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Secondary Recovery Operations - Protection of Correlative Rights

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COMMENTS

SECONDARY RECOVERY OPERATIONS— PROTECTION OF CORRELATIVE RIGHTS

> [N]o man's property can be taken, directly or indirectly, without compensation . . . . Even the sovereign must pay for what it takes or damages for the public good, and it cannot absolve a private party from the same duty.[1]

Extensive periodical literature,[2] and increasing state conservation legislation are evidence of the wide-spread attention now being directed toward the field of secondary recovery and pressure maintenance operations. Even with such progress in this area of oil and gas law, problems still exist which impede the complete utilization of secondary recovery programs. One such problem has arisen from the recent case of *Tidewater Oil Co. v. Jackson*[3] and involves the possibility of unit operators being held liable in damages for invasion of injected substances into the stratum of adjacent, non-unitized property. It is the contention of this paper that authorization for the injection given by state conservation agencies should not immunize the unit operator from paying damages for the injury he may cause within the exercise of the power authorized, *viz.*, the police power. The protection of correlative rights demands reparation for such adverse effects. Not to allow recovery in damages in these situations would raise serious due process questions. Therein lies the heart of this article.

1. Tidewater Oil Co. v. Jackson, 320 F.2d 157, 163 (10th Cir. 1963); 17 O. & G.R. 282 (1963); 18 O. & G.R. 982 (1963).
2. See generally, Bowen, *Secondary Recovery Operations—Their Values and Their Legal Problems*, 13th OIL & GAS INST. 331 (SW. LEGAL FDN. 1962); Brown & Myers, *Some Legal Aspects of Water Flooding*, 24 TEXAS L. REV. 456 (1946); Driscoll, *Secondary Recovery of Oil and Gas: Significance of Agency Approval*, 13 KAN. L. REV. 481 (1965); Franks, *Rights of Consenting and Non-Consenting Owners Under Secondary Recovery and Pressure Maintenance Operations*, 16th OIL & GAS INST. 343 (SW. LEGAL FDN. 1965); Jones, *Tort Liabilities in Secondary Recovery Operations*, 6 ROCKY MT. MIN. L. INST. 639 (1961); Keeton & Jones, *Tort Liability and the Oil and Gas Industry II*, 39 TEXAS L. REV. 253 (1961); Kelley, *Trespass in Secondary Recovery*, 17 SW. L.J. 591 (1963); Methvin, *Secondary Recovery Operations: Rights of the Non-Joiner*, 42 TEXAS L. REV. 364 (1964); Smith, *Rights and Liabilities on Sub-surface Operations*, 8th OIL & GAS INST. 1 (SW. LEGAL FDN. 1957); Walker, *Problems Incident to the Acquisition, Use, and Disposal of Repressuring Substances Used in Secondary Recovery Operations*, 6 ROCKY MT. MIN. L. INST. 273 (1961); Williams, *Compulsory Pooling and Unitization (Of Oil and Gas Rights)*, 15th OIL & GAS INST. 223 (SW. LEGAL FDN. 1964); Comment, *Oil and Gas: Rights and Liabilities Incident to Water Flood Operations*, 17 OKLA. L. REV. 457 (1964).
3. Tidewater Oil Co. v. Jackson, *supra* note 1.

At the outset, a metes and bounds description of the topics to be explored is in order. To lend itself to a workable scheme, this article is broadly divided into sectors of voluntary unitization on the one hand and compulsory unitization on the other. Secondary recovery operations in general, including the purposes for which such programs are conducted, the types of operations which are authorized, and the possible injuries which may result from these operations will be treated in the brief first segment of this paper. Upon proper construction of this foundation, the latter part of the article will consider in depth the liability *vel non* of the injecting party to the non-assenting interest owner. This latter treatment includes, first, an elimination of certain collateral issues that arise in connection with the principal area under consideration and, second, a development of the remedies available to the non-joiner under each of the two types of unitization.

SECONDARY RECOVERY IN GENERAL

When pressure in an oil and gas reservoir falls below that needed to yield oil in paying quantities, it is often practicable and necessary to employ secondary recovery measures to realize maximum production. To obtain this desired result the principal method employed is repressuring by water flooding or gas injection, which has been defined as "the deliberate, controlled injection of water into an oil-producing stratum for the purpose of increasing the percentage and rate of recovery of oil from the stratum."[4] Thus, the secondary recovery method secures recovery through increase in reservoir energy by the injection of liquids or gases into the reservoir after the original reservoir energy has been depleted, and usually, but not always, after the primary recovery period has terminated.[5] Substances injected into this underground structure may migrate to a portion of the reservoir underlying the land of another and, in the course of such migration, displace oil or gas underlying such adjoining land. It is this substance migration and the consequent ad-

4. Brown & Myers, *Some Legal Aspects of Water Flooding*, 24 TEXAS L. REV. 456 (1946).
5. *Ibid.*

verse effects therefrom upon the non-unitized landowner's interest which gives rise to the principal problem with which this paper is concerned, *viz.,* striking a balance between the protection of a non-joining landowner's correlative rights in the substances underlying his land in their natural state and of preserving to the unit operator the fruits of his industry in producing from a common source of supply.

