



Employing a Reservoir Community Analysis to Define and Marshal Correlative Rights in the Oil and Gas Reservoir

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Employing a Reservoir Community Analysis to Define and Marshal Correlative Rights in the Oil and Gas Reservoir

David E. Pierce*

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INTRODUCTION

The Louisiana Mineral Code has much to offer common law jurisdictions that seek to more completely define the oil and gas property interest. As

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* Director, Washburn Oil and Gas Law Center. Norman R. Pozez Chair in Business and Transactional Law at Washburn University School of Law, Topeka, Kansas.

common law courts grapple with cross-boundary intra-reservoir conflicts, such as hydraulic fracturing (“frac”) fissures that cross subterranean property lines, the Louisiana Civil Code provides useful guidance on how to be “neighborly”¹ while the Mineral Code reminds us that reservoir rights are “correlative.”² These Code provisions provide accurate and useful reminders about the scope of “ownership” within an oil and gas reservoir.³ As is often the case, the Code provisions also provide guidance for how common law jurisdictions might better address oil and gas issues.⁴

In typical elegant fashion, the Mineral Code states: “Landowners and others with rights in a common reservoir or deposit of minerals have *correlative rights and duties* with respect to one another in the development and production of the common source of minerals.”⁵ In the past, most of the focus has been on “rights and duties” that place limitations on what an owner can do within the reservoir: *negative* rights.⁶ This Article explores the

1. LA. CIV. CODE art. 667 (2015) (“Although a proprietor may do with his estate whatever he pleases, still he cannot make any work on it, which may deprive his neighbor of the liberty of enjoying his own, or which may be the cause of any damage to him.”); *see also* LA. REV. STAT. ANN. § 31:10 & cmt (2000) (describing Article 10 as “a limited restatement of the obligation of good neighborhood contained in Article 667 of Louisiana Civil Code”). Article 2 of the Mineral Code explains the relationship between the Mineral Code and the Civil Code by providing that in the event of a conflict regarding a mineral law issue the Mineral Code “shall prevail.” LA. REV. STAT. ANN. § 31:2. Otherwise, the Mineral Code is “supplementary” to the Civil Code. *Id.*

2. LA. REV. STAT. ANN. § 31:9.

3. As used in this Article, the term “reservoir” has the same meaning as the term “pool” that Louisiana law defines as “an underground reservoir containing a common accumulation of crude petroleum oil or natural gas or both.” LA. REV. STAT. ANN. § 30:3(6) (2007); *see also* LA. REV. STAT. ANN. § 31:213(3) (2000) (adopting same definition).

4. The best examples of common law states seeking to mimic Louisiana law to address nagging oil and gas problems are the “Dormant Mineral” and “Mineral Lapse” acts designed to impose a “use” requirement to perpetuate a severed mineral interest beyond a stated statutory period. *See generally* *Texaco, Inc. v. Short*, 454 U.S. 516 (1982) (upholding the Indiana dormant mineral act designed to terminate a “mineral interest” if not “used” for 20 years and the owner fails to file a statement of claim); *Scully v. Overall*, 840 P.2d 1211, 1214 (Kan. Ct. App. 1992) (distinguishing terms of the Kansas mineral lapse act from the Indiana act). Title examiners across the nation are envious of Louisiana’s mineral servitude doctrine that avoids the myriad perpetual estates in minerals that exist under the common law system.

5. LA. REV. STAT. ANN. § 31:9 (emphasis added).

6. *See, e.g.,* *Elliff v. Texon Drilling Co.*, 210 S.W.2d 558, 559 (Tex. 1948) (negligent operations resulting in blowout and damage to the reservoir). This concept is articulated in Article 10 of the Mineral Code: “A person with rights in a common reservoir or deposit of minerals may not make works, operate, or otherwise use his rights so as to deprive another intentionally or negligently of the liberty of enjoying his rights, or that may intentionally or negligently cause

positive rights aspects of correlative rights and how such an analysis can assist in resolving intra-reservoir conflicts. Development of a coherent analysis of correlative “rights and duties” in the oil and gas reservoir has been stunted by the *ad coelum* doctrine and the rule of capture.

The quest for a more complete definition of property in oil and gas begins with the foundational concepts created by the *ad coelum* doctrine and the rule of capture, followed by qualifying principles created by correlative rights and conservation regulation. The contours of correlative rights are explored in the context of subsurface boundary disputes that require a precise delineation of rights in oil and gas reservoirs lacking physical boundaries. The study is completed with the author’s “reservoir community” analysis that defines and marshals each owner’s positive and negative correlative rights in a reservoir.

I. THE *AD COELUM* DOCTRINE

Much of the law of real property depends upon boundary lines drawn upon the surface of land. Boundaries define “ownership” and the unlawful invasion of ownership: “trespass.”⁷ The “*ad coelum* doctrine” is the abbreviated term used to describe the extent of ownership in land within surface boundaries.⁸ Ownership extends above and below the land surface.⁹ The *ad coelum* doctrine is a foundation of land law everywhere in the United States.¹⁰ For example, the civil law statement of the doctrine is contained in Louisiana Civil Code article 490:

damage to him.” LA. REV. STAT. ANN. § 31:10; *see also* Mobil Exploration & Producing U.S. Inc. v. Certain Underwriters Subscribing to Cover Note 95-3317(A), 837 So. 2d 11, 36 (La. Ct. App. 2002) (applying Article 10 and the comments to negligent drilling operations that resulted in a blowout and loss of “an ownership interest in hydrocarbons to be produced from the property at issue”).

7. Boundaries also play a similar role in defining the unlawful *interference* with ownership: “nuisance.”

8. The complete maxim is: *cujus est solum, ejus est usque ad coelum et ad inferos*, which is translated: “To whomsoever the soil belongs, he owns also to the sky and to the depths.” BLACK’S LAW DICTIONARY 341 (5th ed. 1979).

9. *See supra* note 8.

