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The Ever-Protruding Stick in the Bundle: The Accommodation of Groundwater Rights in Texas Oil and Gas

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COMMENTS

THE EVER-PROTRUDING STICK IN THE BUNDLE: THE ACCOMMODATION OF GROUNDWATER RIGHTS IN TEXAS OIL AND GAS

By: Andrew D. Lewis*

ABSTRACT

In Texas, water is on everyone's minds. Between a raging drought, an expanding oil and gas industry, and a whirring media machine, Texans find themselves in great conflict on how to maintain a tradition and a booming industry while conserving the very resource that allows their presence in the first place: water. Water has become an important part of oil and gas exploration, and this fact has kept it well within the reach of those who lease the mineral interests. Texas law promotes such exploration by granting these lessees the rights to the reasonable use of the land's subsurface water so that they may be able to pursue their mineral interests.

The limitations to this right loom large, however, as this right may begin to appear, in the minds of legislators, landowners, and the public-at-large, as not so reasonable. Existing Texas common-law limitations to this implied right may provide the door through which public interests slip into the traditional analyses and allow the interests of the landowner, the public, and the oil and gas industry to be served.

This Comment suggests that changes in common law, regulations, and social and environmental trends portend broader interpretations of the limitations to Texas's implied right of reasonable use of the surface. Specifically, this Comment suggests that the analysis provided by one limitation, the Accommodation Doctrine, may be the path by which Texas courts find that the oil and gas industry should accommodate public interests as well as specific surface-owner interests when pursuing their mineral rights.

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* J.D. candidate 2014, Texas A&M University School of Law; B.A. 2001, University of Texas at Austin. This comment is dedicated to my father, Albert DeRoy Lewis. I would also like to thank my wife, Amanda, and son, Will, for their love, support, and patience.

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I. INTRODUCTION

The landscape in Texas has long been dotted with the sites of oil pump jacks and drilling rigs.¹ Today, those rigs appear in increasing numbers as the industry discovers new oil reserves and accesses shale formations² through new technologies that utilize large amounts of water.³ Meanwhile, a long-term drought ravages the state, threatening water supplies in many areas.⁴ Nonetheless, the modern Texan sees new production rigs springing up all around him while tales of towns going dry make the nightly news.⁵

1. See MODY C. BOATRIGHT, *FOLKLORE OF THE OIL INDUSTRY* at v (Southern Methodist University Press 1963).

2. David Blackmon, *Texas Oil and Gas Numbers Fly Off The Chart*, FORBES (Aug. 7, 2013, 3:42 PM), <http://www.forbes.com/sites/davidblackmon/2013/08/07/texas-oil-and-gas-numbers-fly-off-the-charts/>.

3. Kate Galbraith, *Waterless Fracking Makes Headway in Texas, Slowly*, STATEIMPACT (March 27, 2013, 6:00 AM), <http://stateimpact.npr.org/texas/2013/03/27/waterless-fracking-makes-headway-in-texas-slowly/>.

4. *Everything You Need to Know About the Texas Drought*, STATEIMPACT, <https://stateimpact.npr.org/texas/tag/drought/> (last visited Feb. 26, 2014).

5. The town of Spicewood Beach, Texas was forced to truck water in to fulfill the town's needs after the town's well ran too low on water. Manny Fernandez, *Texas Drought Forces a Town to Sip from a Truck*, N.Y. TIMES, Feb. 4, 2012, at A10, available at http://www.nytimes.com/2012/02/04/us/texas-drought-forces-town-to-haul-in-water-by-truck.html?_r=0.

Most Texans today are aware that much of this new activity can be attributed to advancements in technology that effectively utilize water to either permit or increase production of oil and gas. They see the debates on their televisions,⁶ read it in their newspapers and on the Internet, and see the water rigs rolling down the road. What many of them may not be aware of, however, is where this water is coming from.

Generally, the water used in oil and gas production comes from a variety of places: It can come from municipal supplies, surface water, or the ground.⁷ One common practice by oil and gas producers to acquire water for their production activities is to simply drill water wells in the producing land.⁸ Thanks to traditional common law in Texas, the oil and gas producer enjoys an implied right to a reasonable use of the surface in pursuit of its mineral rights, and this right includes access to the surface owner's fresh groundwater.⁹ But this right is not without its limitations. If there is a substantial interference with an existing surface use and the producer has reasonable, alternative means to achieve his goal, he must use those means.¹⁰

Texans are becoming increasingly aware of the potential interferences that these processes may be having on both the landowners and the public.¹¹ This is particularly true in the case of hydraulic fracturing ("fracing"), a process by which water is used to stimulate oil and gas production.¹² Meanwhile, oil and gas producers are becoming increasingly aware of the alternatives that are available to them beyond simply accessing the surface owner's fresh groundwater.¹³ While the debate on the true effects of fracing on Texas's water supply persist, the fact remains that this question has come to the fore for many Texans who find themselves affected by water concerns.¹⁴ If Texas courts become willing to consider the interferences that this water use may have on the public, the growing alternatives available to the producers may be enough to force the oil and gas producers to accommodate the public use of groundwater.

6. See *GASLAND* (HBO Documentary Films 2010); see also *PROMISED LAND* (Focus Features 2012).

7. *Water Use*, ENERGY FROM SHALE, <http://www.energyfromshale.org/environment/fracking-fracturing-water-supply> (last visited Feb. 26, 2013).

8. See, e.g., *Sun Oil Co. v. Whitaker*, 483 S.W.2d 808, 808 (Tex. 1972); *Robinson v. Robbins Petroleum Corp., Inc.*, 501 S.W.2d 865, 866 (Tex. 1973).

9. JOSEPH SHADE & RONNIE BLACKWELL, *PRIMER ON THE TEXAS LAW OF OIL & GAS* 28 (5th ed. 2013); Ernest E. Smith, *The Growing Demand for Oil and Gas and the Potential Impact Upon Rural Land*, 4 TEX. J. OIL GAS & ENERGY L. 1, 7 (2008-2009).

10. *Getty Oil Co. v. Jones*, 470 S.W.2d 618, 622 (Tex. 1971).

11. See discussion *infra* Part IV.

12. Christopher S. Kulander, *Environmental Effects of Petroleum Production: 2010-2011 Texas Legislative Developments*, 44 TEX. TECH L. REV. 863, 869 (2012).

13. See discussion *infra* Part V.

14. See discussion *infra* Part IV.B.

This Comment will examine the current issues surrounding groundwater access for oil and gas production. Specifically, the Comment will examine the existing limitations to water access that the oil and gas industry faces and suggest that those limitations—particularly the Accommodation Doctrine—may become broader in response to changing regulatory, common law, social, and environmental trends.

II. OWNERSHIP AND ACCESS

A. *Theories of Ownership: The Rule of Capture and Ownership-in-Place*

Texas employs the dichotomous relationship between the Rule of Capture and Ownership-in-Place theories of property ownership to determine ownership of minerals for the mineral-interest owner.¹⁵ The Ownership-in-Place theory quite simply establishes that a mineral owner owns the minerals below his surface.¹⁶ The Rule of Capture, on the other hand, acknowledges that these minerals are fluid and may migrate to another's land.¹⁷ Thus, the Rule of Capture establishes that the mineral owner has title to the minerals that he captures below his land, even if such minerals had migrated from an adjacent tract.¹⁸ These theories, taken together, culminate in the concept that a mineral-interest owner owns the oil and gas that lies below his feet subject to the right of his neighbor to capture underlying minerals through non-trespassory capture.¹⁹ Texas recently brought groundwater into this same dichotomy.²⁰ The Texas Supreme Court recognized in *Edwards Aquifer Authority v. Day* that the landowner does, by law, own the groundwater-in-place.²¹ Furthermore, when the surface rights and mineral rights are severed in the context of an oil and gas lease, the groundwater remains a part of the surface estate.²²

B. *The Implied Right of Reasonable Use of the Surface*

Texas recognizes that an oil and gas lessee has the right to use the surface estate to the extent that it is necessary to access and extract its minerals.²³ The oil and gas lease is a conveyance of the mineral interest in fee,²⁴ and the mineral estate is considered the dominant estate

15. SHADE & BLACKWELL, *supra* note 9, at 14.

16. *Id.*

17. *Brown v. Humble Oil & Ref. Co.*, 83 S.W.2d 935, 940 (Tex. 1935).

18. *Coastal Oil & Gas Corp. v. Garza Energy Trust*, 268 S.W.3d 1, 13 (Tex. 2008) (“The Rule of Capture is a cornerstone of the oil and gas industry and is fundamental both to property rights and to state regulation.”).

19. SHADE & BLACKWELL, *supra* note 9, at 14.

20. *Edwards Aquifer Auth. v. Day*, 369 S.W.3d 814, 832 (Tex. 2012).

21. *Id.*

22. *Sun Oil Co. v. Whitaker*, 483 S.W.2d 808, 811 (Tex. 1972).

23. *Id.* at 810.