Initially, it must be recognized there are several factors that create state conservation legislation, the purpose of which is to provide broad boundary lines within which secondary recovery measures may be conducted for the benefit of all parties concerned. First, it must be noted that initiation of such operations is more likely than primary operations to result in violation of the correlative rights of other owners in the common source of supply.[6] Secondly, oil and gas have been regarded as natural resources in every state where discovered; and their production, storing, and transportation are affected with a public interest. This public interest is founded upon the fact that these minerals are irreplaceable, constitute an important source of revenue, and are of great benefit to individuals and industry.[7] Because of these factors, *i.e.,* protection of correlative rights and recognition of the public interest, each state where there is substantial production has enacted laws authorizing its conservation agency to make rules and regulations governing secondary recovery operations.

Such legislation employs the two types of secondary programs toward which the attention of this article is directed. One project type may be instituted by some or all of the lessees or lessors under a unitization agreement that may or may not have government non-compulsory approval. This type is designated as voluntary unitization. What is termed as compulsory unitization is created upon contractual unitization of interests, by a substantial majority in interest, of

6. Franks, *Rights of Consenting and Non-Consenting Owners Under Secondary Recovery and Pressure Maintenance Operations,* 16th OIL & GAS INST. 343, 367 (SW. LEGAL FDN. 1965).

7. *Id.* at 382. See, A.B.A. SECT. M. & N.R.L., PROCEEDINGS 41 (1962): "Currently, one third of the oil produced in the United States comes from secondary recovery projects, 16.3 billion barrels are economically recoverable utilizing current secondary recovery techniques, and new methods may add an additional 40.2 billion barrels."

the lessees and lessors within the proposed boundary of the project with conversion by an order of the state conservation agency to a compulsory project binding upon all interests within the plan. Both types of program may cover either all or part of a field. As provided by these statutes and the regulations promulgated thereunder by the authorizing state agency, the purposes for which unitization may be voluntarily agreed upon or compulsorily ordered are stated in general terms to promote flexibility and include prevention of waste, avoidance of the drilling of unnecessary wells, increasing ultimate recovery, and protection of correlative rights.[8]

Of the possible injuries which may be sustained from a secondary recovery operation, the greatest harm occurring is damage to the sub-surface, since this is the most difficult to control. This sub-surface damage appears in a variety of forms, the most common of which are (1) shoving oil across lease lines, whether from leases involved in the project or from offset leases not involved in the project; (2) flooding offset producing wells still engaged in primary recovery; (3) causing expense to be incurred by the offset producer in protecting himself against the adverse effects of the flooding; and (4) production lost as a result of being by-passed or "watered off" the reservoir by the injected repressuring substance.[9] Keeping in mind these possible injuries and noting that most secondary recovery operations are conducted under voluntary or compulsory unit agreements rather than by an individual operator upon his own leasehold, the discussion now turns to a consideration of the liability for injuries resulting from such operations.

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8. 6 WILLIAMS & MEYERS, OIL AND GAS LAW § 913.1 (1964). An example is the provision in the Alaska statute, ALASKA STAT. § 31.05.110(a) (1962):
> To prevent, or to assist in preventing waste, to insure a greater ultimate recovery of oil and gas, and to protect the correlative rights of persons owning interests in the tracts of land affected, these persons may validly integrate their interests to provide for the unitized management, development, and operation of such tracts of land as a unit . . . .

While the Montana Conservation Act, MONT. REV. CODES ANN. § 60-131 (1947), is unique in its failure to mention the protection of correlative rights, the obligations of the Commission to consider such rights has been read into the act by *Pattie v. Oil & Gas Conservation Comm'n.*, 402 P.2d 596 (Mont. 1965), 23 O. & G.R. 65 (1965). See, *infra* note 50 and accompanying text.

9. Driscoll, *Secondary Recovery of Oil and Gas: Significance of Agency Approval*, 13 KAN. L. REV. 481, 483 (1965).

LIABILITY OF INJECTOR TO NON-JOINER

Before directly discussing the prospect of a unit operator's liability and the remedies available to the non-assenting interest owner, it is imperative to dispose of certain collateral issues that might otherwise cloud the analysis.

As it is well known that there are several theories of ownership concerning the nature of the landowner's interest in the oil and gas underlying his land,[10] the development of these theories will not be treated here. However, mention should be made of the effect of these several theories of ownership on actions by non-assenting landowners. Generally, the liability *vel non* of the injecting party to the adjoining, non-unitized owner does not appear to turn on the view held in the particular state as to the nature of the landowner's interest in the oil and gas underlying his land.[11] Specifically, it appears that the view held in the state has neither significance in determining whether one landowner is liable to others overlying the common reservoir for conduct resulting in the permanent loss of otherwise recoverable hydrocarbons nor importance in determining whether one landowner is liable to others for injury to the producing formation.[12] Instead, the law of capture as modified by the doctrine of correlative rights is the hub of the wheel around which secondary recovery projects turn. Discussion of this facet of oil and gas law is deferred until later where it will be fully treated.[13]

From the cases that immediately follow, there is said to be a developing body of law today to the effect that reasonable injection programs directed toward increased secondary recovery and pressure maintenance will not be enjoined at the urging of non-consenters in unitized areas or owners of competing leaseholds in non-unitized areas. Under the present decisions,[14] no injunctive relief would issue simply because the injection program threatens to flood out the

