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Ruminations on the Continuing Evolution of Trespass Law in the Context of Mineral Development

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Keith B. Hall*

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INTRODUCTION

A trespass is an unauthorized entry upon the land of another. In general, this is a fairly simple legal concept. Indeed, most non-lawyers

have a pretty good idea of what “trespass” means. But various complications can arise in the context of oil and gas or mining activities.

Some of these complications arise from the property laws that govern the right to engage in mineral production. *First*, for example, multiple courts have concluded that an owner’s right to exclude others from her property—one of the sticks of ownership that lies at the heart of trespass claims—becomes attenuated at locations deep below the surface, just as this right becomes attenuated at substantial elevations above the earth.¹ *Second*, the property laws of most states allow landowners to sever mineral rights from surface ownership. In such circumstances, both the surface estate owner and the mineral estate owner may have certain rights of use and possession in the same tract of land. They each may have some ability to assert trespass claims against the other, but the figurative boundaries between their respective rights in the tracts where they share ownership are not always as clear-cut as the literal boundaries between two neighboring, separate tracts of land.

Other complications relate to public policy, the nature of mineral activities, or both. For instance, a *third* complication is that public policy favors mineral development, but the nature of some exploration and production activities is such that it is difficult or impossible to ensure that the activity stops at a defined line in space. *Fourth*, when a “good faith” trespasser removes minerals from a tract, there are competing policy arguments regarding the proper measure of damages for the removal of minerals.

Notably, more than one of these “complications” can be present at the same time. If this is the case, a court may be willing to reconsider the normally “settled” rules of property law. For example, suppose that a person’s activity causes an intrusion into a neighbor’s property. Such an intrusion normally would support a trespass action, even in the absence of harm. But suppose that the activity that caused the intrusion is favored by public policy, that the intrusion causes no actual harm, and that it occurs in the subsurface at a depth that the typical landowner never uses. A court might conclude that the landowner’s interest in excluding others from such depths of the subsurface is so attenuated that the intrusion will not support a trespass action in the absence of harm.

Sometimes in these contexts, trespass claims raise legal issues for which no well settled law exists. The lack of settled law may be partly due to the competing interests involved, such as the complexity of balancing the respective interests of the surface estate owner and the mineral estate owner when a split estate exists. Also, it may be partly due to the relatively

1. See, e.g., *United States v. Causby*, 328 U.S. 256, 264–65 (1946).

new nature of some of these disputes. The common law is several hundred years old, but the oil and gas industry is only about 160 years old. The concept of “pooling” is less than a hundred years old, and the practice of hydraulic fracturing is only about seventy years old.

In any event, the law surrounding trespass disputes regrading oil and gas mining activities continues to develop and evolve. This Article examines the continuing evolution of the law of trespass, focusing on recent disputes arising from five factual scenarios involving oil and gas or mining activities. Namely, after a brief review of trespass law, this Article considers recent developments relating to: (1) trespass claims by landowners who allege that natural gas from a nearby natural gas storage operation has migrated into the subsurface of their land; (2) trespass claims by landowners who assert that a hydraulic fracturing operation on neighboring land has caused a subsurface trespass; (3) trespass claims by a mineral estate owner’s lessee’s claim that a landowner had no authority to authorize a company to drill through a subsurface formation that allegedly contains oil in order to reach a target location beneath neighboring land; (4) trespass claims by a landowner’s claim that a mineral estate owner and its lessee have no right to enter a pooling agreement that authorizes use of the land’s subsurface for a horizontal lateral that captures natural gas from perforations located beneath other tracts, even if the landowner’s tract is part of the pooled drilling unit; and (5) the proper measure of damages when a good faith trespasser extracts minerals from beneath a landowner’s tract.

I. THE LAW OF TRESPASS

Before considering recent developments, it may be helpful to review, first, the basic definition of trespass and, second, the application of trespass law in the airspace above and area below the surface of the earth.

A. Definition of Trespass

“Trespass is an unauthorized entry upon the property of another.”² Courts often describe it as an intrusion onto land in violation of a plaintiff’s exclusive right of possession.³

A plaintiff must have the right of possession in order to bring a claim of trespass.⁴ Typically, a landowner has the right to possess his own land and, therefore, he will have the right to bring a trespass action if someone intrudes without permission.⁵ If the owner does not possess the land, but no one else has established possession, the landowner has constructive possession and, therefore, can bring an action in trespass against an intruder.⁶

2. *Chance v. BP Chems., Inc.*, 670 N.E.2d 985, 991 (Ohio 1996) (citing *Keesecker v. G.M. McKelvey Co.*, 47 N.E.2d 211, 214 (Ohio 1943)). The Texas Supreme Court has stated, “Trespass to real property is an unauthorized entry upon the land of another, and may occur when one enters—or causes something to enter—another’s property.” *Lightning Oil Co. v. Anadarko E&P Onshore, LLC*, 520 S.W.3d 39, 46 (Tex. 2017) (quoting *Barnes v. Mathis*, 353 S.W.3d 760, 764 (Tex. 2011)).

3. *See, e.g., Team Enters., LLC v. W. Inv. Real Estate Tr.*, 647 F.3d 901, 912 (9th Cir. 2011) (quoting *Capogeannis v. Superior Court*, 15 Cal. Rptr. 2d 796, 799 (Cal. Ct. App. 1993) (under California law, a trespass is “an invasion of the interest in the exclusive possession of land.”); *see, e.g., Minch Family LLLP v. Buffalo-Red River Watershed Dist.*, 628 F.3d 960, 968 (8th Cir. 2010) (Minnesota law); *see also* W. PAGE KEETON ET AL., *PROSSER AND KEETON ON THE LAW OF TORTS* § 13, at 77 (5th ed. 1984).

4. *Florig v. Estate of O’Hara*, 912 A.2d 318, 327 n.13 (Pa. Super. Ct. 2006); *see also* KEETON ET AL., *supra* note 3.

5. *Babb v. Lee Cty. Landfill SC, LLC*, 747 S.E.2d 468, 472–73 (S.C. 2013); *Johnson v. Paynesville Farmers Union Coop. Oil Co.*, 817 N.W.2d 693, 700–01 (Minn. 2012). If the land is under lease, the lessee might be the person who has the right to bring a trespass action. *Bascom v. Dempsey*, 9 N.E. 744, 744–45 (Mass. 1887) (lessor who was not in possession could not bring trespass action); *Ikomoni v. Exec. Asset Mgmt., LLC*, 709 S.E.2d 282, 286 (Ga. Ct. App. 2011); *Sumrall v. City of E. St. Louis*, No. 11-CV-796-WDS, 2013 WL 141694, at *2 (S.D. Ill. Jan. 11, 2013) (lessee can bring trespass action). If someone has established wrongful possession, the landowner may not have a claim in trespass, but if his ownership has not been lost by adverse possession he may have the right to bring an ejectment action or a petitory action to force the possessor to leave. KEETON ET AL., *supra* note 3; LA. CODE CIV. PROC. art. 3651 (2019).

6. KEETON ET AL., *supra* note 3.

B. Trespass Can be on Surface or in Airspace or Subsurface

The concept of “trespass” is not limited to unauthorized intrusions *onto the surface of land*. The law recognizes that an intrusion into the airspace above land or the subsurface below it can constitute a trespass.⁷ This recognition is appropriate for several reasons. First, for surface possession and ownership to have any utility, a landowner typically must have ownership rights and control with respect to some distance above and below the surface of the land. For example, if a landowner is going to build any structure on his land, the structure will likely project into the airspace above the ground. Further, a foundation may need to project into the subsurface, and it is often useful or necessary to have utility lines, basements, and water wells constructed into the subsurface.

Moreover, classifying an unauthorized intrusion into the airspace above the surface or the subsurface below the land as trespass is consistent with the *ad coelum* doctrine. This doctrine, which has been professed by prominent common law commentators and numerous American courts, provides that the owner of land owns not just the surface, but rather the entire airspace above it and the entire subsurface below it.⁸ This doctrine’s name comes from the Latin phrase “*cujus est solum ejus est usque ad coelum et ad inferos*,” which has been translated as “for whoever owns the soil, it is theirs up to Heaven and down to Hell.”⁹

On numerous occasions, courts have held that liability for trespass can be based on airspace or subsurface intrusions. For example, courts have held that a landowner has an action in trespass when some portion of a neighboring building or other construction intrudes into his airspace. Such intrusions have included eaves,¹⁰ cornices,¹¹ and roofs¹² that project over a plaintiff’s property. Courts have also held that wires passing over a plaintiff’s property can constitute a trespass,¹³ and one court held that a defendant committed a trespass when she extended her arm over the

7. RESTATEMENT (SECOND) OF TORTS § 159 (AM. LAW INST. 1965); *Hannabalsen v. Sessions*, 90 N.W. 93 (Iowa 1902) (airspace); *Hastings Oil Co. v. Tex. Co.*, 234 S.W.2d 389 (Tex. 1950) (subsurface).

8. *Thrasher v. City of Atlanta*, 173 S.E. 817, 825 (Ga. 1934).

9. *Alyce Gaines Johnson Special Tr. v. El Paso E & P Co.*, 773 F. Supp. 2d 640, 645 (W.D. La. 2011).

10. *Huber v. Stark*, 102 N.W. 12 (Wis. 1905); *cf. Aiken v. Benedict*, 39 Barb. 400 (N.Y. Gen. Term. 1863) (ejectment action).

11. *Harrington v. McCarthy*, 48 N.E. 278 (Mass. 1897).

12. *Murphy v. Bolger*, 15 A. 365 (Vt. 1888).

13. *Marcus Cable Assoc., L.P. v. Krohn*, 90 S.W.3d 697 (Tex. 2002); *Butler v. Frontier Tel. Co.*, 79 N.E. 716 (N.Y. 1906).

property line.¹⁴ Courts also have recognized that a person commits a trespass when he drills a well that bottoms below the land of another.¹⁵

II. RECENT DEVELOPMENTS IN THE EVOLUTION OF TRESPASS LAW IN THE CONTEXT OF OIL, GAS, AND MINING ACTIVITY

In recent years, oil and gas activities, along with mining activities, have given rise to several interesting developments in the law of trespass. Five of these developments are discussed below, starting with an allegation of subsurface trespass by storage gas.

A. Natural Gas Storage and Landowners' Attenuated Interest in Exclusive Possession of the Subsurface

Several of the recent developments regarding trespass law have involved claims of subsurface trespass. A recent case from Ohio involved allegations of subsurface trespass by storage gas. The subsections below provide background information on natural gas storage and discuss the recent Ohio case.

1. Background

For some readers, a review of how and why natural gas is stored, and some of the basic laws governing such storage, will be helpful.

a. Natural Gas Storage

After natural gas has been produced, it is often stored in the subsurface—typically either in (1) the pore spaces of depleted oil and gas reservoirs; (2) salt dome caverns that have been created by solution mining; or (3) the pore spaces of aquifers. Nearly 400 active storage sites exist in the continental United States, with a little over half of the states having at least one underground storage facility.¹⁶ During summer months,

14. *Hannabalsen v. Sessions*, 90 N.W. 93 (Iowa 1902).

15. *Williams v. Continental Oil Co.*, 14 F.R.D. 58 (W.D. Okla. 1953); *Hastings Oil Co. v. Tex. Co.*, 234 S.W.2d 389 (Tex. 1950); *Gliptis v. Fifteen Oil Co.*, 16 So. 2d 471 (La. 1944); *Alphonzo E. Bell Corp. v. Bell View Oil Syndicate*, 76 P.2d 167 (Cal. Ct. App. 1938).

16. The U.S. Energy Information Administration publishes data on natural gas storage capacity (as well as the amount of gas in storage). The published data includes capacity in each state. A state-by-state review of the materials shows that most states have some subsurface storage capacity for natural gas. *Underground*

when demand for natural gas is lower,¹⁷ a portion of the gas being produced within the United States is injected into subsurface storage systems.¹⁸ During winter, when natural gas is in demand for heating buildings, natural gas is withdrawn from storage.¹⁹

Generally, companies planning to develop a subsurface storage operation will seek to inject gas in a location where impermeable subsurface features will limit how far the gas spreads. These companies typically attempt to acquire subsurface rights for the entire space that they anticipate the injected gas will occupy. They can do this through the private purchase of land or subsurface storage rights, but they can also use eminent domain.

b. The Use of Eminent Domain to Acquire Subsurface Storage Rights

Under the Natural Gas Act,²⁰ a company generally must acquire “a certificate of public convenience and necessity” before beginning construction of interstate natural gas facilities. If a company holding such a certificate “cannot acquire by contract, or is unable to agree with the owner of property to the compensation to be paid for” the property rights necessary for the company “to construct, operate, and maintain a pipe line or pipe lines for the transportation of natural gas,” or the additional “land or other property” needed “for the location of compressor stations, pressure apparatus, or other stations or equipment necessary to the proper operation of such pipe line or pipe lines,” the company may acquire those rights through the use of eminent domain.²¹ Although the portion of the Natural Gas Act that grants eminent domain authority does not expressly refer to storage facilities, courts have concluded that the eminent domain authority granted by the Act includes the authority to condemn subsurface

Natural Gas Capacity, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/dnav/ng/ng_stor_cap_dc_u_NUS_a.htm [<https://perma.cc/5TUN-486F>] (last visited Mar. 1, 2020).

17. Winter heating needs lead to larger consumption during winter. The use of electricity to run air conditioning units during the summer can lead to an increase in consumption of natural gas to fuel gas-fired power plants, particularly during the hottest summer months, but the height-of-summer peak is much smaller than the winter peak.

18. *See, e.g.*, *Baatz v. Columbia Gas Transmission, LLC*, 929 F.3d 767, 770 (6th Cir. 2019), *cert. denied*, No. 19-502, 2020 WL 129585 (U.S. Jan. 13, 2020).

19. *Id.*

20. 15 U.S.C. §§ 717–717w (2018).

21. 15 U.S.C. § 717f(h) (2018); *see, e.g.*, *In re PennEast Pipeline Co.*, 938 F.3d 96, 99 (3d Cir. 2019).

rights needed for the operation of a storage facility²² based on the theory that storage facilities are “necessary” for the transport of gas.²³

c. Potential Disputes Relating to Natural Gas Storage

Various disputes can arise from subsurface storage projects. For example, during eminent domain proceedings, disputes may arise regarding the amount of compensation to be paid²⁴ or which person is entitled to the compensation if the land involved has a split estate.²⁵

A natural gas company may also contend that some of its storage gas has migrated beyond the area where the company has acquired storage rights, and that a neighbor’s gas well is producing escaped storage gas, rather than native gas. This could occur if some geologic feature that the company thought would prevent the migration of gas beyond a certain point fails to do so. In such cases, the neighbor may dispute the contention that its wells are producing storage gas. Further, the neighbor may argue that, if its wells are producing escaped storage gas, the rule of capture applies to such gas.²⁶

Even if a storage operator’s neighbor does not have any gas wells, disputes can still arise if the storage company fails to initially acquire subsurface storage rights for the entire space its injected gas occupies. In such cases, the neighboring landowners might allege that the migration of gas into the subsurface of their land constitutes a trespass. The next section of this Article discusses such a case.