24. *Texas Co. v. Dougherty*, 176 SW 717, 719 (Tex. 1915).

in such a lease.²⁵ Texas courts have held that this means that there is an implied right of reasonable use of the surface that the lessee enjoys.²⁶ Most significantly, this implied grant includes “the right to use so much of the land, both surface and subsurface, as is reasonably necessary to comply with the terms of the lease contract and to carry out the purposes and intentions of the parties.”²⁷ Specifically, this includes water.²⁸ Courts have held that water is part of the surface estate and is thus subject to the implied grant of reasonable use.²⁹

The history and policy behind this approach are grounded in traditional property principles and basic common sense.³⁰ In traditional property law, when an estate is considered dominant, that estate holder has the right to use the surface to the extent that it is reasonably necessary to enjoy his estate.³¹ This makes sense, especially in the context of oil and gas leasing. A reservation of mineral rights would be worthless without the ability to explore and access the owned minerals.³² Texas, in its traditional role as one of the nation’s leading oil and gas producing states,³³ has long supported the oil and gas producer by consistently granting this ability to use the surface in a reasonable manner to produce the valuable resources.³⁴ The right is implied in the lease.³⁵

Generally, Texas courts include in the forms of use the “grant of the way, surface, soil, water, gas, and the like essential to the enjoyment of the actual grant of the oil.”³⁶ Interestingly though, despite these rather broad rights given to the lessee to use the surface to develop his

25. *Sun Oil*, 483 S.W.2d at 811. This has become known as the Dominant Estate Theory and is a well established doctrine in oil and gas law. Smith, *supra* note 9, at 10. (“[I]n the event of conflicts between the oil company and the surface owner or lessee of surface uses, the oil and gas company has the paramount legal right.”)

26. *Plainsman Trading Co. v. Crews*, 898 S.W.2d 786, 788 (Tex. 1995).

27. *Brown v. Lundell*, 344 S.W.2d 863, 865 (Tex. 1961).

28. *Sun Oil*, 483 S.W.2d at 811; *see also* *Robinson v. Robbins Petroleum Corp., Inc.*, 501 S.W.2d 865, 867 (Tex. 1973) (The surface estate includes both freshwater and saltwater.). In *Sun Oil*, the Texas Supreme Court held that the oil company could pump large quantities of freshwater for use in their water-flooding operations, even though the withdrawals significantly affected the surface owners. Smith, *supra* note 9, at 10.

29. *Fleming Foundation v. Texaco, Inc.*, 337 S.W.2d 846 (Tex. Civ. App.—Amarillo 1960, writ ref’d n.r.e.).

30. *Plainsman*, 898 S.W.2d at 788–89.

31. *Id.* These rights have existed in both Spanish and English common law. *Cowan v. Hardeman*, 26 Tex. 217, 222 (Tex. 1862).

32. *Id.*

33. David Blackmon, *Texas Continues to Lead the Shale Oil Gas Revolution*, *FORBES* (Oct. 8, 2013, 12:06 PM), <http://www.forbes.com/sites/davidblackmon/2013/10/08/texas-continues-to-lead-the-shale-oil-gas-revolution/>; Zain Shauk, *Regulator Says Texas is Heading for Global Oil Bragging Rights*, *MYSA* (Oct. 7, 2013, 8:20 PM), <http://www.mysanantonio.com/business/eagle-ford-energy/article/Regulator-says-Texas-is-heading-for-global-oil-4876479.php>.

34. *Plainsman*, 898 S.W.2d at 788.

35. SHADE & BLACKWELL, *supra* note 9, at 28.

36. *Guffey v. Stroud*, 16 S.W.2d 527, 528 (Tex. Comm’n App. 1929).

minerals, what constitutes reasonable use remains a source of litigation to this day.³⁷ Joseph Shade and Ronnie Blackwell, in their *Primer on the Texas Law of Oil & Gas*, note that “[r]easonable use generally includes geophysical exploration, drilling, building roads, installing machinery and storage tanks, and using such water as is reasonably necessary to accomplish the purposes of the lease.”³⁸ Modern courts have held that reasonable use includes ingress and egress,³⁹ moving cattle pens to allow for drilling operations,⁴⁰ construction of caliche roads across farmland,⁴¹ and the granting of easements to gas buyers to build pipelines across the land.⁴²

What constitutes reasonable use, however, remains a matter of degree rather than a simple checklist.⁴³ Often, the determination of reasonable use turns on individual circumstances.⁴⁴ A use may be deemed unreasonable or excessive if it involves too much use or an occupation of the surface for an unreasonable amount of time.⁴⁵ Texas courts have also pointed out that there are clear distinctions between cases in which the land itself is injured and property on the land (such as cattle) is injured.⁴⁶ In the latter case, the surface owner must show that the injury was intentional, willful, or wanton or that the use of the land was excessive and that the lessee negligently caused injury to the property.⁴⁷ In the former, the court uses only a negligence standard, finding liability against the lessee when he “negligently or unnecessarily damages the land, either surface or subsurface.”⁴⁸ In a simple question of water usage, however, a court may instead consider another limitation: The Accommodation Doctrine.

37. Bruce M. Kramer, *The Legal Framework for Analyzing Multiple Surface Use Issues*, in SEVERED MINERALS, SPLIT ESTATES, RIGHTS OF ACCESS, AND SURFACE USE, Part IV ¶¶ 20–21 (Rocky Mountain Mineral Law Foundation 2005).

38. SHADE & BLACKWELL, *supra* note 9, at 28.

39. Ball v. Dillard, 602 S.W.2d 521, 523 (Tex. 1980).

40. Merriman v. XTO Energy, Inc., 407 S.W.3d 244, 251 (Tex. 2013).

41. Davis v. Devon Energy Prod. Co., L.P., 136 S.W.3d 419, 424 (Tex. App.—Amarillo 2004, no pet.) (Plaintiff could reasonably avoid the roads in using his surface for farming operations. The roads did not create a sufficiently substantial impact on his existing surface use as to invoke the Accommodation Doctrine.).

42. Delhi Gas Pipeline Corp. v. Dixon, 737 S.W.2d 96, 98 (Tex. App.—Eastland 1987, writ denied).

43. Kramer, *supra* note 37.

44. *Id.*

45. *Id.*

46. Satanta Oil Co. v. Henderson, 855 S.W.2d 888, 889 (Tex. App.—El Paso 1993) (citing General Crude Oil Co. v. Aiken, 344 S.W.2d 668, 670–71 (Tex. 1961); Amerada-Hess Corp. v. Iparrea, 495 S.W.2d 60, 61 (Tex. Civ. App.—El Paso 1973, writ ref’d n.r.e.).

47. *Satanta Oil*, 855 S.W.2d at 889–90.

48. Brown v. Lundell, 344 S.W.2d 863, 866 (Tex. 1961).

C. *The Accommodation Doctrine*

The right of the mineral-estate owner to use the surface is not without its limitations.⁴⁹ In *Getty Oil Co. v. Jones*, the Texas Supreme Court held that the rights of the lessee to develop his minerals must be “exercised with due regard for the rights of the owner of the servient estate.”⁵⁰ This has become known as the Accommodation Doctrine, or the Alternative Means Doctrine.⁵¹ This doctrine has become a safeguard for surface owners to protect their surface if they can establish that (1) the lessee’s activities precluded or impaired an existing surface use, and (2) there were reasonable alternatives available to the lessee to access his minerals.⁵² Specifically, courts look for the availability of alternatives to determine whether the lessee must accommodate the existing surface use.⁵³ If no reasonable alternatives are available, the lessee retains the right to pursue his minerals by existing means, regardless of interference with existing surface use.⁵⁴ If alternatives are available, however, the “mineral owner *must* use the alternative that allows continued use of the surface by the surface owner.”⁵⁵ Because the burden of proof remains with the surface owner to prove that there was a substantial interference with an existing surface use and there were reasonable alternatives available, however, previous assertions of the Accommodation Doctrine have not been particularly effective in limiting the right of surface use.⁵⁶

To invoke the Accommodation, or Alternative Means Doctrine, the surface owner must establish that the impairment to existing land use was substantial.⁵⁷ Only in such cases will Texas courts be willing to deny the lessee its implied right of the reasonable use of the surface to access its minerals.⁵⁸ Thus, like the Reasonable Use Doctrine, the willingness of the court to invoke the Accommodation Doctrine may actually be more a matter of degree.⁵⁹ When the impairment becomes

49. Riley W. Vanham, *A Shift in Power: Why Increased Urban Drilling Necessitates a Change in Regulatory Authority*, 43 ST. MARY’S L.J. 229, 238-39 (2011). “The accommodation doctrine is the major legal theory that can be used to provide some recourse for a landowner who does not include adequate surface-use and damage clauses in his lease of who owns none of the minerals and therefore is not a party to the oil and gas lease.” Smith, *supra* note 9, at 19.

50. *Getty Oil Co. v. Jones*, 470 S.W.2d 618, 621 (Tex. 1971).

