says that the oil belongs to the man that reduces it to possession." Proration is a helpful remedy; but unit operation is a cure, for it can more nearly attain a fair distribution as well as prevent underground waste.

Some states have passed oil and gas conservation laws. These are usually directed primarily against waste in the interest of the general public. Some of them are also aimed directly at the safeguarding of individual rights. Great progress has been made in recent years in the science of recovering, and that of conserving, oil and gas, including the discovery of the inestimable value of a properly controlled use of reservoir pressure in the recovery of oil. This discovery places a finger squarely on

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[1] (1900) 177 U. S. 190, 20 Sup. Ct. 576.
[2] (1920) 254 U. S. 300, 317, 41 Sup. Ct. 118, 122.

the reason for so much economic and underground waste. It furnishes a basis for an extension of the exercise of the legislative power to points further than it has ever gone, or, perhaps, in the case of some states, for the exercise by administrative agencies under existing laws of authority not previously undertaken. If proper use is made of this discovery, the public and the producer are equally protected.

Power to Require Unit Operation

While the state cannot compel a merger of titles, it seems to me to follow clearly, from the decisions of the United States Supreme Court already referred to and other cases presently to be reviewed, that the state has the power to require unit operation.

Proration has been sustained as constitutionally valid in Oklahoma by its supreme court[3] and in an unreported opinion by a three-judge Federal court; by the Supreme Court of California[4] and by the District Court of Travis County, Texas. The decisions in these cases are in point, but other decisions bear more directly upon compulsory unit operation.

In the first place, each proprietor's constitutional right to enjoy his own property is satisfied when there is delivered to him his share of the production wholly without regard to whether this production comes out of the ground through wells drilled on his own land or those drilled on the lands of others. If the oil and gas in the ground is not a common fund analogous to accidentally confused goods,[5] but is owned in place, still, since they are migratory and when the pool is operated easily become confused, the rule governing accidental confusion of goods—that each is at least entitled to his aliquot part of the whole—is fairly applicable here. Each owner should, of course, in any event, be required to pay the cost of the recovery of his part.

A case directly in point here is that of *Marrs v. City of Oxford*.[6] An oil field encroached upon the city of Oxford, Kansas, and was proved to underlie a considerable part of the residential portion of the city. The city council passed an ordinance prohibiting the drilling of more than one well in a city block regardless of the fact that it was known that there were many separate land proprietors therein. A permit for the drilling of such well was required to be obtained and the ordinance provided that all of the several proprietors or their lessees in each block should have the privilege of enjoying shares in the production from the one well which was allowed to be drilled, upon payment of their respective proportionate parts of the cost and expense attending the drilling and

[3] Julian Oil & Royalties Co. v. Capshaw (1930) 145 Okla. 237, 292 Pac. 841.

[4] People *ex rel.* Stevenot v. Associated Oil Co. (1930) 211 Cal. 93, 294 Pac. 717.

[5] 12 C. J. 492.

[6] (D. C. Kan. 1928) 24 F. (2d) 541, *Aff'd* (C. C. A. 8th, 1929) 32 F. (2d) 134.

operation thereof; and it provided that one-eighth of the production should be divided among the lessors of the leased lots without regard to cost and expense. A lot owner who had not leased his lot in a block in which a permit to drill a well had been granted to the lessee of another lot; a lessor of another lessee in the same block, and the last-mentioned lessee filed suits in the United States court in Kansas, attacking the validity of this ordinance on the ground that it deprived them of rights guaranteed by the Fourteenth Amendment to the Constitution of the United States. Their contentions were denied and the ordinance was sustained by both the trial court and the circuit court of appeals.

It is obvious that in effect the provisions of said ordinance enforced the unit operation of each city block. Although there were several lot owners, but one well could be drilled within the block, and for the drilling thereof a permit had to be obtained, and, upon fair conditions relating to the costs, the owners of all of the other lots and/or their lessees could and were to be allowed to share in the production from the one well. The distinction between this plan, on the one hand, and the unit operation by agreement of a like area, on the other, is that in the case of the ordinance there is no absolute obligation to pay any part of the cost of drilling the well, and the right to share in the production is made contingent upon actually sharing in the costs; whereas, in the case of agreed unit operation there is an absolute obligation to pay a prescribed share of the cost of development and operation, and also an absolute right to share in the production upon a prescribed basis. In the former, both landowners and their lessees were bound, for it was a police regulation, whereas, in the latter, if the royalty owners have not also agreed, they are not bound.

