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TAPPING INTO TRESPASS: FRACKING, THE RULE OF CAPTURE, AND LANDOWNER PROTECTION

INTRODUCTION

The term “fracking” likely conjures a multitude of images in one’s imagination. Baby boomers may be reminded of the various oil narratives portrayed in popular culture, such as the optimism accompanying Jedd Clampett’s lucky oil strike in the 1962 sitcom *The Beverly Hillbillies*, or the wealth, greed, and drama surrounding the Ewing family in the 1978 saga *Dallas*.¹ Generation X might think back to the rise of Exxon and its famous merger to create the oil giant Exxon Mobil Corporation.² Millennials likely envision heated protests regarding the environment, pollution, and related health concerns.³ All of these images have influenced the United States’ discourse on oil, gas, and energy issues. While environmental and health concerns are certainly a key point of contention in the debate surrounding U.S. oil acquisition, another concern has emerged as the subject of a great divide: the treatment of fracking in the context of state real property law.

State courts have recently begun grappling with the question of whether an oil company’s fracking of subsurface minerals on adjacent property constitutes an actionable trespass, or whether these fracking operations are precluded by the long-established rule of capture. This Comment will proceed in two parts: First, to understand the key arguments regarding trespass as a cause of action against fracking, this Comment will analyze the two opposing camps in assessing whether the rule of capture should preclude liability for trespass. This Comment will first argue that the best approach to this issue is the one set forth by the Pennsylvania appellate court in *Briggs v. Southwest Energy Co.*, where the court determined that oil companies’ improper fracking on landowners’ adjacent property should constitute an ac-

1. *The Beverly Hillbillies* (CBS 1962); *Dallas* (CBS 1978).

2. Nancy Rivera Brooks, *Exxon and Mobil Agree to Biggest Merger Ever*, L.A. TIMES (Dec. 2, 1998), <https://www.latimes.com/archives/la-xpm-1998-dec-02-mn-49856-story.html>; see also *Our History*, EXXON MOBIL, <https://www.exxon.com/en/history> (last visited Dec. 30, 2019).

3. See generally Andrew Ward, *Oil Industry Struggles to Fill Hole Left by Baby Boomers*, FIN. TIMES (Oct. 27, 2016), <https://www.ft.com/content/f0c72686-9761-11e6-a80e-bcd69f323a8b>; see also Matt Ford, *Climate Change Is This Generation’s Vietnam War*, THE NEW REPUBLIC (Mar. 14, 2019), <https://newrepublic.com/article/153312/climate-change-generations-vietnam-war>.

tionable trespass due to the nonmigratory nature of shale oil.⁴ Second, this Comment will analyze the current status of fracking law in Illinois through the lens of the key policy concern posed by the *Briggs* appellate opinion—protection of the small landowner—and will propose that Illinois legislators amend the Hydraulic Fracturing Regulatory Act to offer greater protection for residential land proprietors. Finally, this Comment will conclude by discussing the broader impacts of considering fracking as trespass.

I. BACKGROUND

Fracking's technology and legal treatment have both been subject to great change over the past forty years. This Part will provide background information regarding the three key components of this Comment: the technology of fracking, fracking in Illinois, and fracking in real property law. Part I.A will begin with an overview of the fracking process and its related legal implications. This Section will then discuss the history and timeline of fracking to highlight its vast technological evolution. Next, this Section will address the controversies surrounding fracking, ranging from the well-known environmental debates to the lesser-known controversies involving real property and residential concerns.

Part I.B will then turn to a discussion of the current state of fracking regulation in Illinois, namely, the recently enacted Illinois Hydraulic Fracturing Regulatory Act (HFRA). This Section will also discuss the lack of Illinois case law on fracking, and how the HFRA is rarely used in practice by industry professionals.

Finally, Part I.C will introduce fracking's importance in the context of real property law by identifying the bridge between fracking and the rule of capture. This Section will outline the rule of capture as applied in the context of conventional oil drilling. It will then move on to discuss the innovative approach to assessing fracking in litigation, as articulated by the Pennsylvania Appellate Court in the seminal case *Briggs v. Southwestern Energy Production Co.* This Section will conclude with a discussion of the opposing, traditional approach, as set forth by the Pennsylvania Supreme Court in *Briggs*.

4. The Pennsylvania Superior Court is the state's appellate-level court, whose appeals are heard by the Pennsylvania Supreme Court. For the purpose of clarity in this Comment, the term "Pennsylvania appellate court" refers to the Pennsylvania Superior Court.

A. What is Fracking?

1. Key Terms & Directional Drilling

In order to best understand the fracking process for the purposes of this Comment, it is important to first define a number of key terms. Hydraulic⁵ fracturing, known commonly as “fracking,” is an oil and gas extraction method where fractures are created in rocks to stimulate the flow of natural gas or oil, thereby making the oil or gas readily recoverable. To create these fractures, water, chemicals, and a proppant⁶ are pumped down an oil or gas well⁷ under high pressure to break open the rock holding the oil or gas.⁸ Advances in technology⁹ have broadened the avenues for oil acquisition, allowing drilling to be conducted via both vertical and horizontal drilling techniques. Vertical drilling involves drilling a well straight down into the ground, aimed at an oil or gas deposit directly below the surface.¹⁰ In contrast, horizontal drilling is a technique used to extract oil and gas from a specific type of rock—shale rock—where the shallow section of a well is first drilled vertically until “the well deviates and becomes horizontal.”¹¹ At this point, the drill is gradually turned horizontally in order to perforate the horizontal portion of the well.¹² Fracking generally employs horizontal drilling techniques.

5. The term “hydraulic” indicates that the process involves “employing water or other liquids in motion,” or, at a more technical level, that the process is “operated by the pressure created by forcing water, oil, or another liquid through a comparatively narrow pipe” *Hydraulic*, DICTIONARY.COM, <https://www.dictionary.com/browse/hydraulic> (last visited Jan. 30, 2020); *The Process of Unconventional Natural Gas Production: Hydraulic Fracturing*, EPA.GOV, <https://www.epa.gov/uog/process-unconventional-natural-gas-production> (last updated Jan. 22, 2020) [hereinafter EPA].

6. A proppant is a material of granular structure such as sand or ceramic and is used after the high-pressure pumping of water or other chemicals stops in order to keep the fractures open wide enough for natural gas or oil to move through. See EPA, *supra* note 5.