51. *Tarrant Cnty. Water Control & Imp. Dist. No. One v. Haupt, Inc.*, 854 S.W.2d 909, 911 (Tex. 1993) (extending *Getty* to hold that the Accommodation Doctrine applies when the surface owner is a governmental entity).

52. *Getty*, 470 S.W.2d at 622.

53. *Id.*

54. *Id.*

55. *Haupt*, 854 S.W.2d at 912.

56. Vanham, *supra* note 49, at 240.

57. *Davis v. Devon Energy Prod. Co., L.P.*, 136 S.W.3d 419, 424 (Tex. App.—Amarillo 2004, no pet.).

58. *Id.*

59. *Id.* at 423.

substantial or the reasonable use becomes excessive, the surface owner may be able to invoke this doctrine.⁶⁰

To date, surface owners have successfully used the Accommodation Doctrine when there is an existing use that is substantially impaired, and there are reasonable, industry-established alternatives available on the leased property for the mineral owner to access the minerals without obstructing the surface use.⁶¹ For example, in *Texas Genco, LP v. Valence Operating Co.*, the surface owner was able to use the Accommodation Doctrine to protect his use of the land as a landfill against the lessee's desire to employ straight-line-drilling methods to access the minerals.⁶² The court noted that the lessee had a reasonable, industry-established alternative in using directional drilling to access the minerals.⁶³ Furthermore, the facts of that case ultimately demonstrate that "an alternative may be deemed reasonable even though it will cost the oil company significantly more than the company's initial proposed use."⁶⁴ The court's holding focused primarily on the alternatives available to the lessee, thus bolstering the Doctrine's other name: the Alternative Means Doctrine.⁶⁵

Some cases, such as *Sun Oil v. Whitaker*, have narrowly construed the alternatives element.⁶⁶ In *Sun Oil*, the Court held that the alternatives must be available on the leased premises, thereby permitting that lessee to deplete the surface owner's groundwater despite the availability of water from a nearby river.⁶⁷ It could be argued, though, that this narrow construction of the Accommodation Doctrine does not serve the likely intent of the parties in accordance with the theory of the mineral owner's right to enjoy his estate.⁶⁸ It may be more likely that the parties intend a balancing of the economic consequences of accommodation rather than requiring the availability of alternatives on the premises.⁶⁹ Other courts have since taken a broader approach and have not required the alternatives to be available on the premises.⁷⁰ If Texas courts are willing to acknowledge the economic perspective on this analysis rather than just the narrow, premises-based

60. *Id.* at 424.

61. *Texas Genco, LP v. Valence Operating Co.*, 187 S.W.3d 118, 124–25 (Tex. App.—Waco 2006, pet. denied).

62. *Id.*

63. *Id.*

64. Smith, *supra* note 9, at 23.

65. *Texas Genco*, 187 S.W.3d at 124–25.

66. *Sun Oil Co. v. Whitaker*, 483 S.W.2d 808, 812 (Tex. 1972); JOHN S. LOWE, OIL AND GAS LAW IN A NUT SHELL 183–184 (5th ed. 2009).

67. *Sun Oil*, 483 S.W.2d at 812; LOWE, *supra* note 66, at 183–184. The Court in *Sun Oil* stated that "requiring the oil and gas company to purchase water elsewhere would be inconsistent with the dominant estate theory." Smith, *supra* note 9, at 24.

68. LOWE, *supra* note 66, at 183.

69. *Id.*

70. *Id.*; see *Valence Operating Co. v. Texas Genco, LP*, 255 S.W.3d 210 (Tex. App.—Waco 2008, no pet.).

perspective, they may likely find, as the alternatives become economically viable for oil and gas producers, that reasonable alternatives do exist.⁷¹

The long-established Accommodation Doctrine may give surface owners some leverage in asserting their rights to their groundwater.⁷² Because the Accommodation Doctrine requires that lessees accommodate the surface owner's existing uses when the lessee has a reasonable alternative for accessing its minerals, surface owners may be able to claim that their property—their groundwater—takes precedence over the lessee's right to pursue the minerals when they have access to other sources of fracturing fluids.⁷³ In *Rosenthal v. Railroad Commission of Texas*, the court acknowledged that “Texas courts have a long history of balancing the competing interests of surface and mineral owners and ‘requiring reasonable accommodations between them’ that have not rigidly tracked above-ground versus below-ground lines.”⁷⁴ The important questions will be (1) whether there are reasonable, industry-established alternatives available to the lessee, and (2) whether the impairment to the surface use created by the removal of groundwater is substantial.⁷⁵ These two key factors are becoming increasingly relevant. The need to use fresh groundwater for drilling will likely decrease as alternatives slowly become more viable for the oil and gas industry.⁷⁶ Simultaneously, growing concerns about the dwindling water supply will undoubtedly influence courts' feelings on whether groundwater usage by an oil and gas developer creates a substantial impairment to the land.⁷⁷ It may only require that a surface owner show that the depletion of the water supply substantially interferes with agriculture, ranching, or human consumption to drive a court to look for the availability of a reasonable alternative.⁷⁸ As the water supply continues to dwindle and modern technologies continue to create new alternatives, courts just might find it.

71. See Smith, *supra* note 9, at 22 (suggesting that income-producing uses of the land may be sufficient to constitute existing use under the Accommodation Doctrine).

72. Taelor A. Allen, Comment, *The South Texas Drought and the Future of Groundwater Use for Hydraulic Fracturing in the Eagle Ford Shale*, 44 ST. MARY'S L.J. 487, 511–512 (2013); Smith, *supra* note 9, at 19.

73. Allen, *supra* note 72, at 511–512.

74. *Rosenthal v. R.R. Comm'n of Texas*, 03-09-00015-CV, 2009 WL 2567941 (Tex. App.—Austin Aug. 20, 2009, pet. denied) (mem. op.) (quoting *Humble Oil & Ref. Co. v. West*, 508 S.W.2d 812, 815 (Tex. 1974)).

75. *Getty Oil Co. v. Jones*, 470 S.W.2d 618, 622 (Tex. 1971).

76. See discussion *infra* Part V.

77. See discussion *infra* Part IV.B–C.

78. See Allen, *supra* note 72, at 511–12. Although the court has previously looked for physical modifications of the land in assessing existing use, what constitutes existing use is still a matter of debate, and arguments based on uses that produce income may carry some weight. Smith, *supra* note 9, at 21–22.

D. *The Failure of Existing Doctrine to Address Public Concerns*

It is important to note, however, that the Accommodation Doctrine only applies to the immediate surface at issue.⁷⁹ In other words, the substantial-interference and existing-use elements of the doctrine relate specifically to the surface owner's usage, not that of the public.⁸⁰ After all, the water does belong to the surface owner.⁸¹ Thus, a surface owner who cannot sustain his or her burden of proof that the lessee's water withdrawal creates a substantial interference with an existing use of that surface will have to allow the withdrawal.⁸² But the question remains whether the withdrawal does, in fact, create a substantial interference with an existing use elsewhere.⁸³ There may not be an immediate interference with the surface owner's surface use, but there may be a substantial interference with an entire aquifer.⁸⁴

The failure of the Accommodation Doctrine to address potential interferences to the public interest evinces a growing tension between existing oil and gas law and present and future regulatory and technological changes. Simply put, the doctrine protects the surface owner, but the public remains vulnerable to the potential impacts that oil and gas activities may have on the water supply and the environment. Interestingly, both the courts and the legislature have created laws and regulations that have seemingly contradictory impacts on this tension.⁸⁵ A broadening of the scope of the Accommodation Doctrine may be all it takes to break this tension between private and public interests. If a court looks beyond the effects on private interests and becomes willing to also consider substantial interference with existing public uses, then oil and gas producers may no longer be able to rely on their implied right to use the groundwater.

III. THE BALANCE BETWEEN PUBLIC AND PRIVATE INTERESTS

Current Texas statutory and common law reflects a balance between long-established ideals of protecting private ownership of property with the more public need to conserve our precious resources such as water. That balance, however, recently appeared to shift in

79. *Getty*, 470 S.W.2d at 622.

80. *Id.*

81. *Edwards Aquifer Auth. v. Day*, 369 S.W.3d 814, 832 (Tex. 2012).

82. *Getty*, 470 S.W.2d at 623.

83. "[A]lthough fracturing typically will be necessary to develop tight sands, coalbed methane, and shale wells, existing owners may argue under the accommodation doctrine that portions of the drilling and fracturing operation will 'prevent or significantly impair' the existing use and that there is a reasonable alternative to certain stages of the drilling or fracturing activity challenged." Hannah Wiseman, *Beyond Coastal Oil v. Garza: Nuisance and Trespass in Hydraulic Fracturing Litigation*, 57 THE ADVOC. (TEXAS) 8, 10 (2011) (citing Smith, *supra* note 9, at 22–23).

