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What's the Harm in a Subsurface Trespass

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WHAT'S THE HARM IN A SUBSURFACE TRESPASS?

Throughout modern history, the issue of subsurface trespass plagues the oil and gas industry in many contexts. The media continues to sensationalize the negative, harmful effects of hydraulic fracturing in society ranging from earthquakes to flaming tap water. Many emerging issues associated with hydraulic fracturing allegedly result from the wastewater injections used for disposal. However, case law does not provide an express rule regarding the trespass liability associated with the subsurface migration of these wastewater injections onto adjoining tracts. This Comment examines the interplay between legal precedent and policy concerns in the Texas Supreme Court's decision to decline ruling on the issue of trespass liability of wastewater injections in Environmental Processing Systems, LC v. FPL Farming Ltd. and whether Oklahoma should resolve this specific issue. Texas case law provides many rulings on subsurface trespass in different instances, most alluding to a lack of harm as crucial to the decisions. Yet, the courts have not specifically answered whether a subsurface trespass exists in the case of wastewater injections. There is a growing trend among courts to contemplate harm as an important factor in determining the existence of a subsurface trespass, but the meaning of "harm" varies and is largely undefined. This Comment concludes that Oklahoma should broadly construe the meaning of harm and assess whether trespass liability attaches in the case of subsurface migration of wastewater onto adjoining tracts.

I. INTRODUCTION

"It's not unexpected that shooting massive amounts of water, sand, and chemicals at high pressure into the earth to shatter shale and release natural gas might shake things up. But earthquakes aren't the worst problem with fracking."[1] In his article, David Suzuki enumerates several ways in which the consequences of hydraulic fracturing outweigh the benefits.[2] The list includes mainly environmental concerns including earthquakes, contaminated drinking water, oil spills, flammable water, and what he considers the largest problem—"continu[ing] our destructive addiction to fossil fuels."[3] The environmental impact of hydraulic fracturing is seemingly large, causing many problems and negative externalities.[4] The media, through articles, books, and movies, such as the documentary *Gasland*, often sensationalizes hydraulic fracturing concerns such as flaming tap water, towns turned into industrial wastelands, and surges in earthquakes.[5] However, the media and critics like Suzuki are silent as to the legal repercussions and controversies that continue to plague oil and gas law—especially the issue of subsurface trespass.[6]

Until several years ago, practitioners, scholars, professors, and other academics believed that earth did not hold enough oil to maintain production levels.[7] Moreover, the world did not view the United States as a major resource of oil—the United States relied on oil imports from other countries.[8] However, over the last few years, increasingly innovative hydraulic fracturing techniques transformed the United States into a powerhouse oil and gas exporter.[9] Such technology mitigated both the industry and the

1. David Suzuki, *What's the Fracking Problem with Natural Gas*, DAVID SUZUKI FOUNDATION (Sept. 13, 2012), http://www.davidsuzuki.org/blogs/science-matters/2012/09/whats-the-fracking-problem-with-natural-gas.

2. *Id.*

3. *Id.*

4. *Id.*

5. *See generally* GASLAND (HBO Documentary Films 2010) (providing a critical view of hydraulic fracturing); *but see* FRACKNATION (Ann & Phelim Media) (addressing concerns raised in *Gasland* and examining positive effects that arise from hydraulic fracturing).

6. *See* GASLAND, *supra* note 5; FRACKNATION, *supra* note 5; David Suzuki, *supra* note 1.

7. *See* RUSSELL GOLD, THE BOOM: HOW FRACKING IGNITED THE AMERICAN ENERGY REVOLUTION AND CHANGED THE WORLD 2-6 (2014).

8. *See id.*

9. Grant Smith, *U.S. Seen as Biggest Oil Producer After Overtaking Saudi Arabia*, BLOOMBERG, (July 4,

public's fears of early depletion of oil and gas.[10] The Energy Information Administration estimates the United States' "natural gas supply will increase to forty-nine percent by 2035."[11] Hydraulic fracturing remains a highly controversial topic in the oil and gas industry, not only regarding environmental concerns, but also legal concerns.[12] However, the process of hydraulic fracturing is not new; it dates back to 1947.[13] Thus, while the controversy surrounding hydraulic fracturing may be new, the process itself is not.[14]

Two oil and gas capitals of the United States, Oklahoma and Texas, are key players in the hydraulic fracturing industry.[15] The Texas Supreme Court was the first to address certain novel issues created by hydraulic fracturing—mainly the overwhelming cases regarding subsurface trespass.[16] Among subsurface trespass issues answered by the Texas Supreme Court, the Texas Supreme Court historically found either no actionable trespass or no trespass existed.[17] However, the issue regarding liability of subsurface trespass of wastewater injected into the ground after extraction of natural gas from shale formations remains unanswered.[18] In 2011 and then again in 2015, the Texas Supreme Court declined to answer this question in the landmark case *FPL Farming v. Environmental Processing Systems, Ltd.*[19]

Initially, the court in *FPL Farming* remanded the case to the Beaumont Court of Appeal son a different threshold issue without addressing the issue of subsurface trespass.[20] In 2014, the case found itself once again in front of the Texas Supreme Court.[21] In early 2014, the Court heard oral arguments, and finally issued an opinion over a year later in February of 2015—declining again to answer the subsurface trespass issue.[22] Prior to the decision of the Texas Supreme Court, analysts believed the court's decision would have a sizeable impact on the liabilities and rights of oil and gas companies despite injection wells not associated with the oil and gas industry being implicated.[23] As another major player in the hydraulic fracturing industry, Oklahoma should address the issue of

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2014 10:56 A.M.), http://www.bloomberg.com/news/2014-07-04/u-s-seen-as-biggest-oil-producer-after-overtaking-saudi.html.

10. *See* Barbara Warner & Jennifer Shapiro, *Fractured, Fragmented Federalism: A Study in Fracking Regulatory Policy*, 43 PUBLIUS: THE JOURNAL OF FEDERALISM 478 (2013).

11. *Id.* at 477.

12. *See* David Shukman, *What is fracking and why is it so controversial?*, BBC NEWS (June 27, 2013), http://www.bbc.com/news/uk-14432401; *see also* BRIAN C. BLACK ET AL., CLIMATE CHANGE: AN ENCYCLOPEDIA OF SCIENCE AND HISTORY 711-13 (2013) (describing the process of hydraulic fracturing).

13. *Hydraulic Fracturing—Is It Safe?* INST. FOR ENERGY RES. (May 3, 2011), http://instituteforenergyresearch.org/analysis/hydraulic-fracturing-is-it-safe.

14. *Id.*

15. Ashleigh L. Boggs, Note, Andarko Petroleum Corp. v. Thompson: *Interpretation of Oil and Gas Lease Habendum Clauses in Texas and Why Oklahoma Should Maintain Its Divergent Approach to Keep Leases Alive*, 61 OKLA. L. REV. 341 (2008) (internal citation omitted).

16. *See* R.R. Comm'n of Tex. v. Manziel, 361 S.W.2d 560 (Tex. 1962); Coastal Oil & Gas Corp. v. Garza Energy Trust, 268 S.W.3d 1, 12 (Tex. 2008).

17. *Manziel*, 361 S.W.2d 560; *Coastal Oil & Gas Corp.*, 268 S.W.3d at 12.

18. *See* FPL Farming Ltd. v. Envtl. Processing Sys., L.C., 351 S.W.3d 306 (Tex. 2011).

19. *Id.*; Envtl. Processing Sys., L.C v. FPL Farming, Ltd., 457 S.W.3d 414 (Tex. 2015).

20. *FPL Farming*, 351 S.W.3d at 308.

21. *FPL Farming*, 457 S.W.3d 414.

22. *Id.*

23. *See* Charles Nixon, *The Continuing Saga of* FPL Farming v. Environmental Processing Systems: *Will the Texas Supreme Court Set New Rules of Liability for Underground Trespass?* 8 TEX. J. OIL GAS & ENERGY L. 428 (2013).

liability for subsurface trespass of wastewater injections.[24] Oklahoma should step up where Texas did not, considering not only legal implications but also environmental, social, and economic consequences as types of harm associated with wastewater injections. Part II provides a brief historical and technical overview of hydraulic fracturing as well as introducing common environmental and legal concerns associated with the process.[25] Part II also delves into the Texas Supreme Court's treatment of subsurface trespass issues.[26] Part III discusses Oklahoma's treatment of subsurface trespass.[27] Part IV analyzes the court's decisions of *FPL Farming* and whether Oklahoma should decide the issue of subsurface trespass of wastewater, and Part V provides a conclusion.[28]

II. BACKGROUND

A. An Overview of Hydraulic Fracturing

A technique of injecting a mix of sand and water underground at a high pressure, hydraulic fracturing began in Kansas in 1947 as an experimental process slowly transitioning into a method of gas extraction in 1949.[29] The first commercial application of hydraulic fracturing took place in Duncan, Oklahoma, and later the same day near Holliday, Texas.[30] As history notes, Texas and Oklahoma are the two of the largest players in hydraulic fracturing.[31] Additionally, these jurisdictions often represent the majority and minority rules followed by other states.[32]

The process of hydraulic fracturing creates fractures in the rock formations beneath the surface "that stimulate the flow of natural gas or oil, increasing the volumes that can be recovered."[33] Underneath the surface, there are shale formations that are fine-grained sedimentary rocks rich in petroleum and natural gas.[34] Shale formations are one of the largest sources of natural gas and oil in the United States.[35] These shale formations are abundant in hydrocarbons, making them a useful alternative for oil and gas extraction.[36] Like coal, over millions of years, shale formations developed as a result of intense heat, high pressure, and bacteria converting layers of organic material such as animal and plant

24. Barclay Nicholson & Brian Albrecht, *Subsurface Trespass Emerging Issue*, AM. OIL & GAS REPORTER, Feb. 2012, http://www.nortonrosefulbright.com/files/us/images/publications/20120201AOGRSubsurfaceTrespassNicholson.pdf.

25. *See* discussion *infra* Part II.

26. *See* discussion *infra* Part II.F.

27. *See* discussion *infra* Part III.

28. *See* discussion *infra* Part IV; *see* discussion *infra* Part V.

29. GOLD, *supra* note 7, at 73; *Shooters—A "Fracking" History*, AM. OIL & GAS HISTORICAL SOC'Y, http://aoghs.org/technology/hydraulic-fracturing (last visited Feb. 19, 2015).

30. *Shooters*, *supra* note 29.

31. Boggs, *supra* note 15, at 341.

32. *See id.* at 343-44.

33. *The Process of Hydraulic Fracturing*, EPA, http://www2.epa.gov/hydraulicfracturing/process-hydraulic-fracturing (last visited Nov. 3, 2014).

34. BLACK, *supra* note 12, at 712.

35. *But see* Dennis Dimick, *How Long Can the U.S. Oil Boom Last?*, NAT'L GEOGRAPHIC, Dec. 19, 2014, http://news.nationalgeographic.com/news/2014/12/141219-fracking-oil-supply-price-reserves-profits-environment.

36. Tiffany Guiltinan, *Inside Shale Gas and Oil Geology*, DRILLINGINFO (Nov. 20, 2014), http://info.drillinginfo.com/shale-gas-oil-geology.

matter into hydrocarbons.[37] Each layer became locked into sediment eventually creating shale formations.[38] These formations contain millions of small pores containing oil and natural gas, in which the primary component is methane.[39]

The Barnett shale formation underlies North Texas and Oklahoma, and it possibly contains the second largest producible natural gas reserves in the United States.[40] George Mitchell, a Houston oilman, hypothesized that a large reservoir of fossil fuels existed beneath Forth Worth, Texas.[41] His countless hours of reading over mineral logs proved beneficial when he discovered a layer of impermeable rocks untouched by other oil and gas companies—the Barnett shale formation.[42] However, operators had difficulty extracting oil and gas from the shale formation.[43] Instead of using water, Mitchell and his engineers injected a gel into the rock, but they could not access the gas inside the shale formation.[44] After some time, an engineer with Mitchell's company discovered that "cracking open the rock . . . would make the[] shale wells both less expensive and more bountiful."[45] Mitchell was the first oilman to combine horizontal drilling and hydraulic fracturing in the Barnett Shale.[46] During Mitchell's era of attempting to decipher the puzzle of extracting gas from the Barnett Shale, Aubrey McClendon, an Oklahoman, who did not have an oil and gas background, quickly became an expert, founded Chesapeake Energy and subsequently transformed into one of the largest proponents of shale gas.[47] After many failed attempts to harness oil and gas from the Barnett Shale, in 2001, Mitchell sold his business to Devon Energy, an Oklahoma company.[48] Using the innovative method of horizontal drilling, Devon Energy was able to access a shallow level of the Barnett shale formation.[49]

As Mitchell discovered, physical access to these shale formations is difficult.[50] Shale formations are "tighter" and have smaller pores, making it difficult to access and then extract oil and gas.[51] With vertical drilling, a well could drain about ten to forty acres;

37. *Id.*

38. *Id.*

39. Vera Köster, *What is Shale Gas? How Does Fracking Work?*, CHEMISTRYVIEWS (Feb. 5, 2013), http://www.chemistryviews.org/details/education/1316813/What_is_Shale_Gas_How_Does_Fracking_Work.html

40. *The Barnett Shale*, http://www.thebarnettshale.com (last visited Nov. 3, 2014).