7. A hole drilled in the earth for the purpose of finding or producing crude oil or natural gas. *Oil and Gas Terminology*, LMOGA, <http://www.lmoga.com/resources/oil-gas-101/oil-gas-terminology/> (last visited Jan. 31, 2020).

8. Robert Rapiere, *Fracking Has Been around since 1949, Why the Recent Controversy?*, GLOBAL ENERGY AFF., <http://globalenergyinitiative.org/insights/58-fracking-has-been-around-since-1949-why-the-recent-controversy.html> [<https://web.archive.org/web/20180806203418/http://globalenergyinitiative.org/insights/58-fracking-has-been-around-since-1949-why-the-recent-controversy.html>] (last visited Jan. 31, 2019).

9. See *infra* Part I.A.3.

10. *Introduction - What is Hydraulic Fracturing?*, AM. PETROLEUM INST. (2020), <http://what-is-fracking.com/what-is-hydraulic-fracturing/> [hereinafter AM. PETROLEUM INST.].

11. U.S. DEP’T OF ENERGY, *HOW IS SHALE GAS PRODUCED?* (2013), https://www.energy.gov/sites/prod/files/2013/04/f0/how_is_shale_gas_produced.pdf.

12. AM. PETROLEUM INST., *supra* note 10.

2. *Conventional versus Unconventional Drilling*

The next step in understanding fracking is identifying how it differs from “conventional” oil drilling. “Conventional” and “unconventional” oil drilling generally refer to the type of rock formation from which the oil or gas is extracted.¹³ Conventional gas reservoirs are produced by sands and carbonates, such as limestone or sandstone.¹⁴ These rocks are permeable and porous, allowing for oil to flow more freely to a well.¹⁵ Drilling from these types of rock formations is therefore termed “conventional,” because the *free-flowing* nature of the oil in these formations yields high amounts of oil.¹⁶ This concept of the free-flowing nature of oil in conventional drilling is critical to understanding the property law arguments surrounding oil rights. In contrast, “unconventional” oil and gas reservoirs are produced by rocks of low permeability, namely, shale rock.¹⁷ Due to the naturally low permeability of shale, the reservoir must be *mechanically stimulated* to create the necessary permeability for oil collection.¹⁸ This type of acquisition is termed “unconventional” because oil was not highly recoverable from shale rock until the early 2000s, when advancements in fracking technology emerged.¹⁹

Therefore, by putting all of these terms together, the fracking process can be described as follows: Using highly technical machinery and engineering processes,²⁰ a well is drilled vertically through a piece of land until the well reaches just above its target—a shale formation. The direction of the drilling then shifts horizontally, ultimately reach-

13. CTR. FOR SUSTAINABLE SYS., UNIV. OF MICH., UNCONVENTIONAL FOSSIL FUELS FACTSHEET (2019), <http://css.umich.edu/factsheets/unconventional-fossil-fuels-factsheet>.

14. Derek Krieg, *Conventional vs. Unconventional Wells*, OILFIELD BASICS (June 2, 2018), <https://oilfieldbasics.com/2018/06/02/conventional-v-unconventional-wells/>; U.S. DEP’T OF ENERGY, *supra* note 11.

15. U.S. DEP’T OF ENERGY, *supra* note 11.

16. JAMES A. JACOBS & STEPHEN M. TESTA, ENVIRONMENTAL CONSIDERATIONS ASSOCIATED WITH HYDRAULIC FRACTURING OPERATIONS: ADJUSTING TO THE SHALE REVOLUTION IN A GREEN WORLD 53 (2019) (“[T]hese hydrocarbon-bearing rocks are referred to as reservoirs where hydrocarbons can flow freely from reservoir rocks to oil and gas wells.”).

17. U.S. DEP’T OF ENERGY, *supra* note 11 (Another type of unconventional gas in addition to shale gas is tight gas, which comes from highly compacted and impermeable sandstone and limestone, as opposed to shale gas which comes from shale formations.).

18. See JACOBS & TESTA, *supra* note 16 (“The revolution that has come about reflects the fact that we are now actually producing from these ‘tight’ formations due to advancements in horizontal drilling and high-pressure and phased hydraulic fracturing technology.”).

19. U.S. DEP’T OF ENERGY, IT SEEMS LIKE SHALE GAS CAME OUT OF NOWHERE—WHAT HAPPENED? (2013), https://www.energy.gov/sites/prod/files/2013/04/f0/shale_gas_what_happened.pdf.

20. The specifics of these processes are beyond the scope of this article. *But see How Hydraulic Fracturing Works*, NAT’L GEOGRAPHIC, <https://www.nationalgeographic.org/media/how-hydraulic-fracturing-works/> (last visited Mar. 21, 2020).

ing the shale rock reservoir. When the well is drilled, a mixture of fluid and sand are injected into the shale rock at high pressure, causing the rock to break open (fracture). The injected sand works to hold these fractures open, allowing oil and gas to flow through the well back up to the surface with less resistance. This procedure utilizing the horizontal drilling technique is conducted because shale rock formations are, by nature, rocks of low permeability and cannot be easily accessed through conventional drilling techniques.

3. *The Technological Evolution of Fracking*

While fracking is, rightfully, considered a modern innovation and major technical advance in the oil and gas industry, it dates back to the mid-nineteenth century.²¹ In 1857, twenty-six-year old Preston Barmore recruited a group of investors to drill two gas wells in western New York.²² When no gas appeared following the initial drilling, Barmore loaded a well with eight pounds of gunpowder and dropped hot iron down a slim tin tube, yielding a large explosion that produced increased gas flow from the well.²³ This early practice, known as “shooting,”²⁴ employs the same basic principles used in fracking today: freeing up non-productive rock wells by loosening the rock or debris.²⁵ This basic principle was further expanded upon in 1865, when a technique known as “superincumbent fluid-tampering” was developed.²⁶ This technique introduced the idea of adding water to the explosive mixture in order to prevent any kickback that would cause debris to blow back up the well and amplify the explosion’s effects.²⁷ Also introduced in 1865 was the concept of using chemicals, specifically nitroglycerine, to replace the gunpowder that was previously used to create the rock-fracturing explosion.²⁸ Subsequently, in the 1930s, the first horizontal oil well drilling was introduced, where the drilling was targeted at a subsurface area just above the oil or gas reservoir at an entry point in the reservoir with a near-horizontal incli-

21. Ken Milam, *Name the Gas Industry Birthplace Fredonia, NY?*, 32 AAPG EXPL. 22 (Sept. 2011).

22. *Id.*

23. *Id.*

24. See DANIEL RAIMI, *THE FRACKING DEBATE: THE RISKS, BENEFITS, AND UNCERTAINTIES OF THE SHALE REVOLUTION* 13 (2018) (“exploding ordinance at the bottom of an existing well could break apart the rocks that were stubbornly hoarding oil and allow more liquid to travel into and up the well”).