10. The *ad coelum* doctrine has been adopted, either by common law or by statute, to draw the necessary subsurface boundary lines. For example, the Supreme Court of Arkansas adopted it by decision in *Osborn v. Arkansas Territorial Oil & Gas Co.*, 146 S.W. 122, 124 (Ark. 1912). North Dakota, in 1877, adopted the following statute: “The owner of land in fee has the right to the surface and to everything permanently situated beneath or above it.” N.D. CENT. CODE § 47-01-12 (West, Westlaw through 2015 legislation). Professor Kuntz has observed in his treatise: “Ownership of land carries with it ownership of or the exclusive right to enjoy substances under the surface.” 1 EUGENE KUNTZ, A TREATISE ON THE LAW OF OIL AND GAS 59 (1987).

Unless otherwise provided by law, the ownership of a tract of land carries with it the ownership of everything that is directly above or under it.

The owner may make works on, above, or below the land as he pleases, and draw all the advantages that accrue from them, unless he is restrained by law or by rights of others.¹¹

The Louisiana Mineral Code applies this doctrine to “minerals occurring naturally *in a solid state*.”¹²

This extension of surface boundaries to define subsurface rights operates on the same fence-line mentality used to define surface rights.¹³ The problem, however, is that oil and gas can move within the reservoir rock structure and thereby migrate across the downward projection of surface boundary lines.¹⁴ This aspect of oil and gas prompted courts to develop the rule of capture.

II. THE RULE OF CAPTURE

In Louisiana, the rule of capture is found in article 8 of the Mineral Code that authorizes a landowner to “reduce to possession and ownership all of the minerals occurring naturally in a liquid or gaseous state that can be obtained by operations on or beneath his land even though his operations may cause their migration from beneath the land of another.”¹⁵ That is the affirmative statement of the rule. Article 14 states the negative corollary of the rule: “A landowner has no right against another who causes drainage of liquid or gaseous minerals from beneath his property if the drainage results from drilling or mining operations on other lands.”¹⁶ In each case, the “land,” “property,” or “other lands” will be measured by surface boundaries extended downward.

11. LA. CIV. CODE art. 490 (2015).

12. LA. REV. STAT. ANN. § 31:5 (emphasis added).

13. A description of this “fence-line mentality” follows:

Although an owner of land can construct a fence, and delineate his or her surface boundaries, this is not possible when the line is drawn within an oil and gas reservoir. Yet, all oil and gas conveyances and leases draw lines that purport to neatly carve up the oil and gas reservoir. This is the product of one of the most basic rules of property law: the owner of land “owns” all that lies above and below the surface boundaries of the land.

David E. Pierce, *Oil and Gas Easements*, 33 ENERGY & MIN. L. INST. 317, 319 (2012).

14. See *Frost-Johnson Lumber Co. v. Salling’s Heirs*, 91 So. 207, 210–11 (La. 1922).

15. LA. REV. STAT. ANN. § 31:8.

16. *Id.* § 31:14.

Louisiana, like every other state confronting the issue, has struggled with applying *ad coelum* concepts to “fugitive minerals” that have the capacity to migrate across boundary lines within a reservoir.¹⁷ This characteristic explains why Mineral Code article 5 applies traditional *ad coelum* principles to “solid minerals”¹⁸ while article 6 states: “Ownership of land does not include ownership of oil, gas, and other minerals occurring naturally in liquid or gaseous form”¹⁹ Whether oil and gas rights are part of the “[o]wnership of land” or a right to enter land to explore, develop, and produce oil and gas does not matter.²⁰ In either case the right to search for, extract, and own the oil, gas, or other minerals, is defined by what takes place on a tract of land that is described by surface boundaries.²¹ The court in *Alphonzo E. Bell Corp. v. Bell View Oil Syndicate* described the role of boundaries under the non-ownership-in-place theory noting that it granted the exclusive right to seek and capture oil and gas “that may be found within the exterior lines of his surface premises extended vertically downward.”²²

The *ad coelum* doctrine and rule of capture create what appear to be absolute and therefore seemingly conflicting property rights. To understand the full contours of oil and gas ownership, it is necessary to consider each reservoir owner’s correlative rights and rights created by conservation regulation.

17. This conceptual struggle apparently began in 1897 with the Ohio Supreme Court’s holding in *Kelly v. Ohio Oil Co.*, 49 N.E. 399 (Ohio 1897), where the court applied a rule of capture to gas migrating from adjacent lands owned by others. See TERENCE DAINTITH, FINDERS KEEPERS? HOW THE LAW OF CAPTURE SHAPED THE WORLD OIL INDUSTRY 28–29 (2010).

18. LA. REV. STAT. ANN. § 31:5.

19. *Id.* § 31:6.

20. The second sentence in article 6 provides: “The landowner has the exclusive right to explore and develop his property for the production of such minerals and to reduce them to possession and ownership.” *Id.*

21. The critical event where a mineral in the land becomes a separate item of property is when it is reduced to “possession” which occurs “when they are under physical control that permits delivery to another.” *Id.* § 31:7. The comment to article 7 notes the point of “possession” for oil and gas has been recognized as being when they are extracted at the wellhead. *Id.* cmt. The common law recognizes that oil and gas cannot be sold as “goods” until they have been extracted and are available for sale. U.C.C. § 2-107(1) (2012). The UCC article does not say that the oil and gas are not “goods.” It says that they cannot be sold as goods until there is severance by the seller; otherwise a contract is merely an agreement to sell. *Id.*

22. 76 P.2d 167, 179 (Cal. Ct. App. 1938).