10. 1 WILLIAMS & MEYERS, OIL AND GAS LAW § 204.5 (1964).
11. *Id.* at § 204.7; Franks, *supra* note 6, at 381.
12. Franks, *supra* note 6, at 368.
13. See, *infra* note 50 and accompanying text.
14. In addition to the cases mentioned in text, see also, Barnwell Drilling Co., v. Sun Oil Co., 300 F.2d 298 (5th Cir. 1962); Syverson v. North Dakota State Indus. Comm'n., 111 N.W.2d 128 (N.D. 1961), 15 O. & G.R. 478 (1961); Gregg v. Delhi-Taylor Oil Corp., 162 Tex. 26, 344 S.W.2d 411 (Tex. Civ. App. 1961).

producing property of the complaining party where the program was approved by the lawful order of the regulatory agency and where the project operator has conducted the project in conformity with such order.[15] The first case to be considered in this respect is *Reed v. Texas Co.*[16] in which, by reliance on a previous Illinois decision sustaining a lessee's injection program even though oil was driven from beneath the complaining party's acreage,[17] injunctive relief was denied to interest owners. The evidence showed the project had resulted in a sharing pattern essentially similar to that under primary recovery and ultimate recovery from the reservoir would be significantly increased. In the more recent case of *Railroad Comm'n. v. Manziel,*[18] plaintiffs sued to set aside an order of the state regulatory agency permitting defendants to inject water into the latter's well which was located adjacent to plaintiffs' property. In dissolving the injunction earlier issued by the district court, the Texas Supreme Court stressed the social value of secondary recovery operations. Thus, it is apparent that the equitable remedy of injunction will be unavailable to the adjacent, non-unitized landowner where the unit operator has complied with the lawful order of the conservation agency, where the non-joiner finds the effect of the injection has been to enhance rather than curtail his recovery, and where the social value of the unit operation is recognized as closely tied with the public interest.

Voluntary Unitization[19]

It has been uniformly held that, absent enabling legislation, courts may not force a non-unitized party to join a voluntary secondary project.[20] In considering whether the non-joiner has any remedy for the injury sustained by virtue of the program instituted under an order approved by the state conservation agency, the problem is reduced, as one

15. Franks, *supra* note 6, at 386.
16. 22 Ill. App. 2d 131, 159 N.E.2d 641 (1959), 11 O. & G.R. 789 (1959).
17. Carter Oil Co. v. Dees, 340 Ill. App. 449, 92 N.E.2d 519 (1950).
18. 361 S.W.2d 560 (Tex. 1962), 17 O. & G.R. 444 (1963).
19. States in which voluntary unitization legislation has been enacted include: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Mississippi, Nebraska, Nevada, New York, North Carolina, North Dakota, Oklahoma, Oregon, Pennsylvania, South Dakota, Texas, Utah, Washington, and Wyoming. Compiled at 6 WILLIAMS & MEYERS, OIL AND GAS LAW § 913.1 (1964).
20. Franks, *supra* note 6, at 386.

observer has noted, to the question whether the administrative authorization casts a cloak of protection around the injecting party and denies the adjacent owner a remedy.[21] The case of *Corzelius v. Railroad Comm'n.*[22] used the following language, which has been quoted in support of the "cloak of protection" theory: "[B]eing authorized by law such entry did not constitute a trespass."[23] It has been said this case should be cited as authority for the sole proposition that in periods of emergency the police power of the state can be summoned to accomplish almost any needed result.[24] The authorized entry with which the case was concerned consisted of injection of substances into the underlying formation in order to kill a well in which fire had developed. This was the emergency which necessitated the exercise of the police power.

Notwithstanding the "cloak of protection" theory and the developing body of law with regard to the unavailability of injunctive relief, one reporter points out that there is an underlying area of weakness in these decisions.[25] He observes that the opinions depended on records establishing that the interests of the complaining parties did not suffer by reason of the injection programs in issue. For this reason two cases may be significant. In *King v. Columbian Carbon Co.*[26] the Fifth Circuit stated: "As a concession to industrial progress and social utility the law will not abate a useful and lawful enterprise even though it be a nuisance, *but further than that the law does not recede . . . .*"[27] (Emphasis added). Again in the more recent case of *Syverson v. North Dakota State Indus. Comm'n.,*[28] which involved a voluntary unit situation in which a non-signing owner sought to overturn on appeal an agency order authorizing a pressure maintenance program, the state court concluded:

21. Kelley, *Trespass in Secondary Recovery*, 17 Sw. L.J. 591, 593 (1963).
22. 182 S.W.2d 412 (Tex. Civ. App. 1944).
23. *Id.* at 417.
24. Kelley, *supra* note 21, at 594.
25. Discussion notes, 17 O. & G.R. 462 (1963).
26. 152 F.2d 636 (5th Cir. 1945).
27. *Id.* at 641-642.
28. Syverson v. North Dakota State Indus. Comm'n., 111 N.W.2d 128 (N.D. 1961), 15 O. & G.R. 478 (1961).