22. *Nat. Gas Pipeline Co. of Am. v. Iowa State Commerce Comm’n*, 369 F. Supp. 156, 159 (D. Iowa 1974); *N. Nat. Gas Co. v. Approximately 9117.53 Acres*, 781 F. Supp. 2d 1155 (S.D. Kan. 2011); *B&J Oil & Gas v. FERC*, 353 F.3d 71 (D.C. Cir. 2004); *Columbia Gas Transmission Corp. v. An Exclusive Gas Storage Easement*, 578 F. Supp. 930, 932 (N.D. Ohio 1984).

23. *Nat. Gas Pipeline Co. of Am.*, 369 F. Supp. at 159. As an alternative to using the Natural Gas Act, companies sometimes may be able to rely on state law as a source of eminent domain authority. *See, e.g.*, LA. REV. STAT. § 19:2 (2019).

24. *S. Nat. Gas Co. v. Sutton*, 406 So. 2d 669 (La. Ct. App. 2d Cir. 1981); *S. Nat. Gas Co. v. Poland*, 406 So. 2d 657 (La. Ct. App. 2d Cir. 1981); *Miss. River Transmission Corp. v. Tabor*, 757 F.2d 662 (5th Cir. 1985).

25. *Cf. United States v. 43.42 Acres of Land*, 520 F. Supp. 1042 (W.D. La. 1982) (involving a mineral servitude, rather than a mineral estate).

26. *See, e.g., Anderson v. Beech Aircraft Corp.*, 699 P.2d 1023 (Kan. 1985).

2. Recent Development—Baatz v. Columbia Gas Transmission

In *Baatz v. Columbia Gas Transmission, LLC*,²⁷ plaintiffs filed suit, asserting that storage gas from the defendant's facility had migrated into the subsurface of their land and that this intrusion constituted a trespass. Indeed, the plaintiffs alleged that a storage operator had been using the subsurface of their land for years for storing gas. The defendant filed for summary judgment. Considering the facts in the light most favorable to the plaintiffs, it appeared that Columbia Gas and its predecessor-in-interest had operated the Medina Storage Field at a depth of approximately 3,000 feet near Medina, Ohio since 1958. Nevertheless, the companies did not seek to obtain any subsurface easements until 2013, at which time Columbia Gas wrote letters to nearby landowners, offering to purchase subsurface easements from them. The landowners rejected these offers and filed suit, alleging trespass and unjust enrichment. The plaintiffs sought damages for the value of storage space for those years.

Columbia filed a condemnation claim and acquired a subsurface easement from the plaintiffs in return for compensation equal to the value of the easement. Columbia also filed a motion for summary judgment, seeking dismissal of the plaintiffs' claims for compensation for the company's past use of their subsurface. Relying on *Chance v. BP Chemicals, Inc.*,²⁸ (alleged subsurface trespass by fluid from injection disposal operation), the district court held that the plaintiffs did not have a cause of action for trespass.

On the other hand, the district court entered summary judgment holding that Columbia was liable for unjust enrichment for having used the subsurface of the plaintiffs' land for storage without compensating them earlier. As full compensation on the unjust enrichment claim, the court order awarded an amount equal to the interest on the amount that Columbia had paid for the subsurface easements it acquired via eminent domain with interest running from March 5, 2008, until the time compensation was paid. The court chose March 5, 2008, as the starting date for interest because the court reasoned that the plaintiffs' unjust enrichment claim was time-barred as to earlier periods.

The plaintiffs appealed the dismissal of their trespass claim, as well as the court's holding that the pre-judgment interest on the condemnation payment amounted to full compensation for their unjust enrichment claim. Columbia, of course, argued on appeal that the dismissal of the plaintiffs' trespass claim was correct. Columbia did not cross-appeal the district

27. 929 F.3d 767 (6th Cir. 2019).

28. 670 N.E.2d 985, 986 (Ohio 1996).

court's judgment holding the company liable for unjust enrichment, but the company defended the damages award (against the plaintiffs' contention that the award was too low) by arguing that the district court actually should have held that the company was not liable for unjust enrichment.

The Sixth Circuit reviewed the Ohio Supreme Court's decision in *Chance v. BP Chemicals, Inc.* In *Chance*, the plaintiffs brought a class action, alleging that fluids from the defendant's injection disposal wells had intruded into the subsurface of the plaintiffs' properties.²⁹ The plaintiffs asserted that this alleged intrusion constituted a trespass, and they sought injunctive relief and monetary damages.³⁰ After a jury returned a verdict finding that the plaintiffs failed to prove any damages or unreasonable interference with foreseeable uses of their properties, the trial court entered judgment for the defendant.³¹ The appellate court affirmed, and the Ohio Supreme Court agreed to review the case. The plaintiffs argued that proof of a subsurface intrusion is sufficient to establish a trespass claim, and that they need not prove damages.³² The Ohio Supreme Court disagreed. It referred to cases that had rejected arguments that, based on the *ad coelum* doctrine, a landowner could assert a trespass claim whenever an airplane flies over her land. The court

29. *Chance v. BP Chems., Inc.*, 670 N.E.2d 985, 986–87 (Ohio 1996). The defendant used the injection wells to dispose of hazardous waste byproducts from the manufacture of industrial chemicals. *Id.* at 986. Underground injection wells are a common way of disposing of waste fluids, with many thousands of these wells having been granted permits to operate in the United States. The United States Environmental Protection Agency's website contains spreadsheets which show the injection well "inventory." The 2018 inventory for injection well permits, excluding wells permitted to operate on tribal lands, shows that approximately 781 Class I wells, 177,763 Class II wells, 26,714 Class III wells, 103 Class IV wells, 528,300 Class V wells, and 2 Class VI wells have permits. *UIC Injection Well Inventory*, ENVTL. PROTECTION AGENCY, <https://www.epa.gov/uic/uic-injection-well-inventory> [<https://perma.cc/ZF4E-DC5Z>] (last visited Feb. 7, 2020). The 2018 inventory of injection wells that have received a permit to operate on tribal lands includes about 6528 additional wells of various types. *Id.* These wells are regulated under the federal Safe Drinking Water Act. A description of the underground injection control provisions of this Act can be found in various articles. *See, e.g.*, Bruce M. Kramer, *Federal Legislative and Administrative Regulation of Hydraulic Fracturing Operations*, 44 TEX. TECH L. REV. 837 (2012); Keith B. Hall, *Regulation of Hydraulic Fracturing under the Safe Drinking Water Act*, 19 BUFF. ENVTL. L.J. 1 (2011).

30. *Chance*, 670 N.E.2d at 986.

31. *Id.* at 989.

32. *Id.* at 993.

declared that a literal application of the *ad coelum* doctrine “has no place in the modern world.”³³ The court stated:

[W]e do not accept appellants’ assertion of absolute ownership of everything below the surface of their properties. Just as a property owner must accept some limitations on the ownership rights extending above the surface of the property, we find that there are also limitations on property owners’ subsurface rights.³⁴

The court then quoted, with approval, a case in which the Ninth Circuit stated that a person’s ownership of the airspace above his land extends only so far as the space he can use and occupy.³⁵ The Ohio Supreme Court concluded that similar reasoning should be extended to subsurface rights.³⁶ Therefore, in order for litigants to recover in trespass for the sort of subsurface intrusion alleged by the plaintiffs, they must prove “physical damage or actual interference with the reasonable and foreseeable use of the properties.”³⁷ Because the plaintiffs had not proven damages or interference with use, the Ohio Supreme Court affirmed the judgment against them.³⁸ Notably, this rule differs from the rule that generally applies to surface trespasses, which usually does not require a showing of actual damages or interference with use. Thus, the landowner’s right to exclusive possession—that is, her right to exclude others—is not the same deep beneath the surface of the land.

The Sixth Circuit then turned back to the natural gas storage dispute in front of it. The court concluded, based on *Chance*, that the plaintiffs could not prevail on their trespass claim against the natural gas storage operators unless the plaintiffs could prove actual damages or an interference with a foreseeable use of their property.³⁹ Because the plaintiffs could not do that, the court affirmed the district court’s grant of summary judgment to the defendants.⁴⁰

The court rejected various attempts by the plaintiffs to distinguish *Chance*. For example, the plaintiffs argued that *Chance* only applied to claims for indirect trespass, but that they were presenting a claim for a direct trespass. In fact, *Chance* qualified its holding by noting that the

33. *Id.* at 991.

34. *Id.* at 992.

35. *Id.* at 991–92.

36. *Id.* at 992.

37. *Id.* at 993.

38. *Id.* at 994.

39. *Baatz v. Columbia Gas Transmission, LLC*, 929 F.3d 767, 772 (6th Cir. 2019), *cert. denied*, No. 19-502, 2020 WL 129585 (U.S. Jan. 13, 2020).

40. *Id.* at 773.

plaintiffs in that case were bringing a claim for indirect trespass. The Sixth Circuit concluded, however, that the reasoning in *Chance* regarding the landowner's lack of a possessory interest in the deep subsurface applied equally, whether the trespass at issue was a direct or indirect one.⁴¹

Finally, the Sixth Circuit rejected the plaintiffs' claims for unjust enrichment. Under Ohio law, one of the elements of an unjust enrichment claim is the conferral of some benefit on the defendant by the plaintiff.⁴² The court concluded that because the plaintiffs lacked a possessory interest in the deep subsurface, the plaintiffs had not conferred a benefit on the defendants.⁴³ Therefore, the landowners were not entitled to recovery.

The main significance of *Baatz* does not relate to disputes in which a landowner sues the operator of a subsurface natural gas storage facility, alleging subsurface trespass, as relatively few of these disputes arise. Rather, the main significance of *Baatz* is that it applied, in a new factual setting, the *Chance* rationale that a landowner generally does not have a right to exclude others from locations deep below her property. On the contrary, under Ohio law, in order to have a claim for trespass or a subsurface intrusion that occurs deep beneath the surface, a landowner must show either actual harm or that the intrusion interferes with a

41. *Id.* at 772. Further, it is not clear that the plaintiffs in *Baatz* were correct in asserting that they were bringing a claim based on a direct trespass. The Sixth Circuit noted that a direct trespass occurs when a defendant takes an action that results in an immediate invasion of the plaintiff's property. *Id.* at 772–73 n.2. An indirect trespass occurs when a defendant discharges an object that, after being released on property not owned by the plaintiff, migrates to the plaintiff's property. *Id.* One could argue that the injection of natural gas at a site not on a plaintiff's property, which results in a migration of gas into the subsurface of a plaintiff's property, is an indirect trespass. Bizarrely, the plaintiffs also apparently attempted to distinguish *Chance* based on the fact that *Chance* had rejected application of the negative rule of capture, a doctrine based on certain legal principles relating to oil and gas extraction, because the *Chance* was not an oil and gas extraction case. But *Baatz* likewise was not an oil and gas extraction case, so the plaintiffs' attempt to distinguish *Chance* on that basis was erroneous. Further, if there had been a sound basis to distinguish *Chance*, and the negative rule of capture had therefore applied, it would have defeated the plaintiffs' claim, not sustained it. Moreover, as noted by the Sixth Circuit, *Chance*'s rejection of the negative rule of capture, based on the fact that *Chance* was not an oil and gas extraction case, did not necessarily mean that *Chance*'s conclusion, that a landowner lacks a possessory interest in depths far below the surface, would be inapplicable in a case that happened to involve oil and gas extraction, which of course *Baatz* did not. *Id.* at 773.

42. *Id.* at 776.

43. *Id.* at 777.

reasonably foreseeable use of her property. This suggests that courts will not limit *Chance* to instances involving waste fluid injections for which a company has obtained a Safe Drinking Water Act permit.

B. The Subsurface Travel of Hydraulic Fracturing Fluids Across Property Lines

The question of whether a company commits a subsurface trespass if its hydraulic fracturing operations cause frac fluid and proppants to intrude into the subsurface of a neighboring tract has attracted considerable attention.⁴⁴ As discussed later in this section of this Article, the Pennsylvania Supreme Court recently decided a much-awaited case on this issue.⁴⁵

1. Background

To appreciate the significance of the Pennsylvania Supreme Court's recent decision regarding subsurface trespass claims, it is helpful for readers to be familiar with the basics of hydraulic fracturing and prior court decisions involving claims that hydraulic fracturing operations caused a subsurface trespass.

a. Hydraulic Fracturing

Most deposits of oil and gas are not located in subsurface caverns or in large, underground void spaces.⁴⁶ Instead, they are located in the small

44. Several oil and gas scholars and practitioners have written on this subject. See, e.g., Keith B. Hall, *Hydraulic Fracturing: If Fractures Cross Property Lines, is there an Actionable Trespass*, 54 NAT. RESOURCES J. 361 (2014); David E. Pierce, *Carol Rose Comes to the Oil Patch: Modern Property Analysis Applied to Modern Reservoir Problems*, 19 PENN ST. ENVTL. L. REV. 241, 259–64 (2011); Owen L. Anderson, *Lord Coke, the Restatement, and Modern Subsurface Trespass Law*, 6 TEX. J. OIL GAS & ENERGY L. 203 (2010–2011); Norman J. Hyne & Laura H. Burney, *Hydraulic Fracturing: Stimulating Your Well or Trespassing Theirs?*, 44 ROCKY MTN. MIN. L. INST. 19-1 (1998); Terry D. Ragsdale, *Hydraulic Fracturing: The Stealthy Subsurface Trespass*, 28 TULSA L.J. 311 (1993).

45. See *Briggs v. Sw. Energy Prod. Co.*, 2020 WL 355911 (Pa. 2020).

46. RICHARD C. SELLEY, *ELEMENTS OF PETROLEUM GEOLOGY* 239 (2d ed. 1997); JAMES G. SPEIGHT, *THE CHEMISTRY AND TECHNOLOGY OF PETROLEUM* 103 (3d ed. 1999). Indeed, the word “petroleum” is Latin for “rock oil.” See MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 809, 869 (10th ed. 1993) (defining “oleum,” “petr,” and “petroleum”); DONALD J. BORROR, *DICTIONARY*

pore spaces of certain subterranean rock formations.⁴⁷ In oil and gas operations that do not involve hydraulic fracturing, an oil or gas well is drilled into such a formation, and the oil or gas must then travel through the “solid” rock to reach the well.⁴⁸ In some formations, the oil or gas can easily do that by moving from one pore space to the next, through interconnections between the pores, or sometimes by flowing through natural fractures in the rock.⁴⁹

But in some formations that contain oil or gas there is relatively little natural fracturing, and the interconnections between pore spaces are narrow and too few in number for oil or gas to flow through the rock at a significant rate.⁵⁰ Such formations are sometimes described as being “tight”⁵¹ or as having low permeability (a solid object’s “permeability” is

OF WORD ROOTS AND COMBINING FORMS 66, 73 (1960) (describing both Latin and Greek origins).

47. See sources cited *supra* note 46.

48. SPEIGHT, *supra* note 46, at 164–65; MARTIN S. RAYMOND & WILLIAM L. LEFFLER, OIL AND GAS PRODUCTION IN Nontechnical Language 167 (2006).