84. See *infra* Part IV.A.

85. See discussion *infra* Part III.

favor of protecting the landowner's property rights.⁸⁶ In a recent case, the Texas Supreme Court showed a desire to protect the interests of the landowners when threatened with a taking.⁸⁷ Conversely, recent regulations passed by the Texas Railroad Commission and existing provisions in the Texas Constitution suggest a desire by the state and its regulatory agencies to protect the rights of the public to have safe access to our increasingly precious resource: groundwater.

A. *The Private Interest*

In a 2011 landmark case, *Edwards Aquifer Authority v. Day*, the Texas Supreme Court established that a groundwater conservation district could go too far in its regulation of a landowner's use of his own groundwater.⁸⁸ The Court declared that the landowner did, by law, own the groundwater below his feet such that a denial of his right to use it by a groundwater conservation district could constitute a compensable taking under the Texas Constitution.⁸⁹ Even though the groundwater conservation district did have the authority to regulate, this authority was mitigated by the importance of upholding the landowner's right to his property.⁹⁰ Thus, the balance between public and private interests swung towards the latter.⁹¹

Commentators in both water and oil and gas law have noted the significance of this ruling.⁹² Some have noted the potential litigation that may arise when a groundwater conservation district attempts to regulate fracing beyond existing exemptions for temporary rig sup-

86. Dan Cruse, *Landmark Texas Case Water Rights Case May Lead to Future Takings Claims or Legislative Fixes: Edwards Aquifer v. Day*, THE SUPREME COURT OF TEXAS BLOG (Feb. 24, 2012), <http://www.scotxblog.com/case-notes/landmark-texas-water-rights-case-may-lead-to-future-takings-claims-or-legislative-fixes-edwards-aquifer-v-day-feb-24-2012/>.

87. See *Edwards Aquifer Auth. v. Day*, 369 S.W.3d 814, 843 (Tex. 2012) (water restrictions by Groundwater Conservation District held to be constitutional taking.); see also *FPL Farming Ltd. v. Envtl. Processing Sys., L.C.*, 383 S.W.3d 274, 282 (Tex. App.—Beaumont 2012, pet. granted) (The Court of Appeals held that a wastewater well injection could be a trespass when wastewater migrated onto neighbor's land and interfered with landowner's water supply.).

88. *Day*, 369 S.W.3d at 843.

89. *Id.* at 843. This was later held to include briny subsurface water as well as fresh. *FPL Farming*, 383 S.W.3d at 281 ("The definition of the term 'groundwater,' found in both the version of the Texas Water Code applicable on the date that TNRCC (now the TCEQ) first issued EPS its permits, and the current version, do not distinguish between water below the surface that is fresh water and water below the surface that is saltwater; nor did these versions distinguish between percolating water found below the ground and water found flowing in subterranean streams.").

90. *Day*, 369 S.W.3d at 843; see also *FPL Farming*, 383 S.W.3d at 281 (Each landowner owns the groundwater beneath the soil separately, distinctly, and exclusively, subject to police regulations and the law of capture.).

91. Cruse, *supra* note 86.

92. See, e.g., *id.*

ply.⁹³ While this seems a likely immediate consequence, the reverberations of this ruling may reach even further. Currently, the *Day* ruling has not been successfully applied to hold that an oil and gas developer's water well may be a regulatory taking (because the permit was issued by the state).⁹⁴ It may, however, become a tipping point in elevating water's importance within the bundle of surface rights given to oil and gas producers when alternatives continue to present themselves to the industry, and public opinion continues to highlight Texas's water supply concerns. In effect, this ruling bolsters the power of the Accommodation Doctrine in supporting the private interests of surface owners. It promotes the private interest by saying that the groundwater does, in fact, belong to the surface owner and that the state has limits in how it regulates its usage.

B. *The Public Interest*

The Texas Water Code reflects the legislature's desire to balance the interests of the private landowner with those of the public.⁹⁵ Section 36.002 of the code "recognizes that a landowner owns the groundwater below the surface of the landowner's land as real property,"⁹⁶ and he is entitled to capture it as long as he does not cause waste, malicious drainage, or negligent subsidence.⁹⁷ In *Day*, the Texas Supreme Court would later interpret this language to mean that the landowner owns the groundwater-in-place, regardless of whether the landowner captures it.⁹⁸ The Water Code, however, also gives authority to groundwater conservation districts to regulate the production of groundwater in order to "provide for conserving, preserving, protecting, and recharging of the groundwater or of a groundwater reservoir or its subdivisions in order to control subsidence, prevent degradation of water quality, or prevent waste of groundwater."⁹⁹

Ultimately, *Day* did not suggest that the state, through groundwater conservation districts, did not have a right to regulate water use.¹⁰⁰ The Court pointed to the Conservation Amendment in the Texas Constitution to acknowledge that the state did have legislative authority to regulate water use.¹⁰¹ Currently, groundwater conservation districts

93. John McFarland, *Texas Supreme Court (finally) decides EAA v. Day – A Victory for Landowners?*, OIL AND GAS LAWYER BLOG (Feb. 24, 2012), <http://www.oilandgaslawyerblog.com/water-rights/>.

94. *Walton v. City of Midland*, 409 S.W.3d 926, 931 (Tex. App.—Eastland 2013, pet. denied) (holding that a water well was not a sufficiently permanent physical invasion to constitute a regulatory taking by the state).

95. Compare TEX. WATER CODE ANN. § 36.002 (West 2008) with TEX. WATER CODE ANN. § 36.101 (West 2008) and TEX. CONST. art. XVI, § 59.

96. TEX. WATER CODE ANN. § 36.002(a) (West 2008).

97. § 36.002(b)(1).

98. *Edwards Aquifer Auth. v. Day*, 369 S.W.3d 814, 832 (Tex. 2012).

99. TEX. WATER CODE ANN. § 36.101 (West 2008).

100. *Day*, 369 S.W.3d at 833.

101. *Id.*; TEX. CONST. art. XVI, § 59.

are the method by which the state regulates most water use throughout the state.¹⁰² Authorized by both the Texas Constitution and the Texas Water Code,¹⁰³ these districts have the authority to regulate the amount of water drawn by landowners.¹⁰⁴

While the Texas Railroad Commission generally has jurisdiction over oil and gas production activities in the state, its jurisdiction over water wells remains somewhat limited.¹⁰⁵ Currently, the Texas Railroad Commission only regulates injection water supply wells that penetrate the base of usable quality water.¹⁰⁶ Rig supply wells that fall both above and below the base of usable quality water are regulated by the groundwater control district.¹⁰⁷ Currently, rig supply water wells that do not penetrate the base of usable quality water are exempt from needing a permit from the enforcing groundwater control district as long as they meet a few basic requirements.¹⁰⁸ For injection water supply wells that do penetrate the base of usable quality water, both the groundwater conservation district and the Texas Railroad Commission require a permit.¹⁰⁹

It is important to note that the authority granted to groundwater conservation districts and the Texas Railroad Commission to regulate the oil and gas companies' groundwater usage appears to only be growing.¹¹⁰ As noted above, groundwater conservation districts do have the authority to regulate the drilling and use of an injection water supply well for oil and gas activity.¹¹¹ Likewise, the Texas Railroad Commission, under section 3.46 of the Texas Administrative Code, may regulate injection of fluids as part of enhanced oil recovery, and this likely includes fracing operations.¹¹² There is already a strong suggestion that the groundwater conservation districts will be continuing their increased interest in regulating groundwater usage in

102. *Hydraulic Fracturing Frequently Asked Questions*, RAILROAD COMMISSION OF TEXAS, <http://www.rrc.state.tx.us/about/faqs/hydraulicfracturing.php#frac9> (last visited Feb. 26, 2014).

103. TEX. CONST. art. XVI, § 59; TEX. WATER CODE ANN. § 36.011 (West 2008).

104. § 36.101.

105. *Hydraulic Fracturing Frequently Asked Questions*, *supra* note 102.

106. *Barnett Shale: Water Use in Association with Oil and Gas Activities Regulated by the Railroad Commission of Texas*, RAILROAD COMMISSION OF TEXAS, <http://www.rrc.state.tx.us/barnettshale/wateruse.php> (last visited Feb. 26, 2014).

107. *Id.*

108. TEX. WATER CODE ANN. § 36.117 (West 2008) (Operators are exempt from needing a permit to drill a “water well used solely to supply water for a rig that is actively engaged in drilling or exploration operations for an oil or gas well permitted by the Railroad Commission of Texas provided that the person holding the permit is responsible for drilling and operating the water well.”).

109. *Id.*; TEX. NAT. RES. CODE ANN. § 91.101 (West 2011); 16 TEX. ADMIN. CODE § 3.5 (2013); 16 TEX. ADMIN. CODE § 3.8(a)(30)(B)(i) (2013).

110. Kulander, *supra* note 12, at 870–871.

111. *Id.* at 870.