25. Michael Quentin Morton, *Unlocking the Earth—A Short History of Hydraulic Fracturing*, 10 GEO EXPRO 86 (2013).

26. *Id.*

27. *Id.*

28. *Id.*

nation, as opposed to vertical inclination.²⁹ Then, in 1940, the concept of applying hydraulic pressure to oil wells came into play, forever changing the process of oil and gas extraction.³⁰

The Stanolind Oil Company was established in 1931 when its parent, The American Oil Company, sought to create an oil exploration and production business.³¹ In the mid-1940s, one of Stanolind's researchers, Floyd Farris, proposed that fracturing rock through hydraulic pressure would increase the flow of oil and gas within wells and began conducting a series of experiments to test this proposition.³² One experimental treatment used the "Hydrafrac" technique to stimulate a gas well. The Hydrafrac technique consisted of injecting 1,000 gallons of a naphthenic acid-palm oil mixture (napalm) combined with sand into a limestone formation.³³ By 1949, the Hydrafrac process was patented and subsequently licensed to Halliburton Oil Well Cementing Company.³⁴ Halliburton's acquisition of this license propelled the company to become the first oilfield service firm to fracture a well hydraulically—that is, rather than dropping an explosive into the ground, Halliburton "would pump fluids at high pressure, hoping to create small cracks in the rock and increase the flow of . . . natural gas," which is what we know today as fracking.³⁵

Fracking continued to be utilized in the oil and gas industry for decades, but was largely applied to limestone, sandstone, and other conventional, naturally permeable rock formations.³⁶ Shale rock formations were also known to be reservoirs with vast storage of oil and gas; however, the low permeability of shale rock formations prevented profitable volumes of the oil and gas from moving toward a

29. Tianshou Ma et al., *Overview on Vertical and Directional Drilling Technologies for the Exploration and Exploitation of Deep Petroleum Resources*, 2 *GEOMECHANICS & GEOPHYSICS FOR GEO-ENERGY & GEO-RESOURCES* 365, 367, 368–69 (2016); Lynn Helms, *Horizontal Drilling*, 35 *DMR NEWSL.* 1–2, <https://www.dmr.nd.gov/ndgs/documents/newsletter/2008Winter/pdfs/Horizontal.pdf> (last visited Jan. 31, 2020) ("Inclination" describes the direction of an angle relative to vertical. Therefore, the word "inclination" in this context refers to the fact that the 1930s introduced technology for a rock containing an oil or gas reservoir to be drilled at a horizontal angle rather than through the land directly above (vertical to) the rock and reservoir.).

30. Morton, *supra* note 25, at 87.

31. *Amoco*, PEI, <https://www.pei.org/wiki/amoco> (last visited Jan. 31, 2020).

32. John Stancavage, *No End in Sight for Fracking Boom*, *TULSAWORLD.COM* (June 8, 2014), https://www.tulsaworld.com/business/energy/drilling/no-end-in-sight-for-fracking-boom/article_38a8ced5-8c0f-5d4e-828b-ccb85aca1ac9.html; Morton, *supra* note 25, at 87.

33. Carl T. Montgomery & Michael B. Smith, *Hydraulic Fracturing: History of an Enduring Technology*, *J. OF PETROLEUM TECH.* 27 (2018).

34. *Id.*

35. RAIMI, *supra* note 24, at 14.

36. U.S. DEP'T OF ENERGY, *supra* note 11.

well following drilling.³⁷ Despite this inability to tap shale formations, efforts to extract oil and gas from them did not cease. In the 1960s, the U.S. government funded research related to oil production from shale formations, but relied on other drilling methods such as shooting and stimulation of wells with nuclear devices.³⁸ But when these techniques did not yield the desired amounts of oil and gas, the government (through various incentives)³⁹ encouraged private companies to explore new ways to develop natural gas. One company to do so was Mitchell Energy.

Mitchell Energy was a Texas-based gas company that undertook the task of finding a way to make shale rock profitable.⁴⁰ Mitchell Energy's fracking technology employed a gel-based fluid to create fractures in rocks that were being tapped for oil and gas.⁴¹ However, an accident on a Mitchell Energy fracking project would change the trajectory of the company and the industry for years to come. While fracking a shale formation, an equipment malfunction occurred, resulting in the fracturing fluid becoming highly slick and water-based—a big difference from the gel-based fluid that was originally being used.⁴² The company's engineers decided to observe the effects of this accident and were surprised to see that the water-based fluid produced encouraging results.⁴³ This was a major achievement for Mitchell Energy, as water-based fracking fluid would be much cheaper than any gel-based fluid comprised of expensive chemicals.⁴⁴ Mitchell Energy continued to use this water-based fluid in all of its fracking projects and continued to adjust the amounts of pressure, sand, and water utilized.⁴⁵ By 1981, Mitchell Energy engineers developed technology to combine fracking with horizontal drilling and seismic imaging to allow for large-scale gas and oil extraction, by injecting millions of gallons of a water-sand mixture being injected at high pressure in order to extract a higher volume of gas from shale rock.⁴⁶ This resulted in a number of profitable projects for the company, which was eventually sold for \$3.1 billion, thereby paving the way for hydraulic fracturing of shale formations as a new, profitable mineral extraction

37. RAIMI, *supra* note 24, at 16.

38. *Id.*

39. *Id.* Incentives included “government initiatives, tax credits, and price premiums.”

40. *Id.* at 17.

41. *Id.*

42. *Id.*

43. RAIMI, *supra* note 24, at 17.

44. *Id.*

45. *Id.*

46. *Id.* at 17–18.

method.⁴⁷ These profitable new techniques spread across the country, allowing oil companies to locate shale rock formations in different areas of the United States and extract oil from reservoirs that were once thought to be impermeable and unprofitable.⁴⁸ This union of hydraulic fracturing and horizontal drilling is the image of fracking in popular press today. Therefore, for the remainder of this Comment, the term “fracking” will be used to mean the process of hydraulic fracturing as applied to horizontal wells of shale rock.