Having in mind the provisions of said ordinance, let us take particular note of what the United States Circuit Court of Appeals said about it. That court, after having sustained the validity of the ordinance upon the ground that it tended to protect the health and comfort of the residents of the city and their property from fire hazards, proceeded to add:

> "But looking to the substance of things, as equity does, what are the rights of plaintiffs that will be encroached upon or denied to them by the enforcement of this ordinance? It is not the mere right to drill a well on one or two lots at great cost and stop with that, or to take the proportionate part of the oil and gas in the pool that might be said to lie under or be fairly attributed to those lots. The obvious purpose was to reach the pool as quickly as possible and take all of the oil and gas obtainable before others could get it, thus seriously encroaching upon and probably destroying the same rights of adjoining lot owners. If one or more lot owners have given a lease for which no permit is obtainable their lessee may join a lessee who has a permit in the same block on terms that are fair to both lessor and lessee. If a lot owner has not given a lease he is protected by the asking in

a fair proportion of the mineral produced by a permittee. The regulations make every effort to protect, rather than to destroy rights. They extend equal opportunity to all who have an interest and eliminate the race between those having equal rights in a common source of wealth, so that some may not take all and leave others with nothing. Under the law in Kansas there is no property in oil and gas, because of their migratory nature, until they have been captured, though each surface owner may take without limit, unless lawfully restrained. *Phillips v. Springfield Crude Oil Co.*, 76 Kan. 783, 92 P. 1119; *National Supply Co. v. McLeod*, 116 Kan. 477, 227 P. 250. This is the rule also in Pennsylvania and Indiana. The nature of the right was fully discussed and defined in *Ohio Oil Co. v. Indiana*, 177 U. S. 190, 20 S. Ct. 576, 44 L. Ed. 729. The court in that case, after accepting the general practice as a settled principle, that every owner of the surface within a gas or oil field might prosecute his efforts and reduce to his possession if possible all of the deposits without violating the rights of other surface owners, in the absence of regulations to the contrary, said:

'But there is a co-equal right in them all to take from a common source of supply, the two substances which in the nature of things are united, though separate. It follows from the essence of their right and from the situation of the things, as to which it can be exerted, that the use by one of his power to seek to convert a part of the common fund to actual possession may result in an undue proportion being attributed to one of the possessors of the right, to the detriment of the others, or by waste by one or more, to the annihilation of the rights of the remainder. Hence it is that the legislative power, from the peculiar nature of the rigbt and the objects upon which it is to be exerted, can be manifested for the purpose of protecting all the collective owners, by securing a just distribution, to arise from the enjoyment by them, of their privilege to reduce to possession, and to reach the like end by preventing waste.'

If this right in each and all of the surface owners can be thus restrained and its exercise regulated by a law of the state enacted for the purpose, how can it be held that a valid police regulation, which incidentally and in caution embodies the same restraint and regulation, can be made the basis of a claim that plaintiffs have a right to take all of it, and any restraint of that right violates constitutional guaranties? The basis of a statute, suggested in the Indiana case, is the governmental power to equally protect each surface owner in bis right to a common fund."[7]

Thus we see that what is in effect, if not in reality, an enforced unit operation of city block has been sustained not only upon the ground that it protected the health and comfort of the inhabitants of the city and diminished the fire hazard to their property, but also upon the added ground that by the recovery through one well in a block of oil for all of the several lot owners within it, none was deprived of any constitutional right to drill upon his own property and to produce his oil through his own well, since each was extended the opportunity upon fair terms, to receive, by the asking, a fair share of the production; and the plan eliminated the costly race between those having equal rights.

[7] Marrs v. City of Oxford (C. C. A. 8th, 1929) 32 F. (2d) 134, 140.

The United States Supreme Court denied a petition for a writ of *certiorari*[8] to bring the case there for its review, and thus by indirection announced that it found no serious fault, if any at all, with the decision below.

TERRITORIAL EXTENT OF APPLICATION OF PRINCIPLE OF REGULATION

If such a system for the development and operation of a city block, an enforced unit operation thereof, wherein there are a large number of separate lot owners, does not deprive any lot owner of any constitutional right, then why may not a system for the unit operation of an area greater than the size of a city block, such as one or more sections of land or the whole of an oil field, be lawfully adopted and enforced? The only difference between the two lies in the territorial extent of the application of the same principle of regulation.

Neither District Judge McDermott nor Circuit Judge Lewis founded his sustenance of the constitutional validity of the ordinance upon the sole ground that it protected to some extent the health, comfort and property of the inhabitants of the city of Oxford. They each, and particularly Mr. Justice McDermott, spoke of the economic waste in the drilling of unnecessary wells which was prevented by the ordinance; and both of them regarded the plan as coming within the holding in the *Ohio Oil Co.* case with reference to the power of the legislature to accomplish proportionality of taking from a pool. So it cannot in my judgment be reasonably or successfully contended that the courts would not have sustained the ordinance had it not been for the presence of homes and families within the area affected by it. Nothing is made clearer than that if the same town lot situation had existed anywhere else, and had been unaccompanied by the presence of persons or residences, a regulation like that which the ordinance contained, relating to the development of the area, would have been sustained upon the same principle which lay at the foundation of the announcement in the *Ohio Oil Co.* case. If an equal opportunity, such as the Oxford ordinance afforded to every lot owner, should be extended to all the leaseholders within an entire oil field to receive, upon fair terms as to the expense, an interest in the production from prescribed and allowed wells in the field upon a basis of a fair apportionment of the production, and at the same time there should be eliminated the race between those having equal rights in the common source of wealth so that some may not take all and leave others with nothing or less than their share, who can say, in the light of this decision, that such a program applied to the field as a whole would operate to take from any leaseholder therein any of his constitutional rights? Let it be