112. *Id.* at 871; 16 TEX. ADMIN. CODE § 3.46 (2012).

oil and gas activity.¹¹³ They are beginning to view fracing separately from “drilling or exploration operations” and may instead subject the fracing use to regulation.¹¹⁴ Indeed, groundwater conservation districts are already regulating and curtailing the use of groundwater for fracing operations in several areas across the state.¹¹⁵ As oil and gas production continues to increase across the state while the drought rages on, the scrutiny will only increase, and regulation alone may spell the end of groundwater use in fracing.¹¹⁶

C. *Reconciling Private and Public Interests*

This authority of the various agencies and groundwater conservation districts granted by the Texas Constitution and the Texas Water Code interestingly reflects an acknowledgment by the state that the public does have an interest in groundwater.¹¹⁷ Conversely, rulings such as *Day*’s reflect the value that the court places on private interests.¹¹⁸ Thus, the court will continue to have to reconcile these oft-conflicting interests. Although the Accommodation Doctrine currently only applies to the surface owner in a specific lessor/lessee relationship,¹¹⁹ all it may take to reconcile the private/public-interest tension will be to simply broaden the scope of the doctrine. In this analysis, it may be significant to note that, although the Rule of Capture protects the surface owner from liability for depleting his neighbor’s wells through his own lawful withdrawal, the mineral lessee only enjoys a limited implied right of reasonable *use*.¹²⁰ Thus, the lessee may not find safe harbor in the surface owner’s expanding ownership rights.

The first part of the Accommodation Doctrine asks that a court look for a substantial interference of an existing surface use by the surface owner.¹²¹ If the court looks beyond the surface owner and finds that there is a substantial interference with public usage and that the usage already existed, all it will take to restrict the lessee’s water usage will be to find that it has reasonable alternatives available for its mineral development. Current drought conditions, modern social

113. Kulander, *supra* note 12, at 878–879.

114. *Id.* (Section 117 of the Water Code appears to support this view by ending the permitting exception when the operator is no longer engaged in drilling or exploration operations. Fracing may fall in the category with secondary or tertiary operations and would thus not be included in the drilling or exploration category of operations.).

115. *Id.* at 879.

116. *Id.* at 880–881.

117. See discussion *supra* Part III.B.

118. McFarland, *supra* note 93.

119. Getty Oil Co. v. Jones, 470 S.W.2d 618, 622 (Tex. 1971).

120. Coastal Oil & Gas Corp. v. Garza Energy Trust, 268 S.W.3d 1, 13 (Tex. 2008).

121. *Getty*, 470 S.W.2d at 622; *Davis*, 136 S.W.3d at 424.

pressures, and technological changes may very well be enough to encourage the court to look in this direction.¹²²

IV. A SUBSTANTIAL INTERFERENCE

There is no debate that Texas faces significant challenges to its water supply.¹²³ Aquifers across the state are dwindling as human usage increases.¹²⁴ Meanwhile, one of the largest droughts in the state's history continues to parch the land with no real foreseeable end in sight.¹²⁵ Consequently, oil and gas producers strive to find new or alternative methods of accessing their minerals with less impact on the water supply¹²⁶ while environmentally minded citizens and organizations continue to pressure legislators to further regulate human access to groundwater.¹²⁷ As these trends progress, the landowner also grows wiser.¹²⁸ Throughout the state, smart landowners are beginning to notice the value of all of their underground properties and seek compensation for its usage or even proactively capture and sell it.¹²⁹ All of these changes reflect the growing value of water in the minds of citizens, legislators, landowners, and oil and gas producers.¹³⁰ The changes suggest that, in the coming future, water may become an exception to the implied right of reasonable use of the surface via a broadened Accommodation Doctrine.

A. *The Aquifer System: A Brief Science Lesson*

Although Texas, in its protection of private-property interests, acknowledges a private landowner's ownership of the water below his surface, the scientific fact remains that subterranean water resources overlap fences and boundaries and are commonly accessed by many different users.¹³¹ Groundwater is found in aquifers, underground systems of porous, water-bearing rock, which may impact multiple tracts of land, multiple landowners, multiple communities, and multi-

122. See discussion *infra* Part IV.

123. *Everything You Need to Know About the Texas Drought*, *supra* note 4.

124. *Id.*

125. *Id.*

126. Mose Buchele, *Fracking Boom Spurs a Rush to Harness Brackish Water*, STATEIMPACT (March 28, 2013, 6:00 AM), <http://stateimpact.npr.org/texas/2013/03/28/drilling-boom-spurs-a-rush-to-harness-brackish-water/>.

127. Virginia Palacios, *In Texas, Freshwater Use For Oil And Gas Should Be Reduced Strategically*, ENVIRONMENTAL DEFENSE FUND (Apr. 9, 2013), <http://blogs.edf.org/energyexchange/2013/04/09/in-texas-freshwater-use-for-oil-and-gas-should-be-reduced-strategically/>.

128. Allen, *supra* note 72, at 513.

129. *Id.*

130. Robert E. Beck, *Current Water Issues in Oil and Gas Development and Production: Will Water Control What Energy We Have?*, 49 WASHBURN L.J. 423, 452-53 (2010).

131. *The USGS Water Science School: Aquifers*, UNITED STATES GEOLOGICAL SURVEY, <http://ga.water.usgs.gov/edu/earthgwaquifer.html> (last visited Feb. 26, 2014).

ple environmental concerns.¹³² When water is pumped from the ground, it can impact anyone else who accesses or is affected by the aquifer.¹³³ This can lead to water depletion for individuals and communities, unintended environmental effects, and land subsidence.¹³⁴ Thus, while Texas's approach to groundwater ownership supports private-property interests (perhaps owing to a long tradition and extension of the Rule of Capture), there is little doubt, as even the Texas Constitution and Texas Water Code have recognized, that there are interests in water supply that extend beyond the landowner's fence.¹³⁵ This is especially true when a mineral lessee only enjoys an implied right of *reasonable* use of the surface.¹³⁶

B. Water Supply

Texas has been under drought conditions since October 2010.¹³⁷ Some have even warned that the current drought may eventually match the record drought of the 1950s.¹³⁸ In fact, 2011 was the driest year on record for the state.¹³⁹ The drought continues today, with a majority of the state still experiencing some degree of drought conditions with no foreseeable end in sight.¹⁴⁰ And the effects of the drought reach far beyond the water table: They include (1) wildfires, such as the one that ripped through Bastrop and surrounding areas in 2011, crippling communities; (2) towns running out of water, like Spicewood Beach, which now must have its water trucked in; (3) severe economic costs to the farm and ranching industries, which require water for crops and livestock; (4) and the closings of electrical power plants, which require fresh water in their operations.¹⁴¹ Texas has taken these conditions seriously, recently passing a bill that will allow the state to use \$2 billion of its Rainy Day Fund to supply much needed funds to approved water-conservation projects around the state.¹⁴²

132. *Id.*

133. *The USGS Water Science School: Groundwater Depletion*, UNITED STATES GEOLOGICAL SURVEY, <http://ga.water.usgs.gov/edu/gwdepletion.html> (last visited Feb. 26, 2014).

134. *Id.*

135. *See* discussion *supra* Part III.

136. *See supra* Part II.B.

137. *Everything You Need to Know About the Texas Drought*, *supra* note 4.

138. *Id.*

139. *Id.*

140. *Id.*; *U.S. Drought Monitor: South*, UNITED STATES DROUGHT MONITOR, <http://droughtmonitor.unl.edu/Home/RegionalDroughtMonitor.aspx?south> (last visited Feb. 26, 2014).

141. *Everything You Need to Know About the Texas Drought*, *supra* note 4.

142. Michael Marks & Terence Henry, *Everything You Need to Know About Proposition 6, Texas' Water Fund*, STATEIMPACT (Nov. 4, 2013, 10:07 AM) <http://stateimpact.npr.org/texas/2013/11/04/everything-you-need-to-know-about-proposition-6-texas-water-fund/>; Terence Henry, *How Prop 6 Passed and What's Up Next For*

The amount of water used by the oil and gas industry is currently a hot topic of debate.¹⁴³ While most observers acknowledge that oil and gas industry use accounts for only about 1% of the total state water use,¹⁴⁴ a number also point out that the usage question is a regional one.¹⁴⁵ Distinctively larger percentages appear in regions such as West Texas and South Texas.¹⁴⁶ In West Texas, oil drillers and residents alike constantly face water shortages.¹⁴⁷ In South Texas, studies show that Eagle Ford Shale exploration comprises close to 50% of the region's water usage.¹⁴⁸ Industry insiders, in turn, point out that these areas have historically faced water shortages and that the industry is actually often drilling below the usable-quality water supply to access brackish and saline waters for their drilling needs.¹⁴⁹

The outcome of this debate is less telling here than its existence in the first place. The attention to the oil and gas industry's water usage coupled with growing concerns about the state's water supply may be further justification for viewing water use in oil and gas production in a different light.¹⁵⁰ These very debates and concerns may very well be the necessary influence on courts to consider depletion of water resources a grave enough concern to broaden the scope of the Accommodation Doctrine to consider substantial interferences and existing surface uses beyond just the surface owner's tract.