4. *Fracking Controversies: The Environment & Real Property*

Despite fracking’s late-nineteenth century origin, its rise to media popularity came in the late 1990s and early 2000s as a result of massive oil and gas production, where natural gas production from shale and other tight gas formations yielded approximately five percent of the United States’ total annual oil production.⁴⁹ This had drastically increased by 2005, when gas production from shale formations yielded eleven percent of United States oil production.⁵⁰ The ability to extract oil from tight shale rock formations increased oil production from 5 million barrels per day in 2008 to 9.4 million barrels per day in 2015.⁵¹ As of 2018, the United States Energy Information Administration estimated that approximately 6.5 million barrels of oil were produced per day from tight (shale) resources in the United States.⁵² This figure accounted for approximately fifty-nine percent of total U.S. crude oil production in 2018.⁵³

As fracking’s popularity increased among oil and gas companies across the United States, so did the public’s awareness of the new process.⁵⁴ This increased public awareness created a large divide between proponents and opponents of the technique. Fracking’s controversy in the media primarily centers on environmental concerns.⁵⁵ During the fracking process, chemicals are added to the pressurized water in order to dissolve minerals and eliminate various bacteria that can potentially plug up wells and halt oil and gas production.⁵⁶ Because high

47. *Id.* at 17.

48. Morton, *supra* note 25, at 88.

49. RAIMI, *supra* note 24, at 27.

50. *Id.*

51. *Id.* at 28.

52. *How much shale (tight) oil is produced in the United States?*, U.S. ENERGY INFO. ADMIN., <https://www.eia.gov/tools/faqs/faq.php?id=847&t=6> (last updated Mar. 4, 2020).

53. *Id.*

54. Morton, *supra* note 25, at 88.

55. Rapier, *supra* note 8.

56. Susan L. Brantley & Anna Meyendorff, *The Facts on Fracking*, N.Y. TIMES (Mar. 3, 2013), <https://www.nytimes.com/2013/03/14/opinion/global/the-facts-on-fracking.html>.

volumes of different chemicals are used to aid oil and gas acquisition, local communities can be affected by potential methane gas leaks, creating a “real though remote possibility of dangerous explosions.”⁵⁷ In addition, contamination is a major concern of fracking opponents, due to the fact that fracking fluid can lead to contamination of both water and soil.⁵⁸ Oil and “gas companies do not always disclose the composition of all fracking and drilling compounds,” therefore making it difficult for local communities to monitor their streams and groundwater for injected chemicals, posing additional environmental concerns.⁵⁹ In addition to contamination concerns, some environmentalists claim that carbon emissions resulting from fracking⁶⁰ and greenhouse gas emissions are contributing to climate change—fracking’s ability to extract higher amounts of gas contributes to more greenhouse gas emissions and expedites climate change more than conventional natural gas extraction.⁶¹

Fracking also has introduced a lesser known but undeniably present controversy in addition to the aforementioned environmental controversies: the real property concerns that affect communities across the United States.

For those who live on lands in parts of the United States where shale rock formations exist, problems arise when residents are approached by companies interested in leasing mineral rights and tapping subsurface gas deposits.⁶² This ultimately impacts the autonomy a resident has over her property. In addition, some landowners have claimed that the fracking that occurred on or near their land has since made their land unsellable.⁶³ Claims of foundation cracks, landslides, and other localized claims of property damage have been on the rise—all attributed to fracking.⁶⁴

Before hydraulic fracturing was combined with horizontal drilling, oil and gas could not be reached and extracted from shale formations, leaving the above-ground properties over these subsurface formations

57. *Id.*

58. *Id.*

59. *Id.*

60. Rapiet, *supra* note 8.

61. Brantley & Meyendorff, *supra* note 56.

62. *Issue Area: Landowner Rights & Fracking: Who Will Be Impacted?*, RURAL ADVANCEMENT FOUND. INT’L USA, <https://rafiusa.org/issues/landowner-rights-and-fracking/> (last visited Mar. 21, 2020).

63. Michelle Conlin, *Gas Drilling is Killing Property Values for Some Americans*, BUS. INSIDER (Dec. 12, 2013), <https://www.businessinsider.com/drilling-can-make-some-properties-unsellable-2013-12>.

64. *Id.*

untouched.⁶⁵ However, through technological advances and the rise of fracking, shale gas can now be tapped, threatening residential properties which lie over these formations.⁶⁶ In many states, one party may own the subsurface mineral rights, while another party holds the rights to the above ground property.⁶⁷ This is called a split estate, and these split estates have left many residents to deal with a number of community problems such as increased traffic, lights, and noise, with no compensation for the above-surface owners at all.⁶⁸ The lack of compensation for split estate owners has led to a large amount of pushback from residents, with towns across the country attempting to propose restrictions on fracking and promote more local control of oil acquisition, thereby creating a deep rift between residents and oil companies.⁶⁹ Yet another type of agreement that landowners and oil companies can reach is the royalty arrangement, in which those who own the rights to the oil and gas on their properties can offset potential impacts of drilling by collecting royalty payments that come from selling their oil and gas rights to developers.

B. *Fracking and the Rule of Capture*

The increasing concerns of residents in fracking areas and the constant changes and advancements in fracking technology lend themselves to a re-evaluation of oil and property rights, namely, the rule of capture.

The doctrinal rule of capture was first articulated by the Supreme Court in *Brown v. Spilman*, which stated:

[Petroleum oil and gas] belong to the owner of the land, and are part of it, so long as they are on it or in it subject to his control; but when they escape and go into other land, or come under another's control, the title of the former owner is gone. If an adjoining owner drills his own land, and taps a deposit of oil or gas, extending under his neighbor's field, so that it comes into his well, it becomes his property.⁷⁰

Therefore, under this traditional rule, so long as a landowner conducts the physical drilling operation on her own land, any oil acquired from adjoining land is rightfully hers. Fracking, however, provides a

65. *Id.*

66. *Id.*

67. *Drilling vs. the American Dream: Fracking impacts on property rights and home values*, RES. MEDIA (Mar. 14, 2018), <http://www.resource-media.org/drilling-vs-the-american-dream-fracking-impacts-on-property-rights-and-home-values/>.

68. *Id.*

69. *Id.*

70. *Brown v. Spilman*, 155 U.S. 670, 670 (1895); Danielle Quinn, *A Fracking Fragile Issue: Courts Continue to Tiptoe Around Subsurface Trespass Claims*, 27 VILL. ENVTL. L.J. 1, 8 (2016).

new context and perspective on oil rights, which stands in opposition to the doctrinal approach.