49. RAYMOND & LEFFLER, *supra* note 48, at 39. See also Thomas E. Kurth et al., *American Law and Jurisprudence on Fracking*, 58 ROCKY MTN. MIN. L. INST. 4-1, 4-6 (2012) (discussing the Austin Chalk as an example of a low permeability formation that has extensive natural fracturing). Typically, oil and gas in the subsurface exist in a fluid state—either as a liquid or a gas—though sometimes oil can exist as a solid or as a liquid that is so viscous that it appears to be in the solid state. 1 PATRICK H. MARTIN & BRUCE M. KRAMER, WILLIAMS & MEYERS, OIL & GAS LAW § 101 (LexisNexis Matthew Bender 2019). Because they are fluids, oil or gas will flow of their own accord from a location at higher pressure to a location at lower pressure. *Id.* at § 104; *Deltic Timber Corp. v. Great Lakes Chem. Corp.*, 2 F. Supp. 2d 1192, 1197 (W.D. Ark. 1998); *Nw. Cent. Pipeline Corp. v. State Corp.* Comm’n, 489 U.S. 493, 497 (1989). Further, underground formations are often under a much higher pressure than exists on the surface. Thus, if a well is drilled to a formation that contains oil or gas, the natural pressure of the formation often will cause those fluids to flow to the well and up to the surface. 1 PATRICK H. MARTIN & BRUCE M. KRAMER, WILLIAMS & MEYERS, OIL & GAS LAW § 101 (LexisNexis Matthew Bender 2019). Other times, oil can be pumped to the surface.

50. See NORMAN J. HYNÉ, Nontechnical Guide to Petroleum Geology, Exploration, Drilling, and Production 158 (2d ed. 2001) (explaining that the interconnections between pores sometimes are called “pore throats”).

51. See HOWARD R. WILLIAMS & CHARLES J. MEYERS, MANUAL OF OIL AND GAS TERMS 1110 (10th ed. 1997) (defining “tight sands”); see also GROUND WATER PROT. COUNCIL & ALL CONSULTING, MODERN SHALE GAS IN THE UNITED STATES: A PRIMER 15 (2009), <http://www.gwpc.org/sites/default/files/ShaleGasPrimer2009.pdf> [<https://perma.cc/6MMQ-VBAV>] [hereinafter SHALE GAS PRIMER] (referring to “tight gas”).

a measure of the ease with which a fluid moves through the solid).⁵² If the formation's permeability is too low, oil and gas will not move through the formation quickly enough to justify the expense of drilling a well.⁵³ Essentially, the oil and gas will remain trapped in isolated pore spaces.

If a person could create new cracks or fractures in the rock formation, any oil and gas in the formation could use those fractures as supplemental pathways to the wellbore.⁵⁴ This would result in higher rates of oil and gas production, and the higher rates of production could make drilling economical, despite the formation's low permeability.⁵⁵ The process of creating such fractures is called "fracturing."

Operators began engaging in fracturing in the 1860s.⁵⁶ They would lower an explosive into the well and detonate it, thereby fracturing the formation.⁵⁷ Such "explosive fracturing," sometimes called "shooting a well," was used until at least the mid-1900s.⁵⁸ But in the late 1940s, hydraulic fracturing was developed.⁵⁹ In hydraulic fracturing, companies use hydraulic pressure to open new fractures and increase the size of existing fractures, thereby opening pathways for oil or gas to flow to the well.⁶⁰ Today, hydraulic fracturing is a process that is frequently used by companies engaged in the exploration for and production of oil and natural

52. See WILLIAMS & MEYERS, *supra* note 51, at 775 (defining "[p]ermeability of rock" as "[a] measure of the resistance offered by rock to the movement of fluids through it"); see also SHALE GAS PRIMER, *supra* note 51, at 82.

53. See DANIEL YERGIN, *THE QUEST: ENERGY, SECURITY, AND THE REMAKING OF THE MODERN WORLD* 328 (2011) [hereinafter YERGIN, *THE QUEST*].

54. SHALE GAS PRIMER, *supra* note 51, at 56; David E. Pierce, *Carol Rose Comes to the Oil Patch: Modern Property Analysis Applied to Modern Reservoir Problems*, 19 PENN. ST. ENVTL. L. REV. 241, 259–60 (2011).

55. See SHALE GAS PRIMER, *supra* note 51, at ES-4; YERGIN, *THE QUEST*, *supra* note 53, at 328–29.

56. See HYNE, *supra* note 50, at 422; see also *Roberts v. Dickey*, 20 F. Cas. 880, 883–84 (W.D. Pa. 1871) (No. 11,899) (discussing a patent granted in 1866 for an invention relating to explosive fracturing); see also *People's Gas Co. v. Tyner*, 31 N.E. 59 (Ind. 1892) (nuisance action in which plaintiffs complained about use of explosive fracturing in urban area).

57. HYNE, *supra* note 50, at 422; see also GREGORY ZUCKERMAN, *THE FRACKERS: THE OUTRAGEOUS INSIDE STORY OF THE NEW BILLIONAIRE WILDCATTERS* 27–28 (2013).

58. HYNE, *supra* note 50, at 422.

59. Kurth et al., *supra* note 49, at 279.

60. HYNE, *supra* note 50, at 423.

gas.⁶¹ It has contributed to a substantial increase in the production of oil and gas in the United States.

But the use of hydraulic fracturing can also lead to new legal issues. For example, because it is difficult to control the length of hydraulic fractures, occasionally the fractures created by a company's operations on and beneath one tract, along with the hydraulic fracturing fluid that created the fractures, will allegedly cross into the subsurface of a neighboring tract. In these circumstances, a person who asserts that he or she has rights in the neighboring tract may bring a claim for trespass.

b. Past Disputes Involving the Travel of Hydraulic Fracturing Fluids Across Property Lines

In at least a few cases, parties have litigated disputes in which a plaintiff alleged that the defendant committed a subsurface trespass by causing fracturing fluids to enter the subsurface of the plaintiff's property. Until very recently the leading case arose out of Texas, with another notable case litigated in West Virginia.

i. Garza—The Texas Supreme Court's View

In *Coastal Oil & Gas Corp. v. Garza Energy Trust*, the plaintiffs alleged that the defendant had hydraulically fractured wells drilled on land adjacent to the land where the plaintiffs owned a royalty interest ("plaintiffs' land"), and that the fractures created by the defendant's operations had intruded into the subsurface of the plaintiffs' land.⁶² The plaintiffs sought damages, alleging that the fractures had facilitated the drainage of hydrocarbons from beneath their land, and that such drainage had cost them royalty revenue that would have been due to them if the hydrocarbons had been produced by a well located on their land, as opposed to being produced by the defendant's well on the adjoining property.⁶³ The plaintiffs did not allege any damages other than the loss of royalty revenue.⁶⁴

61. A Congressional Research Service report states that more than 90 percent of new wells in the United States are hydraulically fractured. MARY TIEMANN & ADAM VANN, CONG. RESEARCH SERV., R41760, HYDRAULIC FRACTURING AND SAFE DRINKING WATER ACT REGULATORY ISSUES (2013).

62. *Coastal Oil & Gas Corp. v. Garza Energy Tr.*, 268 S.W.3d 1, 4 (Tex. 2008).

63. *Id.* at 8.

64. *Id.* at 12–13.

The majority stated that they need not decide whether the cross-border fracturing was a trespass because it was clear that there was no “actionable trespass.”⁶⁵ The court explained that, because the plaintiffs were mineral estate owners who had granted an oil and gas lease, the plaintiffs lacked a possessory interest. Because they lacked a possessory interest, the plaintiffs could not recover in trespass without injury. Further the rule of capture barred any recovery for drainage, which was the only injury alleged by the plaintiffs.⁶⁶ The court described the rule of capture as applying whenever a person produces oil or gas “from a lawful well bottomed on . . . property” where the person has a right to operate.⁶⁷

ii. Stone—The View of a Federal District Court in West Virginia

In *Stone v. Chesapeake Appalachia, LLC*, the plaintiffs asserted claims for trespass.⁶⁸ They alleged that the defendant drilled a well that contained a vertical section about 200 feet from the plaintiffs’ property but that the well’s horizontal lateral approached to within “tens of feet” of their property, and that the hydraulic fracturing fluid intruded into the subsurface of their property.⁶⁹

The defendants moved for summary judgment on the trespass claim.⁷⁰ They argued that the claim was barred by the rule of capture,⁷¹ relying in part on the reasoning of *Garza*,⁷² but the *Stone* court rejected that argument. The federal court concluded that the rule of capture should not apply when a defendant causes a fluid to intrude into the subsurface of the plaintiff’s land. It then concluded that there had been a trespass, relying on the fact that the West Virginia Supreme Court previously had stated the *ad coelum* doctrine governed a landowner’s ownership rights.⁷³ It rejected

65. *Id.*

66. *Id.*

67. *Id.* at 13. Several sources provide a fuller discussion of *Garza*. See, e.g., Hall, *supra* note 44, 394–97. Although *Garza* stands as the leading Texas case, there were some pre-*Garza* cases. *Id.* at 392–94.

68. *Stone v. Chesapeake Appalachia, LLC*, 2013 WL 2097397 *1 (N.D. W. Va.). The plaintiffs also asserted a claim for a breach of the implied covenant to protect against drainage (the defendant was the plaintiffs’ lessee) and a breach of contract, with the alleged breach being that the defendant had pooled the plaintiffs’ property with other properties for purposes of production from the Marcellus Shale, but that the plaintiffs’ lease did not authorize such pooling.

69. *Id.* at *2.

70. *Id.* at *1.

71. *Id.* at *2.

72. *Id.* at *4.

73. *Id.* at *6 (quoting *Young v. Ethyl Corp.*, 521 F.2d 771 (8th Cir. 1975)).

arguments that a landowner lacks a possessory interest at depths far beneath the surface. The federal court's judgment was later vacated after the parties reached a settlement.

2. *Recent Development*—Briggs v. Southwestern Energy Production Co.

In *Briggs v. Southwestern Energy Production Company*,⁷⁴ the plaintiffs owned the surface and mineral rights in an unleased tract of approximately 11 acres.⁷⁵ Southwestern Energy held an oil and gas lease on the neighboring tract.⁷⁶ Southwestern drilled and conducted hydraulic fracturing on and beneath that neighboring tract.⁷⁷

In November 2015, the plaintiffs filed suit against Southwestern, asserting that Southwestern had extracted natural gas from beneath their tract and that they had claims for trespass and conversion.⁷⁸ The plaintiffs did not expressly allege that Southwestern's activities had caused an intrusion into the subsurface of their property by a wellbore or hydraulic fracturing fluid.⁷⁹

Southwestern filed an answer and sought a declaratory judgment that the company had no liability to the plaintiffs.⁸⁰ Southwestern stated that the plaintiffs' claims were barred by the rule of capture.⁸¹ Southwestern also asserted that the plaintiffs failed to plead the elements necessary to establish a trespass, but Southwestern did not file a preliminary objection in the nature of a demurrer or a motion for failure to state a claim.⁸² In responding to Southwestern's assertions, the plaintiffs alleged that Southwestern acted with the intent to extract gas from beneath the plaintiffs' land, but the plaintiffs again failed to expressly allege a physical intrusion of any kind.⁸³

The parties filed cross motions for summary judgment.⁸⁴ In their memoranda to the trial court, the plaintiffs suggested for the first time that Southwestern *might* have caused a physical intrusion into the surface of

74. *Briggs v. Sw. Energy Prod. Co.*, 2020 WL 355911 (Pa. 2020).

75. *Id.* at *4.

76. *Id.*

77. *Id.*

78. *Id.*

79. *Id.*

80. *Id.*

81. *Id.*

82. *Id.*

83. *Id.* at *5.

84. *Id.*

their land, but they still did not expressly allege that an intrusion had occurred.⁸⁵ The trial court denied the plaintiffs' motion and granted Southwestern's motion for summary judgment, concluding that the rule of capture barred the plaintiffs' claims.⁸⁶

The plaintiffs appealed.⁸⁷ The appellate court focused much of its discussion on whether the rule of capture should apply in unconventional reservoirs, where hydraulic fracturing is necessary in order to economically produce oil or gas. The appellate court concluded that the rule of capture should not apply if a company uses "artificial" means, such as hydraulic fracturing, to increase flow.⁸⁸

The appellate court noted that the plaintiffs did not seem to be basing their claim on a contention that there was a physical intrusion, but the appellate court also characterized the issue before it as whether a trespass occurs when a defendant uses hydraulic fracturing in a way that extends into an adjoining landowner's property and results in the withdrawal of natural gas from beneath that property." The appellate court relied in part on the dissenting opinion in *Coastal Oil & Gas Corp. v. Garza Energy Trust* and the decision in *Stone v. Chesapeake Appalachia, LLC*, which each involved allegations that the defendant had caused a physical intrusion into the subsurface of the plaintiffs' land.⁸⁹ The appellate court reversed the trial court's decision, stating that the plaintiffs' "allegations" were sufficient to preclude summary judgment.⁹⁰

The Pennsylvania Supreme Court agreed to hear the case, which was argued before that court in September 2019.⁹¹ The Pennsylvania Supreme Court noted various curious aspects of the case below. For example, the plaintiffs never alleged at the trial court level or at the appellate court level—either in their pleadings or their briefing—that Southwestern had caused a physical intrusion into the subsurface of the plaintiffs' land.⁹² The appellate court seemed to note this, but parts of the appellate court's opinion seemed to treat the case as if the plaintiffs had alleged such an intrusion. The appellate court noted that nothing in the record showed how far the fractures induced by Southwestern had extended, and a party that bears the burden of proof generally must present some evidence to defeat

85. *Id.*

86. *Id.*

87. *Id.* at *6.

88. *Id.* at *6–*7.

89. *Id.*

90. *Id.* at *7.

91. *Id.*

92. *Id.* at *10.

summary judgment, but the court held that plaintiffs' "allegations" were sufficient.⁹³

The Pennsylvania Supreme Court then analyzed the case. The court stated that the appellate court was wrong to conclude that the rule of capture would not apply when a defendant uses some artificial means, such as hydraulic fracturing.⁹⁴ The Supreme Court noted that drilling itself is an artificial means.⁹⁵ The court concluded, therefore, that if Southwestern did not cause a physical intrusion into the subsurface of the plaintiffs' land, the rule of capture would apply and Southwestern would not have conversion liability for drainage of natural gas, even if some of the gas that Southwestern produced was drained from beneath the plaintiffs' land.⁹⁶ Further, in the absence of a physical intrusion, Southwestern would not have liability for trespass.⁹⁷

The court noted Southwestern's "fallback" argument that it would not be liable even if it did cause a physical intrusion because (Southwestern contends) the rule of trespass would not apply in the same way far beneath the surface as it does at the surface.⁹⁸ The court stated, however, that it would not resolve that issue because it was not presented to the court in the petition for appeal.⁹⁹ The court strongly implied that mere allegations by the plaintiffs should not be able to defeat a motion for summary judgment, and the court noted that the plaintiffs had not produced evidence of a physical intrusion.¹⁰⁰ Nevertheless, rather than enter a judgment dismissing the plaintiffs' claims, the court remanded for further proceedings.¹⁰¹ The tenor of the court's opinion seems to imply that, if Southwestern files a motion seeking summary judgment on the grounds that the plaintiffs' have not produced evidence of a physical intrusion, the onus will be on the plaintiffs to produce such evidence if they wish to defeat the motion.