C. *Environmental Pressures*

While the drought persists across the state, so do the pressures by environmentally minded groups and agencies to assure that oil and gas producers are not impacting our water supply in a negative way.¹⁵¹ There have been numerous cases throughout the state and country in which surface owners claimed that drilling activities tainted their

Water Projects in Texas, STATE IMPACT (Nov. 5, 2013, 8:42 PM) <http://stateimpact.npr.org/texas/2013/11/05/texas-water-fund-passes/>.

143. David Blackmon, *Shale, Fracking Are Not the Main Cause of Texas Water Shortages*, FORBES (Aug. 21, 2013, 11:58 AM), <http://www.forbes.com/sites/davidblackmon/2013/08/21/shale-fracking-are-not-the-main-cause-of-texas-water-shortages/>; Kathy Wythe, *Fractured: Experts examine the contentious issue of hydraulic fracturing water use*, 8-1 TXH2O 14 (Winter 2013) available at <http://twri.tamu.edu/publications/txh2o/winter-2013/fractured/>.

144. Kate Galbraith, *Texas Study Finds Increase in Water Used for Fracking*, THE TEXAS TRIBUNE (Jan. 15, 2013) <http://www.texastribune.org/2013/01/15/texas-study-traces-fracking-and-water-use/>; *Hydraulic Fracturing Frequently Asked Questions*, *supra* note 102.

145. Galbraith, *supra* note 144.

146. *Id.*

147. *Id.*

148. *Id.*

149. Blackmon, *supra* note 143.

150. See Allen, *supra* note 72, at 512.

151. Palacios, *supra* note 127.

water supply.¹⁵² While monitoring water pollution is usually the domain of state agencies, even the Environmental Protection Agency has turned its attention to high-profile cases in which water pollution has been linked to drilling activities.¹⁵³ In Texas, the Texas Commission on Environmental Quality oversees and regulates environmental quality throughout the state, including the quality of groundwater.¹⁵⁴ Currently, environmental groups are pushing for moves away from freshwater use in oil and gas activities.¹⁵⁵

D. Water Wildcatting

Water wildcatting is an increasing trend among landowners who are aware of the alternative profits below their feet.¹⁵⁶ While water wildcatting is not a new concept to Texas landowners,¹⁵⁷ it may become more significant as drought conditions and critical water supplies threaten the valuable resource. Currently, landowners overlying the Eagle Ford Shale have been exploiting this concept by selling their water to mineral developers.¹⁵⁸ While this trend may simply reflect the opportunistic efforts of a few to exploit a valuable resource, it nonetheless highlights the value that Texas citizens are beginning to see below their feet and that they are becoming increasingly aware of its preciousness.¹⁵⁹ If enough landowners begin to feel that oil and gas production is substantially interfering with precious water supply, they may increase the pressure on the state to better protect their private interests. In turn, Texas courts may feel pressured to widen the scope of the Accommodation Doctrine to protect the public as a whole.

V. REASONABLE ALTERNATIVES

As the pressures increase on water usage, proactive oil and gas producers are seeking alternative means of fracing that avoid the use of fresh groundwater. Some are using brackish water in their fracing fluids rather than the fresh groundwater that we use for our drinking

152. Ramit Plushnick-Masti, *EPA's Water Contamination Investigation Halted in Texas After Range Resources Protest*, HUFF POST GREEN (Jan. 16, 2013, 9:08 AM), http://www.huffingtonpost.com/2013/01/16/epa-water-contamination-investigation-fracking_n_2484568.html.

153. *Id.*; *Natural Gas Extraction – Hydraulic Fracturing*, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, <http://www2.epa.gov/hydraulicfracturing> (last visited Feb. 26, 2014).

154. *About the TCEQ*, TEXAS COMMISSION ON ENVIRONMENTAL QUALITY, <http://www.tceq.texas.gov/about> (last visited Feb. 26, 2014).

155. Palacios, *supra* note 127.

156. Allen, *supra* note 72, at 513; Dean Baxtresser, *Antiques Roadshow: The Common Law and the Coming Age of Groundwater Marketing*, 108 MICH. L. REV. 773, 774 (2010).

157. Baxtresser, *supra* note 156, at 774.

158. Allen, *supra* note 72, at 513.

159. *See id.*

water.¹⁶⁰ Some are turning their attention to the recycling of fracing water as they drill.¹⁶¹ Others are even exploring non-water alternatives, such as propane, to use in the fracing process.¹⁶² While it could certainly be argued that these alternative methods of fracing are in their infancy and may still not be deemed reasonable alternatives for many oil and gas producers, the progress in these areas may foretell a not too distant future in which such methods are, in fact, quite reasonable and accessible to the industry.¹⁶³ One company executive has even said, “In two to three years, the industry won’t have to use any freshwater in hydraulic fracturing.”¹⁶⁴ If this trend continues, we may see the surface owner’s groundwater become protected by a broadened Accommodation Doctrine, the exception to the very doctrine that has always allowed its access. Simply put, courts may no longer consider the use of a surface owner’s fresh groundwater so reasonable when reasonable alternatives exist for the mineral developer.

A. *Brackish Water*¹⁶⁵

The use of brackish water in fracing processes is becoming a very real alternative for producers, and major players in the industry are exploring this option.¹⁶⁶ The water used in fracing comes back salty anyway, and many industry observers, such as Vik Rao of the Research Triangle Energy Consortium, suggest that fracing should use the brackish water that can be found further underground rather than fresh surface or well water.¹⁶⁷ One researcher at Texas A&M University even noted that brackish water could be even better than freshwater in fracing processes.¹⁶⁸ While fresh water surface reservoirs and underlying aquifers become strained with the current drought and human consumption, further underground lie brackish reservoirs in abundance.¹⁶⁹ Producers and legislators are becoming increasingly aware of this resource, and it is quickly becoming a viable alternative to fresh water use in fracing.¹⁷⁰

160. Buchele, *supra* note 126.

161. Anna Driver & Terry Wade, *Fracking without freshwater at a west Texas oil field*, REUTERS (Nov. 21, 2013, 3:50 AM), <http://www.reuters.com/article/2013/11/21/us-apache-water-idUSBRE9AK08Z20131121>.

162. Galbraith, *supra* note 3.

163. Wythe, *supra* note 143, at 19.

164. *Id.*

165. Brackish water is defined as “water that is saltier than freshwater but not as salty as seawater.” *Brackish Water*, SCIENCE DAILY, http://www.sciencedaily.com/articles/b/brackish_water.htm (last visited Feb. 26, 2014).

166. Buchele, *supra* note 126.

167. Rick Martinez, *Fracking: focus on the water*, NEWS OBSERVER (March 22, 2012), <http://www.newsobserver.com/2012/03/22/1950274/fracking-focus-on-the-water.html>.

168. Buchele, *supra* note 126.

169. *Id.*

170. *Id.*

Though most acknowledge that use of brackish water in fracing is in its early stages, recent studies are already showing its increased use in production.¹⁷¹ In West Texas, some figures show that 30% of the water used in fracing is brackish.¹⁷² One drilling company, Apache, regularly uses a combination of brackish and produced water in their drilling operations.¹⁷³ In South Texas, home of the booming Eagle Ford Shale exploration, 20% of the water used is brackish.¹⁷⁴

State authorities are even recognizing the viability of this alternative as well.¹⁷⁵ Texas Railroad Commissioner Christi Craddick has acknowledged the importance of brackish-water development in oil and gas activities, and State Representative Lyle Larson, from San Antonio, suggested in a House hearing on water-use drilling that drilling companies should share data on brackish water exploration with local water districts.¹⁷⁶ With state actors aware of these available alternatives, it may only be a matter of time before statutory or common law frees a surface owner's fresh groundwater from the obligations of the implied easement of surface use so long enjoyed by mineral developers.