In *Briggs v. Southwestern Energy Production Co.*, Pennsylvania's appellate court drastically altered the scope of the rule of capture by holding that the rule of capture did not preclude liability for trespass because oil was extracted via fracking rather than conventional oil drilling.⁷¹ This view is representative of the camp that supports a finding of fracking as trespass. In *Briggs*, the plaintiffs owned an eleven-acre parcel of land in Pennsylvania adjacent to a property whose oil and gas rights were being leased by the defendants, a company engaging in hydraulic fracturing to extract natural gas from the Marcellus Shale.⁷² The plaintiffs brought a claim against defendants for trespass and conversion, alleging that the defendants, who did not have an oil and gas lease concerning the plaintiffs' property, had been unlawfully extracting natural gas from beneath it through the operation of defendants' drilling units on their properly-leased property adjacent to that of the plaintiffs.⁷³

The appellate court explained that the issue of fracking as trespass in violation of the rule of capture was a matter of first impression.⁷⁴ The court began by acknowledging that the long-standing rule of capture precludes liability for drainage of oil and gas from under another's land, and is consistently applied in the context of conventional oil and gas extraction.⁷⁵ The court articulated the traditional rule of capture, stating "[t]he actor, without himself entering the land, may invade another's interest in its exclusive possession by throwing, propelling, or placing a thing . . . beneath the surface of the land" ⁷⁶ The court further explained that "the rule of capture, which precludes liability for drainage of oil and gas from under another's land, has long been applied in the context of conventional oil and gas extraction."⁷⁷

The plaintiffs argued that hydraulic fracturing differs dramatically from conventional gas drilling, and that "the principles underlying the common law rule of capture do not apply to the natural gas obtained through the process of hydraulic fracturing."⁷⁸ Specifically, the plaintiffs argued that because the technology employed by the hydraulic

71. *Briggs v. Sw. Energy Prod. Co.*, 184 A.3d 153, 163 (Pa. Super. Ct. 2018).

72. *Id.* at 155–56.

73. *Id.* at 156.

74. *Id.* at 155.

75. *Id.* at 156.

76. *Briggs*, 184 A.3d at 156; *see also* RESTATEMENT (SECOND) OF TORTS § 158 (AM. LAW INST. 1965).

77. *Briggs*, 184 A.3d at 156.

78. *Id.*

fracturing process differs so dramatically from the acquisition process used when drilling oil conventionally, application of the rule of capture is not a necessity.⁷⁹ In determining how to approach the application of the rule of capture to hydraulic fracturing, the court looked to the dissenting opinion in *Coastal Oil & Gas Corp. v. Garza Energy Trust*, which stated that the rule of capture should not be applied to a situation in which a party effectively enters another's lease without consent, drains minerals by means of an artificially created channel or device, and then captures the minerals on the trespassers' lease.⁸⁰ Citing the approach taken by the courts in *Young v. Ethyl Corp.* and *Butler v. Charles Powers Estate ex rel. Warren*, the court rested its holding on the notion that "[u]nlike oil and gas originating in a common reservoir, natural gas, when trapped in a shale formation, is non-migratory in nature. Shale gas does not merely 'escape' to adjoining land absent the application of an external force."⁸¹ In addition, the court addressed the policy considerations of equity and protection for small landowners. The court stated that it was "not persuaded by the . . . rationale that a landowner can adequately protect its interests by drilling his own well to prevent drainage to an adjoining property."⁸²

Following an in-depth explanation of the fracking process, the court held that fracking is distinguishable from conventional methods of oil and gas extraction, and that the fundamental rationale for the rule of capture's preclusion of liability does not comport with the technique of fracking.⁸³ The court stated that oil collected through conventional extraction is migratory across property lines, which justifies a lack of trespass liability for extractors.⁸⁴ Natural gas in shale formation (the substance obtained through modern fracking), however, is non-migratory and cannot escape to adjoining land without the application of an external force.⁸⁵ For this reason, the court held that the rule of capture does not preclude liability for trespass due to fracking.⁸⁶ This holding further rested on the policy considerations of adequate protection for small landowners, who are unable to simply take the opportunity for themselves and engage in drilling.⁸⁷

79. *Id.* at 157–58.

80. *Id.*

81. *Id.* at 162.

82. *Id.* at 163.

83. *Briggs*, 184 A.3d at 162.

84. *Id.*

85. *Id.*

86. *Id.* at 163.

87. *Id.*

On appeal, the Pennsylvania Supreme Court disagreed. The Pennsylvania Supreme Court assessed the following issue:

Does the rule of capture apply to oil and gas produced from wells that were completed using hydraulic fracturing and preclude trespass liability for allegedly draining oil or gas from under nearby property, where the well is drilled solely on and beneath the driller's own property, and the hydraulic fracturing fluids are injected solely on or beneath the drillers' own property?⁸⁸

The court ultimately reversed the appellate court's decision and rejected the notion that "the rule of capture is inapplicable to drilling and hydraulic fracturing that occurs entirely within the developer's property solely because drainage of natural resources takes place as the direct or indirect result of hydraulic fracturing, or that such drainage stems from less 'natural' means than conventional drainage."⁸⁹

In its analysis, the court relied on the concept that "all drilling for subsurface fugacious minerals involves the artificial stimulation of the flow of that substance,"⁹⁰ explaining that the rule of capture applies even when artificial means of extraction are used, "so long as no physical invasion of the plaintiff's land occurs."⁹¹ Further, the court addressed the issue of small landowner protection by merely stating that "[t]he judiciary . . . lacks institutional tools necessary to investigate the continuing feasibility of self-help remedies" for aggrieved landowners.⁹² This holding is in line with the reasoning set forth in *Coastal Oil*, where the court found that the rule of capture precluded the landowners' claim for trespass. The court determined that actionable trespass requires injury, and that the landowners' "only claim of injury—that Coastal's fracking operation made it possible for gas to flow from beneath [one tract of land to another]—is precluded by the rule of capture."⁹³ The court reasoned that hydraulic fracturing has "long been commonplace throughout the industry and is necessary for commercial production"⁹⁴ Further, the court reasoned that "the rule of capture is justified because a landowner can protect himself from drainage by drilling his own well, thereby avoiding the uncertainties of determining how gas is migrating through a reservoir."⁹⁵

88. *Briggs*, 197 A.3d at 169.