41. Michael Ennis, *The Rough Guide to Frackistan: Meet the Unsung Heroes and Reckless Pioneers Who Tranformed [sic] the American Energy Sector*, TEX. MONTHLY (May 2014), http://www.texasmonthly.com/politics/the-rough-guide-to-frackistan.

42. GOLD, *supra* note 7, at 8.

43. *Id.*

44. *Id.*

45. *Id.*

46. Warner, *supra* note 10, at 477.

47. GOLD, *supra* note 7, at 8-9.

48. Christopher Helman, *Father of the Fracking Boom Dies – George Mitchell Urged Greater Regulation of Drilling*, FORBES (July 27, 2013, 6:31 P.M.), http://www.forbes.com/sites/christopherhelman/2013/07/27/father-of-the-fracking-boom-dies-george-mitchell-urged-greater-regulation-of-drilling.

49. Ennis, *supra* note 41.

50. *Id.*

51. LOWE, ANDERSON, SMITH, PIERCE, & KULANDER, CASES AND MATERIALS ON OIL AND GAS LAW 42 (6th ed. 2013) (internal citations omitted); Köster, *supra* note 39.

however, shale formations pose difficulty in accessing any fluid or gas.[52] Due to the denseness of the rock, vertical drilling is not as effective.[53] However, horizontal drilling creates a hole across the shale formation that spans thousands of feet; hence, the "fracture" of fracturing.[54] Operators use hydraulic fracturing either to create new fractures or to deepen and widen existing fractures.[55] Thus, hydraulic fracturing mitigates the need for operators to rely on natural fractures.[56]

The general process of hydraulic fracturing consists of three steps.[57] After drilling an initial well, a cement casing or heavy pipe is run down into the structure to line the hole.[58] The first step, known as the "pad," is when the hydraulic fluid is pumped into the productive zone without proppant to "instigate the fractures in the rock and to prime the location so that any fluid leakage into immediately adjacent zones are accounted for."[59] During the second stage, operators add proppant to the fluid.[60] This proppant, normally consisting of sand in the form of uniform grain size or manufactured ceramic beads, keeps the fractures in the shale open to facilitate the flow of gas after the oil and gas operators pump out the fracturing fluid; the proppant keeps the fractures from resealing.[61] The operators connect high-pressure pumps that inject a water and sand mixture into the shale—expanding the natural cracks in the formation and allowing natural gas to flow—causing additional fissures.[62] This pressurized gas seeps into the formation causing more fissures.[63] The fracturing fluid contains approximately 90 percent water, 9.5 percent sand, and the remaining 0.5 percent contains various ingredients.[64] Current laws do not require drilling companies to reveal the chemical components contained in fracturing fluids used by oil and gas companies.[65] Recently, the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission created a public registry encouraging drilling companies to publish the chemicals used in the fluid; however, there is no law requiring these companies to use the directory.[66]

The last step involves flushing the reservoir in order to remove any excess proppant and push it further into the formation, and disposing of the resulting waste water by injecting it miles beneath the surface.[67] As a safety precaution, operators closely monitor the pressure so any significant leakage may be detected early and the operation may be

52. BLACK, *supra* note 12, at 712.
53. *See id.*
54. *Id.*
55. *Id.*
56. *See id.*
57. LOWE, *supra* note 51, at 43.
58. *Id.*; BLACK, *supra* note 12, at 712.
59. LOWE, *supra* note 51, at 43.
60. *Id.*
61. *Id.*
62. *Id.* at 42.
63. *Id.* at 43.
64. *Water Use*, Energy from Shale, http://www.energyfromshale.org/articles/water-use (last visited Nov. 3, 2014).
65. *Id.*
66. *See* FracFocus 2.0, http://fracfocus.org (last visited Nov. 3, 2014).
67. LOWE, *supra* note 51, at 43.

stopped.[68] Unlike traditional wells, shale wells have "prolific" production at the beginning but have a short lifespan, especially in the Barnett Shale.[69] In order to maintain production, operators must continuously drill wells to replace the dying wells.[70]

B. Wastewater Injections Are Not Just Water

The EPA enacted the Underground Injection Control Program, which provides some standards for wastewater injection, but each state regulates wastewater disposal within its borders.[71] Texas charges the Texas Railroad Commission (TRC) with this task; and by statute, the Oklahoma Corporation Commission (OCC) has exclusive jurisdiction to monitor oil and gas companies with regard to Class II Injection Wells.[72] In certain cases, wastewater injections are not feasible options in areas where the geological conditions do not permit re-injection into the ground.[73] In such cases, the oil and gas companies must find reasonable alternatives such as disposing of the wastewater in surface water.[74]

Hydraulic fracturing enjoys special exemptions not granted to other industries.[75] Some of these exemptions include: (1) not labeling fracturing waste as a hazardous material; (2) excusing disclosure of chemical components in proppant; and (3) exemption from the Safe Water Act's injection-well requirements.[76] Because states primarily regulate the disposal of the wastewater, there is great inconsistency.[77] Some states, such as New York, do not allow disposal of wastewater within its borders.[78]

The geology of Texas and Oklahoma allow oil and gas companies to release wastewater back into the ground.[79] The wastewater includes the original proppants used to extract the natural gas and oil; however, industry experts are not entirely certain as to what chemicals and other additives wastewater contains.[80] The initial fracturing fluid carries the label of "trade secret"; thus, no legal obligation exists to force oil and gas companies to divulge the components of the fracturing fluid contained in the wastewater.[81]

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68. *Id.*

69. *Id.*

70. *Id.*

71. Inessa Abayev, Note, *Hydraulic Fracturing Wastewater: Making the Case for Treating the Environmentally Condemned*, 24 FORDHAM ENVTL. L. REV. 275, 276 (2013); *Saltwater Disposal Wells*, Railroad Commission of Texas, http://www.rrc.state.tx.us/about-us/resource-center/faqs/oil-gas-faqs/faq-saltwater-disposal-wells (last visited Feb. 28, 2015).

72. *See Oil and Gas*, Railroad Commission of Texas, http://www.rrc.state.tx.us/about-us/history/informal-history-toc/oil-and-gas (last visited Mar. 4, 2015); TEX. NAT. RES. CODE ANN. § 81.051 (2011); *Oklahoma Corporation Commission History*, Oklahoma Corporation Commission, http://www.occeweb.com/Comm/commissionhist.htm (last visited Mar. 4, 2015); OKLA STAT. ANN. TIT. 52, § 139A (West 2016).

73. Abayev, *supra* note 71, at 276.

74. *Id.* at 276-77.

75. Warner, *supra* note 10, at 478.

76. *Id.* at 478-79.

77. A provision in the Energy Policy Act, enacted by the Bush Administration in 2005 and dubbed the "Halliburton Loophole," prevented the federal government from regulating hydraulic fracturing under federal environmental laws already in place; the provision altered the definition of "underground injection" by exempting most of the chemicals used during the hydraulic fracturing process. *Id.* at 478-80.

78. *Id.* at 482. In fact, the governor of New York placed a moratorium on hydraulic fracturing.

79. *See* Abayev, *supra* note 71, at 276-77.

80. *Id.* at 280.

81. *Id.*

Some oil and gas companies voluntarily disclose the components of their fracturing fluid.[82] One company revealed the fluid used to extract natural gas later re-injected into the ground contained water, sand, hydrochloric acids, an antimicrobial agent and ethylene glycol.[83] After using the fracturing fluid to extract oil and natural gas from the shale formation, the oil and gas companies re-inject the used fluid as wastewater as a disposal method.[84]

In addition to the artificial additives in the original fracturing fluid that oil and gas companies later re-inject as wastewater, there is a high probability that the wastewater absorbed other substances when it was in the earth.[85] Wastewater contains a large amount of total dissolved solids (TDS) naturally occurring in hard water.[86] Normally, people think of TDS as the hard minerals found in bodies of water such as chloride, sulfate, sodium, and manganese.[87] In the fracturing fluids, these minerals are often found in concentrated levels, "mak[ing] wastewater up to five times as salty as seawater."[88] Additionally, high levels of TDS have detrimental, toxic effects on the environment and humans.[89] Naturally occurring radioactive materials also find their way into the wastewater injections.[90] The wastewater picks up these materials naturally occurring below the earth's surface, bringing such hazardous materials to the surface and polluting the ground water.[91] The wastewater pulls heavy metals and brines from the earth, and these brines contain toxic chemicals such as arsenic, barium, radium, and other heavy metals.[92] If ingested, these chemicals are lethal to humans.[93]

The levels of toxicity found in drinking water varies from state to state, but in New York, the Department of Energy Conservation found wells containing a radioactive derivative of uranium reaching levels hundreds of times over the amount allowed by federal law.[94] Under the Resource Conservation and Recovery Act, even trace amounts of these carcinogenic, radioactive materials can lead to classification of wastewater as hazardous waste.[95] While the effects of wastewater from hydraulic fracturing are discrete, experts do not yet know the full force of its effect on human health.[96] These effects will likely manifest over time, not immediately surfacing in the foreseeable future.[97]

C. Environmental Concerns Regarding Hydraulic Fracturing

Over the years, hydraulic fracturing has generated certain environmental concerns ranging from increased seismic activity, toxic groundwater from the fracturing fluids,

82. *Id.*
83. Ethylene glycol is a component of antifreeze. Abayev, *supra* note 71, at 280.
84. Warner, *supra* note 10, at 477.
85. Abayev, *supra* note 71, at 281.
86. *Id.*
87. *Id.*
88. *Id.*
89. *Id.* at 281-82.
90. Abayev, *supra* note 71, at 282.
91. *Id.* at 279-81.
92. *Id.* at 283-84.
93. *See id.* at 284-85.
94. *Id.* at 284.
95. Abayev, *supra* note 71, at 285.
96. *Id.*
97. *Id.*

accidental chemical spills, waste disposal, air quality, land footprint of drilling activities, pipeline placement and safety, and water usage.[98] Critics of hydraulic fracturing allege that the proppants mixed into the fracturing fluid cocktail are toxic and carcinogenic.[99] The chemicals absorb into the groundwater, creating not only harmful groundwater, but also toxic air emissions.[100] Some recent scientific studies document concentrations of toluene and xylene in local residents' blood and urine, as well as higher miscarriage rates among women.[101] Many environmentalists complain about the toxic levels of unknown substances found in the drinking water surrounding towns.[102] More recently, some energy companies and academics posed that hydraulic fracturing itself did not cause polluted groundwater but that faulty wells may be the true source.[103] In these cases, oil and gas companies failed to properly seal the casing of the well, allowing contaminates to travel up the well bore and absorb into drinking water.[104] Proponents of hydraulic fracturing continuously assert that construction defects regarding the cement casing are the cause for each complaint of contaminated drinking water.[105]

In addition to toxic groundwater, increasing seismic activity is a growing concern.[106] In the past year alone, several states experienced heightened seismic activity—Oklahoma had an earthquake as recent as April 2016.[107] Historically, environmental analysts explained that *if* hydraulic fracturing is connected to the jump in earthquakes, the jump is not due to the fracturing itself but the wastewater re-injected into the ground.[108] Now, both critics and proponents of hydraulic fracturing believe the problem largely rests with the wastewater injections.[109] One recent study focused on Jones, Oklahoma, looking for the cause behind its 2,547 earthquakes that occurred in the last five years.[110] Within a one-year period, Oklahoma experienced over 850 earthquakes—compared to a total of only six earthquakes that occurred between 2000 and 2008.[111] Early in 2014, the Oklahoma

98. Diane Rahm, *Regulating Hydraulic Fracturing in Shale Gas Plays: The Case of Texas*, ENERGY POL'Y 2974, 2975 (2011).

99. *Id.* at 2976.

