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Trespass in Secondary Recovery

Oliver Kelley

TRESPASS IN SECONDARY RECOVERY

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When pressure in an oil reservoir falls below that needed to yield oil in paying quantities, often it is feasible to employ secondary recovery measures[1] to obtain additional production. The principal method is repressuring by water flooding,[2] in which water is forced into the oil bearing stratum through input wells and spreads radially from the well bottom pushing the "dead oil" ahead of it toward producing wells.[3] If an input well is located near a lease boundary, the injecting party may benefit the adjoining leaseholder by driving dead oil across the boundary. When this occurs, the injecting party is deemed voluntarily to have conferred a benefit upon the adjoining leaseholder,[4] and the latter is permitted to produce, if he can, the migrating oil under the rule of capture.[5] At the same time, the injected water, being no respecter of lease lines, may cross the boundary.

What are the legal consequences when this occurs? Technically, the injecting party is guilty of a trespass.[6] The question has been raised in a few recent cases[7] whether such a subsurface trespass is actionable, and, if so, whether the proper remedy is legal or equitable. This Comment will discuss, in turn, the development of the concept of subsurface trespass, the effect of state regulation on the injunctive remedy, the remedy of damages, and the judicial climate regarding trespass in secondary recovery in the oil producing states whose courts have spoken on the subject.

I. Trespass in Oil and Gas Law

The tort of trespass has been applied many times to cases of invasion of subsurface minerals.[8] Since the earliest cases, the courts

[1] See generally *Legal Problems of Water Flooding, Recycling and Other Secondary Operations*, 9th Ann. Inst. on Oil & Gas and Taxation 105 (1958).

[2] *Id.* at 106, 128.

[3] One of the most prevalent water flooding patterns is the "five spot," in which four input wells are situated in the four corners of an imaginary square and a producing well is located within the square.

[4] 87 C.J.S. *Trespass* § 111 (1954).

[5] The rule of capture has been stated as follows: "The owner of a tract of land acquires title to the oil and gas which he produces from wells drilled thereon, though it may be proved that part of such oil or gas migrated from adjoining lands." Hardwicke, *The Rule of Capture and Its Implications as Applied to Oil and Gas*, 13 Texas L. Rev. 391, 403 (1935).

[6] 52 Am. Jur. *Trespass* §§ 14, 18 (1962). *But cf.* Railroad Comm'n v. Manziel, ___ Tex. ___, 361 S.W.2d 560 (1962).

[7] See notes 36, 37, 44 *infra* and accompanying text.

[8] See Jones, *Tort Liabilities in Secondary Recovery Operations*, 6th Ann. Rocky Mt. Mineral Law Inst. 639 (1961) and cases cited therein.

have uniformly recognized that one who, without privilege, enters another's land and takes oil and gas therefrom is liable as a trespasser.[9] The trespass was said to be committed not only against the surface estate but also against the minerals.[10] These holdings set the stage for later cases which held that no actual surface trespass is necessary and that subsurface trespass is a separate and distinct tort.[11] Trespass has thus been found in the case of slant wells bottomed under another's land,[12] sandfracing,[13] and salt water injection.[14] In each of these instances, the trespass was committed in its entirety beneath the surface.[15]

Only a handful of cases have arisen in which it was claimed that injected water crossing lease lines constituted trespass. This may be due in part to the relative newness of secondary recovery in the oil industry[16] and the seeming disinclination of oilmen to litigate their rights against other oilmen,[17] but part of it must be ascribed to the failure of attorneys to raise the issue.[18] Only three courts have entertained an action for damages based on trespass in secondary recovery, and two of these cases resulted in money judgments for plaintiffs.[19] In the third, the court held that there was no injury and thus did not reach the question of trespass.[20] In addition, no court has ever permanently enjoined a secondary recovery operation on grounds of trespass.[21]

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[9] 1 Summers, Oil & Gas Law § 21 (2d ed. 1954).

[10] *Ibid.*

[11] In cases in which severed mineral interests were involved and the trespasser had permission of the surface owner to come on the land and drill, no trespass was found except that committed against the minerals themselves. *Ibid.*

[12] Hastings Oil Co. v. Texas Co., 149 Tex. 416, 234 S.W.2d 389 (1950); Alphonzo E. Bell Corp. v. Bell View Oil Syndicate, 21 Cal. App. 2d 587, 76 P.2d 167 (Ct. App. 1938); Note, 16 Texas L. Rev. 543 (1938). *But cf.* Humble Oil & Ref. Co. v. L. & G. Oil Co., 259 S.W.2d 933 (Tex. Civ. App. 1953). See also 1 Summers, *op. cit. supra* note 9, at § 26 (2d ed. 1954).

[13] Delhi-Taylor Corp. v. Holmes, 162 Tex. 39, 344 S.W.2d 420 (1961); Gregg v. Delhi-Taylor Corp. 162 Tex. 26, 344 S.W.2d 411 (1961).

[14] West Edmund Hunton Lime Unit v. Lillard, 265 P.2d 730 (Okla. 1954).

[15] See Keeton & Jones, *Tort Liability and the Oil and Gas Industry*, 35 Texas L. Rev. 1 (1956); Smith, *Rights and Liabilities on Subsurface Operations*, 8th Ann. Inst. on Oil & Gas and Taxation 1 (1957).