89. *Briggs v. Sw. Energy Prod. Co.*, __A.3d__ (2020), 2020 WL 355911, at *12 (Pa. 2020).

90. *Id.* at *11.

91. *Id.*

92. *Id.* at *12.

93. *Id.* at *12–13.

94. *Id.* at *13.

95. *Briggs*, 2020 WL 355911, at *14.

C. *Illinois Hydraulic Fracturing Regulatory Act*

While Oklahoma and Texas are famous for their oil production, the rise of fracking introduced other profitable locations as well. New York, Pennsylvania, Ohio, Maryland, and West Virginia have been increasingly utilized for oil and gas production due to their location above the Marcellus Shale, a shale rock formation that could potentially contain nearly 500 trillion cubic feet of gas.⁹⁶ In addition, Illinois has recently emerged as a potential source for oil. Under southern Illinois, southwest Indiana, and northwest Kentucky lies the Illinois Basin, a 60,000-mile depression that has generated 4 billion barrels of oil and 4 trillion cubic feet of natural gas since the early 1900s.⁹⁷ While the basin formed over a period of more than 100 years, the critical fact is that this oil and gas production occurred exclusively through conventional vertical drilling.⁹⁸ This fact cannot be emphasized enough. A large amount of oil and gas has been extracted from the Illinois basin, but this is only the beginning, since new horizontal drilling techniques have not yet been utilized in this formation. Underneath the Illinois Basin lies the New Albany Shale, a shale rock formation which could “provide a re-birth for oil production in a region that has been in decline for more than half a century.”⁹⁹

With fracking increasing significantly across the country and the discovered potential for oil in the New Albany Shale, Illinois enacted the Illinois Hydraulic Fracturing Regulatory Act (HFRA) in June of 2013.¹⁰⁰ The Act aimed to promote development of the shale for oil and gas production while protecting the health of residents and the environment from associated risks.¹⁰¹ The HFRA establishes a set of requirements that must be complied with in order for fracking to be conducted in Illinois.¹⁰² The HFRA begins by outlining where horizontal hydraulic fracturing may not take place, including within 500 feet of residences, places of worship, schools, hospitals, or licensed nursing home facilities, and within 300 feet of any river, natural or

96. Rapier, *supra* note 8.

97. Keith Schaefer, *Illinois Basin's New Albany Shale: The Next Big U.S. Horizontal Oil Play?*, OIL & GAS INV. BULL. (Sept. 23, 2013), <https://oilandgas-investments.com/2013/oil-and-gas-financial/illinois-new-albany-shale-oil/>.

98. *Id.*

99. *Id.* (emphasis removed).

100. BRYAN CAVE LLP, ENERGY & NAT. RES. CLIENT SERV. GRP., *Illinois Hydraulic Fracturing Regulatory Act* (July 2, 2013), <https://www.bryancave.com/images/content/1/9/v2/1989/ENR-Alert-7-2-13.pdf>.

101. *Id.*

102. Illinois Hydraulic Fracturing Regulatory Act, 225 ILL. COMP. STAT. 732 (2013).

artificial lake, pond, or reservoir.¹⁰³ In addition, the HFRA requires anyone who wishes to engage in drilling to obtain a permit from the Department of Natural Resources.¹⁰⁴ This permit is subject to public review before it is issued. A public hearing may also be conducted by the Department of Natural Resources to allow residents and other members of the public to voice concerns and objections before the Department prior to a permit being awarded.¹⁰⁵ Further, the HFRA allows the Illinois Environmental Protection Agency to bring actions to enforce the regulations, “as well as enforcement by private citizens who believe drillers have violated” the HFRA.¹⁰⁶ With the HFRA’s enactment, many landowners have questions regarding what the Act means for their property, and how they may potentially be affected.¹⁰⁷ Rather than providing clarity, however, the Act leaves many residents with unanswered questions:

When does the lease expire? What are the scope of the indemnities and warranties? What right does the landowner have to terminate the lease? Under what grounds? What about closure? What financial and other assurances that the site will be closed and clean at the termination of the lease? What happens at abandonment? What about violations?¹⁰⁸

In addition, the HFRA and its lack of utilization by oil companies looking to drill in Illinois raises the question of property concerns. Landowners are left to wonder what options they have regarding trespass, or how to bring actions against companies who, despite drilling on company-owned land, tap wells via fracking from the subsurface of adjoining landowners’ property. Because the HFRA has not yet been used in any court cases in Illinois, residents and oil drillers are increasingly turning to environmental lawyers for guidance.¹⁰⁹

Due to the presence of two differing approaches for assessing the rule of capture’s application to fracking, as outlined by the *Briggs* appellate and supreme court decisions (along with support from *Young/Butler*, and *Coastal Oil*, respectively), the status of trespass law with respect to fracking is unclear. Therefore, it is difficult to establish a precedential approach that can be used by other states lacking case law on fracking—a prime example being Illinois. Through its recent

103. *Id.* 732/1-25(a)(4)–(6).

104. *Id.* 732/1-35(a).

105. *Id.* 732/1-50(a).

106. BRYAN CAVE LLP, *supra* note 100.

107. Bill Anaya, *Fracking in Illinois: What’s an owner to do?*, THE S. ILLINOISAN (Aug. 23, 2013), https://thesouthern.com/news/opinion/fracking-in-illinois-what-s-an-owner-to-do/article_d30be4bc-0ae0-11e3-8a28-001a4bcf887a.html.

108. *Id.*

109. Anaya, *supra* note 107; *see also* BRYAN CAVE LLP, *supra* note 100.

enactment of the HFRA and absence of relevant case law in its courts, Illinois' treatment of fracking is completely uncertain, leaving lawyers, property owners, and oil companies with no precedent, analysis, or interpretation to turn to for guidance. The issue of fracking's status in property law and in Illinois specifically is therefore ripe for discussion.