100. *Id.*

101. *Id.*

102. *See id.*

103. *See* Rahm, *supra* note 98, at 2976; Russell Gold, *Faulty Wells, Not Fracking, Blamed for Water Pollution*, WALL STREET JOURNAL (Mar. 25, 2012 1:52 PM), http://www.wsj.com/articles/SB10001424052702304537904577277814040731688.

104. *See* Rahm, *supra* note 98, at 2976; Gold, *supra* note 103.

105. *See* Rahm, *supra* note 98, at 2976; Gold, *supra* note 103.

106. *See* John Roach, *Fracking Tie to Earthquake Raises Question of Liability*, NBC NEWS (May 13, 2014 10:21 PM), http://www.nbcnews.com/science/environment/fracking-tie-earthquakes-raises-question-liability-n104871; Emily Schmall & Justin Juozapavicius, *States with Fracking See Surge in Earthquake Activity*, HUFFINGTON POST (July 13, 2014 5:16 PM) http://www.huffingtonpost.com/2014/07/14/fracking-earthquake_n_5585892.html; *but see Earthquakes Induced by Fluid Injection FAQs*, U.S. GEOLOGICAL SURVEY, http://www.usgs.gov/faq/categories/9833/3424 (last visited Feb. 28, 2015) (providing that "[o]nly a small fraction of these disposal wells have induced earthquakes that are large enough to be of concern to the public").

107. *Preliminary Earthquake Information*, OKLA. GEOLOGICAL SURVEY, http://www.okgeosurvey1.gov (last visited Feb. 22, 2015).

108. Roach, *supra* note 106.

109. *Id.*

110. Nick Ramsey, *New study links Oklahoma earthquakes to fracking*, MSNBC (July 8, 2014, 7:33 PM), http://www.msnbc.com/the-last-word/oklahoma-earthquakes-linked-fracking-study.

111. Dominic Basulto, *Oklahoma earthquakes highlight an inconvenient truth about innovation*, THE WASH. POST (July 15, 2014), http://www.washingtonpost.com/blogs/innovations/wp/2014/07/15/oklahoma-

Geological Survey announced that wastewater injections from hydraulic fracturing are likely a factor in the increased seismic activity because the wastewater impedes frictional forces on the naturally occurring faults within the Earth's crust, creating an earthquake.[112] In 2013, Oklahoma felt 109 earthquakes; however, between January and May 2014, the state experienced over 145 earthquakes.[113]

In an effort to battle some of these environmental concerns, the United States Secretary of Interior attempted to introduce regulations governing hydraulic fracturing.[114] These regulations would not cover all issues governing hydraulic fracturing, but they would eliminate some of the exemptions listed, such as the exemption from disclosing the chemicals used in the proppant.[115] These rules would only cover federal lands; thus, states would retain the ability to regulate hydraulic fracturing within its borders on non-federal land.[116] Ultimately, the House voted to block the introduction of these federal regulations.[117]

D. The Rule of Capture

The rule of capture stems from the traditional property principal that one "owns" property once he captures it.[118] Courts originally analogized hydrocarbons to wild animals, believing that oil and gas migrated similar to foxes.[119] However, courts' understanding of the mechanics of hydrocarbons evolved—realizing that the transient nature of oil and gas differed from that of wild animals.[120] Now, the rule of capture is an integral aspect of oil and gas jurisprudence.[121] The traditional rule shields a landowner from liability when he captures oil and gas "that drains from another's lands to a well on one's own land."[122] The landowner acquires title to the oil and gas produced from the well(s) on his land despite flowing from underneath an adjacent tract as long as: his well does not trespass or create a nuisance; there is no negligence; and the well does not violate correlative rights or conservation rules.[123] Thus, under a traditional scheme, a landowner is not liable for draining the oil and gas beneath a neighbor's land if the draining well does not cross onto the adjacent tract either on the surface or beneath the surface.[124]

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earthquakes-highlight-an-inconvenient-truth-about-innovation.

112. *Record Number of Oklahoma Tremors Raises Possibility of Damaging Earthquakes*, OKLA. GEOLOGICAL SURVEY, http://www.okgeosurvey1.gov/media/press/Full_USGS-OGS_Statment_05022014.pdf.

113. *Id.*

114. Paula Cotter, *Draft Rules on "Fracking"*, NAT'L ASS'N OF ATTORNEYS GENERAL, http://www.naag.org/publications/naagazette/volume-6-number-5/draft-federal-rules-on-fracking.php.

115. *Id.*

116. *Id.*

117. Pete Kasperowicz, *House votes to block federal fracking rules*, THE HILL (Nov. 20, 2013, 5:41 PM), http://thehill.com/blogs/floor-action/votes/190977-house-votes-to-block-federal-fracking-rules.

118. *See* Pierson v. Post, 3 Cai. R. 175, 177-78 (NY 1801) (one of the first instances addressing the rule of capture).

119. *See* Hammonds v. Cent. Ky. Natural Gas Co., 75 S.W.2d 204, 206 (Ky. 1934), *overruled by* Tex. Am. Energy Corp. v. Citizens Fid. Bank & Trust Co., 736 S.W.2d 25, 27-28 (Ky. 1987).

120. *Tex. Am. Energy Corp.*, 736 S.W.2d at 27-28, *overruling Hammonds*, 75 S.W.2d. at 206.

121. *See* discussion *infra* Part II.G.2.

122. JOHN S. LOWE, OIL AND GAS LAW IN A NUTSHELL 12 (6th ed. 2014).

123. *See id.* at 12-20.

124. *Id.* at 12.

E. Subsurface Trespass: Directional Well vs. Injected Fluid Trespass vs. Hydraulic Fracture Trespass

Courts encounter a spectrum of issues regarding subsurface trespass.[125] The three most common types include: (1) directional well trespass; (2) injected fluid trespass; and (3) hydraulic fracture trespass—the subject of this comment.[126] Directional well subsurface trespass occurs when an oil and gas company drills a well that crosses property lines below the surface.[127] This type of subsurface trespass represents the classic case.[128] Since the inception of horizontal drilling, drilling wells has a rich history and the oil and gas industry continues to make large, innovative leaps.[129]

Subsurface "trespass" from injecting fluids presents logistical problems.[130] This type of trespass may occur from: (1) pumping fluid, normally saltwater, into an injection well as a component of an enhanced recovery operation; (2) pumping fluid, normally saltwater, to dispose of waste fluid; or (3) injecting natural gas into an underground reservoir.[131] In each of these cases, the injected substance may disperse from the injection well beneath the surface.[132] Historically, courts used different approaches to address injected fluid subsurface trespass, but they are generally reluctant to attach tort liability.[133]

F. Ownership Theories: Non-Ownership v. Ownership-in-Place

In traditional oil and gas law, states follow one of two ownership theories.[134] The rule of capture is the root for both ownership theories.[135] Moreover, these theories share the concept that a landowner owns the hydrocarbons under his land so long as they remain there.[136] Ownership-in-place jurisdictions view that "no distinction in principle lies between the title acquired under a grant of solid minerals and the title acquired under a grant in the same form of gas and oil."[137] While the rule of capture anchors both ownership theories, this theory comports more with the *ad coelum* doctrine.[138] Under this theory, landowners have a possessory interest in the hydrocarbons beneath their land.[139] In conjunction with the rule of capture, this theory propagates that a mineral owner retains "title to the minerals . . . capture[d] below his land, even if such minerals . . . migrated

125. *See* Terry D. Ragsdale, *Hydraulic Fracturing: The Stealthy Subsurface Trespass*, 28 TULSA L. J. 311, 317 (1993).
126. *Id.* at 317.
127. *Id.* at 317-18.
128. *Id.* at 317.
129. *See id.* at 318-19.
130. Ragsdale, *supra* note 125, at 335.
131. *Id.*
132. *Id.*
133. *See id.*; *see also* discussion of R.R. Comm'n of Tex. v. Manziel *infra* Part II.G.1.
134. Colleen E. Lamarre, Note, *Owning the Center of the Earth: Hydraulic Fracturing and Subsurface Trespass in the Marcellus Shale Region*, 21 CORNELL J.L. & PUB. POL'Y 457, 462 (2011).
135. LOWE, *supra* note 122, at 34.
136. *Id.*
137. Lamarre, *supra* note 134, at 466 (quoting Stephens County v. Mid-Kansas Oil & Gas Co., 253 S.W. 290, 292 (Tex. 1923)) (internal quotation marks omitted).
138. The *ad coelum* doctrine is a traditional, but now somewhat abandoned, principle in oil and gas law, mandating that a landowner owns everything above and below his land. *See id.* at 462-63.
139. *Id.* at 466.

from an adjacent tract."[140] A majority of jurisdictions, including Texas, adopt an ownership-in-place theory.[141] The Texas Supreme Court summarized ownership-in-place doctrine as giving a landowner the right to develop "the oil and gas that will flow out of the well on one's land . . . [but] is limited by the physical possibility of the adjoining landowner diminishing the oil and gas under one's land" under the rule of capture.[142]

In contrast, non-ownership theory emphasizes the migratory nature of hydrocarbons.[143] In jurisdictions that follow this theory, a landowner's right to the minerals beneath his land vests when he possesses, or "captures," the minerals.[144] Once severed from the ground, the rule of capture dictates that the hydrocarbons become personal property and are owned by whoever "captured" them.[145] Thus, while the landowner does not technically own the hydrocarbons beneath his land, he possesses the exclusive right to produce and capture those hydrocarbons.[146] To battle certain legal issues that may arise, non-ownership jurisdictions implement measures to protect the correlative rights of those who have an interest in a common pool.[147] Oklahoma and a minority of jurisdictions follow a non-ownership theory.[148]

G. Liability from Hydraulic Fracturing: A Focus on Texas

Hydraulic fracturing gives rise to novel issues that an increasing number of courts must address.[149] Issues of subsurface trespass are prevalent in hydraulic fracturing.[150] However, history shows that courts run into difficulty addressing these issues.[151] Courts look to comparable oil and gas precedent and apply what they view as the most applicable legal principles, such as waterflood operations, aircraft trespass law, and secondary recovery operations.[152] Moreover, a prevalent trend by courts is the refusal to find liability for "harmless" trespass claims.[153] The Texas Supreme Court decided several unique subsurface trespass issues contemplated in hydraulic fracturing in the following trilogy: *Railroad Commission of Texas v. Manziel*, *Coastal Oil & Gas Corp. v. Garza Energy*

140. Andrew D. Lewis, Comment, *The Ever-Protruding Stick in the Bundle: The Accommodation of Groundwater Rights in Texas Oil and Gas*, 2 TEX. A&M L. REV. 79, 82 (2014).

141. Lamarre, *supra* note 134, at 467.

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

143. At one time, courts analogized hydrocarbons to wild animals; however, courts overruled this notion. *See* Laura H. Burney, *A Pragmatic Approach to Decision Making in the Next Era of Oil and Gas Jurisprudence*, 16 J. ENERGY NAT. RESOURCES & ENVTL. L. 1, 22-26 (1996) (discussing Hammonds v. Central Kentucky Natural Gas Co., 75 S.W.2d 205 (Ky. 1934) and Lone Star Gas Co. v. Murchison, 353 S.W.2d 870 (Tex. Civ. App. 1962)).

144. Lamarre, *supra* note 134, at 469.

145. *Id.*

146. LOWE, *supra* note 122, at 33-34.

147. Lamarre, *supra* note 134, at 470.

148. Ragsdale, *supra* note 125, at 314.

149. *See* discussion *infra* Part II.G.1-3.

150. *See* Ragsdale, *supra* note 125, at 337-46.

151. Levi Rodgers, Comment, *Subsurface Trespass by Hydraulic Fracturing: Escaping* Coastal v. Garza*'s Disparate Jurisprudence Through Equitable Compromise*, 45 TEX. TECH L. REV. ONLINE EDITION 99, 121 (2013).

152. *Id.* at 122.

153. Owen L. Anderson, *Lord Coke, The Restatement, and Modern Subsurface Trespass Law*, 6 TEX. J. OIL GAS & ENERGY L. 203, 204 (2011).