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[8] Ramsey v. City of Oxford (1929) 280 U. S. 563, 50 Sup. Ct. 24; Marrs v. City of Oxford (1929) 280 U. S. 573, 50 Sup. Ct. 29.

left to others to pass upon the practical wisdom of compelling such a complete pooling of a large oil field. There are operators in the Oklahoma City field who have almost prayed for some way to stop the waste of gas energy.

We have another interesting case. It arose in Texas. The commonly called 150-ft. rule issued by the Railroad Commission of that state and its enforcement is a step in the direction of a requirement of unit operation. The Texas statute provides that the Railroad Commission "is empowered to establish rules and regulations for the drilling of wells and preserving a record thereof" and makes it the duty of the Commission "to require such wells to be drilled in such a manner as to prevent injury to the adjoining property." The rule promulgated by the Commission provides that no well for oil or gas shall be drilled nearer than 300 ft. to any other completed or drilling well on the same or an adjoining tract of land and that no well shall be drilled nearer than 150 ft. to any property line, but it contains a proviso to the effect that the Commission, in order to prevent waste or to protect vested rights, may grant exceptions and permit drilling within shorter distances. The validity of this regulation and of a special order issued under the proviso were assailed in the case of *Oxford Oil Co. v. Atlantic Oil & Producing Co.*[9] The Oxford Oil Co. owned an oil lease on a strip of ground 3160 ft. long, 56 ft. wide at one end and 36 ft. wide at the other, in the heart of a prolific oil field in Texas. It had planned to drill 10 wells on this narrow strip. They would have been about 300 ft. apart and within about 25 ft. of adjoining large tracts held under lease by others. By an order the Commission limited the Oxford company to the drilling of four wells and specified where they must be located. By the order those wells were not evenly spaced; the first was 150 ft. south of the north line of the 3160-ft. tract, the second 913 ft. south of the first, the third 157 ft. south of the second, and the fourth 906 ft. south of the third, and this left 1064 ft. between the fourth well and the south line of the tract. The wells were drilled accordingly, and operated, and then the company sued the Atlantic Oil & Producing Co. and the members of the Commission and others for damages, claiming that it had been deprived of its right to drill wells on its leased land and thus was deprived of its property in violation of the Fourteenth Amendment to the Constitution of the United States. The Atlantic Oil & Producing Co. owned, developed and operated the adjoining large lease on one side and another company was likewise situated on the other side. Their wells were 150 ft. from property lines and did not match the Oxford company's wells. The Atlantic company had some part in

[9] (D. C. N. D. Tex. 1926) 16 F. (2d) 639, *aff'd* (C. C. A. 5th, 1927) 22 F. (2d) 597.

procuring the special order on the Oxford company. Judge Atwell, in deciding the case in the trial court, states that an oil well will drain lands around it for 150 ft. in every direction, and that the Oxford Oil Co. could not drill any well on its strip of land without draining the contiguous land, and that "if allowed to drill unsupervised, they would not only get all of the oil that was under their own land, but they would secure a large amount of property that belonged to others. They could not drill any well without this result." The court sustained the regulation and the order made under it upon reason and upon the authority of the *Ohio Oil Co.* case and other cases. In concluding, Judge Atwell said:

> "I am convinced that the plaintiff's rights have not been violated, and, that the drillings allowed by the Commission were consonant with the plaintiff's ownership, rights of development, and enjoyment, and preservative of the property rights of neighboring and contiguous owners."[10]

The Circuit Court of Appeals, in affirming this holding, said, among other things, that,

> "The right of a state to so regulate the drilling of wells for oil and gas as to conserve the rights of adjoining owners is too well settled to admit of serious controversy. . . . It was within the power of the Legislature to lay down a general rule for the protection of the mineral rights of the owners of adjoining lands, and to leave the details of enforcing that rule to an administrative agency or board."[11]

The United States Supreme Court refused to grant a writ of *certiorari* in that case.[12] The decision in this case is particularly significant for two reasons: first, a fair distribution of the recoverable oil in the area of the lease among the holders of leases therein was the one and sole purpose of the order. No waste above or under ground was involved; and second, Texas is one of the few states wherein the courts have held that the owner of land owns the oil and gas in place. Through the allowed wells, the Oxford company would draw oil from its neighbors, and through their wells, its neighbors would draw oil from certain unprotected parts of the Oxford company's strip. Judge Atwell mentioned the fact that under the decisions of the Texas courts the landowner owns the oil and gas in place, and held that if the difference between the rule in that state and the opposite rule on that subject in Indiana, whose statute was involved in the *Ohio Oil Co.* decision, has any bearing upon the problem under discussion "it tends to add a stiffening to the reason for sustaining the Texas regulation as a proper exercise of its police power." He clearly

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[10] Oxford Oil Co. v. Atlantic Oil & Producing Co. (D. C. N .D. Tex. 1926) 16 F. (2d) 639, 643.