II. ANALYSIS

On January 22, 2020, the Pennsylvania Supreme Court vacated the appellate court's order in *Briggs*, and broadly held that the standard suggested by the appellate panel—"that a natural-versus-artificially-induced-flow litmus should be employed to determine whether the rule of capture applies in a given situation"—relies on a "false distinction."¹¹⁰

In assessing the issue presented in *Briggs* on appeal, the Pennsylvania Supreme Court incorrectly rejected the decision of the Superior Court, finding that the rule of capture does apply to oil that was obtained through hydraulic fracturing and precludes liability for trespass.¹¹¹ The Pennsylvania Supreme Court failed to place controlling emphasis on the lack of mobility and migration of the shale oil at issue. This holding, in turn, fails to adequately support the notion of protection for small landowners whose land may be affected by nearby fracking projects. Therefore, when considering fracking legislation, rule makers should look to the approach set forth by the appellate court in *Briggs* and conforming cases which place a critical emphasis on the key differences between conventional oil acquisition and hydraulic fracturing—namely, the porous nature of the rock formations used in conventional drilling as compared with the highly impermeable nature of unconventional formations, such as shale. These differences ultimately render the application of the rule of capture to acquisitions by hydraulic fracturing unfeasible. In Illinois, legislators should follow the line of reasoning set forth by the *Briggs* appellate court's policy discussion regarding small landowners' inability to adequately protect their property interests. These interests should guide legislators in amending the current HFRA to provide for stronger landowner protection. This change in legislation would further aid in providing precedential value and assistance to future courts addressing the issue of fracking as trespass.

110. *Briggs v. Sw. Energy Prod. Co.*, __A.3d__ (2020), 2020 WL 355911, at *15 (Pa. 2020).

111. *Id.*

A. *The Rule of Capture's Inapplicability to Fracking*

First, this analysis will discuss the rule of capture and its justifications and will ultimately argue that these justifications are not viable in the context of hydraulic fracturing. The analysis will then turn to a discussion of the appellate court's reasoning in *Briggs*, which demonstrates the court's reliance on the specifics of hydraulic fracturing techniques and technology in determining that the rule of capture does not preclude liability for trespass when hydraulic fracturing is the method used to acquire oil and gas.¹¹² By pairing the appellate court's reasoning in *Briggs* with the invalidity of the rule of capture in the context of hydraulic fracturing, Part One of this analysis will conclude by addressing the supreme court's flawed reasoning in the *Briggs* appeal.

Second, this analysis will extend the policy rationales utilized by the *Briggs* appellate court—as well as like cases—and propose amendments to the HFRA that would provide for greater property protection for landowners using legislative language influenced by intergovernmental considerations that advocates for the small landowner. Since the sole company with permission to obtain a permit for fracking in Illinois abandoned its fracking project due to “burdensome and costly regulations,” Illinois courts have not yet faced the task of interpreting the language of the HFRA.¹¹³ But the HFRA as currently written provides little guidance to courts due to its failure to address property concerns. Because the Illinois Basin, a large shale rock formation, has recently been targeted as an area with the potential to yield high amounts of oil and gas, it is critical for Illinois courts to establish precedent within the state in order to set the legal boundaries of Illinois fracking operations.¹¹⁴ The only way that courts will have guidance on this issue is by looking to other jurisdictions and Illinois legislation. Therefore, Illinois courts should adopt a position consistent with the Pennsylvania appellate court in *Briggs*, and the *Briggs* appellate court's policy concerns should be integrated into Illinois legislation.

1. *Rule of Capture Rationale*

Legal disputes regarding oil and gas rights primarily arise in two contexts. First, landowners often lease the rights of minerals located

112. *Briggs v. Sw. Energy Prod. Co.*, 184 A.3d 153, 163–64 (Pa. Super. Ct. 2018).

113. Brad Palmer, *The Truth-In-Fracking Bill Passed by Illinois Senate*, WSIU (May 4, 2018), <http://news.wsuiu.org/post/truth-fracking-bill-passed-illinois-senate#stream/0>.

114. Schaefer, *supra* note 97.

within their property's subsurface to oil and gas companies.¹¹⁵ Disputes arise when lease agreements or implied covenants are violated, or ambiguously or incorrectly drafted.¹¹⁶ Second, problems develop when owners of the mineral rights beneath a property do not wish to lease them, or cannot come to an agreement with an oil and gas company about the terms or provisions of a lease.¹¹⁷ Those involved in this second class of disputes suffer major consequences due to the lack of legislative intervention altering the rule of capture.¹¹⁸ The rule of capture's history and evolution provides further support for the approach taken by the appellate court in *Briggs*, and, ultimately, the approach endorsed by this Comment.

The rule of capture has generally been defined by judicial decisions rather than statutes—legislatures have not been the primary source of law regarding oil and mineral rights.¹¹⁹ If legislatures do pass statutes that change judicial decisions that have shaped the common law, any repeal of these statutes would result in the original judicial decisions becoming controlling law again.¹²⁰ Denton explains that the rule of capture “arose from the fact that oil and gas flow underground and geology as we know it today was not well understood at the time that judges were first asked by disputing landowners to decide who owned the gas and oil beneath their respective parcels.”¹²¹ Therefore, at the time the rule of capture was introduced, the key legal question was: “Who owns a natural resource that does not stay in one place, or in other words, tends to flow to the nearest wellbore?”¹²² To resolve this question, early courts settled on the rule of capture, determining that oil and gas were fugitive—that is, fleeting or transient—and were therefore not owned until captured.¹²³ In context, this meant that “a landowner who drilled the well on his or her own land had the right to keep anything that came out of the well. By capturing it, he or she

115. CHAD J. LEE & JILL D. CANTWAY, *Leasing Mineral Rights: A Framework for Understanding the Dominant Estate*, in *BEYOND THE FRACKING WARS: A GUIDE FOR LAWYERS, PUBLIC OFFICIALS, PLANNERS AND CITIZENS* (Erica Levine Powers & Beth E. Kinne eds., 2013).

116. *Id.* at 41–58 (explaining the different types of clauses that are included in mineral leases: habendum clause, drilling delay rental clause, royalty clause, warranty clause, shut-in clause, pooling and unitization, Pugh clauses, and force majeure clauses).

117. Christopher Denton, *Oil and Gas Exploration without Leases Rule of Capture and Compulsory Integration (Forced Pooling) in New York State*, in *BEYOND THE FRACKING WARS A GUIDE FOR LAWYERS, PUBLIC OFFICIALS, PLANNERS, AND CITIZENS* 65 (Erica Levine Powers & Beth E. Kinne eds., 2013).

118. *Id.*

119. *Id.* at 66.

120. *Id.*

121. *Id.*

122. *Id.* at 67.