Trust, and *FPL Farming Ltd. v. Environmental Processing Systems*.[154]

1. Railroad Commission of Texas v. Manziel

In 1962, the Texas Supreme Court addressed the issue of subsurface trespass regarding secondary recovery.[155] The Manziels were landowners who had an adjoining tract to the Whelan brothers.[156] The Whelan brothers applied for a permit to drill and inject wastewater in their Eldridge #11 well, which was in an irregular spacing unit.[157] In this 1962 case, the Manziels claimed that the injection water constituted a subsurface trespass when it entered their adjoining tract, arguing that the subsurface injection of the wastewater caused waste due to premature subsurface flooding, which in turn damaged their wells.[158] In their initial lawsuit, the plaintiffs sued the Texas Railroad Commission, the Texas regulatory agency for oil and gas.[159] Prior to the lawsuit, the Texas Railroad Commission issued a permit allowing the development of the well, including the ability to inject water for their secondary recovery efforts.[160] The trial court found for the plaintiffs, cancelling the order provided by the Texas Railroad Commission and enjoining the tract.[161] However, the Texas Supreme Court decided differently on this issue.[162] In its analysis of subsurface trespass, the court found that "[t]he subsurface invasion of adjoining mineral estates by injected salt water of a secondary recovery project is to be expected."[163]

In answering the question of trespass of this wastewater from hydraulic fracturing, the Texas Supreme Court "examined cases covering almost every aspect of the oil and gas industry in [Texas]."[164] The court discovered only one instance in which a court granted an injunction on a trespass theory.[165] Citing a case from the previous year, the court recognized the idea that "[t]o constitute [t]respass[,] there must be some physical entry upon the land by some thing."[166] In the same case cited by the court, the majority anticipated—but did not answer—whether injected water crossing lease lines from an authorized source constitutes a "thing" under the rule.[167] Shifting to policy concerns, the court focused on the fact that such secondary recovery operations are essential to capturing more oil and gas, greatly benefiting the public.[168] At the time, secondary recovery operations were new and the court realized the benefits offered by such operations.[169] To

154. R.R. Comm'n of Tex. v. Manziel, 361 S.W.2d 560 (Tex. 1962); Coastal Oil & Gas Corp. v. Garza Energy Trust, 268 S.W.3d 1 (Tex. 2008); FPL Farming Ltd. v. Envtl. Processing Sys., 351 S.W.3d 306 (Tex. 2011).
155. *Manziel*, 361 S.W.2d at 566-67.
156. *Id.* at 561-62.
157. *Id.* at 562.
158. *Id.* at 566.
159. *Id.* at 561.
160. *Manziel*, 361 S.W.2d at 561-62.
161. *Id.* at 562.
162. *Id.* at 574.
163. *Id.* at 566.
164. *Id.* at 567.
165. *Manziel*, 361 S.W.2d at 567.
166. *Id.* (internal quotation marks omitted).
167. *Id.*
168. *Id.* at 568.
169. Burney, *supra* note 143, at 27-28.

hinder these operations could inhibit the expansion of the oil and gas industry.[170] In its opinion, the court explained that secondary recovery allowed not only a greater amount of recovery but was also more efficient than primary methods.[171] The water-injection as a secondary recovery operation allowed oil and gas companies to capture remaining oil left in place after primary recovery.[172] The court then emphasized that in accepting the Manziels' position, "the injection of salt water in the East Texas field ha[d] caused subsurface trespass of the greatest magnitude."[173] It finally found that the traditional rules for trespass on the surface were not appropriately applicable to subsurface invasions from secondary recovery efforts.[174] Relying heavily on the approval from the Texas Railroad Commission, the court held that "a trespass does not occur when the injected, secondary recovery forces move across lease lines" if it is a valid exercise of authority preventing waste or protecting correlative rights.[175]

2. Coastal Oil & Gas Corp. v. Garza Energy Trust

In 2008, the issue of subsurface trespass during hydraulic fracturing of natural gas wells extending into another's property came before the Texas Supreme Court.[176] The petitioners, Coastal Oil & Gas Corporation (Coastal), leased a 748-acre tract named Share 13 and an adjacent tract named Share 15 from the respondents referred to as Salinas.[177] Salinas alleged the wells on Share 12, previously owned by Coastal, and Share 13 fractured by Coastal, caused a substantial drainage of subsurface oil and gas, resulting in a trespass.[178] At trial, the jury found that Coastal's well in fact trespassed on Salinas's property, causing substantial drainage.[179] The Court of Appeals affirmed, and the Texas Supreme Court granted certiorari.[180] Upon review, the court explained that Salinas had to prove actual injury to support a trespass claim.[181] Turning to the rule of capture, the Court ruled that an "actionable trespass requires injury" and that Salinas's "injury" could not sustain a cause of action for trespass.[182] The rule of capture precluded Salinas's trespass claim.[183] Moreover, the court found that without violating a statute or regulation, "the gas [Salinas] claims to have lost simply does not belong to him."[184] Additionally, Salinas failed to allege that Coastal's operations damaged any of Salinas's wells or the shale formation beneath his property.[185]

The court also found that the Salinas only retained a royalty interest and possibility

170. *See id.*
171. *Manziel*, 361 S.W.2d at 568.
172. Burney, *supra* note 143, at 27.
173. *Manziel*, 361 S.W.2d at 568.
174. *Id.*
175. *Manziel*, 361 S.W.2d at 568.
176. Coastal Oil & Gas Corp. v. Garza Energy Trust, 268 S.W.3d 1, 4 (Tex. 2008).
177. *Id.* at 5-6.
178. *Id.* at 7.
179. *Id.* at 8.
180. *Garza*, 268 S.W.3d at 5, 8-9.
181. *Id.* at 11.
182. *Id.* at 12-13.
183. *Id.* at 13.
184. *Id.*
185. *Garza*, 268 S.W.3d at 13.

of reverter because they leased their mineral estate to Coastal, and thus did not possess the minerals; however the court found that Salinas had standing to bring the suit.[186] At the time of the court's ruling, the oil and gas industry strongly opposed tort liability for hydraulic fracturing.[187] Ultimately, the Court found that Salinas did not have a claim with recoverable damages and that there was no *actionable* trespass.[188] Writing separately, Justice Johnson ruled that not only was the trespass not actionable, but in fact, a trespass did not occur.[189]

Dissenting in part, Justice Johnson criticized the majority's failure to address the question of trespass.[190] He stressed that the rule of capture insulated liability from natural migration of hydrocarbons—not migration induced by hydraulic fracturing.[191] Moreover, he noted that the jury found the hydraulic fracturing operations as a trespass, but the majority concluded it was not "actionable."[192] Justice Johnson emphasized that the rule of capture does not negate liability if the operation itself was illegal.[193] Just one year before this decision, in *Gregg v. Delhi-Taylor*, the court held that the issue of liability was one of trespass whether the rule of capture includes capture by artificial means or by trespass.[194] "Without the lawful requirement, the rule of capture becomes only a license to obtain minerals in any manner, including unauthorized deviated wells . . . and whatever other method oilfield operators can devise."[195]

The majority's opinion in this case was simply a method of appeasing public policy by preventing waste.[196] Underground waste such as leaving excess hydrocarbons in a reservoir is a common problem for oil and gas developers.[197] However, hydraulic fracturing facilitates a more efficient recovery of these hydrocarbons from the tightly packed shale formations.[198]

3. FPL Farming Ltd. v. Environmental Processing Systems, LC

In 2011, the Texas Supreme Court considered whether a regulatory permit obtained from the Texas Commission on Environmental Quality vitiates the permit holder from tort liability.[199] Environmental Processing Systems, LC (EPS) obtained permits to construct and operate two wastewater injection wells on a tract adjacent to FPL Farming Limited's (FPL Farming), a rice farmer's, land.[200] It used its wells to inject non-hazardous wastewater, not associated with the production of oil and gas.[201] In its suit, FPL alleged

186. FPL Farming Ltd. v. Envtl. Processing Sys., 351 S.W.3d 306, 314 (Tex. 2011).
187. Rodgers, *supra* note 151, at 120.
188. *Garza*, 268 S.W.3d at 12.
189. *Id.* at 47.
190. *See id.* at 43-47.
191. *Id.* at 42-43.
192. *Id.* at 8, 44-45.
193. *Garza*, 268 S.W.3d at 43.
194. *Id.* at 44 (citing Gregg v. Delhi-Taylor Oil Corp., 344 S.W.2d 411, 414-15 (Tex. 1961)).
195. Rodgers, *supra* note 151, at 121 (internal quotation marks omitted).
196. *See* Anderson, *supra* note 153, at 217.
197. *Id.*
198. *Id.*
199. FPL Farming Ltd. v. Envtl. Processing Sys., 351 S.W.3d 306, 307 (Tex. 2011).
200. *See id.* at 308.
201. Thus, the wells at issue were Class I Injection Wells and not Class II Injections Wells associated with

that the wastewater injected into the wells migrated onto FPL's property and contaminated its water.[202] At the trial level, the jury found that the wastewater injected by EPS did not constitute a trespass.[203] The Beaumont Court of Appeals did not directly address the issues presented on appeal and rather ruled that the permit absolved EPS of any tort liability.[204]

On petition for certiorari, the Texas Supreme Court held that "[a]s a general rule, a permit granted by an agency does not act to immunize the permit holder from civil tort liability from private parties for actions arising out of the use of the permit" because a permit does not grant any affirmative rights.[205] The Texas Supreme Court explained it merely "removes the government imposed barrier to the particular activity requiring a permit."[206] The court found *Manziel* and *Garza* highly persuasive in reaching its decision.[207] It distinguished the situation in *FPL Farming* from its previous holdings in *Manziel* and *Garza*, emphasizing that that the two previous cases dealt with specific oil and gas issues that were in fact distinct from the issue before the court.[208] The court found that while the rule of capture was critical to the holding in *Garza*, it did not apply in the case of wastewater injections.[209] In its reasoning, the court differentiated between the purpose of injecting substances for recovery of oil and gas from that of wastewater injections.[210] Reversing the appellate court, the Texas Supreme Court held that a regulatory permit does not shield tort liability and remanded the case to answer the original questions on appeal.[211] The court circumvented explicitly ruling on whether the subsurface migration of wastewater constituted any form of trespass.[212]

On remand, the Beaumont Court of Appeals found "a new cause of action," holding that FPL Farming could sustain a trespass under common law because of the potential for permanent damage to the water supply and held that the initial jury charge misplaced the burden of proving consent on FPL Farming.[213] The appellate court then shifted to a focus on water rights, recognizing the Texas Supreme Court's holding in *Edwards Aquifer Authority v. Day*, which ruled that a property owner also has an actual ownership interest in the groundwater beneath the owner's property.[214] Ultimately, the Beaumont Court of Appeals reversed the trial court and remanded the case for a new trial.[215] EPS filed a petition for certiorari granted by the Texas Supreme Court, which issued its decision on February 6, 2015, once again avoiding ruling on the issue of the subsurface migration of

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the production of oil and gas. *See* discussion on the differences between these well classifications *infra* nn.267 & 272.