III. CONSERVATION REGULATION AND CORRELATIVE RIGHTS

Louisiana was quick to take action to respond to waste created by the rule of capture and the resulting damage to correlative rights. For example, when a gas well in Caddo Parish got out of control, caught fire, and burned for several months, the spectacle became a train destination for tourists from Shreveport, including the Governor of Louisiana.²³ The well burned from May 7, 1905 through November 17, 1905.²⁴ In 1906 the legislature promptly passed an act that criminalized allowing a gas well to remain out of control or wasting gas by allowing it to burn or vent into the air.²⁵ In 1960, Dean Sullivan, after studying the first 50 years of conservation experience in Louisiana, commented:

Louisiana has a reputation for militant conservation of oil and gas. Problems that would be complex by the standards of many oil producing states have become routine. Judicial interpretation of the conservation laws and of administrative action thereunder reflects the appreciation of individual rights and of the necessity for the conservation of these irreplaceable natural resources.²⁶

As noted by Dean Sullivan, Louisiana has always been at the forefront of addressing difficult oil and gas ownership and development issues.

Because conservation regulation often involves limitations on the rule of capture, "correlative rights" are often discussed in tandem with conservation issues. To a large extent, an owner is left to his or her own devices under the rule of capture to secure and protect correlative rights. As Professors Kramer and Martin note in their treatise on pooling and unitization:

Having correlative rights in a common source of supply does not mean that each owner is guaranteed to recover a proportionate share of the oil or gas in the reservoir, but only that each owner shall be afforded the opportunity to produce or to share in production on a reasonable and fair basis. The point bears repeating for emphasis:

23. Yandell Boatner, *Legal History of Conservation of Oil and Gas in Louisiana*, in LEGAL HISTORY OF CONSERVATION OF OIL AND GAS 60, 61 n.3 (1939).

24. *Id.*

25. *Id.* at 61.

26. CONSERVATION OF OIL & GAS 100 (Robert E. Sullivan ed., 1960).

The correlative right is having the *opportunity* to produce, not having a guaranteed share of production.²⁷

When a conservation authority limits an owner's self-help capture remedy—the “opportunity”—it must do so in a fair and equitable manner. A failure to do so would violate the owner's correlative rights.

A number of cases demonstrate how these correlative rights may be violated by limiting an owner's opportunity to produce. For example, in *Zinke & Trumbo, Ltd. v. State Corp. Commission of the State of Kansas*,²⁸ the court held that the commission violated Zinke's correlative rights by failing to consider a statutory factor in adopting a proration formula for gas wells in a reservoir, the “Morrow sand,” that the commission regulated.²⁹ Sho-Bar completed a well with 11 feet of productive reservoir thickness located 330 feet from Zinke's lease line.³⁰ Zinke had completed a well on its lease with 30 feet of productive reservoir.³¹ Sho-Bar fraced its well; the court commented on the trajectory of the frac stating:

Experts for both parties testified a fracture of this size would extend at least 400 feet in the area of least resistance. The center of the reservoir on Zinke's lease is the area of least resistance. Since Sho-Bar's location of Fincham 1-30 is only 330 feet from Zinke's lease line, the fracture obviously penetrated Zinke's lease.³²

After the frac treatment, production from Sho-Bar's well increased by over 550%.³³ This dramatic increase was attributed to the highly porous and permeable nature of the reservoir and the frac traveling from the edge of the formation, where Sho-Bar's well was located, to the heart of the formation, where Zinke's well was located.³⁴

When Sho-Bar applied to the Kansas Corporation Commission to establish field rules for the Morrow sand, Sho-Bar proposed 160-acre spacing with a 50-50 proration formula: 50% of the total pool allowable based upon the open flow of each well and 50% based upon the acreage attributable to each well.³⁵ Zinke objected, arguing for 640-acre spacing

27. 1 BRUCE M. KRAMER & PATRICK H. MARTIN, *THE LAW OF POOLING AND UNITIZATION* § 5-01, at 5-16 (2014).

28. 749 P.2d 21 (Kan. 1988).

29. *Id.* at 28.

30. *Id.* at 23.

31. *Id.*

32. *Id.* at 27.

33. *Id.* (Flow increased from 4.5 million cubic feet per day to 25 million).

34. *Id.* at 23, 27.

35. *Id.* at 23-24.

and a formula that was not so heavily weighted toward the open flow of Sho-Bar's fraced well.³⁶ The Commission adopted Sho-Bar's 160-acre spacing and the 50–50 proration formula.³⁷

On appeal, the court first noted that the Commission had the duty to protect each party's correlative rights, which include allowing each owner to produce from a reservoir in a manner that will not: "(A) injure the reservoir to the detriment of others; (B) take an undue proportion of the obtainable oil or gas; (C) or cause undue drainage between developed leases."³⁸ The applicable conservation statute required the Commission to "give equitable consideration to acreage, pressure, open flow, porosity, permeability and thickness of pay, and such other factors, conditions and circumstances as may exist in the common source of supply under consideration at the time, as may be pertinent."³⁹ Zinke contended the Commission erred by not considering the impact of the fracture treatment as an "other factor" in developing field rules for the Morrow formation. The court agreed and held that the order was unreasonable and a violation of Zinke's correlative rights.⁴⁰

The *Zinke* case is an example of correlative rights in a public context designed to ensure fair treatment by government when it intervenes to marshal capture rights. The issue is routine and one that commissions, commissioners, and courts have dealt with extensively.⁴¹ Much less

36. *Id.* at 24. *Zinke* proposed an allowable formula determined by "dividing the net acre feet attributable to each well by the total reservoir acre feet." *Id.* at 26–27.

37. *Id.* at 24.

38. *Id.*; see also KAN. ADMIN. REGS. § 82-3-101(a)(21)(A)–(C) (Supp. 2014).

39. *Zinke*, 749 P.2d at 24 (emphasis added) (citing KAN. STAT. ANN. § 55-703(a) (1986)).

40. The court found:

Under the KCC's duty to protect correlative rights to natural gas in a common source of supply, we find evidence of fracture treatment to a well or wells in the common field to be one of the "other factors, conditions, and circumstances" which must be considered in making a proration order. It is particularly important where a well's open flow is 50% of its allowable production. The BPO [basic proration order] does not reveal, nor do we find, that the fracture treatment to Sho-Bar's Fincham 1–30 well was considered by the KCC in making its BPO. We hold the order is thus unreasonable.