> By refusing to join such agreement . . . appellants may not, at the same time, prevent other interests in the field from developing adjoining tracts under such agreement . . . . *Whatever the result would be if the appellants could show actual damages,* they certainly are not entitled to complain in absence of such showing.[29] (Emphasis added)

While not directly stated, the language of these two cases strongly implies that even if an injection program tailored to prevent waste and promote industrial and social progress will not be enjoined since public policy considerations override the private interests, the affected non-unitized landowners will be relegated to an action at law for damages if such can be shown.[30]

Legal Remedies. The mention of possible access to an action at law for damages provides an appropriate vehicle with which to move the discussion into the realm of legal remedies. The damage remedy can be broadly categorized into two groups, the first of which consists of cases and authoritative pronouncements holding that the injecting operator is or should be immune from liability, and the second of which consists of cases, a state statute, and authoritative pronouncements claiming that the operator is liable for trespass, negligence, nuisance, or absolutely for any damages proximately caused. It is offered that regardless of these theories, the true liability attaches because of the injury to the correlative rights of the adjacent, non-unitized landowner.

Tidewater Associated Oil Co. v. Stott[31] is the first of two cases to be considered which have refused to recognize any liability and, consequently, have refused to award any damages. In *Stott,* the repressuring of a gas field was undertaken by the operator after a voluntary agreement to unitize the field for that purpose had been stipulated by all parties concerned except the plaintiffs. The operator commenced injection of dry gas to repressure the wet gas field, the non-joining plaintiffs complaining that this recycling would even-

29. *Id.* 111 N.W.2d at 134.
30. Discussion notes, 17 O. & G.R. 462, 463 (1963).
31. 159 F.2d 174 (5th Cir. 1946), *cert. denied,* 351 U.S. 817 (1947).

tually drain off their more valuable wet gas and replace it with dry gas to their financial loss. In denying the plaintiffs' petition, the Fifth Circuit stated:

> In short, the [plaintiffs] may not refuse to cooperate with their lessees for their mutual protection in the adoption of the practicable customary method or plan universal in the [field] offered them by the [defendants] and at the same time assert and demand damages .... *Any damages which they suffer is damnum absque injuria* and in nowise are such damages chargeable to [defendants].[32] (Emphasis added)

In the subsequent case of *California Co. v. Britt*,[33] the great majority of lessors had joined a voluntary repressuring unit arranged by a lessee who had received agency approval for the plan, the plaintiffs declining to participate. The Mississippi Supreme Court held that a non-assenting lessor had no standing to bring a damage action for drainage. The results in these two cases appear to turn in part on the fact that plaintiffs refused a fair opportunity to join in a fair plan of unitization.[34] Likewise, the results of these decisions lend authoritative support for what has been called a "negative rule of capture," to the effect that:

> Just as under the rule of capture, a landowner may capture such oil or gas as will migrate from adjoining premises to a well bottomed on his own land, so also may he inject into a formation substances which may migrate through the structure to the land of others, even if this results in the displacement under such land of more valuable with less valuable substances (e.g., displacement of wet gas with dry gas)....[35]

Under this negative rule of capture, plaintiff's only remedy would be a water flood program of his own. Yet, if the size of the individual's tract is such that it would not be economically feasible to instigate necessary secondary recovery operations *sua sponte* and if he refuses to join in with adjacent owners in their program, he would have no remedy. But the proponents of this negative rule do not propose that

32. *Id.* 159 F.2d at 179.
33. 247 Miss. 718, 154 So. 2d 144 (1963), 19 O. & G.R. 36 (1963).
34. Williams, *Compulsory Pooling and Unitization (Of Oil and Gas Rights)*, 15th OIL & GAS INST. 223, 265 (SW. LEGAL FDN. 1964).
35. 1 WILLIAMS & MEYERS, *op. cit. supra* note 10, at 53-54.

the injecting party have an absolute right to inject without liability. They continue:

> The law on this subject has not as yet been fully developed, but it seems reasonable . . . that such activity will be permitted, free of any claim for damages, *only if pursued as a part of a reasonable program of development and without injury to producing or potentially producing formations.*[36] (Emphasis added)

However, this conclusion neither provides any concrete suggestion as to what law *is* to be applied to an action for injury to the formation nor does it mention the problem of an action for production lost, beyond the intimation that contemporary authority does not support such actionability.[37]

The authoritative pronouncements that an operator injecting fluids in conformity with an approved plan should be immunized from consequential damage claims[38] proceed from the proposition that the police power of the state extends to the area of conservation of natural resources and that, therefore, the execution of a state approved plan to accomplish this socially valuable and publicly oriented enterprise should not result in the operator's liability. Yet, there is an essential distinction to be made. While agency-ordered restrictions on primary production, necessary to prevent waste and preserve the fruits of one's industry in producing from a common source of supply are uncompensable, it seems anomolous to immunize a private person from liability on the basis of compliance with a state approved plan.[39] It is conceded that, even though wells are flooded out, there should be no basis for damages where the effect of injection will be to enhance the recoveries of the affected property owners over what would have been obtained absent the beneficial influence of artificial repressuring conferred at no expense to them.[40] It is offered, however, that where some damage

36. *Id.* at 54.
37. *Id.* at 53.
38. Hughes, *Legal Problems of Water Flooding, Recycling, and Other Secondary Operations*, 9th OIL & GAS INST. 105, 135 (SW. LEGAL FDN. 1958).
39. Discussion notes, *supra* note 30, at 464.
40. Kelley, *supra* note 21, at 591. The California statute, CAL. CIV. PROC. CODE § 731(c), provides that any benefit from secondary recovery operations will be considered in mitigation of damages.

to potential recoveries may be inevitable, the injecting operator should decide whether the benefits accrued sufficiently exceed the potential damage liability to justify the project; in other words, the operator must assume the economists' cost-benefit approach[41] for it is an inescapable fact that in secondary recovery damage cases there is actual physical invasion which is the proximate cause of the injury and which forms the basis of a cause of action.