202. *FPL Farming*, 351 S.W.3d at 309.
203. *Id.*
204. *Id.*
205. *Id.* at 310.
206. *Id.* at 310-11.
207. Anderson, *supra* note 153, at 227.
208. FPL Farming Ltd. v. Envtl. Processing Sys., 351 S.W.3d 306, 313-14 (Tex. 2011).
209. *Id.* at 314.
210. *Id.*
211. *Id.* at 314-15.
212. *Id.*
213. Nixon, *supra* note 23, at 443; FPL Farming Ltd. v. Envtl. Processing Sys., L.C., 383 S.W.3d 274, 282, 289 (Tex. App. 2012).
214. *FPL Farming*, 383 S.W.3d at 280-81.
215. *Id.* at 289.

wastewater.[216]

III. OKLAHOMA – THE CENTER OF IT ALL

A. Subsurface Trespass

Oklahoma has a dearth of case law addressing its views on subsurface trespass, especially regarding the migration of wastewater.[217] The Oklahoma Supreme Court, in the saga of *Edwards v. Lachman*, acknowledged directional well trespass as an actionable tort.[218] Unlike other jurisdictions, Oklahoma places the burden on the plaintiff to show bad faith in trespass actions.[219] The second time *Lachman* came before the court, in *Lachman II*, the court noted that Lachman did not become aware that his well trespassed on adjacent property until a survey performed almost a year after its completion.[220] The court determined that Lachman became a bad faith trespasser as soon as he discovered the trespass.[221] However, the court addressed questions of damages and directional well trespass, but wastewater trespass was not at issue.[222]

In *West Edmond Salt Water Disposal Association v. Rosecrans*, the Oklahoma Supreme Court answered whether trespass liability exists when a landowner injects only salt water, through his own well, into an underground reservoir and when that water then migrates to neighboring land.[223] The court answered this question in the negative, finding that the saltwater injected into the ground failed to constitute a trespass because no actual harm occurred.[224] Moreover, the injected saltwater did not deprive the petitioner of any rights accorded to him through use and enjoyment of his land.[225] The turning point of the court's decision fell upon the fact that the petitioner suffered no harm or deprivation of rights.[226] Otherwise, the court potentially may have found liability.[227]

Four years later in 1954, the Oklahoma Supreme Court, in *West Edmond Hunton Lime Unit v. Lillard*, ruled on an issue regarding the migration of saltwater from an adjoining tract.[228] The defendant injected saltwater into the ground at an extremely high pressure.[229] The plaintiff attempted to produce oil and gas on his leasehold, but could not, due to the migration of saltwater from the defendant's tract that "destroyed the productivity of the well resulting in great damage."[230] This destruction of productivity resulted when

216. Envtl. Processing Sys., L.C v. FPL Farming, Ltd., 457 S.W.3d 414, 426 (Tex. 2015).

217. *But see* W. Edmond Salt Water Disposal Ass'n v Rosecrans, 226 P.2d 965 (Okla. 1950); W. Edmond Hunton Lime Unit v. Lillard, 265 P.2d 730 (Okla. 1954).

218. Ragsdale, *supra* note 125, at 329 n.92.

219. *Id.* at 333.

220. *Id.*

221. *Id.*

222. *See id.* at 333-34.

223. *See Rosecrans*, 226 P.2d at 967.

224. *Id.* at 968-70.

225. *Id.* at 973.

226. *Id.* at 969-70.

227. *Compare Rosecrans*, 226 P.2d at 969-70 (finding that there was no liability because the petitioner did suffer any harm), *with* W. Edmond Hunton Lime Unit v. Lillard, 265 P.2d 730, 732-33 (Okla. 1954) (finding that the plaintiff suffered monetary harm and thus, the defendant was liable for trespass).

228. *See Lillard*, 265 P.2d at 732-33.

229. *Id.* at 731.

230. *Id.*

the plaintiff attempted to pull the casing from the hole, and the saltwater injected by the defendant flowed out of the well onto the surrounding surface.[231] The plaintiff tried to stop the flow but was unsuccessful.[232] As a result, the plaintiff suffered $6,327.35 from its inability to recover the casing it attempted to remove.[233] The court found the defendant liable for trespass on the theory that the plaintiff could recover from the injury resulting from the defendant's actions.[234] In this case, the court appeared to award damages based on the fact that the plaintiff sustained tangible, monetary harm.[235]

Oklahoma does not have a definitive ruling or case regarding wastewater disposal in front of its courts.[236] Other jurisdictions, mainly Texas, provide more definitive rulings on various subsurface trespass issues.[237] Since Oklahoma follows a non-ownership approach to oil and gas rights, an Oklahoma court may be less likely to apply principles established by the Texas Supreme Court.[238]

B. Increased Seismic Activity

Over the last several years, Oklahoma has faced a rapid increase in the number of earthquakes.[239] In 2015, the Oklahoma Geological Survey recorded about 905 earthquakes that registered at least a magnitude of 3 on the Richter scale—a disturbing 55% increase from 2014 and 732% jump from 2013.[240] At the time of writing this Comment, Oklahoma has experienced more than 173 earthquakes between March and April 2016.[241]

The alarmingly high number of earthquakes prompted the Oklahoma Geological Survey to investigate the cause of this sudden increase.[242] In a statement released in 2014, the Oklahoma Geological Survey announced that the wastewater injections from hydraulic fracturing directly influenced the number of earthquakes in Oklahoma.[243] It later reaffirmed and expanded upon its findings on April 21, 2015.[244] The OCC released a statement that same day, announcing that the issue of induced seismicity was its highest priority.[245] In response to these findings, the OCC advised that it would build upon the rules promulgated in 2014 to mitigate the amount of wastewater re-injected into the

231. *Id.*
232. *Id.*
233. *Lillard*, 265 P.2d at 731.
234. *Id.* at 732.
235. *See id.*
236. *But see id.* at 732-33 (ruling on an issue similar but distinct from wastewater migration).
237. *See* Ragsdale, *supra* note 125, at 316-38.
238. *See* LOWE *supra* note 51, at 55-56.
239. Office of the Secretary of Energy & Environment, *Earthquakes in Oklahoma: What We Know*, http://earthquakes.ok.gov/what-we-know (last visited Apr. 15, 2016).
240. *Id.* These numbers are calculated based on a comparison of 2015 with 2014 and also 2015 with 2013.
241. *Earthquake Track*, http://earthquaketrack.com/p/united-states/oklahoma/recent (last visited Apr. 17, 2016).
242. Office of the Secretary of Energy & Environment, *Earthquakes in Oklahoma: Oklahoma Geological Survey*, http://earthquakes.ok.gov/what-we-are-doing/oklahoma-geological-survey (last visited Apr. 15, 2016).
243. *Id.*
244. Richard D. Andrews, Interim Director & State Geologist, *Statement on Oklahoma Seismicity* (Apr. 21, 2015), http://wichita.ogs.ou.edu/documents/OGS_Statement-Earthquakes-4-21-15.pdf.
245. Oklahoma Corporation Commission, *Work of Oklahoma Geological Survey regarding triggered seismicity* (Apr. 21, 2015), http://occeweb.com/News/2015/04-21-15STATEMENT-OGS-LINK.pdf.

ground.[246]

In 2014, the OCC implemented a "traffic light" system for the purpose of regulating disposal well operators.[247] Under this plan, the OCC regularly reviews disposal well permits and evaluates several ever-evolving factors, including but not limited to: (1) the proximity to faults, and (2) seismicity in the area—focusing on "Areas of Interest."[248] The plan defines "yellow light" permitting as license that "requires seismicity review for any proposed disposal well and requires special permitting based on [certain] seismicity concerns to any well" including a well that may be within three miles of a stressed fault or "within [six] miles of an earthquake swarm or magnitude 4.0 event."[249] These permits only last for six months and require daily "recording of well pressure and volume from disposal wells that dispose into the Arbuckle formation."[250] The OCC issues a "yellow light" permit when there are seismicity concerns but they do not rise to the level of a "red light."[251] Additionally, the OCC published a letter mandating any disposal well falling under the "yellow light" category, which fails to implement the new directive, to reduce their disposal volumes by fifty percent.[252] Since these regulations went into effect, the OCC continues to address specific concerns regarding induced seismicity. In October 2015, the OCC issued another directive to thirteen operators to limit disposal well depths or volumes.[253]

In addition to the administrative rules implemented by the OCC, the Oklahoma Supreme Court has weighed in on the discussion of whether a plaintiff could seek damages regarding harm from earthquakes caused by wastewater injections.[254] The court found that district courts were not usurping the jurisdiction of the OCC when ruling on private tort matters, but instead conforming with the "long-held rule that district courts have exclusive jurisdiction over private tort actions when regulated oil and gas operations are at issue."[255]

IV. SHOULD OKLAHOMA MAKE A DECISION?

A. What FPL Farming and EPS Presented to the Court and Why the Texas Supreme Court Needed to Answer the Issue of Wastewater Trespass

As of February 6, 2015, the Texas Supreme Court declined to answer the issue of

246. *Id.*

247. *What We Know*, *supra* note 239.

248. *Id.*

249. Tim Baker, Director, Oklahoma Corporation Commission, *Media Advisory – Ongoing OCC Earthquake Response* (Mar. 25, 2015), http://www.occeweb.com/News/2015/03-25-15MediaAdvisory-TLandrelateddocuments.pdf.

250. *Id.* According to the OCC statement, the Arbuckle foundation is "the state's deepest injection formation." *Id.*

251. *What We Know*, *supra* note 239. The traffic light system was put into place 2013 and has continued to evolve as the OCC continues to learn about how to best address causes of induced seismicity.

252. *Media Advisory*, *supra* note 249.

253. Paul Monies, *Oklahoma regulators take further action on disposal wells after Cushing earthquakes*, NEWSOK (Oct. 19, 2015), http://newsok.com/article/5454515.

254. *Id.*

255. Randy Krehbiel, *Oklahoma Supreme Court clears way for earthquake lawsuits against energy companies*, TULSA WORLD (July 1, 2015 12:00 A.M.), http://www.tulsaworld.com/news/capitol_report/oklahoma-supreme-court-clears-way-for-earthquake-lawsuits-against-energy/article_546e6b34-4bfb-5298-a245-502c632a00dd.html.

subsurface trespass.[256] Experts believed that a decision from Texas's highest court could affect the transaction costs to the entire oil and gas industry, causing them to rise significantly "if a jury [could] hear trespass claims without regard to a plaintiff's injury."[257] In effect, "it [w]ould become cheaper to just pay neighboring landowners from subsurface leases to keep them from suing—a modern take on what the industry . . . traditionally call[ed] a holdout."[258] The oil and gas industry potentially had a large stake in the court's decision.[259]

The Texas Supreme Court considered two issues when it heard arguments in *FPL Farming* for a second time, examining: (1) whether a trespass exists when wastewater from hydraulic fracturing migrates onto an adjacent landowner's property, and (2) whether the jury charge incorrectly categorized "consent" as an affirmative defense.[260] This Comment focuses on the trespass issue addressed by the court.[261] In its briefing, EPS contended that the Texas Supreme Court "ha[d] never recognized a cause of action for trespass due to lateral migration of nonhazardous wastewater deep below the earth's surface," and no other court in the United States had ever recognized such an action besides the Beaumont appellate court.[262] EPS further argued that the appellate court's decision was inconsistent with precedent and policy concerns.[263] It cited *West Edmond Salt Water Disposal Association v. Rosecrans*, noting that the Oklahoma Supreme Court also recognized a public interest in using deep subsurface disposal.[264] According to EPS, not only was there a scarcity of precedent recognizing a trespass, tort law already provided adequate remedies.[265]

In response, FPL Farming focused on its ownership of groundwater, referring to *Edwards Aquifer Authority v. Day*, arguing that both precedent and Texas statutes support the appellate court's finding of trespass and insisted that the appellate court did not create a new cause of action.[266] However, FPL Farming relied upon precedent and statutes regarding water rights—not oil and gas law—further distinguishing *Manziel* and *Garza* from the current case because those cases did not address issues concerning Class I

256. Envtl. Processing Sys., L.C v. FPL Farming, Ltd., 457 S.W.3d 414, 426 (Tex. 2015).

257. Leslie Ritchie Robnett, *Commentary: Court cases suggest Texas is heading to a subsurface lease market*, FUELFIX, (June 6, 2014 12:04 PM) http://fuelfix.com/blog/2014/06/06/commentary-court-cases-suggest-texas-is-heading-to-a-subsurface-lease-market.

258. *Id.*

259. *See id.*

260. Environmental Processing Systems' Brief On the Merits at xii, Environmental Processing Sys. LC v. FPL Farming Ltd., No. 12-0905 (Tex. July 13, 2013), http://www.search.txcourts.gov/SearchMedia.aspx?MediaVersionID=9e93ce25-bfaf-4215-9e37-83a76720104b&coa=cossup&DT=BRIEFS&MediaID=3ad995bf-5e06-4d7c-853f-fd8adcd5bfd8 [hereinafter EPS Brief on Merits].

261. *See* discussion *infra* pp. 21-24.

262. EPS Brief on Merits, *supra* note 260, at xii.

263. *Id.* at 11-40.

264. *Id.* at 32.

265. *See id.* at 22-30.

266. Respondent's Response to Petitioner's Brief on the Merits at 8-9, Environmental Processing Sys. LC v. FPL Farming Ltd., No. 12-0905 (Tex. Aug. 2, 2013), http://www.search.txcourts.gov/SearchMedia.aspx?MediaVersionID=f997ed01-0ec2-48fe-b683-60c4ee93858d&coa=cossup&DT=BRIEFS&MediaID=baa2bc1e-b928-4aea-872c-d37acf1277b9 [hereinafter FPL Farming Brief on Merits].