[16] Although the theory of secondary recovery dates back to 1907, the earliest instance of water flooding on a large scale was in the Midway Field in Arkansas; the project began in 1943. Brown & Myers, *Some Legal Aspects of Water Flooding*, 24 Texas L. Rev. 456, 457 (1946).

[17] For an example, see Hughes, *op. cit. supra* note 1, at 137-38.

[18] In Railroad Comm'n v. Manziel, ___ Tex. ___, 361 S.W.2d 560 (1962), the theory of trespass was not brought up until it was suggested from the bench during oral argument before the Supreme Court of Texas. Appellant's Answer to Appellees Brief, p. 2.

[19] See notes 43, 44 *infra* and accompanying text.

[20] See note 42 *infra* and accompanying text.

[21] Injunction did issue on the applied theory of subsurface trespass in the case of slant wells and sandfracing. See notes 12, 13 *supra*.

A. *Injunctions And State Regulation Of Secondary Recovery*

Courts of equity normally restrain a trespass if it appears that irreparable injury might result therefrom, and it has been said that courts have greater than usual latitude in restraining trespass to minerals because the trespass goes immediately to the destruction of the minerals themselves.[22] However, in litigation based on water flooding, an overriding factor of public interest is present. In the great majority of the oil and gas producing states, secondary recovery plans must gain the approval of a state regulatory agency;[23] thus, the plaintiff in such litigation usually must ask the court to enjoin what the administrative body expressly permits.

The power of the state to control the oil and gas industry in order to prevent waste has been affirmed on many occasions.[24] Because secondary recovery is an important conservation means,[25] regulatory agencies in most of the oil producing states exercise some degree of control over it.[26] These agencies maintain that supervision is necessary to prevent wasteful duplication of effort and to insure that maximum efficient recovery is obtained.[27] Thus, today, an operator must submit a water flooding plan to the regulatory agency and often participate in lengthy hearings, after which the agency may (1) allow the producer to proceed with the plan, (2) deny permission, or (3) amend the plan to suit its requirements.[28] If an adjacent landowner is given the opportunity to oppose such an application before the agency, he has been afforded an administrative remedy which he must exhaust as a prerequisite to court action.[29] Assuming exhaustion of the administrative remedy, the question is whether administrative authorization casts a "cloak of protection"[30] around the injecting party and denies the adjacent owner a remedy.

In *Corzelius v. Railroad Comm'n*,[31] a Texas court refused to enjoin an authorized subsurface invasion. Corzelius was ordered by the

[22] High, Injunctions § 730 (4th ed. 1905), cited in Hastings Oil Co. v. Texas Co., 149 Tex. 416, 234 S.W.2d 389 (1950).

[23] Sullivan, *Conservation of Oil and Gas*, A.B.A. Section of Mineral Law (1958).

[24] See, *e.g.*, Walls v. Midland Carbon Co., 254 U.S. 300 (1920) (upholding a state statute prohibiting manufacture of carbon black from certain grades of natural gas).

[25] McElroy, *Water Flooding of Oil Reservoirs*, 7 Baylor L. Rev. 18 (1955).

[26] Sullivan, *op. cit. supra* note 23.

[27] *Ibid.*

[28] A study of the cases involving secondary recovery plans would seem to indicate that permission is seldom, if ever, denied.

[29] See, *e.g.*, Jackson v. State Corp. Comm'n, 186 Kan. 6, 348 P.2d 613 (1960); Railroad Comm'n v. Manziel, ___ Tex. ___, 361 S.W.2d 560 (1962).

[30] Railroad Comm'n v. Manziel, *supra* note 29; Gregg v. Delhi-Taylor Corp., 162 Tex. 26, 344 S.W.2d 411 (1961); Corzelius v. Railroad Comm'n, 182 S.W.2d 412 (Tex. Civ. App. 1944).

[31] Corzelius v. Railroad Comm'n, *supra* note 30.

Texas Railroad Commission to kill a well located on his lease that had developed a gas leak in the casing, cratered, and caught fire. Corzelius could not afford to drill the necessary directional well, so the Commission authorized Harrel, the adjoining leaseholder, *as its agent*,[32] to drill a directional well to be bottomed under Corzelius' land; the court rejected Corzelius' contention that such action would constitute a trespass. Although this case should be cited as authority only for the proposition that in periods of emergency the police power of the state can be invoked to accomplish almost any needed result, the court 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."[33]

No court has ever permanently enjoined a water flooding operation. Recent cases in Illinois[34] and North Dakota[35] refused injunctive relief to dissenting royalty and mineral owners in fields unitized for secondary recovery. Both states' courts mentioned, in dictum, that public policy favors secondary recovery projects, but the issue of trespass was not raised in either of the cases. Then came the important cases of *Manziel v. Railroad Comm'n*[36] and *Jackson v. State Corp. Comm'n*,[37] both of which squarely presented the issue of trespass. In both, petitioners sought injunctions[38] to prevent adjacent lease operators from pursuing water flooding plans on grounds that injection would result in trespass and cause petitioners damage, and in both cases, respondents set up the defense that the appropriate state regulatory agency had approved the plans. The courts applied the substantial evidence test, found that substantial evidence supported the agency findings, and denied the petitions. In the *Manziel* case, the Supreme Court of Texas said:

> Certainly, it is relevant to consider and weigh the interests of society and the oil and gas industry as a whole against the interests of the individual operator who is damaged; and if the authorized activities in an adjoining secondary recovery unit are found to be based on some substantial, justifiable occasion, then this court should sustain their validity.[39]