Zinke, 749 P.2d at 28.

41. The Commission's error in the *Zinke* case was not necessarily the ultimate formula it chose to adopt; it was the failure to consider the statutory factors in arriving at its decision. For example, in *Mobil Oil Corp. v. Gill*, 194 So. 2d 351, 353–54 (La. Ct. App. 1966), the Commissioner of Conservation adopted a participation formula in a reservoir-wide unit giving 60% weight to productive

developed is the private context of correlative rights. The cases that follow are examples of courts resolving disputes that could have been better addressed using a correlative rights analysis. Instead, the issues were forced into an ill-fitting “property line” analysis.

IV. INTRA-RESERVOIR CONFLICTS AND THE “PROPERTY LINE” ANALYSIS

To date, conflicts among owners within an oil and gas reservoir have been framed using an *ad coelum* or rule of capture analysis, which is essentially a “property line” analysis. The most notable recent intra-reservoir disputes have concerned hydraulic fracturing where frac fissures cross a subterranean boundary line. The Texas Supreme Court, in *Coastal Oil & Gas Corp. v. Garza Energy Trust*,⁴² found no “actionable” trespass when a frac fissure extended into adjacent lands.⁴³ The federal district court, applying West Virginia law in *Stone v. Chesapeake Appalachia, LLC*,⁴⁴ considered and rejected the analysis in *Garza* and held that frac fissures extending into adjacent lands constituted an actionable trespass.⁴⁵ Commenting on the Texas Supreme Court’s analysis, the court in *Stone* stated: “The *Garza* opinion gives oil and gas operators a blank check to steal from the small landowner.”⁴⁶ Both cases applied a property line analysis.

sand under a tract; Mobil contended it should be a 100% weighting. In the *Gill* case, Mobil was complaining because the Commissioner considered other factors, authorized by statute, to determine “each producer’s just and equitable share.” *Id.* at 354 (internal quotation marks omitted). The court affirmed the Commissioner’s decision. *Id.* at 355.

42. 268 S.W.3d 1 (Tex. 2008).

43. Although the Supreme Court found no actionable trespass, the trial court and court of appeals did, and the court of appeals affirmed damages of \$543,776 and punitive damages of \$10,000,000. *Mission Res., Inc. v. Garza Energy Trust*, 166 S.W.3d 301, 309–10 (Tex. App. 2005), *rev’d sub nom.*, *Coastal Oil & Gas Corp. v. Garza Energy Trust*, 268 S.W.3d 1 (Tex. 2008). The court of appeals affirmed the jury finding of malice, concluding the record established “Coastal’s specific intent to cause substantial injury to appellees” by engaging in hydraulic fracturing to increase production from Coastal’s wells. *Id.* at 314–15. The court of appeals also found the Texas statutory cap on punitive damages was properly removed because the record supported a finding that Coastal’s hydraulic fracturing activities constituted felony theft. *Id.* at 315–16.

44. No. 5:12-CV-102, 2013 WL 2097397 (N.D. W. Va. Apr. 10, 2013), *vacated following settlement*, 2013 WL 7863861 (N.D. W. Va. July 30, 2013).

45. *Id.* at *8.

46. *Id.* at *6.

A. Garza: A Weak and Incorrect Analysis

In *Garza*, the majority of the court held that addressing the inherent legitimacy of the frac fissure crossing boundary lines was unnecessary because the lessor, lacking a present possessory interest in the impacted land,⁴⁷ could not seek damages for anything other than the loss of oil and gas through drainage.⁴⁸ The court then made the analytical leap that any damages associated with drainage were foreclosed by the rule of capture.⁴⁹

The weakness of the analysis in *Garza* is that the court never evaluated the legitimacy of the activity that made capturing the oil and gas possible.⁵⁰ The predicate for being able to capture the oil and gas was the act of fracing the well. If the fracing was a legitimate act, then the drainage from the adjacent land would be protected by the rule of capture. If the fracing was illegitimate, the subsequent capture would also be illegitimate. Although *Garza* is hailed by many as “solving” the trespass problems relating to fracing,⁵¹ the court clearly indicated it was not addressing the issue.⁵² After noting its withdrawn opinion in *Geo Viking, Inc v. Tex-Lee Operating Co.*,⁵³ where the court had held “fracing beneath another’s land was a trespass,” the court stated that it “need not decide the broader issue here.”⁵⁴ Instead, the court held that any damages the plaintiffs could assert

47. Under Texas law, the oil and gas lease created a fee simple determinable conveyance of the oil and gas by the lessor to the lessee. *Garza*, 268 S.W.3d at 9. Therefore, while the lease was in effect, the lessor owned a nonpossessory possibility of reverter in the oil and gas. *Id.* This limited the lessor to only those remedies available to owners of nonpossessory interests. *Id.*

48. *Id.* at 12.

49. See 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, 260–61 (2011).

50. This was the principal complaint of the dissenting justices: “I would not address whether the rule of capture precludes damages when oil and gas is produced through hydraulic fractures that extend across lease lines until it is determined whether hydraulically fracturing across lease lines is a trespass.” *Garza*, 268 S.W.3d at 42 (Johnson, J., dissenting). The dissenting justices make the point that only legitimate capture is protected by the rule of capture. To determine whether Coastal’s capture was legitimate, the analysis must first address the legitimacy of the frac fissures crossing property lines. *Id.* at 43–44.

51. This general assumption is best demonstrated by the argument made by the defendants in *Stone*. *Stone v. Chesapeake Appalachia, LLC*, No. 5:12-CV-102, 2013 WL 2097397, at *4 (N.D. W. Va. Apr. 10, 2013), *vacated following settlement*, 2013 WL 7863861 (N.D. W. Va. July 30, 2013).

52. *Garza*, 268 S.W.3d at 12.