93. *Id.* at *10–*11.

94. *Id.* at *11–*12.

95. *Id.* at *11.

96. *Id.* at *12.

97. *Id.*

98. *Id.* at *9 n.11, *13.

99. *Id.* at *13.

100. *Id.* at *14.

101. *Id.*

C. A Landowner's Right to Authorize Intrusion upon the Mineral Estate Owner's Minerals

When one person owns the “surface rights” for certain land, but another person owns the “mineral estate” for the same land, they each have a right to use the land. Sometimes, this leads to disputes as to whether one person’s actions infringes the rights of the other, and occasionally, such disputes result in one of the persons asserting a claim for trespass.

1. Background

In the United States, a landowner typically has the exclusive right to conduct operations on and beneath his land to explore for and produce minerals.¹⁰² But most states allow a landowner to sever this right from the other benefits of ownership.¹⁰³ Doing so creates a “split estate” situation in which there are two estates in the land—one which is commonly called the “surface estate”¹⁰⁴ and another which is commonly called the “mineral estate,”¹⁰⁵ though occasionally it has been called a “subsurface estate.”¹⁰⁶ The landowner can do this by granting a mineral estate to another person or by selling the land and reserving the mineral estate for himself.¹⁰⁷

The names “surface estate” and “subsurface estate” can be misleading. Generally, the surface estate owner owns both the surface *and most or all of the subsurface*. The less common term “subsurface estate,” which is sometimes used in place of “mineral estate,” is misleading for a couple of reasons. First, in some ways, the most important right that the owner of a so-called “subsurface estate” typically has is the exclusive right to use the land to explore for and produce minerals, as well as the right to own any mineral reduced to actual possession. This right includes an “implied

102. See, e.g., LA. REV. STATS. §§ 31:5–31:6 (2019). In contrast, in much of the world, this right belongs to the sovereign—that is, to the national government. Keith B. Hall, *An International Comparison of the Operatorship Provisions Contained in Model Form Oil & Gas Joint Operating Agreements*, 7 LSU J. ENERGY L. RESOURCES 79, 88–89 (2019).

103. Louisiana is an exception. Its civil law property system does not follow the common law “estates” system and does not allow a permanent severance of mineral rights from surface rights. *Frost-Johnson Lumber Co. v Salling’s Heirs*, 91 So. 207 (La. 1922); *Wemple v. Nabors Oil & Gas Co.*, 97 So. 666 (La. 1923).

104. See, e.g., *Lightning Oil Co. v. Anadarko E&P Onshore, LLC*, 520 S.W.3d 39, 43 (Tex. 2017).

105. *Id.*

106. *Faith United Methodist Church & Cemetery v. Morgan*, 745 N.E.2d 461, 478 (W. Va. 2013).

107. *Acker v. Guinn*, 464 S.W.2d 348, 352 (Tex. 1971).

easement” to use both the subsurface *and the surface* as reasonably necessary to explore for and produce minerals, such as oil and gas.¹⁰⁸

Second, as already noted, the surface estate owner will own most of the subsurface. For example, the surface estate owner will own the subsurface formations that do not contain oil and gas. And even if a formation does contain oil and gas, the subsurface owner will own the rock in which the oil and gas is found. Depending on the state jurisdiction, the mineral estate owner *may or may not own* the oil and gas “in place” in the subsurface. In some states, no one owns the oil and gas in place. Those substances are not owned by anyone until they are reduced to possession. In other states, including Texas, the owner of a mineral estate (or the landowner if the land is not subject to a mineral estate) owns the oil and gas itself while it remains in place,¹⁰⁹ but the mineral estate owner *will not own* the rock in which the oil or gas is found.

2. Recent Development—Lightning Oil Co. v. Anadarko E&P Onshore, LLC

This case involves two tracts and a conflict between the owners of the surface and mineral estate.¹¹⁰ In particular, the dispute concerned the tension between the surface estate owner’s ownership of the entire subsurface, which includes the rock matrix in which oil or gas might be found, and the mineral estate owner’s oil and gas rights, which includes both the ownership of any oil or gas molecules found inside the rock

108. The legal instrument that creates the “split estate” situation may specify the rights that the owner of the mineral estate will have to use the surface and subsurface of the land to explore for and produce minerals. If the instrument does not, the typical rule is that the owner of the mineral estate has an “implied easement” to use the surface and subsurface of the land as reasonably necessary to explore for and produce minerals. The instrument creating the mineral estate may restrict (or expand) the extent of the mineral estate owner’s surface use rights, but the default rule throughout the country seems to be that the mineral estate owner can use the land as reasonably necessary. Early courts chose this as the default rule because the mineral estate is of little value unless the mineral estate owner could use the land to explore for and produce minerals.

109. This does not stop these “ownership in place” states from following the rule of capture. They reconcile the rule of capture with ownership-in-place by holding that a mineral estate owner or landowner owns the oil or gas beneath his land so long as it remains beneath his land, but that ownership interest is lost if the oil or gas migrates elsewhere.

110. *Lightning Oil Co. v. Anadarko E&P Onshore, LLC*, 520 S.W.3d 39, 43 (Tex. 2017).

matrix and the exclusive right to explore for and produce those substances.¹¹¹

The first tract is the location of Briscoe Ranch. The surface estate of that tract is owned by Briscoe Ranch, Inc. (Briscoe). The Hurd Family owned the mineral estate, which was leased to Lightning Oil Company.

The neighboring tract is owned by the State of Texas, whose Park and Wildlife Department operates the Chaparral Wildlife Management Area there. The State granted a mineral lease to Anadarko E&P Onshore, LLC. The lease contained various restrictions on Anadarko's use of the surface, including a requirement that Anadarko use drilling locations outside the Chaparral whenever feasible.

Anadarko made plans to drill to an area beneath the Chaparral, using a surface location outside the area. To facilitate these plans, Anadarko entered into a surface use agreement with Briscoe. The agreement gave Anadarko the right to drill from the surface of Briscoe Ranch and through its subsurface to reach the subsurface of the Chaparral. Under Anadarko's plans, the wellbores it drilled would pass through mineral-bearing formations leased to Lightning.

Lightning objected and ultimately filed suit, seeking an injunction to prevent Anadarko from drilling the wells. Lightning argued that the wells planned by Anadarko would constitute a trespass on Lightning's mineral estate.¹¹² In addition to alleging that the drilling would constitute a physical intrusion, Lightning alleged that it would cause two harms—Anadarko's physical structures would interfere with Lightning's future mineral activities, and the drilling process itself would remove minerals embedded in the drill cuttings (the rock chips created by the drill bit's passage through the rock).¹¹³ The district court dismissed Lightning's claim, and the court of appeals affirmed. The Texas Supreme Court agreed to review the case.

The Texas Supreme Court reviewed the law of trespass, stating, "Trespass to real property is an unauthorized entry upon the land of another, and may occur when one enters—or causes something to enter—another's property."¹¹⁴ The court also noted that "every unauthorized entry upon land is a trespass, even if no damage is done or injury is slight."¹¹⁵ A property owner generally has the right to exclude others from entering or using the property, but an owner's right "does not necessarily include the

111. *Id.* at 43–44.

112. *Id.* at 44.

113. *Id.* at 46–47.

114. *Id.* at 46 (quoting *Barnes v. Mathis*, 353 S.W.3d 760, 764 (Tex. 2011)).

115. *Id.*

right to exclude *every* invasion or interference” with his property.¹¹⁶ To determine whether Lightning had a right to stop Anadarko’s activities, the court considered the nature of the rights of a mineral estate owner, mineral lessee, and surface owner.

Under Texas law, the owner of the mineral estate (such as the Hurd family) owns oil and gas in place and has a possessory interest in that oil and gas.¹¹⁷ A mineral lessee (such as Lightning) similarly has an ownership and possessory interest.¹¹⁸ In addition, unless a mineral lease restricts the mineral lessee’s use of the property, the lessee (or the mineral estate owner in the absence of a lease) has an implied easement to use the surface and subsurface of the leased premises as reasonably necessary to explore for and produce minerals.¹¹⁹

The surface estate owner (such as Briscoe) owns the surface and subsurface of the land, including subsurface rock formations that do not contain oil and gas and the rock matrix that surrounds oil and gas in a formation that contains those substances.¹²⁰ But this does “not necessarily mean [the surface owner] is entitled to make physical intrusions into formations where minerals are located and remove some of the minerals—as is probable if a well is drilled through such formations.”¹²¹ After supplying this background analysis, the court turned to resolving the parties’ dispute.

One of the harms alleged by Lightning was that Anadarko’s activities might interfere with Lightning’s own future operations. This was a plausible basis on which Lightning might build a claim for relief because a mineral lessee such as Lightning generally has an implied easement to use the leased premises as reasonably necessary to explore for and produce minerals. The surface owner is obligated to respect this right, and Anadarko would be obligated to respect this right too because Anadarko’s rights emanated from the surface owner.¹²²

But the surface owner generally is entitled to conduct whatever activities it wishes on its land, provided that its activities do not interfere with the mineral lessee’s ability to explore for and produce minerals. The court concluded that Lightning’s assertion that Anadarko’s drilling might

116. *Id.*

117. *Id.* at 48.

118. *Id.*

119. *Id.*

120. *Id.* at 47 (“the surface owner owns and controls the mass of earth undergirding the surface”).

121. *Id.*

122. *Id.* at 49.

interfere with Lightning's future mineral activities was speculative.¹²³ If Lightning had shown that Anadarko's activities would actually interfere with Lightning's operations, Lightning might have been entitled to relief (though an analysis under the accommodation doctrine might be necessary to answer the question definitively), but Lightning's speculative concerns could not justify relief.¹²⁴

The court then turned to Lightning's other claim of harm—that Anadarko's drilling plans would cause loss of some of the minerals in which Lightning had a possessory and ownership interest. In particular, Anadarko's drilling would cause a loss of the oil or gas embedded in the drill cuttings—that is, the rock displaced by the drilling itself. The court recognized that such a loss as an actual harm to Lightning, though a small one. The court stated, "Whether the small amount of minerals lost through that process will support a trespass action must, in the end, be answered by balancing the interest involved"¹²⁵

The Texas Supreme Court noted that horizontal drilling can be the most efficient means of exploiting oil and gas resources, but that "[i]t can take several thousand feet" to transfer the wellbore from a vertical direction to a horizontal direction.¹²⁶ Further, it may be impossible to recover oil and gas from this transition interval using the well whose wellbore is turning from vertical to horizontal because this portion of the well's casing is not typically perforated.¹²⁷ Thus, the hydrocarbons in the transition interval may go unrecovered unless a separate well is drilled to target those minerals. Failing to recover the minerals would run counter to the policy to encourage production of mineral, but drilling a separate well to recover the hydrocarbons in the transition interval would run counter to a public policy to avoid drilling an excessive number of wells.

Suppose, however, an operator having a right to produce minerals from Blackacre, but not from the neighboring property, could start drilling its well from the neighboring property. The operator could drill the well so that the non-producing transition interval from vertical to horizontal drilling could be completed while the drill bit was still within the subsurface of the neighboring property, before the drilling reached the subsurface of Blackacre.¹²⁸ Thus, the entirety of the wellbore drilled within the subsurface of Blackacre could consist of a horizontal lateral that is

123. Thus, if Lightning had been able to show actual interference with its exploration or production activities, it might have been entitled to relief.

124. *Lightning Oil Co.*, 520 S.W.3d at 49–50.

125. *Id.* at 50.

126. *Id.*

127. *Id.* at 51.

128. *Id.*

suitable for perforation and recovery of minerals. The Texas Supreme Court summarized: “Such drilling activities allow for recovering the most minerals while drilling the fewest wells. And this court has always viewed waste-reducing innovations favorably.”¹²⁹ The court then concluded that the balancing of interests weighed in favor of denying relief to Lightning. The court explained:

Balanced against the small loss of minerals a lessee such as Lightning will suffer, if drilling through the minerals is determined to be a non-actionable interference with its property rights, is the longstanding policy of this state to encourage maximum recovery of minerals and to minimize waste. In that context, we have no doubt that individual interests in the oil and gas lost through being brought to the surface as part of drilling a well are outweighed by the interests of the industry as a whole and society in maximizing oil and gas recovery. That being so, we conclude that the loss of minerals Lightning will suffer by a well being drilled through its mineral estate is not a sufficient injury to support a claim for trespass. Accordingly, such a loss will not support injunctive relief. Lightning’s claim of an impending trespass and its application for injunctive relief on that basis are rejected.¹³⁰

This result is in tension with the general rule that an owner and possessor of property has a trespass action even when the trespass causes no harm. Several factors likely contribute to this result. First, Lightning’s loss would be miniscule. Second, public policy favors allowing drilling of the sort planned by Anadarko. The court expressly noted both of those factors in discussing its balancing of interests. Third, courts have previously held that the right to exclude others—one of the traditional sticks of “ownership”—is less absolute for spaces high above or below the surface than at the surface.¹³¹ Although the court did not note this factor in the part

129. *Id.* Of course, the well still would not be perforated in the transition interval and thus still not would recover any oil or gas from that area, but that area would be beneath the neighboring property, where the operator had not right to produce minerals anyway. Further, it still would be necessary to drill another well to produce the hydrocarbons found in that area, but another well by a different company would have been necessary anyway given that the operator of Blackacre has no rights to produce hydrocarbons from the subsurface of the neighboring tract.

130. *Id.* at 51.

131. *Lightning Oil* quoted a statement from a prior Texas Supreme Court decision stating that, “Wheeling an airplane across the surface of one’s property

of its decision discussing the balancing of interests, the court noted it when discussing the basic rules governing trespass actions.¹³²

Fourth, the relationship between the surface owner and mineral estate owner is somewhat different than the relationship between owners of two neighboring tracts. If one person owns Blackacre and a different person owns a contiguous tract called Whiteacre, a property line separates the location of their possessory interests. One person has an interest on one side of the line, and the other person has a possessory interest in the land on the other side. In contrast, when there is a split estate, the surface owner owns the rock matrix in which any oil and gas is embedded, but the mineral estate owner owns the hydrocarbon molecules that are located in the small pore spaces of the rock. Thus, the surface owner and mineral owner have possessory interests in substances that are intermingled at a microscopic level. Arguably, this supports a balancing of interests, rather than an absolute rule.

Finally, Lightning sought injunctive relief, rather than a damages award. The Texas Supreme Court, in rejecting the arguments that it considered speculative—the possibility that Anadarko’s drilling might interfere with future activities that Lightning might decide to undertake—stated the basic principle that injunctive relief is not appropriate unless the relief is necessary to prevent “imminent, irreparable harm.”¹³³ In rejecting Lightning’s arguments based on the small loss of hydrocarbons from the drill cuttings, the court used somewhat broad language, stating that, given the required balancing of interests, such a loss is not sufficient “to support a claim for trespass.”¹³⁴ Such language would seem broad enough to also bar a damages claim, but perhaps the language was overbroad. As the court noted in the very next sentence, the relief Lightning was seeking, and which it was denied, was injunctive relief.