B. *Waterless Fracing*

Others in the industry are looking to waterless methods of fracing, thereby creating a further alternative for mineral developers.¹⁷⁷ Some, such as GasFrac, are using propane to frac the shale, and there continues to be talk of other substances like carbon dioxide or nitrogen.¹⁷⁸ Perhaps even more so than brackish water, waterless fracing is in early stages of development and use, but it is showing some real promise.¹⁷⁹ GasFrac has used propane to frac roughly 100 wells, mostly in the booming Eagle Ford Shale, and has been exploring uses in West Texas.¹⁸⁰ Though some critics have noted that it may be a more costly approach, Eric Tudor of GasFrac points out that almost all of the propane gets reused in the process, and the fuel is readily available in South Texas.¹⁸¹ Additionally, because the propane does not pick up potentially toxic materials in this process, the used propane does not present the same controversial concerns as water-based

171. *Id.*

172. *Id.*

173. *Id.*

174. *Id.*

175. *Id.*

176. *Id.*

177. Galbraith, *supra* note 3.

178. *Id.*

179. *Id.*

180. *Id.*

181. *Id.*

fracing methods, which must be treated and either recycled or discharged into the environment or into underground injection wells.¹⁸²

Most interestingly in this development, there is even a suggestion that these waterless methods may actually be better for production.¹⁸³ David Yoxtheimer, of the Marcellus Center for Outreach & Research at Penn State University, notes that propane fracing can avoid the damage to the shale formation that water often causes.¹⁸⁴ Tudor supports this observation by saying that his company actually recovers a higher percentage of oil and gas from the formation with propane fracing than they would with water-based fracing.¹⁸⁵

C. *Recycling Water*

Oil and gas producers are also becoming increasingly encouraged to minimize their impact on freshwater supplies by recycling fracing fluids.¹⁸⁶ In March 2013, the Texas Railroad Commission adopted new rules that encourage producers to recycle fluids by eliminating a need for a recycling permit if the operators are recycling fluid on their own leases or transferring the fluid elsewhere for recycling.¹⁸⁷ The Chairman of the Commission noted that the amendments will “help foster the recycling efforts by oil and gas operators who continue to examine ways to reduce freshwater use when hydraulically fracturing [a] well.”¹⁸⁸

These recycling efforts by state legislators will likely not go unnoticed by the courts when evaluating the significance of water withdrawal by oil and gas producers. They tell the courts that even the state recognizes that there is an important public interest that needs to be protected here beyond the private interests of the surface owner. While it may be the tradition that use of water by a lessee for enjoyment of his minerals may be a reasonable use of the surface,¹⁸⁹ these state-enacted efforts may push the importance of water further to the surface so as to invoke the Accommodation Doctrine. All a court will need to do is use a broader interpretation of the doctrine to find that such water usage is a substantial interference to the public.

182. Anthony Brino, *Waterless fracking technique makes its debut in Ohio*, MIDWEST ENERGY NEWS (May 15, 2012), <http://www.midwestenergynews.com/2012/05/15/waterless-fracking-technique-makes-its-debut-in-ohio/>.

183. Galbraith, *supra* note 3.

184. *Id.*

185. *Id.*

186. See 16 TEX. ADMIN. CODE § 3.8(d)(7)(B)(i) (2013).

187. *Railroad Commission News Release: March 26, 2013*, RAILROAD COMMISSION OF TEXAS, <http://www.rrc.state.tx.us/pressreleases/2013/032613.php> (last visited Feb. 26, 2014); § 3.8(d)(7)(B)(i).

188. *Id.*

189. See discussion *supra* Part III.B.

VI. PUBLIC INTEREST IN OTHER JURISDICTIONS

Other jurisdictions across the country are balancing increasing concerns with water supply with increasing opportunities for oil and gas exploration. Significant gas shale plays are being explored throughout the country, but their laws regarding water access vary considerably. Where some jurisdictions already recognize the public interest in the resource where private interests are asserted, others are just beginning to see that private ownership interests may need to be limited by more public considerations. This Section will examine a select few of those states that approach water access by oil and gas lessees differently and discuss how these approaches may inform Texas's future approaches to this dilemma.

A. *Prior Appropriation States*

Some states (currently twelve) apply the Prior Appropriation Doctrine to the ownership of groundwater.¹⁹⁰ Under this doctrine, the first person to use or divert water from a given source is given priority of right.¹⁹¹ In other words, the "first in time is first in right."¹⁹² Although basing their common-law water rights on this doctrine, many of these states have supplanted it with a permit system that requires any consumer of water resources to first get permission from the state before using or diverting groundwater.¹⁹³

In Kansas, a prior-appropriation state, water rights may only be obtained with a permit from the Kansas Department of Water Resources ("DWR").¹⁹⁴ The landowner must first have this permit before transferring his water rights to the lessee through a clause in the lease.¹⁹⁵ This has been common practice in Kansas for some time.¹⁹⁶ However, it is also important to note that the landowner's permit is strictly limited to particular uses, and thus, further use by an oil and gas transferee requires permission from the DWR.¹⁹⁷ It therefore becomes the duty of the oil and gas producer to evaluate the existing consumptive use of the water and determine whether its use may increase the existing consumptive use.¹⁹⁸ In order to avoid criminal offense, the oil

190. *Who Owns the Water?*, WATER SYSTEMS COUNCIL, 2 (October 2003), http://www.watersystemscouncil.org/VAiWebDocs/WSCDocs/1836033IN_WHO_OWNS.PDF.

191. Robert E. Beck, *Water Resources and Oil and Gas Development: A Survey of North Dakota Law*, 87 N.D. L. REV. 507, 517 (2011).

192. *Id.*

193. Eva N. Neufeld et. al., *Water Allocation Law and the Oil and Gas Industry in Kansas: An Update to the 1981 Neufeld Article*, J. KAN. BAR ASSOC., Sept. 2012, at 22, 23; Beck, *supra* note 191, at 517–18.

194. *Id.*

195. *Id.* at 24.

196. *Id.* at 23.

197. *Id.* at 24.

198. *Id.*

and gas lessee must either have a permit to the water use or fit into a statutory exception.¹⁹⁹

North Dakota, overlying the expansive Bakken Shale formation, is also a prior-appropriation state, and the North Dakota Constitution declares its water as *res publicae*, belonging to the state itself.²⁰⁰ Thus, unlike Texas, landowners in North Dakota have no vested right in their groundwater.²⁰¹ They only have the rights to employ the water for beneficial uses.²⁰² Furthermore, North Dakota says that any allocation of water is subject to the public-trust doctrine.²⁰³ Under this doctrine, the state must consider in its planning any effects “on the present water supply and future needs of this state.”²⁰⁴

North Dakota, like Kansas, requires a permit for nondomestic use of groundwater.²⁰⁵ However, in evaluating usage for permits, the state employs the “beneficial use” test,²⁰⁶ defining beneficial use as “a use of water for a purpose consistent with the best interests of the people of the state.”²⁰⁷ In his survey of North Dakota oil and gas law, Robert Beck notes, “[A]lthough there is no reported North Dakota case that says production of oil and gas as such is a beneficial use, the State Engineer with State Water Commission . . . [does] recognize it as a beneficial use.”²⁰⁸ This is further bolstered by a strong policy in North Dakota that promotes oil and gas development.²⁰⁹

Beck, however, raises an interesting question in the context of North Dakota oil and gas law, one that certainly has implications in Texas as hydraulic-fracturing methods continue to change and develop. Beck suggests that a question as to the quality of the water may come into the picture.²¹⁰ More specifically, the availability and viability of lesser quality water for hydraulic fracturing may present the question of whether potable freshwater continues to fall within the scope of beneficial use.²¹¹ The North Dakota Century Code says that the “well-being of all of the people of the state shall be the overriding determinant in considering the best use, or combination of uses, of water and related land resources.”²¹² Additionally, section 38-11.1-06

199. *Id.*

200. Nancy Jean Strantz, *Rights to Ground Water in North Dakota: Trends and Opportunities*, 71 N.D. L. REV. 619, 627 (1995).

201. *Id.*

202. *Id.* at 529.

203. Beck, *supra* note 191, at 520.

204. *Id.* (quoting *United Plainsmen Ass’n v. North Dakota Water Conservation Comm’n*, 247 N.W.2d 457, 461-63 (N.D. 1976)).

205. *Id.* at 518.

206. *Id.* at 518–519.

207. N.D. CENT. CODE § 61-04-1.1(1) (2010).

208. Beck, *supra* note 191, at 519.

209. *Id.*

210. *Id.*

211. *Id.*

212. N.D. CENT. CODE § 61-01-26(2) (2010).

of the North Dakota Century Code states that a landowner who obtains his water supply for a beneficial use from an underground source may recover damages from a mineral developer who, absent a legal right to the appropriation, diminishes or disrupts the quality or quantity of the landowner's water supply.²¹³

Both Kansas and North Dakota represent an acknowledgement by those states that there is a strong public interest in groundwater, notably as it applies to the oil and gas context. If Texas is to take anything from their approaches, it may simply be to recognize that there may be substantial interferences to existing public uses as well as private ones. It may only take this acknowledgement to broaden the scope of the Accommodation Doctrine to include the public interest.

B. *Correlative Use States*

States such as California, Hawaii, Iowa, Minnesota, New Jersey, and Vermont employ the Correlative Use Doctrine when determining ownership of groundwater.²¹⁴ Under this doctrine, the rights of multiple landowners overlying a groundwater source are correlated, and water use must constitute a reasonable, beneficial use.²¹⁵ Ultimately, this puts the power in the hands of the courts to allocate water through permits, thereby protecting both public and private interests.²¹⁶ This correlative approach, markedly distinct from Texas's private ownership approach, demonstrates that these states have already acknowledged the fact that water use has effects beyond the borders of private ownership.

C. *Reasonable Use States*

Under the Reasonable Use Doctrine, a landowner may use any amount of water necessary for a useful or beneficial purpose in connection with the overlying land.²¹⁷ Because it limits ownership and use to the overlying land and only to uses deemed beneficial, this doctrine could be considered one of the most limiting of the different theories of groundwater ownership.²¹⁸ Generally though, as long as the use is for a beneficial purpose incidental to the enjoyment of the land, such use will be allowed,²¹⁹ and this application actually brings the Reasonable Use approach close to Texas's approach when it

213. N.D. CENT. CODE § 38.11.1-06 (2004).

214. *Who Owns the Water?*, *supra* note 190, at 1.