53. No. D-1678, 1992 WL 80263 (Tex. 1992) (per curiam), *withdrawn*, 839 S.W.2d 797 (Tex. 1992) (per curiam).

54. *Garza*, 268 S.W.3d at 12.

were related solely to drainage, which the majority deemed to be encompassed by the rule of capture.⁵⁵

B. Stone: A Strong but Equally Incorrect Analysis

The court in *Stone* uses a strict property line analysis to impose liability when a frac fissure crossed a surface boundary extended downward into the reservoir.⁵⁶ The court did not attempt to consider the nature of each tract owner's rights in the connected reservoir structure.⁵⁷ Correlative rights were not considered.⁵⁸

The problem with the analysis in *Stone* is the court assumed that when a frac fissure crossed a subterranean boundary line it constituted a trespass.⁵⁹ *Stone* clearly answered the question left unanswered in *Garza*: recovery of oil and gas through a frac fissure that crosses property lines is a trespass and is therefore not protected by the rule of capture.⁶⁰ The court stated its belief that the West Virginia Supreme Court of Appeals would find: "that hydraulic fracturing under the land of a neighboring property without that party's consent is not protected by the 'rule of capture,' but rather constitutes an actionable trespass."⁶¹

The court noted that West Virginia fully embraces the *ad coelum* doctrine.⁶² The court used this reasoning to try and distinguish *Garza* because the Texas Supreme Court suggested the doctrine may not be applied to a subsurface trespass.⁶³ The *ad coelum* doctrine is a necessary

55. *Id.* "Accordingly, we hold that damages for drainage by hydraulic fracturing are precluded by the rule of capture." *Id.* at 17.

56. *Stone*, 2013 WL 2097397, at *7–*8.

57. *Id.*

58. *Id.*

59. *Id.* at *8.

60. *Id.*

61. *Id.* The *Stone* analysis, like the *Garza* analysis, fails to consider the connected nature of the property interest at issue. Neither opinion contains any analysis regarding the parties' correlative rights in the reservoir. The observations made by Theresa Poindexter, in her student comment on *Garza*, are therefore equally applicable to *Stone*. Theresa D. Poindexter, Comment, *Correlative Rights Doctrine, Not the Rule of Capture, Provides Correct Analysis for Resolving Hydraulic Fracturing Cases* [Coastal Oil & Gas Corp. v. Garza Energy Trust, 268 S.W.3d 1 (Tex. 2008)], 48 WASHBURN L.J. 755, 756–57 (2009).

62. *Stone*, 2013 WL 2097397, at *7. The court observed: "Significantly, the West Virginia Supreme Court of Appeals as recently as 2003 reaffirmed the maxim, stating that 'we are considering the case of a lessor who owned from the heavens to the center of the earth.'" *Id.*

63. The Texas Supreme Court, after noting Lord Coke could not have envisioned airplanes or oil wells, stated: "The law of trespass need no more be the same two miles below the surface than two miles above." *Garza*, 268 S.W.3d at 11. This statement was dicta. The court was musing that if frac fissures constituted

component of the property line analysis. Once a frac fissure crosses a property line, a trespass has been committed, and any drainage of oil and gas associated with the frac will be illegitimate and not protected by the rule of capture.⁶⁴

As is frequently the case, the court chose to protect the landowner's right to refuse to pool its land or otherwise participate in development of the reservoir—the right to just say “no.” The *Stone* court emphatically made this point when it stated:

The *Garza* opinion gives oil and gas operators a blank check to steal from the small landowner. Under such a rule, the companies may tell a small landowner that either they sign a lease on the company's terms or the company will just hydraulically [sic] fracture under the property and take the oil and gas without compensation. In the alternative, a company may just take the gas without even contacting a small landowner.⁶⁵

In many states, as in Louisiana, compulsory pooling statutes have severely limited the landowner's ability to just say “no.”⁶⁶ In a state like Kansas, which has no compulsory pooling, the landowner has the right to say “no,” but in that process, the landowner may also be saying no to the opportunity to recover the oil and gas beneath the land.⁶⁷

a trespass under the *ad coelum* doctrine, the court may be forced to consider, or reconsider, the nature of subsurface ownership. The court has subsequently indicated that different rules can be applied to subsurface invasions that do not relate to the recovery of oil and gas. *FPL Farming Ltd. v. Envtl. Processing Sys., L.C.*, 351 S.W.3d 306, 314 (Tex. 2011) (wastewater injection well).

64. *Stone*, 2013 WL 2097397, at *7–8.

65. *Id.* at *6.

66. In *Nunez v. Wainoco Oil & Gas Co.*, the court held that:

[W]hen the Commissioner of Conservation has declared that landowners share a common interest in a reservoir of natural resources beneath their adjacent tracts, such common interest *does not permit one participant to rely on a concept of individual ownership to thwart the common right to the resource as well as the important state interest in developing its resources fully and efficiently.*

488 So. 2d 955, 964 (La. 1986) (emphasis added).

67. In *Mobil Oil Corp. v. State Corp. Commission*, 608 P.2d 1325 (Kan. 1980), the court held that although the owner of an undivided 3/7 of the mineral interest refused to join in development, the remaining 4/7 interest may nevertheless be considered in assigning an allowable to a voluntarily pooled unit. Because the unit well was not located on the tract at issue, the owner of the 3/7 interest would not participate in production attributable to the tract. In contrast to the “small landowner” situation described by the court in *Stone*, the Kansas Supreme Court viewed the “small landowner” and Mobil as follows:

The court in *Stone* made clear that the rule of capture does not protect hydraulic fracturing.⁶⁸ But whether fracing might be protected under a more precise definition of the parties' respective rights as members of a "reservoir neighborhood" was an issue left untouched.