[11] Oxford Oil Co. v. Atlantic Oil & Producing Co. (C. C. A. 5th, 1927) 22 F. (2d) 597, 598.

[12] Oxford Oil Co. v. Atlantic Oil & Producing Co. (1928) 277 U. S. 585, 48 Sup. Ct. 433.

meant that the regulation and the particular order tended to accomplish proportionality of taking, and that if thereby the Oxford company acquired, under the circumstances, an amount of oil equal to that in place under its land, it was immaterial where in the reservoir it came from.

If the power exists, and particularly in a state where, as in Texas, the owner of real property owns the oil and gas in place, to require a particular location or spacing of wells in a small limited portion of the area of a large oil field in order to accomplish a fair distribution of the production among a few producers in such limited area, then it necessarily follows that, for the same reasons and upon the same grounds, the power exists, and if circumstances require, it may be exercised, to regulate the spacing and location of wells throughout the entirety of any such field in order to accomplish a fair distribution among all of the producers therein. If the legislature, or an administrative body acting under its authority, has the power to regulate the spacing of wells of one operator for the protection of his neighbors, it would seem necessarily to follow that it has the power to regulate in like manner all the other operators in the field in carrying out a comprehensive plan of conservation and of fair distribution of the reservoir content among them all.

It will not do to say that if the property boundary lines in a field happen to be so regularly fixed as that wells would be located in accordance with the prevailing practice of the industry, that is, one well to each 10 acres, and that if the field were developed according to custom, no well would be nearer to a property line than 300 ft., the power of regulation would not exist. There nevertheless would still obtain the competitive struggle, confusion, wasteful haste and undue dissipation of gas energy. In the absence of either voluntary or enforced orderly and regulated operation of the field, no fair distribution among the several leaseholders of the recoverable oil from the reservoir would be possible. The race for advantage would still obtain. There would be disproportionate takings and disproportionate and unfair use made of the commonly owned gas energy.

I have not been able to study sufficiently the gas-oil ratio statute of California, nor the decisions of the courts of that state[13] sustaining its consitutional validity, to make it safe to review them. Petroleum engineers will, I think, give credit to that state and its courts for having made the first substantial legislative and judicial direct recognition of the presence of gas energy in subsurface oil zones and its importance in

[13] People *ex rel.* Stevenot v. Associated Oil Co. (1930) 211 Cal. 93, 294 Pac. 717; Bandini Petroleum Co. v. Superior Court (1930) 63 Cal. App. Dec. 1175, 293 Pac. 899, *aff'd* (Nov. 23, 1931) 52 Sup. Ct. 103.

the recovery of the oil, and as the first to take affirmative steps to prevent the waste and to require the utilization of this energy.[14] The Oklahoma

[14] EDITORIAL NOTE: The California legislation referred to is Chapter 535 of the statutes of 1929. It does not provide for compulsory unit operation. It legalizes voluntary cooperative and unit operation agreements when made with the approval of the state oil and gas supervisor. Its novel feature is the so-called oil-gas ratio. It authorizes the state oil and gas supervisor after a hearing, upon public notice, with respect to any oil field to determine "whether or not there is an unreasonable waste of gas in said field, in existence or threatened . . . and the extent to which the waste of gas therein occurring or threatened is unreasonable. If it shall appear that gas is being produced from any oil well or wells in quantities exceeding a reasonable proportion to the amount of oil produced from the same well or wells, even though it is shown that such excess gas is being used in the generation of light, heat, power or other industrial purpose and that there is sufficient other gas available for such uses from other wells in the same or other fields in which the gas produced is not in excess of the amount which bears a reasonable proportion to the amount of oil produced from such other wells and that there are adequate gas-pipe-line connections between such other wells and the place of utilization of such gas the state oil and gas supervisor shall hold that such excess production of gas is unreasonable waste thereof if such holding will not cause an unreasonable waste of gas in any other field. If the waste of gas be found unreasonable an order shall be made directing that such unreasonable waste of gas shall be discontinued or refrained from to the extent stated in said order." (Sec. 8d.)