Attention is now directed to the second group of damage remedy and representative cases espousing various theories of liability. The first case to be mentioned is *West Edmond Hunton Lime Unit v. Lillard*[42] in which the plaintiff brought an action in trespass because his producing well had been flooded out by the defendant's injected salt water. Plaintiff claimed and recovered in full the value of oil well casing lost and extraordinary expenses incurred in attempting to retrieve the casing. Representative of the negligence theory is a California state statute which provides that there is no liability on the part of the injecting party in a unitized field in the absence of proof of negligence.[43] No other state appears to make such provision. Coinciding with this theory of liability, however, is the proposal of one writer to adapt to subsurface activity the analysis that in surface activities there should be a separate consideration of intentional and unintentional acts in determining a basis of liability for injury to another's property. He suggests a negligence theory for unintentional invasions and a nuisance theory for the intentional intrusions:

41. Discussion notes, *supra* note 30, at 464-465. The "cost-benefit formula" indicates that a project is desirable if the ratio of benefits to costs is favorable. If two competing interests want the same resource for inconsistent purposes, the cost-benefit ratio can be used to determine the one that promises the greater benefits and comes closest to the development and regulation of the resource so as to get the maximum benefit from it in the public interest, hence the one that should be granted the resource use. In computing a given party's cost, consideration must be accorded the compensation paid the other party for the foregone benefits of his project.

42. 265 P.2d 730 (Okla. 1954).

43. CAL. PUB. RESOURCES CODE § 3320.5:
> No working or royalty interest owner shall be liable for any loss or damage resulting from repressuring or other operations connected with the production of oil and gas which are conducted, without negligence, pursuant to and in accordance with a co-operative or unit agreement ordered or approved by the Supervisor pursuant to this article.

> [I]f the secondary recovery operator unintentionally causes invasions of neighboring lands that result in physical damage to non-unitized property, liability should follow *only* if the [unit operator] was negligent in his conduct . . . . Such cases would arise where the [injector] is under the impression . . . that his flooding [substance] will not extend beyond his own unit. On the other hand, if the secondary operation is carried out in a reservoir known to be common to both joiners and non-joiners in the program, the intrusions into the stratum of the non-joiners should in most cases be considered intentional. Even though the operator may intend invasion but not harm, his subjective intent should not control. If there is a substantial certainty that all wells in the reservoir will eventually be flooded . . . the damage as well as the invasion must be said to be intentional. . . .[44]

Next in point and illustrative of the theory of absolute liability is the case of *Gulf Oil Co. v. Hughes.*[45] In holding that the theory of strict liability applied to a water flood operator whose salt water had migrated and flooded the plaintiff's fresh water well, the Oklahoma Supreme Court relied largely on an Oklahoma state constitutional provision relating to the taking of private property without compensation.[46] The court believed that such pollution constituted a private nuisance. However, it seems unreasonable to apply such strict liability where the damaging of property is a reduction in the amount of oil ultimately recoverable by another mineral owner from a common source of supply. "When the 'injury' or 'damage' is an increase in the amount of oil recovered at the expense of a neighbor, it is necessary to [consider] the law of capture and the correlative rights of owners owning mineral rights in a common source of supply."[47]

These cases and their consequent theories of liability notwithstanding, the most significant and most recent secondary recovery damage case is that of *Tidewater Oil Co. v. Jackson.*[48] Simplified, the facts present a familiar situation.

44. Methvin, *Secondary Recovery Operations: Rights of the Non-Joiner,* 42 TEXAS L. REV. 364, 374 (1964).
45. 371 P.2d 81 (Okla. 1962), 16 O. & G.R. 1016 (1962).
46. *Id.* 371 P.2d at 83.
47. Discussion notes, 18 O. & G.R. 1048, 1049 (1963).
48. Tidewater Oil Co. v. Jackson, *supra* note 1.

Tidewater notified Jackson of its intention to water flood its properties adjacent to Jackson and proposed a cooperative project. Jackson declined to join since his wells were still producing in paying quantities. Tidewater commenced drilling input wells very close to Jackson's producing wells with the result that the latter were flooded out. In holding that the water flooding activities were intentional, the consequences foreseeable, and therefore actionable if they caused substantial injury, even though lawfully carried on, the Tenth Circuit used the following language: "[N]o man's property can be taken, directly or indirectly, without compensation . . . . Even the sovereign must pay for what it takes or damages for the public good, and it cannot absolve a private party from the same duty."[49] From a perusal of the key words of the opinion, it is seen that the peg on which the court hangs its hat is not one of the traditional theories of tort liability, *e.g.*, trespass, negligence, or nuisance. Instead, the court says that lawfully conducted secondary operations with foreseeable consequences are actionable if substantial injury occurs. In other words, the decision seems to rest on a well-known principle, *viz.*, if an operator effectuates such a program and in so doing injures his neighbor, *the protection of correlative rights* demands that the nonunitized landowner be idemnified for his loss.