The court stated that it did not reach the "cloak of protection"

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[32] 182 S.W.2d at 413.
[33] *Id.* at 417.
[34] Reed v. Texas Co., 22 Ill. App. 2d 131, 159 N.E.2d 641 (1959).
[35] Syverson v. North Dakota State Indus. Comm'n, ___ N.D. ___, 111 N.W.2d 128 (1961).
[36] Railroad Comm'n v. Manziel, ___ Tex. ___, 361 S.W.2d 560 (1962).
[37] Jackson v. State Corp. Comm'n, 186 Kan. 6, 348 P.2d 613 (1960).
[38] Actually, petitioners in the Jackson case sought a cease and desist order.
[39] 361 S.W.2d at 568.

question, but merely applied the substantial evidence test.[40]

Whether the various state courts say that an act authorized by law is *per se* not a trespass[41] or that it may be a technical trespass but not enjoinable because of public policy, it is submitted that the *Manziel* and *Jackson* cases were decided correctly, for *injunction* is not the proper remedy for the adjoining owner who has been or is about to be injured by encroaching secondary recovery forces. Barring attacks based on the alleged unconstitutionality of enabling legislation, violation of procedural due process, or lack of substantial evidence, the courts have no jurisdiction in the regulation of secondary recovery operations. The states have created expert administrative agencies and vested them with statutory responsibility for such regulation. However, it is the province of the courts to protect the rights of those injured by their neighbor's secondary recovery project by providing them an action at law *for damages.*

B. *Legal Remedy*

Two cases have come before the Supreme Court of Oklahoma in which damages were claimed for the subsurface encroachment of salt water. In *West Edmund Salt Water Disposal Ass'n v. Rosecrans,*[42] the court held that no action for trespass would lie where the plaintiff failed to prove actual damages, but the court reserved the question of whether actionable trespass had occurred. This was answered in the affirmative in *West Edmund Hunton Lime Unit v. Lillard.*[43] Here, plaintiff's producing oil well was flooded out by defendant's injected salt water, and plaintiff brought an action claiming the value of oil well casing lost on account of salt water flooding the hole and extraordinary expenses incurred in attempting to retrieve the casing and in shutting down the well. Defendants claimed they should be liable only for the cost of plugging the well, but the court affirmed judgment for plaintiff for all the amounts claimed.

In 1960, the United States District Court for the District of Kansas entertained the third and, to date, latest secondary recovery trespass suit—the first such suit to claim damages for loss of oil and exemplary damages. In *Tidewater Oil Co. v. Jackson,*[44] the same plaintiffs who failed in their petition to enjoin Tidewater's approved water flooding plan in the Kansas courts brought suit in federal court and were awarded 620,700 dollars actual damages and 25,000

[40] *Id.* at 566.
[41] This is another way of stating the "cloak of protection" theory.
[42] 204 Okla. 9, 226 P.2d 965 (1950).
[43] 265 P.2d 730 (Okla. 1954).
[44] 320 F.2d 157 (10th Cir. 1963).

dollars exemplary damages.[45] Tidewater appealed, and, in a decision handed down by the Tenth Circuit in 1963, the higher court unanimously affirmed the trial court's decision as to actual damages, reversing the award of punitive damages.[46] While noting that the issue of tort liability in secondary recovery had not arisen in the Kansas courts, the Tenth Circuit briefly considered the possible legal bases of recovery. "The question then is by what standards of tort liability shall Tidewater's conduct be judged, i.e., trespass, nuisance, negligence, strict liability, or unreasonable use or disregard of another's property."[47] After discussing the paucity of black letter law in this field in other jurisdictions as well as Kansas, the court identified the legal basis as the "intentional and unreasonable interference with the claimants' property rights, resulting in actual and substantial damages." Thus the Tenth Circuit seems to have followed the trial court[48] in basing recovery on the doctrine of "reasonable use."[49]

The doctrine of "reasonable use"[50] developed out of dissatisfaction

[45] The important facts in the case are as follows: Tidewater, lessee of a major portion of the huge Blankenship-Sallyards Reservoir in Kansas, began authorized water flooding operations in a portion of its leasehold in 1948. In 1953, Tidewater applied for and was granted permission to repressure and water flood the Bartlesville formation through wells on eleven sections of land. In 1954, Jackson Brothers acquired a lease bordering on the eleven sections and by July, 1956, had drilled nine wells into the Bartlesville formation, each well being approximately fifty feet from the common lease line. Meanwhile, Tidewater's water flooding operation proceeded with input wells being drilled nearer and nearer to the Jackson Brothers lease. In 1956, Tidewater proposed to the Jacksons that the two co-operate in a water flooding plan. Jackson Brothers declined, saying they were still obtaining primary production from their lease, that they could not then afford to participate in the plan, and that they desired to continue with primary production for two years before initiating a water flooding program. During these negotiations, Tidewater indicated an interest in purchasing Jackson Brothers' lease and obtained copies of electric logs on all of the Jacksons' wells. Later Tidewater notified the Jacksons that it would not make an offer.