An appeal with a hearing *de novo* is allowed to a board of oil and gas commissioners with power in them to affirm, set aside or modify the supervisor's order, and their decision is declared to be "final". (Sec. 9, as amended.) In case the order is not complied with voluntarily the state director of the department of natural resources may apply to a court "to enjoin unreasonable waste of gas." In this suit the administrative findings are not "final" but "constitute prima facie evidence of unreasonable waste." (Sec. 14a.) Even without the administrative hearings above described the state director of natural resources may institute proceedings in the superior court of the county in which the oil field is located to have enjoined "unreasonable waste of gas." (Sec. 14b.) It was the latter procedure that was used in the proceeding in 1929 instituted against forty-three oil producers in the Santa Fe Springs oil field in Los Angeles county to restrain an alleged unreasonable waste of natural gas. As an outcome of this proceeding the statute and the judicial procedure which it provides have been sustained as constitutional by the Supreme Court of California and the Supreme Court of the United States. People *ex rel.* Stevenot v. Associated Oil Co. (1930) 211 Cal. 93, 294 Pac. 717; People *ex rel.* Stevenot v. Associated Oil Co. (1931) 81 Cal. Dec. 468, 297 Pac. 536; Bandini Petroleum Co. v. The Superior Court (1930) 63 Cal. App. Dec. 1175, 293 Pac. 899, affirmed by the United States Supreme Court (Nov. 23, 1931) 52 Sup. Ct. 103. For brief comment on the constitutional question see page 203 of this *Review*.

So far the validity of the alternative method of proceeding by administrative action to restrain waste has not been judicially passed upon.

The statute does not fix any numerical proportion for the gas-oil ratio. It requires a "reasonable proportion" in the language above quoted. The California Supreme Court in People *ex rel.* Stevenot v. Associated Oil Co., *supra,* sustained this feature against the objection of lack of standard. After quoting the passage in the statute above quoted it said:

> "It would seem, therefore, that the legislature has plainly adopted the standard so expressed, viz.: that gas may not be produced, under existing conditions where the production thereof so greatly exceeds the market demand therefor, in quantities exceeding a reasonable proportion to the amount of oil produced, as the standard to be applied and beyond which

Corporation Commission and perhaps the Texas Railroad Commission have recognized this to some extent in proration orders. If a state can require what the California statute does, then there appears no good reason why it could not require the conservation and use of this energy by a type of development and operation such as is the subject of discussion in this paper.

NEW APPLICATION OF ANCIENT PRINCIPLE OF LAW

The principle underlying the *Ohio Oil Co.* case and kindred decisions is not new. It is older than our Government. It is embodied in the ancient maxim of the common law that everyone must so use his own property as not to injure the rights of others, which lies at the base of a proper exercise of the police power. It happens that this principle has been but recently applied to conditions in this comparatively young and now rapidly growing industry.

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the production is prohibited as being an unreasonable waste of natural gas. "... The best mean ratio, or the amount of gas which bears a reasonable proportion to the amount of oil produced, may vary for each reservoir or deposit of oil, depending on the natural characteristics above mentioned, and may, and probably does, vary for each well drilled into the same reservoir, depending on the location of the well and other factors. Therefore, because of the many and varying conditions peculiar to each reservoir and to each well, which will bear upon a determination of what is a reasonable proportion of gas to the amount of oil produced, it may be said that it would be impossible for the legislature to frame a measure based on ratios or percentages or definite proportions which would operate without discrimination, and that what is a reasonable proportion of gas to the amount of oil produced from each well or reservoir is a matter which may be ascertained to a fair degree of certainty in each individual case." (211 Cal. at 107, 294 Pac. at 724.)

The court described the purposes of the act in the following language:

"It is contended that the real purpose of the statute is to curtail the production of oil so as to regulate and stabilize the market price thereof. We cannot agree with this contention. Obviously the enactment is an effort on the part of the legislature to conserve for present and future needs great natural resources in which the people of the state are interested. It may be that the enforcement of the statute throughout the gas and oil producing sections of the state may have an effect upon the market price of oil. For this reason the subject matter of the act is a delicate one for legislative treatment and judicial cognizance. But the fact that the field of economic law to some extent may thus be invaded may not justify the avoidance of the statute. As we view the terms of the act the primary function of gas in the production of oil is recognized, and its complete utilization in that respect, without unnecessary waste, is attempted to be safeguarded. The additional function of the gas in providing light and heat for manufacturing and domestic purposes is also recognized, and the effort is made to compel the fullest utilization as to both functions. The act, without doubt, was a response to a growing recognition that the continuing and increasing waste of the propulsive energy of gas underground and of its full energy above ground was unreasonable and should be inquired into and regulated ..." (211 Cal. at 110, 294 Pac. at 725.)—*D. O. McGovney.*

Many years ago it was stated by the courts that the Government has the power to prescribe regulations for the better and more economical management of property of persons whose properties adjoin, or which, for some other reasons, can be better managed or improved by some joint operation. This early announcement was quoted by the United States Supreme Court in *Wurts v. Hoagland*.[15] It was long ago held by the courts, as is shown by quotations in the *Wurts* case, that where there are adjoining lands held by various owners in severalty, and which, by reason of the peculiar natural condition of the whole tract, cannot be improved or enjoyed by any of them without the concurrence of all, there is presented a condition where the power of the legislature may be exerted to establish regulations whereby all may be compelled to submit to proceedings whereby they may be improved or enjoyed, and to contribute, in proportion to the benefits enjoyed by each, to the expense of the steps taken to accomplish such improvement or enjoyment.