The point to be made is that while, under the law of capture, a unit operator has the right to extract oil and gas from the common source of supply without accounting to the non-joining owner for a share of the production, such right must be exercised with due regard for the similar rights of that non-joiner to extract minerals from the same source of supply.[50] In this context, correlative rights means protection against spoilage of the common source of supply (*e.g.*, by flooding) and the right to a fair share of the underlying oil or gas.[51] This right to a fair share does not assure a proportionate share of the minerals; it simply means that he has a right to a fair opportunity to extract oil and gas.[52]

49. *Id.* 320 F.2d at 163.
50. KUNTZ, OIL AND GAS §§ 4.1, 4.2, 4.3, 4.7 (1962).
51. *Id.* at §§ 4.1, 4.3.
52. See generally, KUNTZ, *op. cit. supra* note 50, at §§ 4.1, 4.2, 4.7.

It must be realized, too, that this is not a special correlative rights doctrine which sounds the death knell to the law of capture. On the contrary, the doctrine is complementary. In this matter of conservation measures, the fair division of production from the common source of supply necessarily involves consideration of the benefits that could have been realized under the operation of the law of capture. If consideration is given to such factors as porosity and permeability of the sands, the volume of the substance, location on the structure, and acre feet of sands, then production is being divided on such basis. In other words, the law of capture is being employed as a point of reference.[53]

That this common law of correlative rights looms large in this field of oil and gas law is evidenced by the recent case of *Pattie v. Oil & Gas Conservation Comm'n.*[54] Involved was a landowner adjacent to plaintiff who drilled for oil in accordance with established well-spacing rules. The completed well, only 330 feet west from the subdivision line, was a gas well and thus violated a spacing rule that such wells be located at least 1320 feet from a property line. The driller requested an exception. Plaintiff also requested an exception so as to permit him to offset the well in this new gas field by drilling 330 feet east of the common property line. In granting the driller's request but denying plaintiff's, the Commission considered evidence showing that plaintiff would be outside the field if he had to drill on the regular spacing pattern instead of the excepted one. The trial court held plaintiff entitled to his share of the gas or compensation for that amount. In affirming, the Montana Supreme Court said that even though the state statute made no mention of correlative rights,[55] the interests of adjacent landowners in sharing in a common source of supply required such consideration; otherwise, "the legislation would have to be held unconstitutional as a deprivation of property without due process of law . . . ."[56] Similarly, a noted authority on oil and gas law has said: "When the right to produce oil or gas

53. *Id.* at § 4.1.
54. 402 P.2d 596 (Mont. 1965), 23 O. & G.R. 65 (1965). See *supra* note 8.
55. *Ibid.*
56. *Id.* 402 P.2d at 599.

is denied or curtailed by conservation regulation, measures must be taken to assure owners equal opportunity to enjoy their fair share of production, and a denial of such equal opportunity would amount to confiscation . . . ."[57]

With the mention of "confiscation," it must be concluded that a serious due process question is presented if the state attempts to immunize an individual who has damaged another. Indeed, "Precise location of the limit on the power of the state to permit invasion without compensation may be circumvented if the state provides a remedy in damages."[58] It has always been recognized that under the police power the regulation of the use and enjoyment of the private property taken must be reasonable.[59] The legislature cannot, under the guise of that power, impose unreasonable and arbitrary rules and regulations which go beyond that power and, in effect, deprive a person of his property within the purview of the law of eminent domain.[60] The problem of the state-condoned interference with correlative rights under secondary recovery operations actually appears to fall into a twilight zone somewhere between the exercise of the police power and the law of eminent domain. As a general rule, the police power does not appropriate the property taken to another use, but destroys it completely; eminent domain, on the other hand, takes property from the owner and transfers it to a public agency to be enjoyed by the latter as its own.[61] The distinguishing features between these two legal processes are that eminent domain compensates for what is taken, while the police power does not; and that the police power completely destroys the property taken, while eminent domain transfers it to a public agency. Even though the authorization order given by the state conservation agency in secondary recovery cases does not, in theory, appropriate the taken property for its own use, it seems the order does effectuate this

57. KUNTZ, *op. cit. supra* note 50, § 4.7 at 102.

58. Kelley, *supra* note 21, at 599-600.

59. 29A C.J.S. *Eminent Domain* § 6 (1965).

60. *Ibid.* As one writer points out, the practical reality of an approved injection program is that the state approval obtained is based on rather cursory examination even though presumed commission expertise and application of the substantial evidence rule on review makes the approval impregnable in law. Discussion notes, 17 O. & G.R. 462 (1963).

61. 29A C.J.S., *supra* note 59.

result in practice. And since the protection of correlative rights demands reparation when such rights are taken, it is submitted that the authority behind the state agency order approaches more nearly an exercise of the law of eminent domain than an exercise of the police power.