D. Pooling as a Basis for Authority to Use Land

An oil and gas lessee generally has no right to use the leased tract to support operations to produce oil and gas from another tract. If the lessee

without permission is a trespass; flying the plane through the airspace two miles above the property is not.” *Id.* at 46 (quoting *Coastal Oil & Gas Corp. v. Garza Energy Tr.*, 268 S.W.3d 1, 11 (Tex. 2008)). That prior decision, which involved subsurface rights, rather than airspace rights, went on to state: “The law of trespass need no more be the same two miles below the surface than two miles above.” *Coastal Oil*, 268 S.W.3d at 11.

132. *Lightning Oil Co.*, 520 S.W.3d at 46.

133. *Id.* at 49.

134. *Id.* at 51.

uses the leased tract in such a way, the lessee may be liable for trespass. However, one of the legal effects of pooling is that the lessee or other operator of a pooled unit that includes the leased tract typically has the right to use the leased tract for unit operations, even if the unit operations involve production of minerals from other tracts in the unit. But sometimes disputes arise regarding the extent of a unit operator's rights to use a tract without incurring trespass liability.

1. Background

Typically, a mineral estate owner or mineral lessee can use the land subject to the mineral estate or lease as reasonably necessary for the exploration and production of minerals *from the land* that is subject to the estate or lease. A mineral estate owner or lessee typically would not have the authority to use the leased premises to produce minerals from other lands.¹³⁵ But if pooling is implemented by agreement or by order of a regulator for a drilling unit that includes multiple tracts, the pooling typically has the effect of treating the tracts within the unit as a single tract for purposes of oil and gas production, with a portion of production revenue and a portion of costs being allocated to each tract. In such cases, a mineral estate owner or mineral lessee typically can use the leased premises to support production from anywhere in the drilling unit. Indeed, the unit operator may be able to use any tract in the unit even if the operator does not have a lease for the tract. Various disputes can arise, though, including disputes regarding a mineral estate owner's (or his lessee's) authority to agree to pooling that would allow such use of the tract, and disputes regarding a unit operator to use unleased tracts to support unit production when a regulator's order has implemented pooling.

a. The Development of Statutory Pooling

Statutory pooling is a regulatory response to certain problems that can arise from tract-by-tract ownership of oil and gas rights and the rule of capture.

135. Of course, the act creating the mineral estate could expressly grant more the owner of the mineral estate the right to use the land to support production from other lands, but that would be unusual and the default rule would be that the mineral estate owner has no such rights. Similarly, a mineral lease could expressly grant the lessee the right to use the leased premises to support production from other tracts. A clause giving the lessee the right to use the leased premises to support producing from nearby or adjacent tracts is an "adjacent lands" clause.

i. Tract-by-Tract Ownership of Mineral Rights

Ownership of land confers a bundle of rights upon the landowner.¹³⁶ In the United States, this bundle of rights generally includes the exclusive right to conduct oil and gas operations on and beneath the land.¹³⁷ Because each landowner has this exclusive right, the ownership of mineral rights, like the ownership of surface rights, typically differs from one tract of land to the next.

A landowner typically has the freedom to sever these oil and gas rights from the remainder of the bundle of rights that belong to the landowner.¹³⁸ For example, a landowner can bring about a permanent severance of mineral rights, either by granting a severed mineral estate to some other person or by selling the land and reserving a severed mineral estate for himself or herself.¹³⁹ But such severances do not alter the fact that the person who owns oil and gas rights will typically be different from one tract to the next.

ii. Addressing the Fugacious Nature of Oil & Gas with the Rule of Capture

Oil and gas are typically found in the pore spaces of underground rock formations. When a well is drilled into such a formation, the oil or gas generally can flow through the rock to the well by traveling through interconnections between the pores. In this manner, oil and gas often can flow hundreds of feet. For this reason, and because a reservoir of oil or gas often will extend through the subsurface of separately owned tracts of land, a portion of the oil or gas that reaches the well sometimes has originated from beneath a neighboring tract. This can lead to “drainage” disputes between neighboring landowners.

136. “Bundle of rights” is a commonly-used description of the rights that a person obtains when she becomes owner of property. *See, e.g.*, *Evanston Ins. Co. v. Legacy of Life, Inc.*, 370 S.W.3d 377, 382–83 (Tex. 2012) and sources cited therein.

137. *Atl. Richfield Co. v. Tomlinson*, 859 P.2d 1088, 1094 (Okla. 1993); *Cal. Minerals v. County of Kern*, 62 Cal. Rptr. 3d 1, 6 (Cal. Ct. App. 2007); LA. REV. STAT. § 31:6. This is the general rule in the United States, but it is not the global norm. In most other countries, the national government owns the right to produce minerals. JOHN S. LOWE, *OIL AND GAS IN A NUTSHELL* 8 (5th ed. 2009).

138. This is such a well-settled principle that it is difficult to find cases in which courts actually state the principle, rather than simply applying it. *See, e.g.*, *Barker v. Campbell-Ratcliff Land Co.*, 167 P. 468 (Okla. 1917).

139. *Id.*

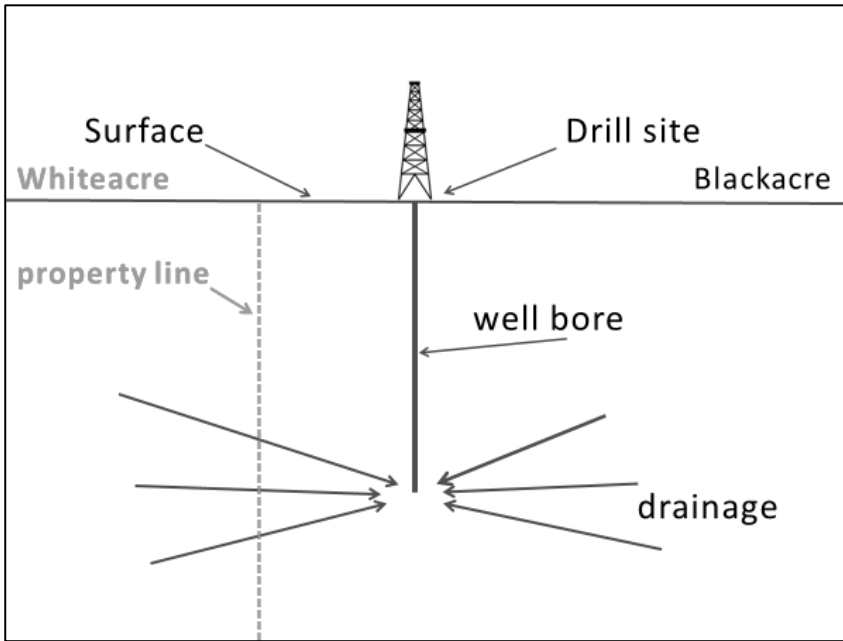


Figure 1. Well on Blackacre drains oil from beneath neighboring tract.

As courts began confronting this issue in the late 1800s,¹⁴⁰ different jurisdictions reached the same result: if a defendant drills a well on property where he owns the mineral rights, he would not have liability to a plaintiff who owns a neighboring tract, even if the well drains oil or gas from beneath the plaintiff's tract. This result became known as the "rule of capture."¹⁴¹

140. See, e.g., *Kelly v. Ohio Oil*, 49 N.E. 399 (Ohio 1897); see also *Barnard v. Monongahela Nat. Gas Co.*, 65 A. 801 (Pa. 1907).

141. See, e.g., *Gadeco, LLC v. Indus. Comm'n of State*, 812 N.W.2d 405, 407 (N.D. 2012); *Coastal Oil & Gas Corp. v. Garza Energy Tr.*, 268 S.W.3d 1, 13 (Tex. 2008); *Bonner v. Okla. Rock Corp.*, 863 P.2d 1176, 1185 (Okl. 1993); *Desormeaux v. Inexco Oil Co.*, 277 So. 2d 218, 220 (La. Ct. App. 1973). Several commentators have noted that the rule of capture has been universally adopted in the United States. See, e.g., PATRICK H. MARTIN & BRUCE M. KRAMER, *WILLIAMS & MEYERS OIL AND GAS LAW* § 204.4; TERENCE DAINITH, *FINDERS KEEPERS? HOW THE LAW OF CAPTURE SHAPED THE WORLD OIL INDUSTRY* 7 (RFF Press 2010).

iii. Problems Arising from the Rule of Capture

Although the rule of capture has been universally adopted, it leads to three significant problems. First, it gives each landowner an incentive to drill as many wells as possible near property lines, in order to produce the available oil or gas before his neighbor does. In other words, it encourages the drilling of more wells than are necessary to efficiently drain the oil or gas in an area.¹⁴² Because drilling wells is expensive, excess drilling is a form of economic waste.

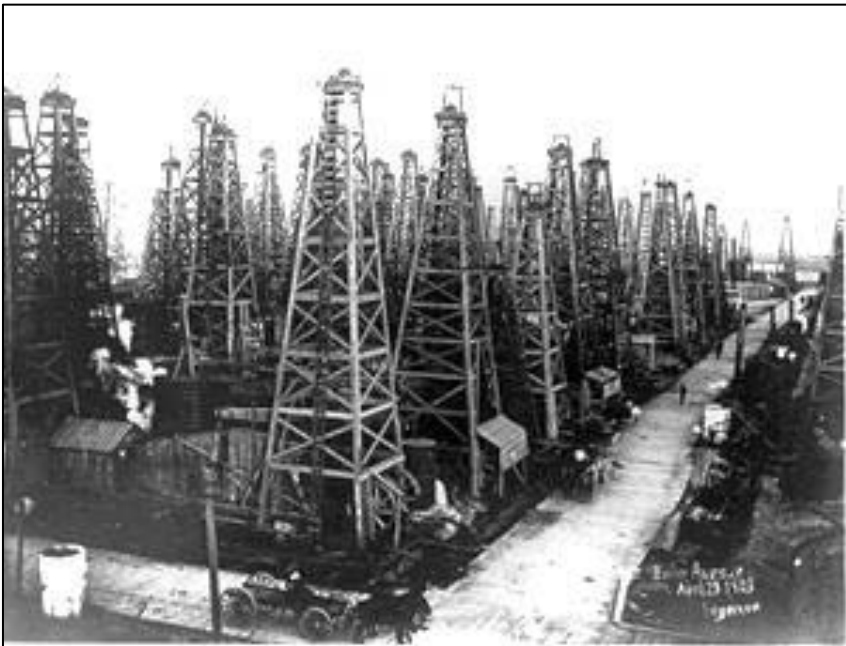


Figure 2. Closely spaced wells at Spindle Top (Texas) in early 1900s.

142. *Gadeco, LLC*, 812 N.W. 2d 405, 407 (N.D. 2012); *Nunez v. Wainoco Oil & Gas Co.*, 488 So. 2d 955, 960 (La. 1986) (rule of capture encouraged indiscriminate drilling).

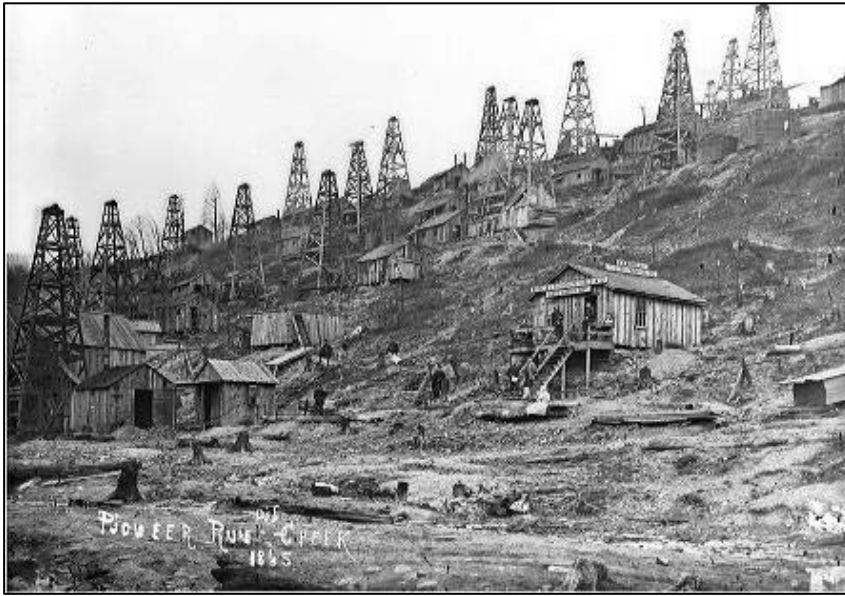


Figure 3. Closely spaced wells in Pennsylvania in late 1800s.

Second, the rule of capture encourages the owners of wells to produce oil from each well as rapidly as possible, in order to recover the oil before a neighbor does. This can be a problem because rapid production can harm the reservoir. It is never possible to recover 100% of the oil in a formation, but it is often possible to recover a larger fraction of the oil if the oil is produced at a moderate pace, rather than at the maximum possible rate.¹⁴³

143. *Nunez*, 488 So. 2d at 960 (referring to diminished ultimate recovery).

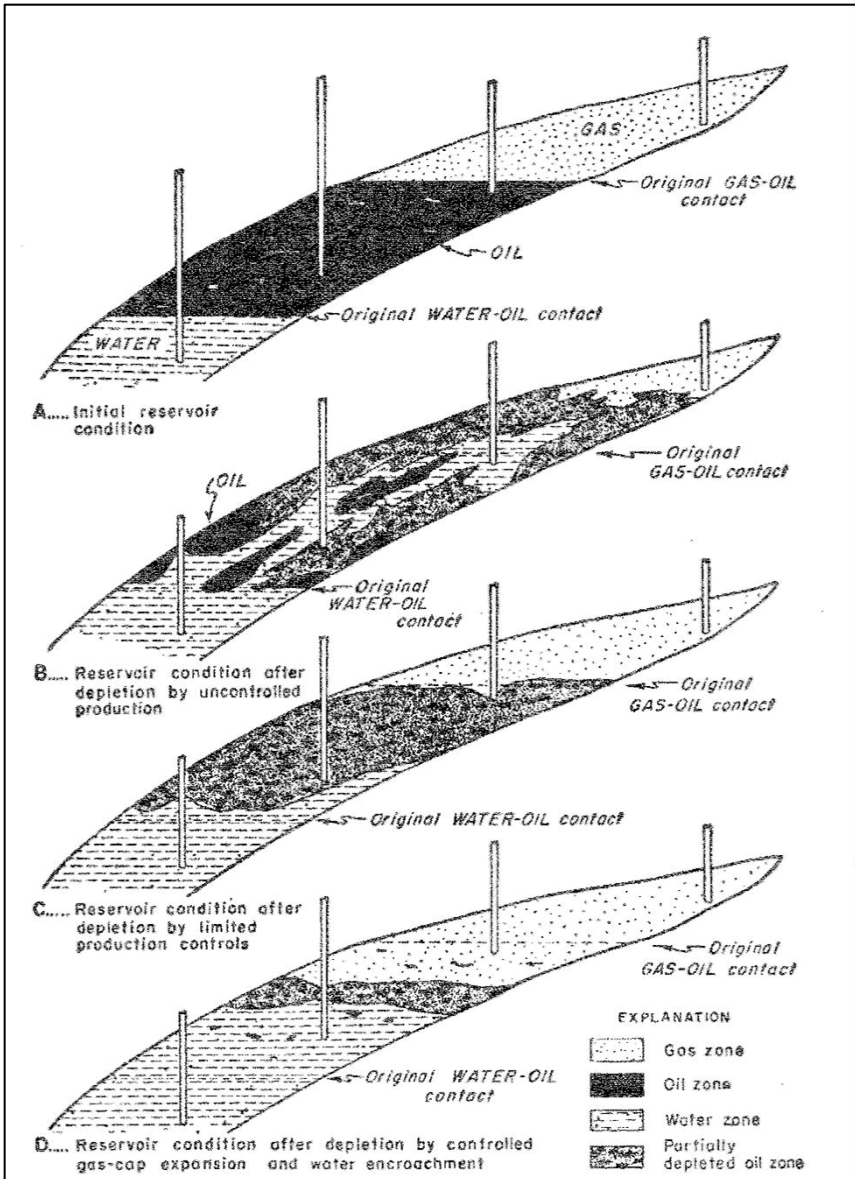


Figure 4. Second sketch from top showing bypassing of pockets of oil by overly rapid production.