Injection wells.[267] To rebut EPS's use of *Rosecrans*, FPL Farming distinguished the case, noting that *Rosecrans* addressed issues regarding saltwater "identical to the native brine," not the wastewater involved in the hydraulic fracturing process which is not pure saltwater and contains industrial strength waste and chemicals.[268] FPL Farming also asserted that it "[w]ould [b]e [b]ad [p]olicy" if the court reversed the appellate court based on principles of fairness and economic efficiency.[269] Interestingly, in its brief, FPL Farming insisted that the outcome of the current case would not impact the Texas oil and gas industry because of the type of wells directly implicated.[270] At issue were Class I Injection wells, which are subject to a different regulatory scheme than other wells.[271] Class II Injection wells are more commonly associated with the oil and gas industry, and FPL Farming believed that a decision to recognize subsurface trespass with regard to Class I Injection wells would not affect the regulation of Class II Injection wells.[272]

Throughout the *FPL Farming v. Environmental Processing Systems* saga, EPS consistently asserted that FPL Farming consented to the trespass upon its acceptance of $185,000 from EPS.[273] As previously mentioned, FPL Farming submitted that the trial court incorrectly classified "consent" as an affirmative defense to a trespass claim.[274] The court reviewed two issues, and some believed the court would circumvent answering the issue once again—addressing only the jury charge issue.[275] Some scholars did not agree

267. The EPA defines Class I Injection wells as those that allow the injection of "hazardous wastes, industrial non-hazardous liquids, or municipal wastewater beneath the [lowermost underground sources of drinking water]." Classes of Wells, EPA, http://water.epa.gov/type/groundwater/uic/wells.cfm (last visited Jan. 24, 2015). There are currently 680 Class I Injection wells in existence. The parties and amici also address the implications of Class II Injections wells, which allow the injection of "brines and other fluids associated with oil and gas production, and hydrocarbons for storage." *Id.* Most wastewater disposal wells fall under the purview of Class II Injection Wells, which are associated with oil and gas production. According to the EPA, at the time of writing this article, there are currently 172,068 Class II Injection wells. *Id*. Class I wells "inject wastewater . . . into salt water approximately a mile and a half below the surface, below any drinking water, which is commonly found at a few hundred feet." FPL Farming Ltd. v. Envtl. Processing Sys., 351 S.W.3d 306, 308 (Tex. 2011). Additionally, Class II wells have two classifications. Tim Baker, Director, Oil & Gas Conservation Division, Presentation (Apr. 2015), http://earthquakes.ok.gov/wp-content/uploads/2015/04/OGCD_Presentation.pdf. 2R wells are Enhanced Recovery Wells (EOR) that are used to re-inject any water produced during the hydraulic fracturing process into the same producing formation in order to extract any remaining oil. *Id*. However, 2D wells, or Disposal Wells, re-inject the wastewater produced during the process into the subsurface. *Id.* Over 10,000 Class II wells exist in Oklahoma. *Id.*

268. FPL Farming Brief on Merits, *supra* note 266, at 20.

269. *Id.* at 22.

270. *Id.* at 11-12, 31.

271. *Id.* at 11.

272. An amicus brief in support of EPS, submitted by the Texas Chemical Council and the Underground Injection Technology Council, attacks this position by demonstrating how Class I Injection wells have historically impacted numerous industries, including the oil and gas industry. Citing to an amicus brief submitted by the Texas Oil and Gas Association (TXOGA), limitations on Class I Injection Wells would trickle down to Class II Injection Wells and cripple the oil and gas industry. Additionally, to address health concerns, the Texas Chemical Council and the Underground Injection Technology Council's brief insists that proper supervision and regulation of Class I Injection wells are both safe and effective alternative to waste disposal, and "[t]here are no documented problems with the effectiveness of the . . . regulations" because they have safety measures such as layers of protective casings to prevent failure, and then in the event of a breach, the area in which the waste would spill inhibits the area that can be affected. (internal quotation marks omitted). Brief of Amici Curiae The Texas Chemical Council and The Underground Injection Technology Council as Amici Curiae Supporting Petitioners at 5-12, Environmental Processing Sys. LC v. FPL Farming Ltd., No. 12-0905 (Tex. Mar. 6, 2013) [hereinafter TCC Amicus Brief].

273. Nixon, *supra* note 23, at 445.

274. FPL Farming Ltd. v. Envtl. Processing Sys., L.C., 383 S.W.3d 274, 282 (Tex. App. 2012).

275. Nixon, *supra* note 23, at 445.

with EPS's contention that the Beaumont Court of Appeals created a new cause of action in its 2012 decision.[276] The appellate court applied precedent in a manner consistent to what had long been the norm of Texas courts.[277] While courts in other states previously addressed issues regarding trespass claims deriving from secondary recovery or injection operations, they have not addressed those issues in the context of hydraulic fracturing.[278] Additionally, both FPL Farming and scholars recognized a fine distinction that may dissuade the Texas Supreme Court from relying heavily on case law from other jurisdictions.[279] Texas recognizes an ownership-in-place theory for groundwater—making it part of the surface estate.[280] No other state affords this type of ownership to groundwater.[281]

There was little dispute that if the court ruled on the subsurface trespass issue, it would affect people and multiple industries.[282] FPL Farming and EPS both asserted that their positions favor public policy.[283] FPL Farming contended its position advanced the public interest because it prevented the oil and gas industry from freely using a landowner's property.[284] However, EPS claimed that if the Texas Supreme Court did not strike down this "new" type of trespass liability, it would threaten Texas's future economic growth and as such, the court should adapt traditional oil and gas doctrine to modern realities.[285] Both parties' positions favored different aspects of "public" policy.[286] FPL Farming's view advanced the rights of landowners, while EPS's argument promoted further developments in the oil and gas industry.[287] Arguably, "the court must determine if policy considerations justify distinguishing between trespass from oil and gas-related operations and trespass from injection operations."[288] Hydraulic fracturing lies on a thin line between many related recovery processes invented by the oil and gas industry, making it difficult for courts to apply existing precedent.[289]

Currently, oilfield exemptions exist in many federal regulatory schemes.[290] There is no apparent distinction between injection wells for different purposes besides well classifications.[291] Thus, while it may appear unfair to define a clear distinction between

276. *Id.* at 445-46.
277. *Id.*
278. *Id.* at 446-47.
279. *See id.* at 447.
280. Nixon, *supra* note 23, at 447.
281. *Id.*
282. EPS Brief on Merits, *supra* note 260, at 24-28; *but see* FPL Farming Brief on Merits, *supra* note 266, at 20, 27-29, 31-32 (arguing that because Class I Injection Wells are at issue, the court's decision would not affect the oil and gas industry).
283. Nixon, *supra* note 23, at 448-50; FPL Farming's Brief on Merits, *supra* note 266, at 22-27; EPS Brief On Merits, *supra* note 260, at 11-40.
284. Nixon, *supra* note 23, at 448.
285. *Id.*
286. *See id.*
287. *See id.*
288. *Id.*
289. *See* discussion *supra* Part II; Nixon, *supra* note 23, at 448.
290. *See Exemption of Oil and Gas Exploration and Production Wastes from Federal Hazardous Waste Regulations*, EPA, *available at* http://www.epa.gov/osw/nonhaz/industrial/special/oil/oil-gas.pdf (last visited Feb. 27, 2015) (a pamphlet provided by the EPA detailing oilfield exemptions for waste).
291. *See* Nixon, *supra* note 23, at 448-49.

injection wells for oilfield services from other industries, policy reasons may drive the court to find such a distinction.[292] However, legally, this distinction could create confusion.[293] Injection from hydraulic fracturing is similar to injection from other industries and the same basic rules of property govern these injections—there would be "a distinction without a difference."[294]

An LLM student from the University of Texas School of Law, Charles Nixon, suggested the addition of a harm requirement to the definition of trespass.[295] Historically, Texas did not include "harm" as an element, but its addition may add, while not completely solving, some needed clarification to the definition of an "actionable" trespass.[296] The court in *Coastal* failed to address what constituted an "actionable" trespass but hinted that a tangible harm may push the court to find an actionable trespass.[297] Many courts already impose a harm requirement to create a trespass.[298] But, Texas's unique view of ownership-in-place of groundwater would likely cause tension between the addition of a harm requirement and other legal principles.[299]

The Texas Supreme Court issued its opinion on February 6, 2015, tackling only the jury instruction issue and declined to address the issue of trespass regarding subsurface migration of wastewater.[300] The court explicitly "neither approve[d] nor disapprove[d] of the court of appeals' analysis and holding" regarding the issue of subsurface trespass of wastewater injections.[301] Thus, the Beaumont Court of Appeals decision, creating a new cause of action is the current law in Texas, subject to further scrutiny and interpretation by other Texas appellate courts.[302] In its opinion, the Texas Supreme Court highlighted that the "lack of harm eliminates the need to address whether . . . [the] law recognizes a trespass cause of action for deep subsurface wastewater migration."[303] A plain reading of the court's language in its opinion suggested that the court associated some type of harm with this subsurface trespass issue.[304] The court focused on the absence of harm suffered by EPS due to the misplaced burden of consent of trespass, using this explanation as a means for bypassing the issue of subsurface trespass.[305]

292. *Id.*
293. *Id.*
294. *Id.* at 449.
295. *Id.* at 450.
296. *See* Nixon, *supra* note 23, at 450-51.
297. *See* Coastal Oil & Gas Corp. v. Garza Energy Trust, 268 S.W.3d 1, 12-13 (Tex. 2008).
298. Nixon, *supra* note 23, at 447 & n.180.
299. *See id.* at 449-50 (explaining the tension created between *Garza* and *Manziel*). In Texas, the surface owner has the right to use the groundwater at the exclusion of an oil and gas company. *Id.* Nixon proposed a that a plaintiff could seek relief if he can demonstrate that "the trespass either: (1) is presently causing demonstrable harm, or (2) will substantially interfere with its reasonable and foreseeable future use of the affected part of the subsurface." *Id.* at 450. He argues the surface owner's right to the groundwater would become a qualified right by creating a burden on the landowner to show harm. *Id.* at 451.
300. Envtl. Processing Sys., L.C v. FPL Farming, Ltd., 457 S.W.3d 414, 426 (Tex. 2015).
301. *Id.*
302. *See id.*
303. *Id.*
304. *See id.*
305. *See FPL Farming*, 457 S.W.3d at 426.

B. Another Jurisdiction Answers the Question of Subsurface Trespass

In *Chance v. BP Chemicals*, a class action suit brought against British Petroleum (BP), the Ohio Supreme Court recognized that "the right to exclude others from subsurface extends only to invasions that actually interfere with appellants' reasonable and foreseeable use of the subsurface."[306] Thus, there must be some actual harm affecting both the reasonable and foreseeable use of the subsurface.[307] Interference with use is not adequate.[308] As Professor Anderson notes, a sufficient trespass claim potentially arises when the migration of wastewater "across property lines . . . unreasonably interferes with access to recoverable minerals, such as oil and gas—a showing of actual and substantial harm."[309] The Texas Supreme Court's reference to harm and the Ohio Supreme Court's explicit mention of harm as an element point to an increasing trend to evade assessing trespass liability on oil and gas companies absent some type of tangible injury.[310]

C. Texas Precedent Paves an Unclear Path for the Future

Texas precedent appears to be in conflict.[311] In *Manziel*, the Texas Supreme Court appeared vitiated trespass liability because the Texas Railroad Commission issued a permit, allowing the defendant to maintain its operations but failed to answer the specific issue of trespass, and in *Garza*, it held that the rule of capture precluded a finding of trespass.[312] The first time that court heard *FPL Farming*, it noted that a permit could not completely undermine a finding of trespass but instead insulated liability.[313] However, since Texas's highest court recently dodged actually answering whether trespass liability existed with regard to the wastewater injections, there is no clear answer.[314] It is possible that the Texas Supreme Court was not ready to answer the issue because of the possible impacts it could have on the oil and gas industry.[315] However, the court made clear that the rule of capture is not applicable in the case of wastewater injection.[316] The Beaumont Court of Appeals found some liability in EPS's actions; however, creating a new cause of action.[317] Now, it is the highest court in Texas to rule on the issue of wastewater injection; however, there are fourteen appellate courts in Texas, none of which are bound by the Beaumont court's decision—leaving a level of uncertainty in Texas and in other states that may look to Texas's well-defined law regarding subsurface trespass resulting from

306. Anderson, *supra* note 153, at 228 (citing Chance v. BP Chems. Inc., 670 N.E.2d 985, 986 (Ohio 1996)) (internal quotation marks omitted).