V. THE RESERVOIR "NEIGHBORHOOD" ANALYSIS

Article 667 of the Louisiana Civil Code provides, in part: "Although a proprietor may do with his estate whatever he pleases, still he cannot make any work on it, which may deprive his neighbor of the liberty of enjoying his own, or which may be the cause of any damage to him."⁶⁹ This portion of article 667 recognizes that no property interest is absolute. Private property is sometimes made more valuable by recognizing limits on its free use because the property will benefit from similar limits imposed on surrounding owners. Even the *ad coelum* doctrine can be "restrained by law or by rights of others."⁷⁰ Carol Rose, one of the leading contemporary property theorists, has noted that property consists of "some individual rights, mixed with some rights shared with nearby associates or neighbors, mixed with still more rights shared with a larger community, all held in relatively stable but nevertheless changing and subtly renegotiated relationships."⁷¹ One can apply Professor Rose's theories to oil and gas development.⁷² When dealing with oil and gas in a reservoir, these reciprocal limitations—and corresponding reciprocal rights—are reflected in the concept of correlative rights.

The rather dog-in-the-manger position of the owners of the 3/7 interest is that if Mobil won't pay them a premium for joining the unit then it is unfair to let the owners of the 4/7 interest into the unit. The Commission, by its order, permits the 3/7 to use the 4/7 as a tool to improve their bargaining position.

Id. at 1337.

68. *Stone*, 2013 WL 2097397, at *8.

69. LA. CIV. CODE art. 667 (2015). Article 10 of the Mineral Code applies the Article 667 concepts to the oil and gas reservoir. *See supra* notes 1, 6.

70. LA. CIV. CODE art. 490. Article 490, after stating that "a tract of land carries with it the ownership of everything that is directly above or under it," tempers this ownership by providing: "The owner may make works on, above, or below the land as he pleases, and draw all the advantages that accrue from them, *unless he is restrained by law or by rights of others.*" *Id.* (emphasis added).

71. Carol M. Rose, *Canons of Property Talk, or, Blackstone's Anxiety*, 108 YALE L.J. 601, 631 (1998).

72. Pierce, *supra* note 49, at 245.

A. Correlative Rights

During the formative years of oil and gas law, the greatest threat to the rule of capture was the correlative rights doctrine. The concern was that the doctrine might be used to allocate a specific volume of oil and gas to individual tracts of land overlying the reservoir.

1. Negative Rights and Fear of “Fair Share” Allocation

In 1931, the American Petroleum Institute (“API”) sought to describe each owner’s correlative rights in a reservoir by stating: “each owner of the surface is entitled only to his equitable and ratable share of the recoverable oil and gas energy in the common pool in the proportion which the recoverable reserves underlying his land bear to the recoverable reserves in the pool.”⁷³ If this principle were applied literally, then a producer would have to stop producing once it had recovered its “equitable and ratable share of the recoverable oil and gas” from the reservoir. Any attempt to allocate a specific portion of a reservoir to overlying landowners would severely limit the rule of capture and the entrepreneurial spirit that rule inspires. Perhaps that is why the API, in 1942, purported to “clarify” its 1931 statement with the following:

*Within reasonable limits, each operator should have an opportunity equal to that afforded other operators to recover the equivalent of the amount of recoverable oil [and gas] underlying his property. The aim should be to prevent reasonably avoidable drainage of oil and gas across property lines that is not offset by counter drainage.*⁷⁴

Through this clarification, the API fundamentally changed its statement on correlative rights by focusing on a fair “opportunity” to exercise capture

73. AM. INST. MINING & METALLURGICAL ENG’RS, PETROLEUM CONSERVATION 256 (Stuart E. Buckley ed., 1951) (quoting AM. PETROLEUM INST., PROCEEDINGS OF THE TWELFTH ANNUAL MEETING § 1 (1930)); see also Seldon B. Graham, Jr., *Fair Share or Fair Game? Great Principle, Good Technology—But Pitfalls in Practice*, 8 NAT. RESOURCES LAW. 61, 65 (1975).

74. SPECIAL STUDY COMM. & LEGAL ADVISORY COMM. ON WELL SPACING & ALLOCATION OF PROD., AM. PETROLEUM INST., PROGRESS REPORT ON STANDARDS OF ALLOCATION OF OIL PRODUCTION WITHIN POOLS AND AMONG POOLS 8 (1942) (emphasis added); see also *Wronski v. Sun Oil Co.*, 279 N.W.2d 564, 569–70 (Mich. Ct. App. 1979).

rights as opposed to any attempt to allocate oil and gas to overlying property owners.⁷⁵

By the time this change in policy was announced, states were passing oil and gas conservation laws and the focus shifted from private correlative rights to ensuring equal treatment of owners by conservation agencies regulating drilling and production.⁷⁶ The only private correlative rights issues were those dealing with injury to the reservoir that impaired the capture rights of other owners in the reservoir. Prior to the conservation movement, most correlative rights cases related to injury inflicted on other owners in the reservoir.⁷⁷ One notable exception is *Hague v. Wheeler*,⁷⁸ which many commentators cite as an outright rejection of correlative rights in favor of unrestrained capture.⁷⁹ As will be seen, however, *Hague* was probably the first “gas balancing” case, with the result driven by the court’s search for an equitable remedy.

2. *The First Gas Balancing Case: Hague v. Wheeler*

The court in *Hague v. Wheeler* was attempting to deal with one developer’s refusal to share a market for gas with another developer in the same reservoir.⁸⁰ As the court noted: “it is a matter of first importance to get a clear apprehension of the facts”⁸¹ Wheeler undertook to drill the well “at the suggestion and request of the gas company”⁸² Hague was another operator in the field who was selling gas to the gas company.⁸³ After drilling a well, Wheeler and the gas company were unable to agree

75. This is also the modern definition of correlative rights. See KRAMER & MARTIN, *supra* note 27, § 5-01, at 5-16.

76. The API’s initial 1931 characterization of correlative rights was immediately followed by the enactment of state oil and gas conservation statutes. See *generally* THE OIL AND GAS CONSERVATION STATUTES [annotated] (Northcutt Ely comp. 1933).