Following the negotiations, Tidewater drilled three input wells as near as possible to the common lease line and directly across the line from three of the Jacksons' producers. One of the Jackson Brothers wells was flooded out within a few hours of the commencement of injection, and within a few weeks, two more producing wells were flooded. At the time injection in the three wells in question was commenced, Tidewater had no producing wells drilled for purpose of recovery; the purpose of the three injection wells was allegedly to create a water block along the lease boundary. Tidewater Oil Co. v. Jackson, 320 F.2d 157 (10th Cir. 1963). For the findings of fact and conclusions of law in the trial court, see 17 Oil & Gas Rep. 282 (1963).

[46] *Ibid.* One judge dissented in part on the ground that punitive damages should have been allowed.

[47] *Id.* at 162.

[48] See Brief for Appellant, p. 57; Brief for Appellee, pp. 24-25, Tidewater Oil Co. v. Jackson, 320 F.2d 157 (10th Cir. 1963).

[49] Mason v. Hoyle, 56 Conn. 255, 14 Atl. 786 (1888) (owner of mill privilege unreasonably injuring downstream mill owners); Rancho Santa Margarita v. Vail, 11 Cal. 2d 501, 81 P.2d 533 (1938) (diversion of stream where upper riparian owner had other reasonably economical water sources); Kasuba v. Graves, 109 Vt. 191, 194 Atl. 455 (1937) (pumping additional water into a stream, flooding lower riparian lands).

[50] Also called the "American Rule" and the "Rule of Correlative Rights." See Annot.,

with the English common-law rule with respect to percolating water;[51] the American courts prefer a rule of "correlative rights"[52] to one of absolute ownership.[53] If oil may properly be analogized to percolating water, the *Jackson* case squarely presented the issue of reasonableness. On the side of the injecting party, it may be argued that the only means of preventing migration from lease to lease is to form a water barrier along the lease line by placing injection wells on the lease boundary.[54] Although injected water may cross the lease boundary, in theory at least, the adjoining owner is benefited by increased pressure in his reservoir and by the fact that the input well may drive some of the injecting party's oil across the boundary.[55] On the side of the adjoining owner, it may be argued that offset wells, rather than a water block, are the proper means of protecting correlative rights.[56] Furthermore, even if the water block is a reasonable means of protecting rights, the injecting party owes a duty to his neighbor to so locate his input wells as to cause a minimum of damage.[57]

The parent of the "reasonable use" doctrine is the tort of nuisance.[58] In cases of underground water pollution, actionability is generally based on either negligence or nuisance.[59] Nuisance is, of course, limited by the doctrine of "reasonable use," *i.e.*, defendant is

55 A.L.R. 1385, 1398 (1928). The doctrine of "reasonable use" developed as a defense to the tort of nuisance, but the trend appears to be toward utilizing it as an independent cause of action. As applied to percolating waters, the rule limits the right of the landowner to whatever amount of such waters under his lands that is necessary for him to divert in order to make reasonable use of the land.

[51] Under English law, percolating waters were, for a time, regarded as belonging to the landowner, who could, in the absence of malice, appropriate to his own use such waters as were on his premises. Acton v. Blundell, 12 M. & W. 324, 152 Eng. Rep. 140 (1843).

[52] Swett v. Cutts, 50 N.H. 439 (1870); Bassett v. Salisbury Mfg. Co., 43 N.H. 569 (1862).

[53] Midway Irrigation Co. v. Snake Creek Mineral & Tunnel Co., 271 Fed. 157 (8th Cir. 1921), *affirmed*, 260 U.S. 596 (1922).

> [W]hile the owner of land is entitled to appropriate subterranean or other waters accumulating on his land, which thereby become a part of the realty, he cannot extract and appropriate them in excess of a reasonable and beneficial use upon the land he owns, unconnected with the beneficial use of the land, especially if the exercise of such use in excess of the reasonable and beneficial use is injurious to others, who have substantial rights to the water. 271 Fed. at 162-63.

[54] The Kansas Corporation Commission so found in hearings in the Jackson case.

[55] Western Gulf Oil Co. v. Superior Oil Co., 92 Cal. App. 2d 299, 206 P.2d 944 (Ct. App. 1949).

[56] Contrary to the finding of the Corporation Commission, the court found that there was no established custom or practice in the oil industry of injecting water barriers along lease lines to prevent migration. Finding of Fact XXXVIII, 17 Oil & Gas Rep. 282, 295 (1963).

[57] See note 45 *supra*.

[58] United Fuel Gas Co. v. Sawyers, 259 S.W.2d 466 (Ky. 1953).

[59] Martin v. Shell Petroleum Corp., 133 Kan. 124, 299 Pac. 261 (1931); Texas Co. v. Giddings, 148 S.W. 1142 (Tex. Civ. App. 1912).

not guilty of creating a nuisance if the use to which he put his land was reasonable.[60] Two recent Oklahoma cases found the existence of nuisance in secondary recovery projects.[61]

Williams and Meyers suggest a different approach to the problem:

> What may be called a 'negative rule of capture' appears to be developing. 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.*, the displacement of wet gas by dry gas).[62]

Under this theory, the Jacksons' remedy would be a water flooding program of their own, and a small tact owner, for whom a secondary recovery project is not economically feasible, would have no remedy. But Williams and Meyers do not propose that the injecting party has an absolute right to inject without liability.