215. *Id.*

216. *Id.*

217. Matt Berkowitz, *Bottling the Water Bottlers: A Critique of Pennsylvania Groundwater Law*, 22 TEMP. ENVTL. L. & TECH. J. 235, 242 (2004).

218. Joseph W. Dellapenna, *Developing A Suitable Water Allocation Law for Pennsylvania*, 17 VILL. ENVTL. L.J. 1, 64 (2006).

219. *Id.*

comes to allowing oil and gas lessees access to groundwater.²²⁰ Actually, it is very similar to Texas's.²²¹ The only exceptions to the use are a prohibition against waste and a limitation to the transportation of water to other areas.²²² This approach is the most common among the states, having been adopted or used by twenty-one states including Pennsylvania, Kentucky, and Oklahoma, all states with notable shale plays.²²³

The usage restrictions under the Reasonable Use Doctrine, however, present an inference that these states, through their own developed common law, have placed some value on the public interest. That the use is restricted to the overlying land, it cannot produce waste, and its transportation to other areas cannot injure landowners evinces a basic consideration of the public good. Thus, the Reasonable Use approach, which in its practice is considerably deferential to beneficial use, still attempts to protect the public interest.

D. *Restatement of Torts States*

Under the Restatement of Torts approach, a state allows a landowner to use groundwater for a beneficial purpose as long as they meet certain conditions.²²⁴ Both Ohio and Michigan, states with large amounts of oil and gas activity, are among the states that generally have used the Restatement of Torts approach to groundwater ownership.²²⁵ Similar to Texas, Ohio has regulations surrounding fracing but has yet to focus its restrictions on groundwater withdrawal.²²⁶ Likewise, Michigan has yet to restrict water use in oil and gas exploration and production, and it is exempt from the requirements of Michigan's Great Lakes Preservation Act.²²⁷ There is a hint, though, that Michigan's regulatory agency that oversees water usage may restrict fracing usage if there is an indication that it will cause a negative impact on groundwater.²²⁸ Thus, these states find themselves in the same position as Texas. The public interest is forcing them to consider the potential public impacts when water is used in oil and gas production.

220. See Berkowitz, *supra* note 217, at 242; *Who Owns the Water?*, *supra* note 190, at 1.

221. See Berkowitz, *supra* note 217, at 242.

222. *Id.*

223. *Who Owns the Water?*, *supra* note 190, at 1.

224. *Id.*

225. *Id.*

226. Christopher S. Kulander, *Shale Oil and Gas State Regulatory Issues and Trends*, 63 CASE. W. RES. L. REV. 1101, 1119–1120 (2013).

227. Susan Hlywa Topp, *Deep Shale Natural Gas Production in Michigan Opportunities, Problems, and A Shot in the Dark*, MICH. B.J., January 2011, at 32, 33. The Great Lakes Preservation Act gives authority to the state to regulate large quantity withdrawals of water for the purpose of protecting state waters for the public interest. *Michigan Business One Stop: Water Withdrawal Permit*, MICHIGAN.GOV (Feb. 2014), http://michigan.gov/statelicensesearch/0,1607,7-180-24786_24829-245038—,00.html.

228. Topp, *supra* note 227, at 33.

E. *Louisiana*

Louisiana bases its approach to groundwater ownership on the Absolute Ownership Doctrine.²²⁹ Like Texas, Louisiana's absolute-ownership approach is a combination of the common-law Rule of Capture and a recognition that the landowner is free to withdraw as much as he wishes, short of legislative restrictions.²³⁰ Most notable, though, is the fact that much of Louisiana does not share the same water-supply issues with Texas,²³¹ yet it appears to nonetheless be moving towards limitations on the doctrine through regulations on water use in hydraulic fracturing.²³²

Similar to Texas's approach, Louisiana landowners do have the ability to claim negligence or intentional misconduct against their neighbors when they feel their neighbor's water use damages their rights.²³³ Roderic Fleming suggests that Louisiana courts may supplant the negligence determination with a "simple fact of life" determination where an oil and gas withdrawal threatens a continued use of an aquifer and find that the use was unreasonable.²³⁴ Under section 858 of the Restatement (Second) of Torts, "one who withdraws groundwater [is] liable if, among other things, his withdrawal 'unreasonably causes harm to a proprietor of neighboring land through lowering the water table or reducing artesian pressure, [or] exceeds the proprietor's reasonable share of the annual supply or total store of ground water.'"²³⁵ Thus, "a Louisiana court would have civil law maxims, statutory provisions, rational concerns over justice and fairness, and numerous other reasons to apply reasonableness-based limits to groundwater withdrawal rights."²³⁶ Considering the similarities between the jurisdictions, it stands to reason that Texas may be willing to look in a similar direction. Even if Texas remains unwilling to call the groundwater withdrawal unreasonable, such influence may be enough to find a substantial interference with an existing use.

F. *What Texas Can Learn From Other Jurisdictions*

Perhaps the most interesting correlation among all the jurisdictions examined above, including Texas, is the increasing trend of courts and state agencies to get involved in the regulation of the oil and gas industry's water usage.²³⁷ Water concerns appear nationwide, and states

229. Roderic Fleming, *Hydraulic Fracturing, Louisiana Water Law, and Act 955: An Irresistible Economic Force Meets an Immovable Legal Object*, 24 TUL. ENVTL. L.J. 363, 367 (2011).

230. *Id.* at 368 (citing *Adams v. Grigsby*, 152 So. 2d 619 (La. Ct. App. 1963)).

231. *Id.* at 367.

232. *Id.* at 381.

233. *Id.* at 377.

234. *Id.*

235. *Id.* (quoting RESTATEMENT (SECOND) OF TORTS § 858).

236. *Id.*

237. See discussions *supra* Part III.B. and VI.

are willing to step in and control access to it.²³⁸ Even Texas and Louisiana, which broadly acknowledge that the landowner has ownership of groundwater-in-place and may even capture that of his neighbors if it flows underneath his land,²³⁹ are turning their eyes towards its withdrawal and use.²⁴⁰ If this trend continues, it may be likely that courts will no longer imply the right of the owner of a severed estate (the mineral estate) to have unfettered access to such a precious, regulated resource. Texas courts may only have to look to a broader interpretation of the Accommodation Doctrine to recognize that there is, indeed, a substantial interference to existing uses of water. Once they find it, they merely have to observe the myriad alternatives that are becoming increasingly available to all oil and gas producers for their fracing needs.²⁴¹

VII. CONCLUSION

To date, the Accommodation Doctrine simply limits the implied right of reasonable use of the surface when there is a substantial interference with an existing surface use and the lessee has reasonable alternatives by which to access his minerals. Furthermore, the cases that invoke this doctrine have traditionally dealt with very specific uses by surface owners that require accommodation. But with growing concerns over water supply throughout the state and nation, this doctrine may provide the analysis by which Texas courts rein in the freedom allowed by the implied right of reasonable use of the surface. It may simply be a matter of broadening the scope of the Accommodation Doctrine to recognize substantial interferences beyond the surface owner's borders. If a court is willing to do that, all that remains in its analysis will be to look for reasonable alternatives available to the producer.

Already, state agencies are increasing their attention to the growing water supply problem as well as environmental concerns and responding with more monitoring and regulation on the withdrawal of groundwater. In this, they promote both private and public interests. Likewise, alternatives, though currently in relatively early stages, become increasingly viable to oil and gas producers who must respond to pressures from state and environmental groups to find methods of extracting their minerals without impacting the precious water supply. These companies are staying on the cutting edge of technological progress and social trends and are, therefore, promoting a lasting rela-

238. *Id.*

239. See discussions *supra* Parts II.A. and VI.E.

240. See discussion *supra* Part III.B. and Fleming, *supra* note 229, at 381 (The Louisiana legislature has given authority to watershed districts to regulate rates of production from aquifers.)

241. See discussion *supra* Part V.

tionship and reputation with the state, the surface owners, and the public community.

The implied right of reasonable use of the surface and the Accommodation Doctrines are fixtures in Texas oil and gas law, but the writing appears to be on the wall regarding their true modern relevance. Once just a stick in the bundle, water has been elevated to an absolute right held by the surface owner while its use in oil and gas production is simultaneously being regulated by state agencies. Meanwhile, statewide shortages and concerns turn more eyes to the ground, hoping that we can find ways to ensure the retention of our most precious resource. It appears that this stick in the proverbial bundle sticks out too far for courts to continue granting to a non-owner. If the lessee has other ways to enjoy its mineral rights, there seems to be little reason why a court would not seek to protect the interests of the private citizen and the public at large. The legislature and its agencies already appear to be moving in this direction. The analysis employed under the Accommodation Doctrine may provide the path by which Texas courts join the trend.