77. See, e.g., *Ohio Oil Co. v. Indiana*, 177 U.S. 190, 209–10 (1900) (oil producer enjoined from producing in a manner that would injure gas producers in same reservoir).

78. 27 A. 714 (Pa. 1893).

79. DAINTITH, *supra* note 17, at 27–28 (“The court . . . explicitly rejected any restriction of the defendants’ rights derived from ideas of malice or correlative rights in a common resource, which had been adopted—from the developing law of subterranean waters—in a learned judgment by the court below.”); Bruce M. Kramer & Owen L. Anderson, *The Rule of Capture—An Oil and Gas Perspective*, 35 ENVTL. L. 899, 907 (2005) (describing *Hague* as a “‘pure’ form of the rule of capture”).

80. *Hague*, 27 A. at 718–19.

81. *Id.* at 718.

82. *Id.*

83. *Id.*

on a gas sales arrangement.⁸⁴ In the meantime, Hague and the gas company were producing and marketing gas from their wells.⁸⁵ Wheeler's response was to open his well and let the gas vent into the air.⁸⁶ After making several insightful observations about "correlative rights," the trial court granted the injunction sought by Hague and the gas company.⁸⁷

The trial judge considered correlative rights limitations recognized under water law and commented on "certain duties of good neighborhood" that were applicable to the oil and gas reservoir.⁸⁸ The court posed the following questions regarding the connected nature of the oil and gas reservoir: "What, then, are the rights of adjoining owners of oil and gas? Are they absolute and independent, or qualified and correlative?"⁸⁹ Answering the question, the court held that the "right of each owner is qualified" because of the connected nature of the right; each must "submit to such limitations as are inevitable to enable each to get his own."⁹⁰

The Pennsylvania Supreme Court took a much more pragmatic approach to the issues. If the court upheld the injunction, there would be no incentive for Hague and the gas company to share their markets with Wheeler, and Wheeler's gas would be drained away.⁹¹ If the injunction were denied, a chance would remain that Wheeler could make a deal to sell his gas, or his gas well, to Hague or the gas company. The issue was whether to uphold the trial court's injunction. In reversing the injunction, the court did not think that accomplishing equity was necessary in this case.⁹² The court even ended its opinion with a statement acknowledging that an oil and gas developer "must not disregard his obligations to the public, he must not disregard his neighbor's rights."⁹³ This ruling was not an outright rejection of correlative rights in oil and gas, but merely a

84. *Id.*

85. *Id.*

86. *Id.*

87. *Id.* at 717. In *Higgins Oil & Fuel Co. v. Guaranty Oil Co.*, 82 So. 2d 206 (La. 1919), leaving a well unplugged such that it impaired the ability of an adjacent landowner to efficiently operate their pump was held to be actionable. The court noted that one "must not in an unneighborly spirit do that which while of no benefit to himself causes damage to the neighbor." *Id.* at 211; *see also* Mobil Exploration & Producing U.S. Inc. v. Certain Underwriters Subscribing to Cover Note 95-3317(A), 837 So. 2d 11, 36-39 (La. Ct. App. 2002) (applying article 10 of the Mineral Code to allow recovery of damages to the oil and gas reservoir neighborhood caused by negligent drilling operations resulting in a blowout).

88. *Hague*, 27 A. at 716.

89. *Id.* at 717.

90. *Id.*

91. *Id.* at 719 ("Their well must be shut in, while their successful neighbors drain the entire basin through their open wells, and receive pay for the gas.").

92. *Id.*

93. *Id.* at 720.

refusal to use the concept to limit Wheeler's rights as to Hague and the gas company.⁹⁴

B. Professor Kuntz's "Special Community"

Professor Kuntz first described correlative rights as rules for a "special community" in a 1958 article for the *Mississippi Law Journal*.⁹⁵ In summarizing the scope of the term "correlative rights," Professor Kuntz observed: "It is a simple doctrine that owners of rights in a common source of supply may not inflict loss upon one another by conduct which is considered to be socially undesirable."⁹⁶ This statement concerns the negative rights component of correlative rights and declares what cannot be done in the reservoir. He then develops the "social" aspects of correlative rights, stating:

The owners in the common source of supply operate in a special community, and the social acceptability of conduct within such community must be determined, not only by applying the standards applicable to conduct generally, but by also considering the utility of the conduct in the light of its peculiar consequence to others operating in the same community.⁹⁷

Although this passage suggests that Professor Kuntz would recognize a positive rights component to correlative rights, he does not further develop his special community observation. In his treatise, Professor Kuntz expands upon his analysis of correlative rights, mentioning "fracturing the sands" as being in a category where the rule of capture protects correlative rights by allowing impacted owners to "do likewise."⁹⁸ He contrasts that situation with secondary recovery operations "because it is not always possible for each operator to 'go and do likewise' and thereby obtain his fair share of the common source of supply."⁹⁹ The "reservoir community" analysis builds on Professor Kuntz's special community but also provides a foundation for a positive rights component to correlative rights.

94. *See id.* at 718–20.

95. Eugene Kuntz, *Correlative Rights in Oil and Gas*, 30 MISS. L.J. 1, 8 (1958).

96. *Id.*

97. *Id.* This "special community" analysis is also repeated by Professor Kuntz in his treatise. KUNTZ, *supra* note 10, at 120.

98. *Id.* at 129.

99. *Id.*

C. A “Reservoir Community” Analysis

The foundation of a reservoir community analysis is the physical reality that drawing a property line within a reservoir and thereby creating a segregated portion of reservoir ownership is not possible. This reality is also the inherent flaw with the *ad coelum* doctrine, the rule of capture, and the resulting property line analysis. What the courts failed to realize in *Garza* and *Stone* is the undeniable fact that neither party to the litigation had the sole rights to the reservoirs at issue. In each case, the parties owned *more, and less*, than the courts accounted for in their analyses. They each owned more rights because they also possessed rights in the reservoir at large, which gave them rights in the properties of their neighbors. They each owned less rights because the portions of the reservoir within their property lines were connected to surrounding properties. Because activities within the owner’s property lines could impact surrounding properties, the owner will be restrained to account for community rights.