> The law on this subject has not as yet been fully developed, but it seems reasonable to suggest the qualification that such activity will be permitted, free of any claim for damages, only if pursued as part of a reasonable program of development and without injury to producing or potentially producing formations.[63]

Basing their discussion on the *Lillard* case[64] and *Tidewater Associated Oil Co. v. Stott,*[65] Williams and Meyers point out that apparently the theory of ownership of oil and gas has nothing to do with subsurface trespass actions. They note that *Lillard,* decided in a qualified ownership state, allowed the injured landowner to recover for his loss while *Stott,* decided under Texas ownership in place law, denied recovery. They conclude that contemporary authority[66] is against imposition of liability for migration of injected water on any theory of trespass, apart from special damages such as were recovered in *Lillard.* However, they suggest that injury to producing or potentially producing formations should be actionable.[67]

Williams and Meyers do not provide any concrete suggestion as

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[60] See Annot., 38 A.L.R.2d 1265, 1268 (1954).

[61] See notes 86, 87 *infra* and accompanying text.

[62] 1 Williams & Meyers, Oil & Gas Law § 204.5 (1962).

[63] *Ibid.*

[64] See note 43 *supra* and accompanying text.

[65] 159 F.2d 174 (5th Cir. 1946), *cert. denied,* 351 U.S. 817 (1947) (Lessee held not liable under Texas law where dry gas he injected under neighbor's land displaced wet gas under lessor's land. Here lessor had declined an opportunity to unitize.)

[66] It should be noted that Williams and Meyers wrote before the *Manziel, Jackson,* and *Delhi-Taylor* cases.

[67] 1 Williams & Meyers, *op. cit. supra* note 62.

to what law is to be applied to an action for injury to formations, and they do not discuss the problem of an action for damages for loss of oil beyond the statement that contemporary authority does not support such actionability. Certainly, the broad language of the "reasonable use" doctrine may be extended to include water flooding situations,[68] and the tort of nuisance could also be applied; however, there is no logical reason why the law of trespass should not apply. In secondary recovery cases, there is actual physical invasion which is the proximate cause of the injury. However, the seeming reluctance on the part of some courts to call an authorized water flooding project a "trespass" has apparently induced attorneys to base actions at law on other legal grounds. Nevertheless, the fact remains that, no matter what it is called, the physical invasion of property forms the basis of the cause of action.

There is no real reason to rely on the vague analogy of "reasonable use." Even in nonownership theory states,[69] trespass could be applied in situations similar to the *Jackson* case on the ground that defendant's waters trespassing underneath plaintiff's land have caused injury.[70] The same result would occur as if a trespasser entered the surface of the land and destroyed the productivity of the well.[71] There is no necessity that the plaintiff prove ownership of the minerals in place, but only that his right to reduce them to possession, under the rule of capture, has been thwarted by reason of the alleged trespass.

Finally, regardless of the theory adopted and regardless of whether or not a water flooding program has been approved by the state, if an oil operator effectuates such a program and in doing so injures his neighbor, the injecting operator should make reparations. The rule of capture and the protection of correlative rights demand that the operator of a flooded-out well be indemnified for his loss. Otherwise, a small tract owner might find his entire tract swept clean of oil within a matter of days, and he would be without a remedy. Furthermore, a serious due process question is presented if the state attempts to immunize an individual who has done damage to another. Precise location of the limit on the power of the state to permit invasion

[68] The doctrine applies primarily to extraction of water from the ground. See notes 49, 51, 52, 53 *supra*.

[69] Williams and Meyers classify the following as nonownership states: California, Illinois, Kentucky, Louisiana, and New York. 1 Williams & Meyers, *op. cit. supra* note 62, at § 203.

[70] Nonownership states, as well as the other states, call it a trespass when oil is wrongfully produced by slant wells. See 1 Summers, *op. cit. supra* note 9, at § 26.

[71] An action for damages lies if a lessee unnecessarily damages the production of a well on lessor's land, so as to cause drainage of oil to other leases. Morriss v. Barton, 200 Okla. 4, 190 P.2d 451 (1947).

without compensation is beyond the scope of this Comment, but the problem may be circumvented if the state provides a remedy in damages.

C. *Measure Of Damages*

The appropriate measure of damages in a continuing trespass to oil and gas property is the decrease in market value[72] of the property invaded, measured first before the trespass occurred and second from past losses and projected future losses calculated at the trial.[73] In *Jackson v. Tidewater Oil Co.*,[74] the trial court seems to have arrived at its finding on actual damages according to this formula. In addition, the court allowed plaintiffs to recover actual capital expenditures on account of the invasion, which included the cost of drilling new wells to replace those which were flooded out.[75]

It is not clear from the opinion in the *Jackson* case precisely how damages were computed.[76] It is submitted that damages in such cases should be rationalized as follows: Before the trespassing waters were injected into the ground,[77] there existed X barrels[78] of oil which were ultimately recoverable[79] and which the property owners had the right, subject to production allowable restriction,[80] to capture. At the time

[72] McDaniel Bros. v. Wilson, 70 S.W.2d 618 (Tex. Civ. App. 1934) *error ref.* If market value cannot be proved, actual value is the proper measure. Steger v. Barrett, 124 S.W. 174 (Tex. Civ. App. 1910) *error ref.* See 87 C.J.S. *Trespass* § 117 (1954).

[73] See Whitson Co. v. Bluff Creek Oil Co., 293 S.W.2d 488 (Tex. Civ. App. 1956).

[74] See note 44 *supra.*

[75] Brief for Appellant, pp. 62-66; Brief for Appellee, pp. 53-65, Tidewater Oil Co. v. Jackson, 320 F.2d 157 (10th Cir. 1963).