307. *See id.*

308. *Id.*

309. *Id.* at 229.

310. *Chance*, 670 N.E.2d at 986; *accord FPL Farming*, 457 S.W.3d at 426.

311. *Compare* Coastal Oil & Gas Corp. v. Garza Energy Trust, 268 S.W.3d 1, 4 (Tex. 2008) (finding that the rule of capture precluded a finding of trespass), *and* R.R. Comm'n of Tex. v. Manziel, 361 S.W.2d 560, 574 (Tex. 1962) (finding that the permit issued by the Texas Railroad Commission vitiated trespass liability), *with* FPL Farming Ltd. v. Envtl. Processing Sys., 351 S.W.3d 306, 314 (Tex. 2011) (finding that a permit can insulate, but not completely vitiate, liability and that rule of capture did not apply).

312. *Manziel*, 361 S.W.2d at 574; *Garza*, 268 S.W.3d at 4.

313. *FPL Farming*, 351 S.W.3d at 310, 314.

314. *See* Envtl. Processing Sys., L.C v. FPL Farming, Ltd., 457 S.W.3d 414, 426 (Tex. 2015).

315. *See* discussion of policies advanced by the parties *supra* nn.272-87.

316. *FPL Farming*, 351 S.W.3d at 314.

317. Nixon, *supra* note 23, at 445-46.

recovery procedures.[318]

D. Should Oklahoma Rule? Water Law Weighs In

Subsurface trespass not only concerns oil and gas law, but water law as well.[319] In *FPL Farming*, the wastewater injections were not the products of oil and gas recovery.[320] Still, wastewater injection has a large role in hydraulic fracturing, and therefore, in the oil and gas industry.[321] Thus, if the court had ruled on subsurface trespass in *FPL Farming*, it is conceivable that the effects would ripple into the oil and gas industry, as it would be far simpler to apply those principles to wastewater injections associated with hydraulic fracturing.[322] At its core, the wastewater injected by EPS is analogous to wastewater from hydraulic fracturing.[323] Both include briny water containing contaminates that could affect human health and the environment.[324]

Hydraulic fracturing is a product of the oil and gas industry, however, the process itself includes the use of millions of tons of water; thus, placing it also within the scope of water law.[325] Texas and Oklahoma fundamentally differ in oil and gas rights—these differences likely affect how Oklahoma would rule on the same issue.[326] While Texas and Oklahoma vastly differ in their oil and gas jurisprudence, it is not the only place where the two states' practices diverge.[327] Oklahoma does not follow the same view as Texas regarding subsurface water.[328] In Texas, the surface estate has the ownership right to the groundwater beneath the property subject to the reasonable use of the mineral lessee.[329] This right is not exclusive to freshwater and includes saltwater; thus, the surface estate also has the right to the saltwater in place beneath the property.[330] Oklahoma follows a version of the doctrine of correlative rights.[331] While the right to groundwater belongs to the surface estate, the surface estate does not have the right to unlimitedly use the ground water.[332] The ownership of groundwater depends "on ownership of the land surface overlying a source of groundwater . . . limited by an obligation to respect similar rights of

318. *See FPL Farming*, 457 S.W.3d at 426.
319. Nixon, *supra* note 23, at 428-29.
320. *Id.*; *FPL Farming*, 351 S.W.3d 306.
321. *See* Nixon, *supra* note 23, at 428-30.
322. *See id.*
323. *See* Classes of Wells, *supra* note 267 (describing the types of substances injected into each well class).
324. *See* discussion *supra* Part II.C.
325. *The Process of Hydraulic Fracturing*, *supra* note 33.
326. LOWE, *supra* note 51, at 55-56.
327. Joseph W. Dellapenna, *A Primer on Groundwater Law*, 49 IDAHO L. REV. 265, 270, 277 (2013).
328. *See id.*
329. Lewis, *supra* note 140, at 81-83.
330. *FPL Farming*, 383 S.W.3d at 281.
331. Dellapenna, *supra* note 327, at 277. In the context of oil and gas, the Oklahoma Supreme Court defined "correlative rights" to mean the "convenient method of indicating that each owner of land in a common source of supply of oil and gas has legal privileges as against other owners of land . . . to take [hydrocarbons] . . . by lawful operations conducted on his own land . . . [but cannot] injure the source of supply . . . [or] take an undue proportion of the [hydrocarbons]." Kingwood Oil Co. v. Corp. Comm'n, 396 P.2d 1008, 1010 (Okla. 1964) (internal citation omitted) (internal quotation marks omitted).
332. L. Paul Goeringer, *A Practitioner's Guide to the Oklahoma Groundwater Act: How to Dip Your Bread into the Gravy While It Is Still Hot*, 2 KY J. EQUINE, AGRIC., & NAT. RESOURCES L. 157 (2010).

others owning overlying land."[333] Generally, the Oklahoma Water Resources Board (OWRB) can issue a permit to an oil and gas company authorizing the use of ground water, but the legislature carved out an exception for saltwater used in enhanced recovery processes.[334] In fact, while domestic uses do not require the issuance of a permit, the OWRB does not need to take into account domestic uses before issuing a temporary permit.[335] Taking Oklahoma's perspective on ownership rights and the OWRB's ability to issue permits, an oil and gas company should be able to use the ground water as long as it does not violate the correlative rights, especially if there are no detrimental effects.[336]

With regard to permits issued in Oklahoma, it is important to note that a regulatory agency may not absolve an oil and gas operator from tort liability associated with recovery operations; however, a permit can insulate liability.[337] Courts consider certain trespasses as "privileged" in cases regarding emergency responses.[338] A difference exists between migration of wastewater and the injection of a substance into the subsurface of property to facilitate recovery operations that move across property lines.[339] As one commentator notes, courts run into difficulty resolving the latter cases because court focus on the loss of hydrocarbons through drainage as a result of either enhanced or secondary recovery operations.[340] While jurisdictions differ as to subsurface trespass issues, courts consistently find no trespass if the oil and gas company previously obtained a permit from the state regulatory agency.[341] Additionally, hydraulic fracturing differs from other subsurface extraction techniques also requiring injections of a compound below the surface.[342]

E. Other Theories of Liability

Scholars also discuss the theory of strict liability as a viable cause of action, categorizing hydraulic fracturing as an abnormally dangerous activity.[343] One scholar attaches liability to earthquake damage resulting from hydraulic fracturing and wastewater injections.[344] The Seventh Circuit recognized the waterflooding that occurred as a danger because it

333. Dellapenna, *supra* note 327, at 284.

334. OKLA. STAT. ANN. tit. 82, §§ 1020.2(B), 1020.7 (West, Westlaw through end of 2d session 54th Legis. 2014). From 2009 to 2012, the number of permits for "Oil, Gas & Mining" grew from 875 to 2,270. The Oklahoma Water Resources Board grants the greatest number of provisional temporary permits for "Oil, Gas & Mining." The second largest number of permits granted is for "Industrial," which only totals between forty-nine to seventy-six permits issued. *See* Provisional Temporary Permits Fact Sheet, *Oklahoma Water Resources Board*, http://www.owrb.ok.gov/about/about_pdf/Fact-PTPermits.pdf (last visited Feb. 28, 2015).

335. Goeringer, *supra* note 332, at 176.

336. *See Kingwood Oil*, 396 P.2d at 1010; *see also* Goeringer, *supra* note 315, at 176. Industry experts are split as to the human health and environmental effects posed by wastewater injections. However, strong evidence exists that proper maintenance of the injection wells mitigates the probability of well failure resulting in contamination of the surrounding groundwater.

337. Anderson, *supra* note 153, at 225.

338. *Id.*

339. *Id.*

340. *Id.* at 214.

341. *Id.* at 225.

342. *See* Anderson, *supra* note 153, at 214.

343. Blake A. Watson, *Fracking and Cracking: Strict Liability for Earthquake Damage Due to Wastewater Injection and Hydraulic Fracturing*, 11 TEX. J. OIL, GAS, & ENERGY L. 1, 7 (2016).

344. *Id.*

> (1) introduced a risk of serious harm to the land of others which could not be eliminated by the exercise of care; (2) was not a matter of common usage; and (3) was accordingly an abnormally dangerous activity for the conduct of which defendant would have been strictly liable had plaintiff chosen to proceed on that theory.[345]

However, not every jurisdiction agrees that strict liability applies to hydraulic fracturing.[346] In *Williams v. Amoco Production Co.*, the Kansas Supreme Court found that the operation of a natural gas well did not constitute an abnormally dangerous activity and failed to satisfy the six-party test laid out in Section 520 of the Restatement (Second) of Torts.[347] Another route of establishing liability, nuisance theory, sometimes appears in case law; however, it overlaps with trespass and is rarely accepted.[348] Under a private nuisance theory, a plaintiff must establish the following elements: "(1) causation, (2) intentional and unreasonable invasion, or an invasion that was unintentional and otherwise actionable under negligence, recklessness, or strict liability, and (3) significant harm."[349] However, the discussion of the applicability of these other doctrines of liability is outside the scope of this Comment.

F. Legal and Policy Arguments Oklahoma Should Consider

Policy, as well as legal, considerations play a large role in judicial decision-making.[350] However, what policies should a court consider?[351] How much weight should it give each policy?[352] The answers to these questions may affect whether Oklahoma should rule on the issue declined by the Texas Supreme Court.[353] Despite a concrete ruling on the specific issue, Texas precedent implies that without a showing of actual harm, trespass liability does not attach.[354]

Although Oklahoma follows a different ownership theory than Texas, the precedent set by the Texas Supreme Court in *Manziel*, *Coastal*, and now *FPL Farming*, may provide guidance in determining whether trespass liability attaches upon the subsurface migration of wastewater.[355] The Texas Supreme Court, in *FPL Farming*, looked to its previous cases,

345. *Id.* (quoting Mowrer v. Ashland Oil & Ref. Co., 518 F.2d 659, 661 (7th Cir. 1975)) (internal quotation marks omitted).

346. *Id.*; *see* Williams v. Amoco Prod. Co., 734 P.2d 1113, 1116 (Kan. 1987).

347. *Williams*, 734 P.2d at 1116.

348. Kaoru Suzuki, Note, *The Role of Nuisance in the Developing Common Law of Hydraulic Fracturing*, B.C. ENVTL. AFF. L. REV. 265, 283 (2014).

349. *Id.*

350. Nixon, *supra* note 23, at 448-50.

351. *See id.*; *see also* discussion on policies advanced by FPL Farming and EPS *supra* nn.245-70.

352. *See generally* Nixon, *supra* note 23, at 448-50 (describing policies implicated by *FPL Farming*)

353. *See generally id.*

354. *Compare* Coastal Oil & Gas Corp. v. Garza Energy Trust, 268 S.W.3d 1, 13 (Tex. 2008) (finding that petitioners failed to allege actual harm), *with* Envtl. Processing Sys., L.C v. FPL Farming, Ltd., 457 S.W.3d 414, 426 (Tex. 2015) (declining to answer the issue of subsurface trespass because there was no harm).

355. *See* R.R. Comm'n of Tex. v. Manziel, 361 S.W.2d 560, 574 (Tex. 1962) (finding that the permit issued by the Railroad Commission vitiated liability); *Garza*, 268 S.W.3d at 12-13 (holding that no actionable trespass occurred because of the rule of capture); *FPL Farming*, 457 S.W.3d at 426 (declining to answer the issue of subsurface trespass).

distinguishing them based on their facts, in order to circumvent ruling on the specific issue.[356] While these cases were distinguishable on their facts, they provide helpful guidance in legally determining subsurface trespass of wastewater injections.[357] In *Garza*, the fracturing procedures allegedly "trespassed" on the neighboring tract, causing substantial drainage of gas.[358] There was no "actionable trespass" due to a lack of actual injury; but in the case of wastewater injections, the wastewater contains many toxic chemicals that may contaminate the surrounding ground, which are arguably actual harm.[359]

Closely analogous, *Manziel* dealt with wastewater injections resulting from hydraulic fracturing; however, the court bypassed a specific finding that answered whether a trespass occurred.[360] The court kept in mind the rapidly developing oil and gas industry and did not want to hinder its growth.[361] Accordingly, in the *Manziel* decision, the court determined that a trespass did not occur based on the Texas Railroad Commission's issuance of a permit, suggesting that the expansion of the oil and gas industry trumped the landowner's potential claim.[362] However, the court in *FPL Farming* revisited and clarified its holding in *Manziel*, explaining that the authorization by the Railroad Commission prevented injunctive relief, not a finding of tort liability; thus, liability may be insulated by the issuance of a permit.[363] Because *Manziel* dealt specifically with hydraulic fracturing, Oklahoma may find the court's emphasis on policy to induce growth in the oil and gas industry.[364] Additionally, the court expressly highlighted that its previous finding in *Garza* concerning the rule of capture is inapplicable in cases of wastewater injection.[365] However, *FPL Farming* does not directly implicate the oil and gas industry because the operations were not due to hydraulic fracturing.[366] There is no doubt that regulations placed on Class I Injection wells for wastewater will also affect Class II Injection wells associated with the oil and gas industry; thus, Oklahoma should consider the rule of capture in its analysis.[367]

As previously discussed in Part III, Oklahoma precedent does not provide an explicit

356. FPL Farming Ltd. v. Envtl. Processing Sys., 351 S.W.3d 306, 313-14 (Tex. 2011).

357. *See id.*

358. *Garza*, 268 S.W.3d at 12-13.