1. Define Community Membership

The reservoir community analysis begins where the property line analysis begins and ends—with surface boundaries. The surface boundaries define membership in the reservoir community. Membership may change as more information concerning the extent of the reservoir becomes available. The extent of the reservoir defines the universe of potential members and ownership lines drawn at the surface will determine those members.

Using the *Garza* case as a guide, assume the reservoir at issue—the community—is the Vicksburg T formation, which is found at a depth between 11,688 and 12,610 feet below the surface of lands that constitute the reservoir community.¹⁰⁰ Although property lines will be used to define membership in a particular reservoir community, they will not define rights as a community member.¹⁰¹

2. Define the Physical Attributes of the Reservoir Community

The second step is to identify the physical attributes of the reservoir community. The Vicksburg T formation described in *Garza* is a gas

100. Coastal Oil & Gas Corp. v. Garza Energy Trust, 268 S.W.3d 1, 5 (Tex 2008).

101. See David E. Pierce, *Developing a Common Law of Hydraulic Fracturing*, 72 U. PITT. L. REV. 685, 693 (2011).

reservoir located at the depths noted previously.¹⁰² “The Vicksburg T is a ‘tight’ sandstone formation, relatively imporous and impermeable, from which natural gas cannot be commercially produced without hydraulic fracturing stimulation”¹⁰³ Depending upon the conduct being evaluated, extensive geological and geophysical information may be collected for consideration. The goal is to figure out how the reservoir community works.

3. Evaluate the Activity Impacting the Reservoir Community

Once the mechanics of the reservoir community are fully understood, a developer’s proposed activity—and its impact on the reservoir community—can be properly evaluated. The activity for this example is the hydraulic fracturing conducted by Coastal in the Vicksburg T formation. The first issue is whether *any* hydraulic fracturing should be allowed in the Vicksburg T formation. Assume a landowner owning oil and gas rights in the Vicksburg T formation objects to all hydraulic fracturing. Perhaps they are concerned about frac fissures coming onto their part of the formation from adjacent lands. Perhaps they fear producing additional fossil fuels will contribute to climate change and the ultimate destruction of planet Earth. The matter will not be put to a vote. Instead, consideration of the physical attributes of the Vicksburg T formation will provide the answer. Because the Vicksburg T is worthless without hydraulic fracturing, it is an appropriate activity and one that should be encouraged.¹⁰⁴

But what if prudent development of the Vicksburg T formation requires that frac fissures extend across property lines?¹⁰⁵ Can an owner object to the practice? Unlike the *ad coelum* capture property line analysis, the issue is not the proximity of a frac fissure to a property line. The issue is whether the conduct is in harmony with development of the reservoir community. The proper focus should be on the conduct: the justification

102. *Garza*, 268 S.W.3d at 5.

103. *Id.* at 6.

104. The analysis should consider only what is necessary to maximize development and value from the Vicksburg T formation. Surface use and other collateral issues should not enter into the analysis. This is purely an exercise for the technicians seeking to get the most value out of an oil and gas reservoir.

105. This may be done to avoid creating bands of reservoir that are not appropriately developed and therefore leave oil and gas unrecovered and, in many cases, unrecoverable. Potential trespass liability would most likely cause these bands of otherwise productive reservoir to become wider as developers, and their lawyers, seek to manage the risk of trespass claims. This injects an artificial component into the development process that has no relationship to the best interests of the reservoir community, or the general public.

for what was done, how it was done, and its impact on the reservoir community. The impact will be a matter of time and place; the state of the art combined with the special requirements of the reservoir.¹⁰⁶

This step is where the positive aspects of correlative rights play a major role in the analysis. When fracking is consistent with reservoir community standards, owners will have the affirmative right to send frac fissures across property lines and into adjacent lands. When properly viewed as a property right of a common owner in the reservoir community, trespass will not be an issue. The intrusion across property lines is authorized as a member of the reservoir community pursuing development of the reservoir.

Therefore, when a court must evaluate the legitimacy of frac fissures that cross property lines, courts should not consider the concept of “trespass” until the property interests of all parties have been accurately defined. Trespass will always be dependent upon an accurate definition of the affected parties’ property rights. The reservoir community analysis recognizes communal rights in the reservoir that will often extend beyond property lines. The issue can also arise before a state oil and gas conservation commission, regarding spacing and set-backs from adjacent properties. The communal rights of all parties in the reservoir must likewise be acknowledged to prevent adopting development rules that create unnecessary buffer zones for no reason other than to accommodate property lines. Buffer zones can strand oil and gas reserves resulting in waste. Properly defining each owner’s property interest in the reservoir community will secure the rights of all owners and promote efficient development of the oil and gas resource.

CONCLUSION

Whether termed correlative rights, reservoir community, or subterranean neighborhood, the goal is to ensure that oil and gas ownership is viewed in its proper multi-dimensional context. Each owner within a reservoir is “connected” to varying degrees with other owners in the reservoir. This connection places restrictions on all owners to not do things

106. As noted in previous writings:

The “time” element considers the state of the art in developing oil and gas. The “place” encompasses the unique conditions presented by a particular reservoir. . . . Development techniques and practices that were reasonable at one time may become unreasonable as they are eclipsed by new techniques and practices. Therefore, the correlative rights within a particular reservoir community must be evaluated on a case-by-case basis.

Pierce, *supra* note 49, at 259.

in the reservoir that could injure the reservoir community. At the same time, that connection gives each owner affirmative rights that can extend into the community to such an extent that property lines may not be the limitation encountered at the surface. Hydraulic fracturing is a good example. Because developers must operate in an interconnected reservoir, allowing frac fissures to venture beyond property lines to achieve effective development of the reservoir community will often be reasonable. When the activity is appropriate to meet the needs of the reservoir community, fracing becomes one of the developer's correlative rights.