[76] The measure of damages to real property is not invariable, the amount to be awarded being such sum as will compensate the injured owner for the detriment proximately caused thereby. 25 C.J.S. *Damages* § 84 (1954). In the *Jackson* case, the Tenth Circuit adopted the trial court's method of computation.

> The Court explained that this loss was the result of increased lifting costs, due to the necessity of disposing of excessive quantities of water injected by Tidewater; the loss of fuel for the pumping wells, due to the loss of natural gas as a result of the flooding operations; the acceleration of the time when the economic limit of production from the wells on the Barrier tract would be lost; the destruction and loss of producing wells on the Barrier property; and the loss of substantial quantities of recoverable oil under the Barrier lease, as a result of being bypassed or 'watered off' by the excessive injection of salt water by Tidewater. 320 F.2d at 164.

Tidewater did not seriously question the means used in arrived at the amount of damages.

[77] By setting the time here instead of just before the water crosses the line, defendant is given an offset for benefits conferred in causing oil to migrate across the boundary.

[78] The unknowns, X and Y, should be calculated in terms of discounted value of the oil in the reservoir according to contemporaneous production allowables. In situations in which migration is capable of calculation, that factor should also be considered.

[79] Assuming Jackson had used the best available recovery methods.

[80] Production allowable plays a part here because the amount capable of production depends, in part, on the rate of production. Generally, in a low pressure field, the faster the injection and production of "dead oil," the more oil will be recovered ultimately. See Whorton & Kieschnick, *A Preliminary Report on Oil Recovery by High Pressure Gas Injection*, Am. Petroleum Inst. (1950). A logical solution would be to assume, for purposes

of the trial, there are Y barrels of oil ultimately recoverable; this sum should include that oil produced in the interim between the trespass and the trial. If X exceeds Y, then plaintiff has suffered damage, and he should recover the value[81] of the lost oil. He should also be allowed recovery for cost of drilling new wells if any are needed to give him the well capacity with which to produce his oil.[82] In other words, wells needed to replace those flooded out by defendant's injection program should be replaced at defendant's expense, together with all other uncompensated necessary expenditures proximately caused by the water flooding. If Y equals or exceeds X plus any necessary well costs, there should be no recovery at all. In other words, if plaintiff has suffered no monetary loss, even after the loss of needed well capacity by flooding out has been taken into consideration, the trespass is *damnum absque injuria.*

II. Review of the Decisions and Conclusions

Development of the law of trespass in secondary recovery is just beginning. The *Jackson* case is the only case in which recovery for loss of oil has been asked, and it, of course, lacks the force of stare decisis in Kansas state courts.[83] Thus, it is not possible to predict with accuracy how a particular jurisdiction is likely to deal with the problem; however, a brief review of dicta in jurisdictions that have spoken on the subject sheds a modicum of light.

A. *Oklahoma*

In view of the holdings in the *Rosecrans*[84] and *Lillard*[85] cases, it logically may be inferred that the Oklahoma Supreme Court accepts the doctrine of trespass committed by water flooding and will allow recovery of any special damages proximately caused. In *Lillard*, the

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of calculation of ultimately recoverable oil, that future allowables will be set according to state regulatory agency policy in effect at the time of the trial.

[81] Market value at the time of the trespass. 87 C.J.S. *Trespass* § 117 (1954).

[82] Plaintiff should recover only for the cost of wells actually needed to restore productive capacity, which probably will not equal the number of wells flooded out.

[83] There are indications that the Kansas Supreme Court might have decided the damage suit differently from the Federal Court holding. The trial court's finding with respect to oil industry water blocking practices, *i.e.*, that there is no such established custom, conflicts with the finding of the Kansas Corporation Commission, and the latter finding was tacitly accepted by the Kansas Supreme Court. Brief for Appellant, pp. 40, 41, Tidewater Oil Co. v. Jackson, 320 F.2d 157 (10th Cir. 1963). The court also found that Tidewater was acting outside its authorization in drilling input wells flush against the lease line and directly across from three of Jackson Brothers' producing wells, whereas the Kansas Supreme Court indicated otherwise. Conclusions of Law V; 348 P.2d at 615.

[84] West Edmund Hunton Salt Water Disposal Unit v. Rosecrans, 204 Okla. 9, 226 P.2d 965 (1950).

[85] West Edmund Hunton Lime Unit v. Lillard, 265 P.2d 730 (Okla. 1954).

plaintiff did not claim damages for loss of oil production, and the question of whether loss of oil is recoverable in a trespass action remains unanswered. It is interesting to note that Oklahoma has also allowed recovery in cases involving secondary recovery on the theory of private nuisance. In *Lyons v. McKay*,[86] the court held that drilling operations may become a private nuisance if injury is proximately caused, and in *Gulf Oil Corp. v. Hughes*,[87] the court found a private nuisance where encroaching secondary recovery waters polluted plaintiff's water well.