This principle has been applied in drainage cases where, in order that the several owners of land located in an area which is subject to overflows or wherein swamps exist, and, as a result, the establishment of drains is necessary to the better enjoyment by the several owners of their respective tracts within the area. It has long been applied to party walls, partition fences and other conditions. Its applications to a variety of situations furnishes to us something which the Supreme Court did not suggest in the *Ohio Oil Co.* case as a means for accomplishment of an enforced fair and equitable distribution of the oil and gas reservoir content among the several proprietors whose lands lie within the pool.

REGULATION IN DRAINAGE CASES

The establishment of drainage districts by or under the legislative authority is an exercise of the police power of the state. While drains cannot be provided for purely private purposes, the public benefit required need not be a use or benefit accruing to the whole public or any large portion of it, and if the public purpose is kept in view, the fact that private interests will also be promoted is immaterial. Statutes authorizing the reclamation of swamp or agricultural lands by drainage are held to be valid independently of any effects upon the public health, if they tend to the general advantage or prosperity of the community.[16] The power to construct drains is a special authority given for a particular purpose and may be conferred upon any person or body upon which the legislature may see fit to confer it.[17] A reclamation statute creating reclamation districts and providing that those who are interested in the

[15] (1885) 114 U. S. 606, 5 Sup. Ct. 1086.
[16] 19 C. J. 610.
[17] 19 C. J. 611.

land and must pay for the improvements shall determine by an election whether the improvement shall be made, was sustained in California.[18] The Indiana Supreme Court held[19] that public ditches, like public highways, are subjects of the state's control, and it may delegate to interested persons the power of initiative and declare the extent of jurisdiction.

In *Wurts v. Hoagland*[20] an attack was made upon an act of the Legislature of New Jersey which provided for the establishment of drainage districts for the reclamation and improvement of swamp or overflowed lands. There were certain provisions of the law with reference to the payment of the expense of construction and maintenance of the system, one of which was that the cost and expense should be distributed and assessed to the several properties in proportion to the benefit derived by each from the drainage. A landowner in a drainage district established under this statute asserted that its operation deprived him of his property without due process of law. It requires no stretch of the imagination to look upon this statute as an enforced unitized drainage system. The state courts sustained the law. In reviewing the case on writ of error, the Supreme Court of the United States pointed out that laws authorizing drainage of tracts of swamp and lowlands by commissioners appointed upon proceedings instituted by some of the owners of the lands, and the assessment of the whole expense of the work upon all the lands within the area benefited, had long existed in the state of New Jersey and in many other states; and it quoted approvingly from an early decision of the New Jersey Supreme Court, this language:

> "Laws for the drainage or embanking of low grounds, and to provide for the expense, for the mere benefit of the proprietors, without reference to the public good, are to be classed, not under the taxing, but the police power of the government."[21]

It quoted from another decision of the New Jersey court, wherein it was held that power exists in the local government to prescribe public regulations for the better and more economical management of the property of persons whose properties adjoin or which for some other reason can be better managed and improved by joint operation, such as the power of regulating the building of party walls, the making and maintaining of partition fences and ditches, the construction of ditches and sewers for the draining of uplands and marshes, which can more advantageously be drained by a common sewer or ditch; and that this is a well-

[18] People *ex rel.* Van Loben Sels v. Reclamation District No. 551 (1897) 117 Cal. 114, 48 Pac. 1016.

[19] Shields v. Pyles (1912) 180 Ind. 71, 99 N. E. 742.

[20] (1885) 114 U. S. 606, 5 Sup. Ct. 1086.