The third significant problem associated with the rule of capture is that, notwithstanding the availability of a landowner's self-help remedy of

drilling his or her own wells, there is sometimes a concern that the rule of capture is unfair.¹⁴⁴

iv. Pooling—A Regulatory Response to Problems Associated with the Rule of Capture

The problems associated with the rule of capture became evident by the early 1900s. Gradually, a consensus developed that regulation was needed to address these problems. As a result, during the 1920s through 1940s, a number of states enacted legislation empowering state agencies to take action to combat the inefficiency and waste that resulted from competition to produce oil and gas from the same formations.¹⁴⁵ Such measures often are called “conservation” provisions because they tend to minimize the waste of resources—the waste inherent in the expense of drilling an excessive number of wells and the waste inherent in the lower ultimate recovery of oil from a reservoir that can result when companies produce oil at such a fast rate that the reservoir is harmed.¹⁴⁶

144. *Cf. id.* at 960 (noting that one goal of conservation regulation can be “to insure a fair and reasonable participation, by the surface owners in the common pool within the producing area”).

145. AM. BAR ASS’N, CONSERVATION OF OIL AND GAS: A LEGAL HISTORY 3 (Robert E. Sullivan ed. 1960).

146. North Dakota’s statutes generally are typical of those found in states with oil and gas production. A state statute proclaims it to be in the “to be in the public interest to foster, to encourage, and to promote the development, production, and utilization of natural resources of oil and gas in the state in such a manner as will prevent waste.” N.D. CENT. CODE § 38-08-01. In turn, “waste” is defined to include “locating, spacing, . . . [or] operating . . . any oil or gas well or wells in a manner which causes, or tends to cause, reduction in the quantity of oil or gas ultimately recoverable.” N.D. CENT. CODE § 38-08-02. North Dakota law then states that “[w]aste of oil and gas is prohibited.” N.D. CENT. CODE § 38-08-03; *see also* N.D. ADMIN. CODE 43-02-03-06 (regulation prohibiting waste). Further, the North Dakota Industrial Commission is given authority to enforce the state’s oil and gas laws and to investigate and “determine whether waste exists or is imminent or whether other facts exist which justify action by the commission.” N.D. CENT. CODE § 38-08-04(1). The NDIC also is given authority to regulate the “spacing of wells.” N.D. CENT. CODE § 38-08-04(1)(b)(3). The state’s oil and gas statutes provide that the NDIC “shall set the spacing of wells” as “necessary to prevent waste, to avoid the drilling of unnecessary wells, or to protect correlative rights.” N.D. CENT. CODE § 38-08-07. Most other oil and gas producing states have nearly identical provisions and have had such provisions for decades. Accordingly, such provisions have had time to affect the customs, practices, and expectations within the oil and gas industry.

Spacing rules are one of the most common types of conservation rules.¹⁴⁷ Spacing rules attempt to ensure that wells are spaced sufficiently far apart that they are not competing to drain oil or gas from the same portion of a common formation. For example, spacing rules often are written so as to prohibit the drilling of more than one well within a given number of acres—presumably, the maximum number of acres that can be efficiently drained by one well.¹⁴⁸ Alternatively, rather than specifying a particular number of acres for each well, the rules can be written so that they require wells to be located or spaced no less than a specified, minimum distance apart (presumably, a distance that would result in wells being far enough apart that they are not draining from the same area).¹⁴⁹ Thus, the use of spacing rules demonstrates the regulators' intent to prevent the drilling of more wells than are necessary to efficiently and economically drain an area.

Yet another common type of conservation rule—statutory pooling—addresses a problem associated with spacing rules.¹⁵⁰ In particular, statutory pooling addresses the “small tract” problem. An example can illustrate this problem. Suppose that the applicable spacing rules require a minimum of 640 acres per well. This may work fine if all the tracts in an

147. The strong public policy favoring spacing rules is demonstrated by the fact that virtually every state with oil and gas activity has spacing rules. *See, e.g.*, ALA. ADMIN. CODE r. 400-1-2.02; ARK. ADMIN. CODE 178.00.1-B-3; 14 CAL. CODE REG. §§ 1721–1721.7; 2 COLO. CODE REGS. § 404-1:318; KAN. ADMIN. REG. § 82-3-109; LA. ADMIN. CODE tit. 43, pt. XIX § 1905; 26 MISS. ADMIN. CODE Pt. 2, Rule 1.8; MONT. ADMIN. R. 36.22.702; N.D. CENT. CODE § 38-08-07 and N.D. ADMIN. CODE § 43-02-03-18; N.M. ADMIN. CODE 19.15.13; OHIO ADMIN. CODE 1501:9-1-04; OKLA. ADMIN. CODE 165:10-1-21.; 25 PA. CODE §§ 79.21–79.28; ADMIN. R. S.D. § 74:12:02:04 (oil) and 74:12:02:05 (gas); TEX. ADMIN. CODE § 3.37(a); UTAH ADMIN. CODE r. § 649-3-2; W. VA. CODE R. § 39-1-4.2; WYO. R. AND REG. 055.0001.3 §2.

148. For example, North Dakota Administrative Code § 43-02-03-18 specifies spacing requirements that depend on three factors that help determine the area is drained by a well—namely, the well's depth (above or below a specified formation), product (oil or gas), and configuration (vertical or horizontal). For example, the rule requires that at least 160 acres be allowed for each deep, vertical, oil well. The rule does so by specifying that either a government quarter section or “equivalent lots” must be devoted to such a well.

149. *See, e.g.*, LA. ADMIN. CODE tit. 43, pt. XIX, § 1905; N.M. ADMIN. CODE § 19.15.15.9; OKLA. ADMIN. CODE § 165:10-1-21; 16 TEX. ADMIN. CODE § 3.37(a)(1).

150. The most frequently used term for this sort of regulatory action is “pooling,” though “integration” sometimes is used. *See, e.g.*, N.D. CENT. CODE § 38-08-08 (title of section refers to “integration,” but text of statute refers to “pooling”).

area are 640 acres or larger. The landowners who have 640-acre tracts can drill one well. Landowners who have 1280 acres can drill two wells, and so forth. But suppose four neighboring landowners—Adams, Brown, Carter, and Davis—each own a 160-acre tract, with the total acreage owned by the four of them therefore equaling 640 acres. Would the 640-acre spacing rule mean that none of the four can drill because no single one of them has 640 acres? If so, an important property right has been undermined and perhaps “taken” by regulation.¹⁵¹

In the alternative, does it mean that the first of the four to start drilling is allowed to drill and keep all production (as provided by the rule of capture), but that the other three are barred from drilling, thereby resulting in there being only one well in the 640 acres? If so, the purpose of the spacing rule has been preserved, but an important property right of three of the four has been abrogated.

An alternative method to address this small tract problem—a method now authorized in almost every state that has oil and gas activity, is for the state’s oil and gas regulatory agency to issue “pooling” orders.¹⁵² A pooling order combines multiple tracts that are individually too small to justify their own drilling permit into a single unit that is large enough to justify a well under the applicable spacing rules.¹⁵³ When such a pooling order is entered, the order compels joint operations of all the oil and gas interests within the unit, with one party being designated as the “operator” who will conduct operations on behalf of all parties. Pursuant to the pooling order, a portion of the costs and revenue from oil and gas operations will be allocated to each tract in the pooled unit, and the regulatory agency will limit the number of wells allowed, with the classic model of a pooled unit being an area in which only one well will be allowed. Many states have a public policy favoring pooling because of the efficacy of pooling in promoting conservation. Indeed, in some states, if separately owned tracts of land are contained within the area in which only

151. This is not meant to express a judgment on whether this would constitute a “taking” for purposes of the Fifth Amendment to the United States Constitution.

152. See, e.g., LA. REV. STAT. § 30:10 (2016); N.D. CENT. CODE § 38-08-08 (2020).

153. N.D. CENT. CODE § 38-08-07(1) (2020) (spacing); N.D. CENT. CODE § 38-08-08 (2020) (pooling). See also COLO. REV. STAT. § 34-60-116(3) (2017); WYO. STAT. § 30-5-109(c)(1) (2019); LA. REV. STAT. 30:9(B) (2015); N.M. STAT. § 70-2-17(B) (2019); OKLA. STAT. tit. 52, § 87.1(a) (2012); UTAH CODE § 40-6-6(1) (2019); WYO. STAT. § 30-5-109(a) (2019). Often, “drilling unit” is contemplated to be the maximum area that can be drained by one well. See, e.g., PATRICK H. MARTIN & BRUCE M. KRAMER, *MANUAL OF OIL AND GAS TERMS* at 726 (definition of “drilling unit”) and 918 (definition of “spacing unit”) (14th ed. 2009).

one well will be allowed (the so-called “drilling unit” or “spacing unit”), statutes often provide that the regulator “shall” enter a pooling order unless the owners of the tracts already entered a voluntary pooling agreement.¹⁵⁴

Within the United States, a consensus exists that conservation regulations promote an important public policy. Because of this consensus, a substantial amount of similarity exists across the nation in the various states’ oil and gas laws. For example, the laws of many states prohibit “waste,” with waste encompassing two concepts—*physical waste*, in the form of practices that result in less production of hydrocarbons and *economic waste*, in the form of money spent on drilling of more wells than necessary to efficiently recover the hydrocarbons in an area. Further, many states give their oil and gas regulatory agency the task of promulgating regulations and issuing orders to minimize physical waste and avoid the drilling of unnecessary wells. Pooling is one of the major tools that regulators use in seeking to minimize waste.

b. Voluntary Pooling

Persons holding mineral rights can enter voluntary pooling agreements that have much the same effect as pooling orders issued by a regulator. Often, oil and gas leases delegate pooling authority to the lessee.

c. Authority of a Mineral Estate Owner to Pool

There is relatively little case law that expressly addresses the question of whether a mineral estate owner or his lessee can enter a pooling agreement that would have the effect of allowing the leased premises to be used to support the production of oil and gas from within the drilling unit, but outside the tract covered by the mineral estate or lease. One of the few cases to do so is from the Texas Supreme Court—*Key Operating & Equipment, Inc. v. Hegar*.¹⁵⁵ In this case, Key Operating and Equipment, Inc. (“Key”) held a lease and operated a well on the sixty-acre Richardson Tract. Key also held a lease and operated a well on the 191-acre Curbo/Rosenbaum Tract, which was contiguous to the Richardson Tract. In 1994, Key built a road on the Curbo/Rosenbaum Tract to access the well on that tract and also the well on the Richardson Tract.

In 2000, the well on the Curbo/Rosenbaum Tract quit producing and Key Operating’s lease on that tract expired. But the same year, Key acquired a lease from individuals who owned a 12.5% interest in the

154. See, e.g., LA. REV. STAT. § 30:10 (2016); N.D. CENT. CODE § 38-08-08 (2020).

155. 435 S.W.3d 794 (Tex. 2014).

mineral estate for the Curbo/Rosenbaum Tract. The new lease contained a pooling clause, and Key pooled under a portion of the Curbo/Rosenbaum Tract with a portion of the Richardson Tract. The pooled area included the access road on the Curbo/Rosenbaum Tract and the well on the Richardson Tract. Two years later, Will and Loree Hegar bought eighty-five acres of the Curbo/Rosenbaum Tract, including the portion that contained the access road.

For several years, the Hegars took no action to prevent Key from using the road across their land to access the well on the Richardson Tract. But later, after Key drilled an additional well on the Richardson Tract and Key's use of the road increased, the Hegars filed suit, asserting that Key's use of the road constituted a trespass. They offered expert testimony that the wells on the Richardson Tract drained only a small area that did not reach the Hegar property.¹⁵⁶ The trial court entered an order enjoining Key from using the road that crossed the Hegars' property and issued findings of fact that included a finding that the wells on the Richardson Tract did not drain hydrocarbons from the Hegar Tract.¹⁵⁷

Key appealed. The appellate court initially reversed the trial court's decision, but then granted rehearing, withdrew its initial decision, and affirmed the lower court's ruling.¹⁵⁸ The appellate court held that, because the mineral lease that contained the pooling clause did not appear in the Hegars' chain of title, Key could not rely on the pooling clause for authority to use the Hegars' land to facilitate production from a well on the Richardson Tract. Basically, the appellate court reasoned that, in order for the Hegars to be bound by the pooling provision, the mineral lease containing the provision would have had to have been granted by a landowner prior to the creation of a split estate. The Texas Appellate Court stated:

We agree that Key Operating and the Key brothers cannot contractually expand their surface rights against the Hegars in a lease and a pooling agreement executed after the mineral and surface estates were severed. If the Key brothers' lease, which authorizes Key Operating to pool the Curbo tract, had been executed before or at the time the mineral and surface estates were severed, this lease would have been part of the Hegars' chain of title and the Hegars would have taken their title to the surface estate subject to the lease.¹⁵⁹

156. *Id.* at 796.

157. *Id.* at 796–97.

158. *Id.* at 797.

159. Key Operating & Equip., Inc. v. Hegar, 403 S.W.3d 318, 326 (Tex. App. 2013).

The Texas Supreme Court agreed to review the case and rejected the appellate court's reasoning. The Texas Supreme Court noted, "The primary legal consequence of pooling is that 'production and operations anywhere on the pooled unit are treated as if they have taken place on each tract within the unit.'"¹⁶⁰ Thus, "production from the pooled part of the Richardson Tract was legally also production from the pooled part of the Hegar tract."¹⁶¹ It was undisputed that, by virtue of its lease that covered the Hegar Tract, Key would have the right to use the Hegar Tract to produce minerals from beneath that tract. Given this right, and the principle that production from anywhere on the pooled unit is treated as if it came from each tract in the unit, Key had the right to use the road crossing the Hegar Tract to access the unit well on the Richardson Tract.¹⁶²

The court also noted that a public policy of Texas is to encourage production of minerals.¹⁶³ Allowing a surface owner to block a mineral estate owner's pooling agreement likely would discourage production, given the efficiencies that can be achieved when pooling is used. Further, another public policy of Texas is to prevent waste,¹⁶⁴ and pooling is one method to prevent waste.¹⁶⁵ Several other jurisdictions also have a policy of encouraging production,¹⁶⁶ and virtually all jurisdictions prohibit waste.¹⁶⁷

d. Authority of Operator of a Unit Created by a Regulator to Use Unleased Premises

When a pooling is ordered, this generally gives the unit operator the authority to use the subsurface, and perhaps the surface, of any tract in the unit, even if the operator does not have a lease on the tract. In *Nunez v. Wainoco Oil & Gas Co.*,¹⁶⁸ the Louisiana Commissioner of Conservation entered orders creating a drilling unit, ordering pooling, and issuing a permit that authorized Wainoco to drill a well that became the unit well.