B. *Texas*

Dicta in Texas cases is very much in conflict as regards acceptance of the theory of underground trespass. In *Eliff v. Texon Drilling Co.*,[88] the Texas Supreme Court said: "Each owner of land owns separately, distinctly and exclusively all the oil and gas under his land and is accorded the usual remedies against trespassers who appropriate the minerals or destroy their market value."[89] In *Hastings Oil Co. v. Texas Co.*,[90] the court held that a continuous physical invasion of an adjoining mineral estate by drilling across lease lines is a trespass. Then, in the much discussed companion cases of *Delhi-Taylor Oil Corp. v. Holmes*[91] and *Gregg v. Delhi-Taylor Oil Corp.*,[92] the court enjoined a sandfracing operation in which it was shown that the sandfracing would open fissures which would cross lease lines. In the *Gregg* case, the court found that it had jurisdiction to determine whether a trespass had occurred or was about to occur on the ground that the tort of trespass presents questions which are primarily judicial in nature and the court was not bound to a review of a Railroad Commission determination under the substantial evidence rule.[93] Then, after holding that injunction would issue to prevent the threatened sandfracing operation, the majority stated that they did not reach the question whether the operation would be a trespass if carried through.[94]

In the *Manziel* case,[95] there is rather strong dicta against application of trespass law to secondary recovery. Although the holding in the

[86] 313 P.2d 527 (Okla. 1957).
[87] 371 P.2d 81 (Okla. 1962).
[88] 146 Tex. 575, 210 S.W.2d 558 (1948).
[89] *Id.* at 561.
[90] 149 Tex. 416, 234 S.W.2d 389 (1950).
[91] 162 Tex. 39, 344 S.W.2d 420 (1961).
[92] 162 Tex. 26, 344 S.W.2d 411 (1961).
[93] 344 S.W.2d at 415. Note that there was no administrative action in the *Gregg* case prior to the petition for injunction.
[94] *Id.* at 417.
[95] Railroad Comm'n v. Manziel, ___ Tex. ___, 361 S.W.2d 560 (1962).

Manziel case is limited to a denial of injunction, the court went on to say:

> We conclude that if, in the valid exercise of its authority to prevent waste, protect correlative rights, or in the exercise of other powers within its jurisdiction, the Commission authorizes secondary recovery projects, a trespass does not occur when the injected, secondary recovery forces move across lease lines, and the operations are not subject to an injunction on that basis. The technical rules of trespass have no place in the consideration of the validity of the orders of the Commission.[96]

But in spite of this language, the question remains whether the technical rules of trespass[97] have a place in the consideration of a damage suit.[98]

Amicus curiae briefs representing interests in the East Texas Oil Field were filed in the *Manziel* case after the issue of trespass was raised in the case, pointing out that if the petitioners' theory of trespass were accepted, the injection of salt water in the East Texas Field would have already caused subsurface trespass of the greatest magnitude.[99] However, by setting the time of the initial trespass within the limit of the Texas two-year statute of limitations, damages would be largely obviated. Furthermore, by computation of damages according to the formula set out *supra,* the result of any damage suit arising out of the East Texas Field would not be unfair, in view of the fact that calculation of damages must depend on actual loss.

Nevertheless, a plaintiff suing for damages in Texas would probably have a stronger case if he could allege a "reasonable use" situation,[100] *i.e.,* that defendant's water flooding operation was conducted

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[96] *Id.* at 568.

[97] The court provides a clue that "trespass," for purposes of the opinion in the *Manziel* case, means only "trespass for injunction purposes" with the following language:

> The subsurface invasion of adjoining mineral estates by injected salt water of a secondary recovery project is to be expected, and in the case at bar *we are not confronted with the tort aspects of such practcies* . . . rather we are faced with an issue of *whether a trespass is committed* when secondary recovery waters from an authorized secondary recovery project cross lease lines. 361 S.W.2d at 566-67. (Emphasis added.)

[98] At least one writer believes that an action for damages in this area must be based on negligence or unreasonableness. McElroy, *supra* note 25. In Commanche Duke Oil Co. v. Texas Pac. Coal & Oil Co., 298 S.W. 554 (Tex. Comm. App. 1927), in which defendant shot a well with nitroglycerine and caused plaintiff's well on an adjoining tract to be flooded with water, defendant was liable on the theory of negligence. Also, two later cases held that permitting salt water and other waste products to escape or flow on another's property is not actionable without proof of negligence. Turner v. Big Lake Oil Co., 128 Tex. 155, 96 S.W.2d 221 (1936); Cosden Oil Co. v. Sides, 35 S.W.2d 815 (Tex. Civ. App. 1931).

[99] Railroad Comm'n v. Manziel, ___ Tex. ___, 361 S.W.2d 560, 568 (1962).

[100] Jackson Brothers relied on the "reasonable use" doctrine, quoting the following language from City of Muskogee v. Hancock, 58 Okla. 1, 158 Pac. 622 (1916):

> The general rule that no one has absolute freedom in the use of his property,

in an unreasonable manner. In the *Delhi-Taylor* cases,[101] the evidence showed that if the defendant had been allowed to proceed with the sandfracing, defendant's well would have produced far in excess of the amount of oil then in place under the land,[102] and this may have been the controlling factor in the decision. Furthermore, other Texas cases show a trend on the part of the courts toward the "fair share" doctrine, that is, a mineral owner should have the opportunity to produce his fair share of the oil in the reservoir.[103] Although a secondary recovery project is not enjoinable on this theory,[104] the right of the flooded out operator to produce his fair share might form the basis of recovery of damages in Texas.