Along this same line of reasoning, note the observations of two authorities in the field of oil and gas law. One has stated:

> At some point the police power becomes so strained that its further application requires a compensatory element for the taking of private property even though the public welfare is served by the taking .... It is not unreasonable that, for the oil and gas field of law, affirmative plans designed to enhance ultimate recovery also should be the point at which the possibility of compensation in terms of an action for damages against the operator should enter the picture to justify this further extension of the police power.[62]

Concluding that the *Tidewater* case is an example of an instance where the exercise of the police power has reached the breaking point at which further application required a compensatory element for the taking of private property even though the public welfare was served by such taking, one other authority said:

> Although the action is described in terms of tort, the result is within the spirit of the principles of eminent domain which compel the sovereign or its designees to afford compensation to those whose property is taken in furtherance of enterprises held to be in the public good.[63]

Damages. With this development of the compensatory element being made, it is necessary to turn consideration toward a method of measuring the damages to which the injured landowner is entitled. For the invasion to oil and gas property which results in substantial injury, the proper measure of damages may be the decrease in market value of the property invaded, measured first before the invasion oc-

62. Discussion notes, 17 O. & G.R. 462, 464 (1963).
63. Discussion notes, 18 O. & G.R. 993, 994 (1963).

curred and second from past losses and projected future losses.[64] The precise computation of these damages appears to be as follows. Before the invading substances were injected into the ground, there existed X barrels of ultimately recoverable oil which the non-unitized owner had the right to capture. At the time of the trial there existed Y barrels of ultimately recoverable oil, including that oil produced in the interim between injection and the trial. If X exceeds Y, the non-unitized owner has suffered damage and should recover the value of the oil lost. In addition, he should recover for the cost of drilling any new wells necessary to give him the well capacity needed to restore productive capacity. If Y equals or exceeds X plus necessary well costs, the non-unitized owner should not recover, *i.e.,* if he has suffered no monetary loss even after considering the loss of needed well capacity, the invasion is *damnun absque injuria.* In this computation certain explanations are necessary. First, the unit operator should be allowed an offset for the migration of any oil across the boundary. Second, the unknowns X and Y should be stated in terms of discounted value of the oil in the reservoir according to contemporaneous production allowables. Third, in determining the ultimately recoverable oil which the non-unitized owner had the right to capture, consideration must be given production allowables since the amount capable of production depends on the rate of production to some extent. Finally, the measure of the value of the oil lost should be gauged by the market value of the oil at the time of the invasion.[65]

Compulsory Unitization[66]

Heretofore, the discussion has considered only the voluntary unit agreement. Attention now focuses on compulsory unitization, an area seldom tread by the steps of litigation. While the non-signing interest owner cannot be forced by

64. Kelley, *supra* note 21, at 600.

65. *Id.* at 600-601 & nn. 77-82. The foregoing text material is a liberal paraphrase of Kelley's treatment of damages.

66. Compulsory unitization legislation has been enacted in the following states: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Florida, Georgia, Louisiana, Michigan, Mississippi, Nebraska, Nevada, New York, North Dakota, Ohio, Oklahoma, Oregon, and Washington. Compiled at 6 WILLIAMS & MEYERS, OIL AND GAS LAW § 972 (1964).

law to join and participate in unitization of a common source of supply by virtue of voluntary agreement and, therefore, may be compensated if his interests are adversely affected; the effect of the compulsory order may be to force the non-signing owner to join and participate. But it should not necessarily follow that the forced party cannot be compensated if his interests in the common source of supply are adversely affected by the order. The primary problem in this area, then, would seem to arise when the non-assenter is compelled to join the unit program for purposes of secondary recovery and he is, in fact, still engaged in primary production. In such case, is the forced party to be compensated for his loss of primary production? If so, or if not, what is a reasonable participation formula for all parties concerned so that benefits and costs will be equally shared and correlative rights in the common source of supply protected?

It has been suggested that the possibility of a damage suit such as *Tidewater* would not be present if compulsory unitization were introduced for the purpose of conducting secondary recovery projects.[67] This belief is based on the assumption that all parties who could be adversely affected by fluid migration would be sharing the benefits of the operation, *e.g.,* development and operation of the unit area as one continuous reservoir, placement of input and production wells without regard to surface lines of separately owned properties so the wells may best serve the reservoir, protective aspect of the conservation order, and, with regard to correlative rights, the recoverable oil and gas is now the property of all with production and sharing on an equitable and approved basis.[68] It is offered that this basic assumption fails to take into account the questions posed at the outset relating to loss of primary production and reasonable participation formula as to which the factors of porosity and permeability of sand, acre feet of sand, and location on the structure must be considered.

67. Driscoll, *supra* note 9, at 495; Bowen, *Secondary Recovery Operations—Their Value and Their Legal Problems*, 13th OIL & GAS INST. 331, 337-38 (SW. LEGAL FDN. 1962).

68. *Ibid.* See also, Franks, *supra* note 6, at 384-85.

Any search for case law having a fact situation wherein the forced party is still engaged in profitable primary production and all other unit members are ready to initiate secondary recovery measures appears to be in vain; however, the recent case of *Jones Oil Co. v. Corporation Comm'n.*[69] is somewhat similar and will, therefore, be mentioned for any light it may shed on the problem. For purposes of this treatment the caveat must be stated that any final determination of the problem within the confines of this paper is little more than an educated guess.