[21] Wurts v. Hoagland (1885) 114 U. S. 606, 611, 5 Sup. Ct. 1086, 1089, quoting State v. City of Newark (N. J. 1858) 3 Dutcher 185, 194.

known legislative power, recognized and treated by all the courts and writers upon law throughout the civilized world; a branch of legislative power exercised both before and since the Revolution and before and since the adoption of the present Constitution, and repeatedly recognized by the courts of New Jersey. In that case, the New Jersey court is quoted as having held that the principle of all these laws is to make an improvement common to all concerned and at the expense of all; that in none of the works established under such laws is the owner divested of his fee, and for all purposes the title of the land remained in the owner. The Supreme Court, after having reviewed these and other cases, then said:

> "This review of the cases clearly shows that general laws for the drainage of large tracts of swamps and low lands, upon proceedings instituted by some of the proprietors of the lands to compel all to contribute to the expense of their drainage, have been maintained by the courts of New Jersey (without reference to the power of taking private property for the public use under the right of eminent domain, or to the power of suppressing a nuisance dangerous to the public health) as a just and constitutional exercise of the power of the legislature to establish regulations by which adjoining lands, held by various owners in severalty, and in the improvement of which all have a common interest, but which, by reason of the peculiar natural conditions of the whole tract, cannot be improved or enjoyed by any of them without the concurrence of all, may be reclaimed and made useful to at their joint expense."[22]

Numerous cases sustaining the same principle might be cited, but lack of time forbids.

Analogy between Regulation of Drainage and Enforced Unit Operation

The analogy between the drainage cases and a requirement for the unit operation of oil pools seems to be clear. In the former, by reason of the peculiar natural conditions, the whole area cannot be improved or enjoyed to its full extent without the concurrence of all, and since all will not concur, they may be compelled to conform to a plan best calculated, on the whole, to secure and promote both the common interest of all and the individual interest of each of them. This same thing is manifestly true in the case of the oil pool. Oil and its accompanying gas are migratory and fugacious and will pass from the land of one proprietor to that of another, so that one, either by waste or a disproportionate use thereof, has it in his power to seriously injure the other's and even to annihilate the rights of the others, and hence each may be compelled to yield, not his title, but some control and dominion in the interest of the common good of all. By reason of the peculiar nature of these substances and the peculiar natural conditions, the rights of the several proprietors

[22] (1885) 114 U. S. 613, 614, 5 Sup. Ct. 1086, 1090.

in the oil pool to take from the common source of supply cannot all be protected, in the absence of the concurrence of all, unless the state, in the exercise of its legislative power, secures a just distribution among all to arise from the enjoyment by all of their privilege to reduce to possession. The soundness of these statements, which are but paraphrases of the statements in the *Ohio Oil Co.* case, is greatly strengthened by the recent discovery of gas energy in oil pools and its function in the recovery of oil. Such an oil statute would be founded and predicated upon the same principle upon which the drainage acts are predicated. It would not be something new in the law, but only a new application of an old and well-settled principle. These references to laws relating to drainage districts suggest that the legislature of a state might authorize the creation of oil and gas conservation districts, with power in the owners of leases upon lands within an oil field or an area which may be thought to be underlain by oil or gas, to organize such a district to be operated on the unit plan; all with the view to accomplishing two purposes: first, the prevention of the waste of oil and/or gas in the area for the general benefit of the public at large and to conserve it for use as and when needed by the public; and, second, to bring about a fair distribution of the content of the reservoir among the several land proprietors and to protect each against the extraction by any of a disproportionate part thereof.

In practice it would doubtless be almost universally true that the owners of leases upon a considerable portion of the acreage would agree to the unitization of their lands and would be in a position to vote or petition for the establishment of an oil conservation district to be operated with a view to accomplishing the purposes above enumerated, and thereby force into the plan those unwilling to join it. Having been established pursuant to legislative enactment, royalty owners would be likewise bound. The area of the pool might, and doubtless, in most instances, would be unknown at the beginning of development; but it could be approximated. A particular area could be originally brought into the plan with the understanding that as development progressed, its boundaries could be extended; and, if land brought in proved to be outside the pool, it could be later excluded. We find that in the case of drainage districts it is not an uncommon thing for lands which are brought in to be later excluded because found not to be benefited, and, also, that lands are often added or annexed to the district which it is later discovered will benefited by it.[23]

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[23] Houck v. Little River Drainage District (1915) 239 U. S. 254, 36 Sup. Ct. 58; 19 C. J. 621-622.

POLICE POWER SHOULD SAFEGUARD GENERAL PROSPERITY

Is the saving to the producers in cost of recovery a meritorious consideration from a legal standpoint? The answer must be in the affirmative. The police power of the state is not limited to measures for the protection of the health, safety and comfort of its citizens. It extends also to the promotion of general prosperity, a fact referred to in strong terms by the California Supreme Court in the gas-oil ratio case.[24] The Idaho sheep-herding statute was sustained upon the ground that it promoted the prosperity and general welfare of the state and its inhabitants.[25] In the *City of Oxford* case, the trial court, speaking through Judge McDermott, who later became a circuit judge in the newly created Tenth Circuit Court of Appeals, made a particular point here. He said:

> "Without any attempt to define police power, it is sufficient to say that the police power is not limited to the protection of the health, peace, and morals of the community. It has been said to extend to acts that 'increase the industries of the state, develop its resources, and add to its wealth and prosperity' (*Barbier v. Connolly*, 113 U. S. 27, 5 S. Ct. 357, 28 L. Ed. 923), and to 'promote the public convenience or the general prosperity' (*C., B. & Q. Ry. v. People*, 200 U. S. 561, 26 S. Ct. 341, 50 L. Ed. 596, 4 Ann. Cas. 1175)."[26]

Referring to zoning ordinances, and particularly to the ordinance involved in the case of *Euclid v. Ambler Realty Co.*,[27] Judge McDermott said that,

> "The ordinance was sustained on the broad ground that one can be compelled by law to so use his own as not to injure another."[28]

Later, he said that,

> "The argument most generally used in support of zoning ordinances is that of the stabilization of property values. It is generally conceded that the value of property in a residence district may be greatly impaired by the erection on a certain lot of a factory, a retail store, or an apartment house. The stabilization of property values, and giving some assurance to the public that, if property is purchased in a residential district, its value as such will be preserved, is probably the most cogent reason back of zoning ordinances. That reason exists in the case at bar. An ordinance which affords some protection to the public generally from the waste of town lot drilling, and gives some assurance to owners of real estate that the oil under their property may be economically recovered, is within the police power. An ordinance that makes it impossible for a diligent or fortunate lot owner to drain the oil from his neighbor's lots, to his own exclusive use; an ordinance which makes it impossible for an owner of property in a block to prevent any recovery of oil on other parts of the block — is valid."[29]

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[24] People *ex rel* Stevenot v. Associated Oil Co. (1930) 211 Cal. 93, 294 Pac. 717.
[25] Bacon v. Walker (1907) 204 U. S. 311, 27 Sup. Ct. 289.
[26] Marrs v. City of Oxford (D. C. Kan. 1928) 24 F. (2d) 541, 547.
[27] (1926) 272 U. S. 365, 47 Sup. Ct. 114.
[28] Marrs v. City of Oxford, *supra* note 26 at 547-8.
[29] *Ibid.* at 548.

We have the question as to whether the imposition by a legislature of such a regulation as we are discussing would constitute an unreasonable restraint. One limitation upon the police power is that the regulation must not be unreasonable or arbitrary; otherwise, the courts will strike it down as a taking of property. It therefore becomes necessary that we make sure of the soundness of our position from a fact standpoint. However, in the *Ohio Oil Co.* case, that company was unable profitably to operate its oil wells unless it were allowed to produce at the same time the gas, and it had no market for the gas. The court nevertheless sustained the law prohibiting a waste of the gas. The case of *Walls v. Midland Carbon Co.*[30] presents a still stronger case which those who are interested may desire to read. In the California case, the operation of a certain well was enjoined until more efficient methods should be employed to conserve the gas.[31]

In the Texas 150-ft. rule case there was a limitation placed upon the otherwise existing right to drill as many wells as the lease owner desired, and, while the reasonableness of the order was not raised in the suit, yet the court took account of the area from which the lease owner would draw oil through its wells, and although it was not at all apparent that the particular number of wells allowed to be drilled, when considered in connection with the wells on adjoining lands, enabled each leaseholder in the particular area to extract from the reservoir his fair share based upon any sort of mathematical calculation, yet, the court dealt to no small extent with the reasonableness of the limitation on the Oxford Oil Co. under the circumstances. Surely, if the Texas order, which so far failed of perfection, was not unreasonable or arbitrary, a regulation which more nearly approaches a distribution among the surface owners upon a basis which, by mathematical calculation, is approximately fair, could not be said to be unreasonable or arbitrary. The same thing may be said of the *City of Oxford, Kansas,* case. But the point is that any enforced unit operation plan must not be unreasonable; otherwise, it will be void.

The police power, if exercised, can close the door to the desire of your neighbor to gain possession of your oil and gas deposits. It can remove from your neighbor his fear that you will gain possession of his. The police power, if exercised, can dispense with the prevailing wasteful cost of capturing these substances. It can dispense with the practice of skimming the cream off of flush fields and leaving the bulk of the deposits to be possessed only at such high cost that much that could have been obtained will never be recovered at all. It can, if it will, compel a cessation of the practice of committing underground waste. It can, if it will, adjust

[30] (1920) 254 U. S. 300, 41 Sup. Ct. 118.

[31] People *ex rel* Stevenot v. Associated Oil Co. (1930) 211 Cal. 93, 294 Pac. 717.

output to market demand and thus let the tankage of excess supplies rest where they should in Nature's costless, wasteless and perfect warehouse. In times both of overproduction and underproduction, it can secure to lessees generally a realization of a fair ultimate profit on their estates, and to lessors generally a more protracted and satisfying reasonable income, while insuring the public at large a greater certainty of continuity of supply to meet its daily needs over an extended period of time, and thus promote the happiness, comfort and prosperity of the people.

W. P. Z. German.

TULSA, OKLAHOMA.