C. *Illinois*

In the often quoted case of *Reed v. Texas Co.*,[105] the Illinois Supreme Court held that dissenting mineral owners in a unitized field could not block secondary recovery (by injunction) on the ground that oil to which the dissenters had title would be pushed from underneath their land. The case is distinguishable from the *Jackson* situation in that (1) trespass was not alleged and (2) the court found as fact that no loss of oil would be suffered by plaintiffs as a result of the secondary project. The court spoke in terms of the "compensating counterdrainage" theory[106] enunciated in *Carter Oil Co. v. Dees*,[107] and it should be pointed out that the Illinois court has yet to be confronted with a case not involving compensating counterdrainage. Nevertheless, the court reflected the trend away from enjoining water flooding because public policy so strongly favors it.

D. *North Dakota*

Although North Dakota joined the ranks of oil producing states

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but is restrained by the coexistence of equal rights in his neighbor to the use of his property, so that each in exercising his right must do no act which causes injury to his neighbor, is so well understood, is so universally recognized, and stands so impregnable in the necessities of the social state, that its vindication by argument would be superfluous. *Ibid.*

[101] See note 13 *supra.*

[102] Gregg v. Delhi-Taylor Corp., 162 Tex. 26, 344 S.W.2d 411, 414 (1961).

[103] *Cf.* Halbouty v. Railroad Comm'n, ___ Tex. ___, 357 S.W.2d 364 (1962), noted in 17 Sw. L.J. 674 (1963); Atlantic Ref. Co. v. Railroad Comm'n, 162 Tex. 274, 346 S.W.2d 801 (1961).

[104] Railroad Comm'n v. Manziel, ___ Tex. ___, 361 S.W.2d 560 (1962).

[105] 22 Ill. App. 131, 159 N.E.2d 641 (1959).

[106] We conceive the law to be that an operator must be reasonably diligent to prevent waste, and to prevent any substantial loss of oil, but that the absolute prevention of any movement of oil underground across a boundary line is not humanly possible. If the oil moving off one lease is compensated by a substantially equal amount from the same pool, there is no actual loss. *Id.* at 644-45.

[107] Carter Oil Co. v. Dees, 340 Ill. App. 449, 92 N.E.2d 519 (1950).

only recently,[108] the North Dakota Supreme Court has had occasion to comment on secondary recovery. In *Syverson v. North Dakota State Industrial Comm'n*,[109] the court followed Illinois in denying injunction to dissenting royalty and mineral owners seeking to block secondary recovery. Recognizing the problem of a damage suit, the court said: "Whatever the result would be if the appellants could show actual damages, they certainly are not entitled to complain in the absence of such showing."[110] Beyond this, there is no indication how the court might view a damage suit. It may be inferred that the North Dakota court will not enjoin a secondary recovery project in view of a favoring statutory policy,[111] even if a petitioner could show damages.

E. *California*

California, which holds that an underground trespass occurs in slant well cases,[112] has anticipated actions for damages arising from secondary recovery situations. A recently enacted statute[113] provides:

> Injury to formations bearing oil and gas or to oil or gas wells caused by the subsurface migration of any substance as a result of secondary recovery operations for oil or gas conducted in accordance with good oilfield practices shall not be grounds for enjoining such secondary recovery operations if adequate security, to be approved by the court, is given for the payment of any compensable damages to which the owners of the interests in such formations or wells may be entitled resulting from such injury. Any benefit to the injured property from such secondary recovery operation shall be considered in mitigation of damages for such injury.[114]

Another California statute[115] provides that there is no liability on the part of the injecting party in a unitized field in the absence of proof of negligence. So California recognizes the fundamental distinction between unit situations, as encountered in the *Reed* and *Syverson* cases, and nonunit situations, as in *Jackson* and *Manziel*. In the former, actionability must be based on negligence and causation,

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[108] Oil was first discovered in North Dakota in 1951.

[109] 111 N.W.2d 128 (N.D. 1961).

[110] *Id.* at 134.

[111] N.D. Cent. Code § 38-08-01 (Supp. 1961).

[112] See Alphonzo E. Bell Corp. v. Bell View Oil Syndicate, 21 Cal. App. 2d 587, 76 P.2d 167 (Ct. App. 1938).

[113] Calif. Civ. Proc. Code § 731c (Supp. 1961). See 15 Oil & Gas Rep. 252 (1961).

[114] *Ibid.*

[115] Calif. Pub. Resources Code § 3320.5 (Supp. 1961).

> 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 act. *Ibid.*

and in the latter, indications are strong that the injecting party is liable if he injures the economic interest of his neighbor; however, in neither may the injured party get an injunction.

F. *Summary*

Because good conservation practices demand that secondary recovery operations be conducted in some reservoirs, an adjoining owner in either a unitized or nonunitized field should not be able to block the project on the ground that a trespass will be committed or that damage will occur. On the other hand, state authorization should not immunize an injecting party from paying damages for torts he may commit within the exercise of the power authorized. It is submitted that whenever injected waters or other foreign matter cross lease lines, a trespass has been committed, albeit one which is condoned by the state, and the trespasser should be liable for actual damages proximately caused.

Reliance on the strained analogy to perculating waters, as is present in the "reasonable use" and "nuisance" doctrines, tends to cloud the issues when it is utilized in secondary recovery situations. To allow no remedy in damages whatever in approved water flooding situations would raise serious due process questions. The law of trespass is well developed in all of the American jurisdictions, and it provides methods for determining when a wrong has been committed, who is liable, and the amount of the damages. Trespass is the appropriate remedy.