160. *Key Operating & Equip., Inc. v. Hegar*, 435 S.W.3d 794, 798 (Tex. 2014).

161. *Id.* at 799.

162. *Id.* at 800.

163. *Id.* at 798 ("The policy of Texas is to encourage the recovery of minerals . . ."). This is also the public policy in several other jurisdictions. *Cf. Jameson v. Ethyl Corp.*, 609 S.W.2d 346, 351 (Ark. 1980).

164. *Id.* ("the Legislature has made waste in the recovery of oil and gas unlawful").

165. *Id.* ("Pooling is one method to prevent waste.").

166. *Cf. Jameson*, 609 S.W.2d at 351.

167. *See, e.g.*, LA. REV. STAT. § 30:2; N.D. CENT. CODE § 38-08-03.

168. 488 So. 2d 955 (La. 1986).

Wainoco began drilling from a surface location on a tract it had under lease, near the property line separating that tract from a tract that was part of the unit, but on which Wainoco did not have a lease. After the well was completed, a directional survey indicated that the drilling had deviated from vertical and that the well had bottomed about four or five feet inside the subsurface of the unleased tract. The owner of that tract brought a trespass action against Wainoco and other defendants who owned mineral interests in the unit, seeking an order that required the operator to remove the wellbore.

The district court dismissed the action on procedural grounds, but the appellate court reversed and remanded for a resolution of the trespass claim. The Louisiana Supreme Court granted review and dismissed the case, but on different grounds than the district court had done so.

The Louisiana Supreme Court stated that compulsory pooling and unitization converts the separate exploration and development rights held by different persons within the drilling unit into a common interest for the drilling and development of the unit.¹⁶⁹ The court described the common interest as “a departure from the traditional notions of private property.”¹⁷⁰ The court then explained that this departure is justified as a “reasonable exercise of the police power” because oil and gas “migrate to points of lower pressure caused by . . . drilling,” so that one person’s production of oil or gas affects “the correlative rights” of others who have exploration and development rights that apply to the “common reservoir.”¹⁷¹ Indeed, pooling “*protect[s]* private property [by] preventing it from being taken by one of the common owners without regard to the enjoyment of the others.”¹⁷²

The court noted that this ruling “supercede[d] in part” Louisiana’s rule that the surface owner also owns the subsurface, and that the trespass alleged by the plaintiff was a subsurface trespass, not a surface trespass. The court then concluded: “Since established private property law concepts, such as trespass, have been superceded in part by Louisiana’s Conservation Law when a unit has been created by order of the Commissioner, we do not find that a legally actionable trespass has occurred in this instance.”¹⁷³

In a subsequent dispute between Nunez and Wainoco, the Louisiana Third Circuit applied the same principle in concluding that unitization orders and the grant of a drilling permit for a particular location can also

169. *Id.* at 961–62.

170. *Id.*

171. *Id.* at 962–63.

172. *Id.* at 963 (quoting *Ohio Oil Co. v. Indiana*, 177 U.S. 190 (1900)).

173. *Id.* at 964.

alter the rules relating to surface trespass.¹⁷⁴ In that subsequent dispute, Nunez complained about Wainoco using a portion of his land while drilling a well just on the other side of the property line.¹⁷⁵ Using a portion of Nunez's surface during the drilling process had been necessary because, although the well site was not on Nunez's property, the site designated on the drilling permit was near the property line.¹⁷⁶ The appellate court stated that an operator might be required to compensate the non-consenting landowner for any damages to his property, but the mere use of his land is not a basis for trespass liability if use of the land is necessary in order to drill a unit well at the location specified by the Commissioner of Conservation.¹⁷⁷

Similarly, the Oklahoma Supreme Court has held that the operator of a pooled unit even has the right to drill a unit well at a surface location owned by a landowner who refuses to give his consent,¹⁷⁸ though the owner might be entitled to compensation for the value of such use under the Takings Clause of the Oklahoma Constitution.¹⁷⁹ Further, the North Dakota Supreme Court has held that, when the state's regulators have created a compulsory unit, an operator does not incur liability for trespass by drilling a horizontal well beneath the property of an unleased owner without that owner's consent.¹⁸⁰

2. Recent Developments Relating to Pooling

At least two recent developments relating to pooling are relevant to a discussion of trespass claims. One of these is a case from West Virginia regarding the extent of a mineral estate owner's right to pool. The other relates to an amendment of a Colorado statute relating to pooling.

174. *Nunez v. Wainoco Oil & Gas Co.* 606 So. 2d 1320, 1325 (La. App. Ct. 3d Cir. 1992).

175. *Id.* at 1323.

176. *Id.*

177. *Id.* at 1326–27.

178. *Tex. Oil & Gas Corp. v. Rein*, 534 P.2d 1277 (Okla. 1975).

179. *Cormack v. Wil-Mc Corp.*, 661 P.2d 525, 526–27 (Okla. 1983) (citing OKLA. CONST. art. 2, § 23).

180. *Cont'l Res., Inc. v. Farrar Oil Co.*, 559 N.W.2d 841, 846 (N.D. 1997). The cases discussed in this section of the Article do not figure prominently in the eventual "Model" that this Article suggests is the appropriate synthesis of existing subsurface trespass rules, but these cases support the conclusion that there are numerous exceptions to a literal application of the *ad coelum* doctrine.

a. Recent Developments—A Mineral Estate Owner’s Right to Pool

In 2019, the West Virginia Supreme Court decided *EQT Production Co. v. Crowder*¹⁸¹ and reached a decision that seems to directly conflict to the result reached by the Texas Supreme Court in *Key Operating*.

The relevant facts in *Crowder* begin in 1901. As of that year, Joseph and Bell Carr owned a 351-acre tract—the “Carr Tract”—in Doddridge County, West Virginia. They also owned the mineral rights associated with the tract. In 1901, they granted EQT’s predecessor-in-interest an oil and gas lease covering the Carr Tract. The lease was written so that it would last for a primary term and “as long as oil or gas . . . is produced” from the Carr Tract.¹⁸² The lease did not contain a pooling clause. The lessee established production and the lease remained in effect as of 2019.¹⁸³

Until 1936, the Carrs and their successors in title continued to own the Carr Tract, as well the landowners’ interest in minerals, subject to the 1901 oil and gas lease.¹⁸⁴ In 1936, the then owner of the 351-acre Carr Tract created a split estate by selling a surface estate, while retaining a mineral estate.¹⁸⁵ In essence, the seller retained the lessor royalty rights under the lease, the reversionary interest, and minerals not covered by the 1901 lease.¹⁸⁶ These rights were reserved as to the entire Carr Tract.

By the mid-1970s, the surface estate for this land had been partitioned into several smaller parcels.¹⁸⁷ A married couple, Margot Beth Crowder and David Wentz, acquired the surface estate for one of the parcels in 1975. They built a house on the tract and moved into it in 1977, but in 2003, the couple divorced.¹⁸⁸ They then portioned their land into smaller tracts. As of the time of trial, Mr. Wentz owned two of those smaller tracts and Ms. Crowder owned one.¹⁸⁹

As of 2011, Patty and Keith Carihfield owned the mineral estate for the entire 351-acre Carr Tract and EQT owned the rights of the lessee under the lease. That year, the Carihfields and EQT entered an agreement to amend the 1901 lease.¹⁹⁰ The amendments included the addition of a

181. *EQT Prod. Co. v. Crowder*, 828 S.E. 2d 800 (W. Va. 2019).

182. *Id.* at 804.

183. *Id.*

184. *Id.* at 803.

185. *Id.*

186. *Id.*

187. *Id.*

188. *Id.* at 804.

189. *Id.*

190. *Id.*

clause that gave EQT the authority to pool or unitize the Carr Tract with other lands.

Relying on the pooling clause, EQT made plans to use the surface of the tracts owned by Ms. Crowder and Mr. Wentz to drill horizontal wells that would recover minerals from beneath portions of the Carr Tract, as well as neighboring tracts that had been pooled with the Carr Tract. In 2012, a lawyer representing Ms. Crowder and Mr. Wentz sent a letter to EQT, contending that EQT did not have the right to use their tracts to facilitate the production of oil and gas from outside the 351-acre Carr Tract.¹⁹¹ EQT disagreed, and in 2013 used portions of the plaintiffs' tracts to drill horizontal wells that extended beyond the Carr Tract.¹⁹²

The plaintiffs sued EQT, arguing that the company committed a trespass by using their land to produce minerals from beneath land outside the Carr Tract. The trial court granted summary judgment in favor of the plaintiffs, holding that EQT had committed a trespass. Later, the trial court held a trial to determine the quantum of damages and entered a judgment awarding damages based on a jury verdict. EQT appealed.

EQT argued on appeal that it had authority to use the plaintiffs' tracts in the way it did based on the pooling clause in its amended lease with the owners of the mineral estate for the Carr Tract.¹⁹³ The West Virginia

191. *Id.* Actually, the lawyer's letter apparently contended that EQT did not have the right to use the tracts owned by Ms. Crowder and Mr. Wentz to produce minerals from outside their tracts, but that contention was clearly wrong. When a lessor grants an oil and gas lease covering a tract of land, a subsequent subdivision of the surface estate does not divide the lease. By the time this dispute reached the West Virginia Supreme Court, the plaintiffs no longer contended that EQT could not use their land as reasonably necessary to produce minerals from other portions of the Carr Tract, though they continued to contend—ultimately, successfully—that EQT did not have the right to use their tracts to drill a horizontal well that would extend and produce minerals beyond the Carr Tract.

192. *Id.* at 804.

193. *Id.* at 810. EQT raised two defenses. One was its right to pool. Second, under well-established oil and gas law principles, the owner of a mineral estate covering a tract has an implied easement to use the surface and subsurface of the tract as reasonably necessary to explore and produce minerals from the tract. EQT argued that it was reasonably necessary, in order to produce minerals *from beneath the Carr Tract*, to produce those minerals via a horizontal well that extended and produced minerals from beyond the tract. The West Virginia Supreme Court did not seem to squarely address that issue. The court stated the well-settled proposition that a mineral estate owner's implied easement is not sufficient to give that owner the right to use the tract in order to produce minerals from another tract. But here, EQT was not merely arguing that, in order to produce minerals from leases EQT held outside the Carr Tract, it was reasonably necessary

Supreme Court disagreed.¹⁹⁴ The court noted that the surface estate and mineral estate were severed in 1936, and that the 1901 oil and gas lease was not amended to include a pooling clause until 2011, when the mineral estate owner and EQT reached that agreement. The West Virginia Supreme Court stated:

[I]n 2011, the owners of the mineral estate no longer owned the right to use the surface estate for exploration on and production from neighboring tracts. Because the mineral estate was severed from the surface estate in 1936, that right belonged to the plaintiffs or, more specifically, was a right attached to their surface estate. Hence, the mineral owners could not have conveyed that right to EQT in the 2011 amendment.¹⁹⁵

The *Crowder* decision is potentially very significant. Under a very narrow reading, the case could merely mean that, if a mineral lease that lacks a pooling clause exists at the time that a split estate is created, the owner of the mineral estate in West Virginia will lack the authority to amend the lease to authorize the lessee to use the leased premises to drill horizontal laterals that extend beyond the leased premises. However, the reasoning stated in the court's opinion does not seem to justify this most narrow reasoning. The decision leaves various questions unanswered, but the decision could be read as meaning that, unless the instrument creating a split estate expressly grants the mineral estate owner the right to pool, the mineral estate owner generally will not be able to use the leased premises (or authorize the use of the leased premises) to support operations for a pooled unit, whether or not the wellbore extends into the subsurface of a neighboring tract.¹⁹⁶

to use the plaintiffs' land. Rather, EQT seemed to argue that, in order to produce minerals from beneath the Carr Tract itself, it was reasonably necessary to use the plaintiffs' land to drill a horizontal lateral that produced minerals from beneath the Carr Tract *and* neighboring tracts simultaneously.

194. *Id.* at 810–11.

195. *Id.*

196. The premise of such a position would be that, because a portion of the minerals that the wellbore and surface equipment are handling will be attributed to other tracts, the operations constitute a trespass to that extent. *Crowder* leaves various questions unanswered. One is the possibility just mentioned. What if the lessee in *Crowder* had created a pooled unit, then drilled a vertical well for the pooled unit, using the plaintiffs' land? Would the fact that some of the production from the well would be attributed to portions of the pooled unit outside the Carr Tract have meant that the unit operations constituted a trespass? What if the 1901 lease had terminated? Could the mineral estate owner grant a new lease with broad

Of course, if the owner of a surface estate consents to pooling, then pooling could be used even if a split estate exists. But given that the owner of a surface estate is not entitled to revenue from oil and gas production, such a person has little incentive to consent. Thus, a broad reading of *Crowder* could make it difficult to use voluntary pooling involving tracts where there is a split estate in West Virginia.¹⁹⁷ Further, given that West Virginia's compulsory pooling statute only applies to certain depths,¹⁹⁸ and that these depths do not include the highly-productive Marcellus formation,¹⁹⁹ a broad reading of *Crowder* could hinder efforts to conduct operations in an efficient manner in any areas of West Virginia where split estates are common.

b. Recent Developments—Changes to Colorado's Pooling Rules

In 2019, Colorado enacted legislation designed to impose stricter environmental regulations on oil and gas activities and to give landowners and local communities more power to oppose oil and gas development.²⁰⁰ A portion of that legislation amended Colorado's pooling statute in several ways. One of the amendments provides that a pooling order must prohibit the unit operator from using the surface of any tract owned by any "nonconsenting owner"—that is, a person who declines to participate in the cost of drilling and operating the unit wells—without that person's permission.²⁰¹ Often, the owners of tracts that are not under an oil and gas lease will be nonconsenting owners.

pooling authority? It would seem not. A different issue would arise, though, if, at the time a split estate is created, an oil and gas lease that authorizes pooling exists, but the lease terminates. In that situation, would the mineral estate include the right to pool, so that a mineral estate owner could authorize pooling in any future leases?

197. The logic of *Crowder* should not apply to situations involving compulsory pooling because the case was based on which party—the mineral estate owner or the surface estate owner—held certain rights. The authority of a regulator to order pooling would be based on the state's pooling statutes and regulations.

198. W. VA. CODE § 22C-9-7 (authorizing pooling for "deep wells").

199. W. VA. CODE § 22C-9-2 (defining "deep well" as meaning "any well . . . drilled to a formation below the top of the uppermost member of the 'Onondaga Group'"); *see also* *Stone v. Chesapeake Appalachia, LLC*, 2013 WL 2097397 *1 (N.D. W. Va.) (noting that Marcellus Shale formation above Onondaga formation).

200. The legislation was Senate Bill 19-181.

201. COLO. REV. STAT. § 34-60-116(7)(a)(IV).

E. The Measure of Liability for a Trespasser's Removal of Minerals

The last of the recent developments in this Article does not deal with whether a trespass has occurred, but instead deals with the proper measure of damages. In particular, what is the proper measure of damages when a “good faith” trespasser extracts minerals from land.