359. *See id.*; *see also* FPL Farming Ltd. v. Envtl. Processing Sys., L.C., 383 S.W.3d 274, 282, 289 (Tex. App. 2012).

360. *Manziel*, 361 S.W.2d at 561.

361. *See id.* at 568 ("It cannot be disputed that such operations should be encouraged, for as the pressure behind the primary production dissipates, the greater is the public necessity for applying secondary recovery forces.").

362. *See id.*

363. *Id.* at 574; FPL Farming Ltd. v. Envtl. Processing Sys., 351 S.W.3d 306, 313 (Tex. 2011); *but see Garza*, 268 S.W.3d at 12 ("[I]n . . . *Manziel*, we held that a salt water injection[s] . . . did not cause a trespass when the water migrated across property lines, but we relied heavily on the fact that the Commission had approved the operation.")

364. *See Manziel*, 361 S.W.2d at 568.

365. *FPL Farming*, 351 S.W.3d at 314.

366. *Id.* at 308.

367. *See id.* at 314 (finding that mineral owners can avail themselves of the rule of capture to protect their rights and interests, but it is necessarily not the same in cases of wastewater injections and that "*Manziel* and *Garza* did not decide the issues in this case, and because of the oil and gas interests at issue in *Manziel* and *Garza*, their reasoning does not dictate [the] analysis in this wastewater injection trespass case"); *see also* EPS Brief on Merits, *supra* note 260, at 36-37.

answer regarding subsurface trespass of wastewater injections.[368] These cases, however, do support that where there may be an actual tangible harm, liability may attach.[369] In *Rosecrans*, the pivotal turning point in the Oklahoma Supreme Court's decision to find the defendant *not* liable hinged on the fact that the petitioner failed to suffer any harm or deprivation of rights.[370] The court then further supported a need for actual harm in *Lillard*, in which it awarded damages to the petitioner because tangible, monetary harm existed.[371] These holdings show that harm is an important factor in the Oklahoma Supreme Court's consideration of tort liability.[372] Oklahoma precedent resembles the Ohio Supreme Court's decision requiring actual harm that affects the reasonable as well as foreseeable use of the land.[373] However, a court can construe the definition of actual harm either broadly or narrowly.[374] Oklahoma should not relegate its definition of actual harm to only physical or monetary harm but should also consider social and economic effects.[375]

From a policy perspective, there are other economic and social aspects Oklahoma should consider.[376] Many farmers maintain oil and gas leases that are tied to their lands to supplement their annual income.[377] In some cases, these leases provide these farmers with the capital they need to maintain their farms.[378] In *Fracknation*, one farmer admitted that the revenue from his farm alone was insufficient to survive—the royalties he earned from his lease prevented him from losing his farm and falling into financial straits.[379] Although outside the scope of this comment, it may be the case that Oklahoma's farming community relies on the leases provided by the oil and gas companies.[380] If Oklahoma relies on the presence of oil and gas companies, it is likely because these companies stimulate the local economy by injecting money into it and creating new jobs—they are a source of income for the state.[381] Theoretically, these actions can turn faltering towns into thriving

368. *See* discussion *supra* Part III.

369. *See* W. Edmond Salt Water Disposal Ass'n v Rosecrans, 226 P.2d 965, 973 (Okla. 1950); W. Edmond Hunton Lime Unit v. Lillard, 265 P.2d 730, 731 (Okla. 1954).

370. *Rosecrans*, 226 P.2d at 973.

371. *Lillard*, 265 P.2d at 731.

372. *See Rosecrans*, 226 P.2d at 973; *Lillard*, 265 P.2d at 731.

373. *Compare Rosecrans*, 226 P.2d at 973 (finding no harm because petitioner did not suffer any harm), *and Lillard*, 265 P.2d at 731 (finding liability with respect to petitioner's monetary damages), *with* Chance v. BP Chems. Inc., 670 N.E.2d 985, 986 (Ohio 1996). (holding that there must be some foreseeable harm to constitute a trespass).

374. *See generally* Christopher S. Kulander, *Common Law Aspects of Shale Oil and Gas Development*, 49 IDAHO L. REV. 367, 376-77 (2013); Abayev, *supra* note 71, at 290-91.

375. *But see Lillard*, 265 P.2d at 731 (finding liability on the grounds the petitioner sustained monetary damages).

376. *See* Abayev, *supra* note 71, at 290-91.

377. FRACKNATION, *supra* note 5; Timothy B. Wheeler, *Fracking debate intensifies in Western Maryland*, BALT. SUN (Jan. 15, 2015, 4:17 P.M.), http://www.baltimoresun.com/features/green/blog/bs-md-fracking-garrett-20150109-story.html#page=1.

378. FRACKNATION, *supra* note 5.

379. *Id.*

380. *But see* Ryan Holeywell, *North Dakota's Oil Boom is a Blessing and a Curse*, GOVERNING, Aug. 2011, http://www.governing.com/topics/energy-env/north-dakotas-oil-boom-blessing-curse.html (one resident explaining that the oil and gas company's use of his land is his worst nightmare).

381. Jim Efstathiou Jr., *Fracking Will Support 1.7 Million Jobs, Study Shows*, BLOOMBERG BUS., (Oct. 23, 2012, 3:05 P.M.), http://www.bloomberg.com/news/articles/2012-10-23/fracking-will-support-1-7-million-jobs-study-shows; *but see* Clare Foran, *How Many Jobs Does Fracking Really Create?*, NATIONALJOURNAL, Apr. 14, 2014, http://www.nationaljournal.com/new-energy-paradigm/how-many-jobs-does-fracking-really-create-20140414 (discussing how hydraulic fracturing creates jobs but analyzes the caveats associated with these jobs).

communities.[382] Moreover, some energy companies partake in beautification projects to improve the towns and lands surrounding them.[383] Thus, from a facial perspective, hydraulic fracturing can have great benefits to Oklahoma and its residents.[384] However, these benefits relate to hydraulic fracturing as a whole and are not specific to saltwater injections.[385]

There are certain environmental burdens associated with saltwater that may weigh on the side of forcing oil and gas companies to find alternative disposal options.[386] The Oklahoma Geological Survey linked increased seismic activity in Oklahoma specifically to saltwater injections, not the entire process of hydraulic fracturing.[387] Currently, analysts contest whether health issues arise from the saltwater injections or from the toxic, carcinogenic chemicals picked up by the wastewater.[388] Proponents of hydraulic fracturing argue that current regulations, if properly followed, prevent leakage of hazardous waste into the water.[389] On the contrary, opponents claim that the carcinogenic toxins still permeate the surrounding earth and water.[390] Moreover, such contaminations may have permanent damage on the water supply, which then lead to deadly effects on not just the environment—but also humans.[391] Such damage to the water should not be taken lightly and weighs against the use of wastewater injections, but alternatives to this disposal method may not be a viable option for Oklahoma.[392]

The conflicting authorities make it difficult to balance whether the negative effects outweigh the benefits.[393] However, even if the potential negative impacts are slight, they are still suggestive of actual harm.[394] While such harm is not monetary, negative impacts on human health and the environment are still harm—and are still tangible.[395] If an economic perspective is the most integral aspect of a decision to define the migration of wastewater as an actionable trespass, Oklahoma should consider the detrimental effects on the economy in the future if human health and the environment are compromised.[396] By

382. *Cf.* Efstathiou Jr., *supra* note 381; *but see* Holeywell, *supra* note 356.

383. Press Release, Green Mountain Energy, Green Mountain Energy Company Encourages Texans to Help Support Local Keep Texas Beautiful Affiliates (Apr. 1, 2011), https://www.greenmountainenergy.com/our-story/news-room/press-releases/694-green-mountain-energy-company-encourages-texans-to-help-support-local-keep-texas-beautiful-affiliates; Marsha Sills, *With a boost from Stone Energy, Lafayette Middle School get a makeover*, THE ADVOCATE, Oct. 13, 2014, http://theadvocate.com/news/10476470-123/with-a-boost-from-stone.

384. *See* Green Mountain Energy, *supra* note 383; Sills, *supra* note 383; Efstathiou Jr., *supra* note 381.

385. *See* discussion of benefits from hydraulic fracturing *supra* nn.353-60.

386. Abayev, *supra* note 71, at 276-77.

387. *See Preliminary Earthquake Information*, *supra* note 107.

388. *See* discussion *supra* Part II.B-C.

389. TCC Amicus Brief, *supra* note 255, at 7-9; *but see* Helman, *supra* note 48 (quoting George Mitchell explaining that tighter regulations are needed because it is difficult to control the smaller, independent companies).

390. *See* Abayev, *supra* note 71, at 276-77; Rahm, *supra* note 98, at 2975.

391. *See* FPL Farming Ltd. v. Envtl. Processing Sys., L.C., 383 S.W.3d 274, 289 (Tex. App. 2012).

392. *See id.*

393. *Compare* Rahm, *supra* note 98, at 2975 (detailing the detrimental effects on human health), *and Preliminary Earthquake Information*, *supra* note 107 (linking wastewater injections to increased seismic activity), *with* TCC Amicus Brief, *supra* note 255 at 7-9 (arguing that properly managed injection wells do not have adverse effects on human health).

394. *See* Abayev, *supra* note 71, at 276-77; Rahm, *supra* note 98, at 2975.

395. *See* Abayev, *supra* note 71, at 276-77; Rahm, *supra* note 98, at 2975.

396. *Cf.* Efstathiou Jr., *supra* note 381.

recognizing wastewater trespass as a feasible cause of action, oil and gas companies will have to find other methods of disposal, which can be costly, hindering the oil and gas industry.[397] However, restricting the use of wastewater injections as a means of disposal could be the driving force needed to push the industry to grow and discover innovative, cleaner techniques that cause less harm than the current procedures.[398]

V. CONCLUSION

Oklahoma cannot just use legal precedent to determine whether trespass liability attaches in the case of subsurface trespass of wastewater injections.[399] While there is a trend towards a need for harm as a factor, or element, of trespass, Oklahoma would do better to broadly interpret the meaning of harm.[400] While the oil and gas industry is heavily regulated, it continues to enjoy exemptions from many federal regulations.[401] Perhaps the industry needs to be held more accountable.[402] Environmental impacts, as well consequences to human health, are types of harm that should play a role in determining the future of wastewater injections associated with hydraulic fracturing.[403] Despite the negative ramifications, hydraulic fracturing itself has many advantages and to limit wastewater injections could hurt the industry, producing damaging results.[404] Looking at other jurisdictions, the Oklahoma Corporation Commission or an Oklahoma court could consider substitute methods to disposal of wastewater; however, alternative methods may be less efficient and cost the industry more.[405] If Oklahoma decides to tackle whether wastewater injections can be subject to trespass liability, it will have a fine line to balance.[406]

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397. *Cf.* Abayev, *supra* note 71, at 288.
398. *See id.* at 322, 327.
399. *See* discussion *supra* Part IV.F.
400. *See* discussion *supra* Part IV.F.
401. *See Exemption of Oil and Gas Exploration and Production Wastes from Federal Hazardous Waste Regulations*, *supra* note 290; Kasperowicz, *supra* note 117.
402. *See* discussion *supra* Part IV.
403. *See* discussion *supra* Part II.B-C.
404. *See* discussion *supra* Part IV.D-F.
405. *See* Abayev, *supra* note 71, at 276-77.
406. *See* discussion *supra* Part IV.