In the *Jones* case, the field had been unitized by compulsory order, but a time period remained before secondary recovery commenced, during which primary production was to be carried on by all interest owners. A "split formula" of participation was to be followed to the effect that a separately owned tract's participation in primary unit production was a percentage derived by dividing the individual tract's cumulative production for a designated base period[70] by the unit area cumulative production for the same period. Upon termination of this primary period, the estimated total future primary oil was to have been recovered. Thereafter, secondary recovery operations were to be commenced, based on the second aspect of the "split formula" which would allocate unit production among and to the separately owned tracts on the basis of net acre feet of productive sand under each tract. The Oklahoma Supreme Court affirmed the unitization order and the "split formula" of participation, thereby rejecting the plaintiff's contention that they were not receiving and would not receive their fair and reasonable share under such a plan.

By analogy with the *Jones* decision, the dilemma in which the forced party still engaged in primary production finds himself in relation to other unit members who are ready to commence secondary recovery operations seems to resolve itself in favor of the forced party. If the participation formula for primary production would allocate to the forced

69. 382 P.2d 751 (Okla. 1963), 18 O. & G.R. 1041 (1963).
70. In the instant case, the base period was July 1, 1959 through December 31, 1959.

party a percentage of total unit production, it may not violate his correlative rights nor such rights of the unit members. This would seem to hold true if the forced party's percentage was derived by dividing his tract's cumulative production for a base period—at the end of which his estimated total future primary production will have been realized—by the unit area cumulative production for the same period. By this arrangement the forced party, in effect, is being completely left alone by the unit to recover his primary production and the unit members are still able to recover from unit area cumulative production. Upon termination of his primary recovery, the forced party could then participate with the unit members according to the participation formula instituted for the secondary operations.

In connection with this participation formula as it relates to secondary recovery, there arises the difficult question of liability for oil drained by such operations when there is neither reduction in primary recovery nor the ultimate secondary recovery by all owners from the common source of supply. As one authority stated:

> If the answer . . . is that there is liability on the part of the water flood operator, then any participation formula must necessarily be upon the basis of volume of oil in place, without regard to the factor of location on structure or other factors which would control the volume of oil which any operator could expect to recover under the law of capture.[71]

But this authority does not see this as a repudiation of the law of capture or the recognition of absolute ownership in place; rather, it is the operation of the doctrine of correlative rights in its complementary clothing. Of this, Kuntz says:

> Perhaps the conclusion to be reached is that each owner is entitled to a fair opportunity to extract oil recoverable by primary production methods without interference by secondary recovery operations engaged in by others. With regard to secondary recovery, however, the right is not a right to oil in place, but is a right to a fair opportunity to engage in secondary recovery operations.[72]

71. Discussion notes, 18 O. & G.R. 1048, 1050 (1963).
72. *Ibid.*

Further, he concludes:

> [A] participation formula which allocates the secondary production on an acre feet of sand basis will be approved . . . unless it can be clearly demonstrated that it is unreasonable and deprives the protestant of his property without due process by awarding him a smaller portion of production than he would have been able to obtain by individual operation.[73]

CONCLUSION

State-approved conservation programs instituted under the guise of the police power involve striking a balance between the protection of a non-joining landowner's correlative rights in the oil and gas underlying his land and the preservation of a unit operator's fruits of industry in producing from a common source of supply. Where the unit operations adversely affect the non-joiner's correlative rights, equitable relief will not provide protection to the latter. In turning toward legal relief, the non-joiner finds no solace in an ownership theory because the minerals involved are found in a common source of supply; hence, unit operators as well as non-joiners have the undeniable right to extract minerals therefrom. But this law of capture is modified by the doctrine of correlative rights, and therein the injured non-joiner finds his protection. For the operator who submits a plan of unitization and for the agency that approves it, it is recommended that both of them take notice of the fact that secondary recovery operations usually result in the flooding of the entire reservoir. Using this as a guideline, both the operator and the agency should use the cost-benefit formula to decide whether or not the project deserves approval. In other words, all that is needed is for the operator and the agency to understand an economic principle. This is, that in developing natural resources the goal is to provide the maximum net benefits, and that in counting costs against those benefits, the agency and the unit operator should include losses and induced adverse effects. This means that if a conservation program deprives a non-unitized landowner of the resource use, the loss of such use is a cost of the conservation program.

73. *Ibid.*

In the final analysis, the only issue is who should bear the loss and pay the cost. Should it be paid by the unit operator and borne by all those who receive the benefits of the conservation program, or should the non-unitized landowner be required to make a costly sacrifice for the public good? The answer to this question has not been clearly settled, but it must be said when considering such answer that the compensation principle is needed, not because it sets private interests above public interests, but because it is in the public interest and is in accord with the policies of conservation legislation. If such reparation is refused on the basis of the argument that the program was authorized under a valid exercise of the police power, the refusal will be to no avail. Such taking or damaging of private property in the interests of conservation approaches more nearly the spirit of the principles of the law of eminent domain under which compensation must be paid.

With regard to the situation of the forced party in a compulsory program, it appears to be on a common ground with that of the non-joiner under voluntary unitization. Protection of the forced party's correlative rights demands that he be given a fair opportunity to complete his primary production or be compensated therefore, and further, that he be accorded a fair opportunity to participate in secondary recovery operations. In these operations the criteria to be followed should include, at least, porosity and permeability of the sands. This is not a denial of the law of capture, but is a recognition of such law as modified by the doctrine of correlative rights.

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