1. Background

Occasionally, a person trespasses onto land and produces minerals from the land. When this happens, it typically is the result of a mistake. Sometimes, the trespasser is operating, by mistake, beyond the boundary of tracts where it has a right to operate. Other times, the trespasser is operating pursuant to a lease that previously expired, without the trespasser knowing it had expired or pursuant to a lease granted by someone who lacked valid title to the mineral rights that the lease purports to cover.

In any case, the trespasser typically owes compensation to the landowner (or mineral owner in the event that there is a split estate) for the unauthorized removal of minerals.²⁰² But what is the proper measure of damages for the unauthorized removal of minerals? In virtually all states, the measure of liability depends on whether the trespasser was in “good faith” or “bad faith,” with a “bad faith” trespasser being subject to greater liability than a “good faith” trespasser, but jurisdictions have not followed uniform rules regarding the distinction between “good faith” and “bad faith” or the extent of liability of a “good faith” trespasser.

a. The Majority Rule

Under the majority rule, the measure of liability for a trespasser's removal of minerals depends on whether the trespasser was in “good faith” or “bad faith.” A good faith trespasser—also sometimes called an “innocent trespasser”—is liable for the value of the minerals that he produced, minus the costs that he actually and reasonably incurred in producing the minerals. In contrast, a “bad faith trespasser”—sometimes called a “willful trespasser”—is liable for the full value of the minerals he produced, without a deduction for the expenses he incurred. The United States Supreme Court described this rule in a case relating to oil and gas rights, stating:

202. See, e.g., *Alaska Placer Co. v. Lee*, 553 P.2d 54, 57 (Alaska 1976). Of course, the trespasser also typically will be liable for the damage, if any, that it caused to the land during the trespass.

An agreed premise is found in the rule that one who “willfully” or “in bad faith” trespasses on the land of another, and removes minerals, is liable to the owner for their full value computed as of the time the trespasser converted them to his own use, by sale or otherwise, but that an ‘innocent’ trespasser, who has acted “in good faith,” may deduct from such value the expenses of extraction.²⁰³

This agreed premise has been expressly recognized in the jurisprudence of numerous states that have expressly recognized this “agreed promise” when addressing this question in the context of oil and gas activity or mining. These states include Alaska,²⁰⁴ Arkansas,²⁰⁵ California,²⁰⁶ Colorado,²⁰⁷ Illinois,²⁰⁸ Kansas,²⁰⁹ Kentucky,²¹⁰ Louisiana,²¹¹ Michigan,²¹² Montana,²¹³ Nevada,²¹⁴ New Mexico,²¹⁵ Ohio,²¹⁶ Oklahoma,²¹⁷ Pennsylvania,²¹⁸ Texas,²¹⁹ Virginia,²²⁰ West Virginia,²²¹ and Wyoming.²²²

The good faith or innocent trespasser is allowed a credit for its reasonable expenses because the landowner would have had to incur such expenses if she had produced the minerals herself. Thus, she would be

203. *United States v. Wyoming*, 331 U.S. 440, 458 (1947).

204. *See, e.g., Alaska Placer Co. v. Lee*, 553 P.2d 54, 57 (Alaska 1976).

205. *Nat’l Lead Co. v. Magnet Cove Barium Corp.*, 231 F. Supp. 208, 218 (W.D. Ark. 1964).

206. *Whittaker v. Otto*, 248 Cal. App.2d 666 (Cal. App. 1967).

207. *Kroulik v. Knuppel*, 634 P.2d 1027 (Colo. App. 1981).

208. *Lambach v. Town of Mason*, 53 N.E.2d 601, 607-08 (Ill. 1944); (oil and gas case).

209. *Armstrong v. Bromley*, 378 P.3d 1090 (Kan. 2016).

210. *Harrod Concrete & Stone Co. v. Crutcher*, 458 S.W.3d 290 (Ky. 2015); (stating this rule in a mining case, but expressly stating that the same rule applies in oil and gas cases).

211. *State v. Jefferson Island Salt Mining Co.*, 163 So. 145, 167 (La. 1935).

212. *Robinson v. Gordon Oil Co.*, 253 N.W. 218, 219 (Mich. 1934).

213. *Edington v. Creek Oil Co.*, 690 P.2d 970 (Mont. 1984).

214. *Dinwiddie Const. Co. v. Campbell*, 406 P.2d 294, 297-98 (Nev. 1965).

215. *Alvarado Min. & Mill. V. Warnock*, 187 P. 542 (N.M. 1919).

216. *Brady v. Stafford*, 152 N.E. 188, 191 (Ohio 1926).

217. *Edwards v. Lachman*, 534 P.2d 670, 677 (Okla. 1974); *Champlin Ref. Co. v. Aladdin Petroleum Corp.*, 238 P.2d 827 (Okla. 1951).

218. *Sabella v. Appalachian Dev. Corp.*, 103 A.3d 83, 98-99 (Pa. Super. Ct. 2014).

219. *Victory Energy Corp. et al. v. OZ Gas Corp.*, 461 S.W.3d 159, 178 (Tex. App. 2014).

220. *Mullins v. Clinchfield Coal Corp.*, 227 F.2d 881, 885-86 (4th Cir. 1955).

221. *Reynolds v. Pardee & Curtin Lumber Co.*, 310 S.E.2d 870, 876 (W. Va. 1983).

222. *Martel v. Hall Oil Co.*, 253 P. 862, 864 (Wyo. 1927).

unjustly enriched by an award equal to the full value of the minerals, without a deduction of the expenses necessary to produce them. Further, such an award would be a harsh result for the good faith trespasser. On the other hand, courts state that bad faith or willful trespassers should be liable for the full value of the minerals, even though this might overcompensate the landowner, in order to deter such trespasses.

The states that follow the majority rule regarding the extent of a good faith or bad faith trespasser's liability do *not* all follow a uniform rule regarding what "good faith" and "bad faith" mean in the context of a trespasser's production of minerals. Some jurisdictions use a somewhat literal meaning of "good faith" and "bad faith." Kentucky provides one example. In *Hughett v. Caldwell County*,²²³ (fluorspar²²⁴ mining), a Kentucky Appellate Court explained:

It has been concisely said in a case of this kind that the difference between a willful and an innocent trespasser is "*the one knows he is wrong and the other believes he is right.*" The specific delineation is that a willful trespasser is one who knowingly and willfully encroaches or enters upon the land of another and takes his mineral without color or claim of right, or one who dishonestly or in bad faith mines minerals of another and converts them to his own use, while an innocent trespasser is one who does so under color of right or in good faith by mistake.²²⁵

Another Kentucky case, *Harrod Concrete and Stone Co. v. Crutcher*, stated that a trespass that is "inadvertent or 'the result of an honest mistake' constitutes an innocent trespass."²²⁶

West Virginia provides another example. In *Reynolds v. Pardee & Curtin Lumber Co.*,²²⁷ the court stated:

A trespasser who does so intentionally or recklessly with intent to "take an unconscientious advantage of his victim" commits a willful or bad faith trespass

* * *

223. 230 S.W.2d 92, 94 (Ky. App. 1950) (internal citations omitted).

224. Fluorspar is also known as fluorite. It is a mineral composed of calcium and fluorine and is represented by the chemical formula CaF₂. It has several uses in the chemical and metallurgical industries.

225. 230 S.W.2d 92, 94 (Ky. App. 1950).

226. 458 S.W.3d 290, 297 (Ky. 2015).

227. 310 S.E.2d 870 (W. Va. 1983).

If the trespass be committed, not recklessly, but through inadvertence or mistake, or in good faith, under an honest belief that the trespasser was acting within his legal rights, it is an innocent trespasser.²²⁸

Other jurisdictions do not use a literal meaning of “good faith.” In those jurisdictions, a trespasser’s honest belief that he was not trespassing may be necessary for that person to be deemed in legal “good faith,” but it is not necessarily sufficient. In those jurisdictions, a trespasser may be in “bad faith” even if he believed he had a right to operate where and when he did, if he was aware that a person who ultimately turns out to be the true landowner or mineral estate owner was claiming that the trespasser’s operations would constitute a trespass.

For example, in Louisiana, the distinction between good faith and bad faith is controlled by Civil Code article 487. Article 487 provides that a possessor of property “is in good faith when he possesses by virtue of an act translative of ownership and does not know of any defects in his ownership. He ceases to be in good faith when these defects are made known to him or an action is instituted against him by the owner for the recovery of the thing.”²²⁹ Thus, for a trespasser to be in good faith, it is not sufficient that he believed he had a right to operate—that is, that he did “not know of any defects in his ownership” or lease rights. Certain events can end the trespasser’s “good faith” for purposes of trespass liability, even if the trespasser is still in subjective good faith. For example, if the true owner files suit to recover possession of the land, that will end the trespasser’s legal good faith, even if he believes that the suit has no merit and the landowner has not yet obtained a judgment vindicating her rights.

Texas may provide another example. Some of its jurisprudence suggests that, if a trespasser entered land when he was aware of a claim or a lawsuit, the effect of which, would be to deny his exploration rights, he necessarily was a bad faith trespasser.²³⁰ On the other hand, other Texas jurisprudence suggests that a trespasser’s knowledge of an adverse claim does not mean that, as a matter of law, the trespasser necessarily was a bad faith trespasser.²³¹

228. *Id.* at 876.

229. LA. CIV. CODE art. 487.

230. *See, e.g., Whelan v. Killingsworth*, 537 S.W.2d 785 (Tex. App. 1975); *Houston Prod. Co. v. Mecom Oil Co.*, 62 S.W.2d 75 (Tex. App. 1933).

231. *Brannon v. Gulf States Energy Corp.*, 562 S.W.2d 219 (Tex. 1977).

b. The Minority Rule

The minority rule regarding the extent of a good faith trespasser's liability provides that the liability depends on whether the plaintiff was in a position to conduct mining or drilling operations. Under this rule, in the event of a good faith trespass, a plaintiff who was not in a position to conduct mining or drilling operations was entitled to damages based on the market value of a lease royalty for the mineral at issue.

The basis for this rule is the theory that an award of the total value of the minerals, minus the cost of production, overcompensates the landowner. The rationale of this theory is that such an award is equivalent to awarding the profits from a mining or drilling operation, but the owner who was not capable of mining or drilling could never have earned such profits. On the other hand, such an owner could grant a lease and receive a royalty. Thus, an award of a market-rate royalty would make the landowner whole by compensating her for the money she could have earned by granting a lease.²³²

If, on the other hand, a plaintiff was in position to conduct mining or drilling operations, that plaintiff would have been in a position to conduct operations and earn a profit. Thus, the loss that plaintiff incurred due to the trespasser's tort was the profits from mineral activity. Accordingly, the minority rule provided that such a plaintiff could recover from a good faith trespasser the full value of the minerals at the mouth of the mine or well, minus the reasonable costs that the trespasser incurred in producing the minerals.

This minority rule apparently used to be more widely followed than it is now, but most states have abandoned the rule, with many doing so long ago. But until recently, Kentucky continued to follow the minority rule.

232. Although this rationale apparently was the main rationale for the minority view, other rationales may have existed. For example, Kentucky followed the minority rule, apparently based in large part on the above-stated reasoning, but an additional rationale was revealed by a commentator. That commentator stated that early Kentucky decisions developing this relatively mild measure of liability for defendants may have been influenced by the "deplorable state of title in mineral producing regions and the immense societal value derived from mining." Harrod Concrete & Stone Co. v. Crutcher, 458 S.W.3d 290 (Ky. 2015) (discussing Kelly M. Easton, *The Measure of Damages for Mineral Trespass—A Kentucky Perspective*, 4 J. MIN. L. & POL'Y 137 (1988–1989)). Given the poor state of titles, if the courts had applied a higher measure of liability, it might have deterred development too much at a time when policymakers wanted to encourage development.

2. *Recent Development*—Harrod Concrete and Stone Co. v. Crutcher

In *Harrod Concrete and Stone Co. v. Crutcher*, however, the Kentucky Supreme Court established a new rule that any plaintiff is entitled to recover from a good faith trespasser the value of the mineral at the mouth of the mine or well, minus the trespasser's reasonable costs.²³³ It no longer matters whether the plaintiff was capable of mining or drilling. The court noted that sometimes it is difficult to determine whether a plaintiff was capable of mining or drilling. Further, the "royalty" value of damages essentially forces a plaintiff into a retroactive lease, while allowing the defendant to keep any profits from drilling or mining. Although a good faith trespasser should not be punished, such a trespasser should not be allowed to make a profit from its trespass. *Harrod* involved mining for limestone, but the court stated that its new rule applies to both mining of solid minerals and the production of fugacious minerals, such as oil and gas.²³⁴

CONCLUSION

The law of trespass continues to evolve in the context of mineral exploration and production, including both oil and gas activity and mining. These activities raise unique trespass issues given such factors as the great depths at which operations take place, the fact that surface estate and mineral estate owners have different rights in the same land, and that the public policy of avoiding waste sometimes conflicts with a plaintiff's desire to assert trespass claims to vindicate their alleged possessory rights.

Some of these trends reflect movement toward a balancing of actual interests in unique situations involving subsurface disputes, rather than resolving trespass claims by applying the same rules as would apply on the surface. In *Baatz*, for example, the United States Sixth Circuit applied the Ohio Supreme Court's holding from the *Chance* case. *Baatz* and *Chance* each declined to apply the *ad coleum* doctrine literally, concluding that a landowner generally does not have a possessory interest that gives her the right to exclude others from her land at depths deep beneath the surface.

Similarly, in *Lightning*, a mineral estate owner sought to prevent the surface owner from authorizing the use of the tract for horizontal drilling operations that were favored by public policy. The mineral estate owner correctly noted that the drilling would cause an actual loss of minerals

233. *Harrod Concrete & Stone Co.*, 458 S.W.3d at 290.

234. *Id.* at 295.

belonging to the mineral estate owner, but the loss would be miniscule. The court held that, under the circumstances, Texas would not recognize a trespass claim in favor of the mineral estate owner.

Recent developments relating to pooling have revealed the tension between the well-established public policies of preventing physical and economic waste, which are policies that pooling promotes, versus protecting the rights of surface owners against unwanted mineral development. The most recent developments have favored surface owners, but it is not clear if this will be an ongoing trend. The *Crowder* case from West Virginia favored surface owners, as did legislation in Colorado, but the only slightly older *Key Operating* case from Texas reached a result opposite that in *Crowder*, coming down in favor of pooling and the public policies promoted by pooling.

Recent developments regarding whether the subsurface intrusion of fracturing fluids constitutes a trespass repeat themes raised in the pooling disputes. Recent decisions favor landowners' assertion of possessory rights below the surface, while only slightly older decisions from another jurisdiction rejected a trespass claim, concluding that a plaintiff's alleged possessory rights were attenuated, and that recognition of the claim would retard activities favored by public policy.

A final recent development was Kentucky's recent adoption of the majority rule regarding the measure of damages when a good faith trespasser removes minerals from land—namely, that the mineral owner is entitled to the value of the removed minerals, minus the costs of production. A large majority of states that have had occasion to address the issue now follow this rule.