123. Denton, *supra* note 117, at 67.

gained ownership of it.”¹²⁴ Importantly, the rule of capture in the context of mineral rights requires that the well be located exclusively on the landowner’s property.¹²⁵ This means that a landowner could not drill a well on a neighbor’s property to drain oil or gas—an act that would constitute a trespass. However, as technology has advanced over the past century, and particularly in the past three decades, legal issues regarding trespass have come into play.¹²⁶ The United States has experienced technological advancements in the fields of geology, geophysics, geochemistry, and highly efficient drilling techniques.¹²⁷ For example, the initial hydraulic fracturing technology created by Stanolind Oil and licensed to Halliburton created cracks in tapped rock that extended over a much greater distance than early explosive-based fracking techniques. These longer cracks within the shale rock allow oil and gas to flow toward the well and the drilling surface, far from the actual entry point of the drilling.¹²⁸

In addition, a number of new, “green” technologies have been developed within the past five years, which aim to reduce water use and chemical emissions.¹²⁹ Water-free fracking utilizes gel that contains hydrocarbons, which allows the fracking fluid to merge into the extraction.¹³⁰ This eliminates the need to drain contaminated wastewater, which, in turn, decreases its carbon footprint.¹³¹ Solar-powered vertical storage silos have been developed in order to store the sand used for fracking.¹³² Halliburton has also developed a treatment system which uses positively charged ions and bubbles to remove particles from the water at the fracking site in order to reduce wastewater.¹³³ These are just a few examples of numerous technological advancements that are increasingly utilized by oil companies. These technologies will ensure that fracking persists as an oil and gas acquisition method in the United States. As technology in the fracking industry continues to advance, fracking itself will be much easier to conduct, thereby increasing the total number of fracking operations in

124. *Id.*

125. *Id.* at 68.

126. *Id.*

127. *Id.*

128. DANIEL RAIMI, *WHAT IS FRACKING, THE FRACKING DEBATE: THE RISKS, BENEFITS, AND UNCERTAINTIES OF THE SHALE REVOLUTION* 14 (Columbia Univ. Press 2017).

129. Patrick J. Kiger, *Green Fracking? 5 Technologies for Cleaner Shale Energy*, NAT’L GEOGRAPHIC (Mar. 21, 2014), <https://news.nationalgeographic.com/news/energy/2014/03/140319-5-technologies-for-greener-fracking/>.

130. *Id.*

131. *Id.*

132. *Id.*

133. *Id.*

play. An increased number of fracking operations necessarily implicates the land of residential property owners and increases the potential for conflict. It is therefore important to resolve legal ambiguities that currently surround the fracking process in the context of property law. Resolving the issue of whether technology employed by fracking necessarily renders fracking an actionable trespass is a key first step. It is clear that the rule of capture originally adopted from English common law did not consider any of the technological advances that have made fracking the industry that it is today, thereby making it inapplicable to oil acquired from shale formations through fracking.

2. *The Appellate Court's Rationale in Briggs*

In 2018, Pennsylvania's appellate court in *Briggs v. Southwestern Energy Production Co.*, analyzed the central issue as a matter of first impression.¹³⁴ The appellate court reversed the trial court, holding that the rule of capture does not preclude liability for trespass due to hydraulic fracturing, and that there existed a genuine issue of material fact as to whether the defendant energy company's operations constituted a trespass.¹³⁵ In appealing the trial court's decision, the appellant, Briggs, presented the following claim for review:

Did the [trial court] err in determining that the rule of capture precluded any liability on the part of [Southwestern] under the theories of trespass or conversion for natural gas extracted by [Southwestern,] even if said natural gas originated under the lands of . . . Appellants and was extracted from under Appellants' land by [Southwestern] through hydr[aulic]fracturing?¹³⁶

The plaintiffs' key argument was that, although the defendants did not physically drill on or inject fracking fluids into the plaintiffs' land, the defendants' extraction of natural gas from the plaintiffs' property through its fracking operations on adjacent property constituted a trespass.¹³⁷

Specifically, the plaintiffs argued that when acquiring oil or gas through conventional drilling methods, the "rule of capture is a rule of necessity, caused by the inability to determine the ownership of natural gas or oil located in an underground pool" ¹³⁸ The plaintiffs asserted that the gas in shale formations would remain trapped there forever due to the nature of the tightly packed shale rock.¹³⁹ There-

134. *Briggs v. Sw. Energy Prod. Co.*, 184 A.3d 153, 163 (Pa. Super. Ct. 2018).

135. *Id.*

136. *Id.* at 155–56.

137. *Id.* at 156.

138. *Id.*

139. *Id.* at 157.

fore, the *forced* extraction of oil and gas conducted through hydraulic fracking conflicts with the rationale that supports the existence of the rule of capture—the fugitive, free-flowing nature of oil and gas—and thereby does not preclude defendants’ potential trespass liability.

In opposition, the defendant gas company argued that it should not be held liable for trespass because the company had never physically entered or drilled any gas wells on the plaintiffs’ property.¹⁴⁰ The defendants further argued that the rule of capture should apply to gas obtained by hydraulic fracturing because it is a mechanical method of increasing the permeability of rock and thereby increases the amount of oil or gas produced from it.¹⁴¹

The appellate court’s analysis began by conducting a review of several oil and gas cases heard by the Pennsylvania Supreme Court, but recognized that Pennsylvania courts had not yet considered whether subsurface hydraulic fracturing that extends into an adjoining landowner’s property and results in the withdrawal of natural gas from beneath that property constitutes an actionable trespass.¹⁴² The appellate court cited two cases from other jurisdictions that had considered whether the rule of capture applies to hydraulic fracturing: *Coastal Oil* and *Stone v. Chesapeake Appalachia, LLC*.¹⁴³ Using the conclusions drawn from these cases together, the Pennsylvania appellate court concluded that hydraulic fracturing is distinguishable from conventional methods of oil and gas extraction.¹⁴⁴ The court stated that the rule of capture traditionally assumes that oil and gas originate in subsurface reservoirs or pools, and can freely migrate within that reservoir and across property lines due to changes in pressure.¹⁴⁵

The appellate court highlighted the key differences between the fugitive nature of oil and gas captured through conventional drilling and the forcible removal of the natural gas that is contained in shale rock formations by hydraulic fracturing.¹⁴⁶ The court concluded that because natural gas obtained by hydraulic fracturing is non-migratory in nature and is only extracted through an external force, the rule of capture does not preclude liability for trespass due to hydraulic fracturing.¹⁴⁷ This ultimately suggests that the rule of capture should be limited to projects involving traditional, vertical drilling of permeable

140. *Briggs*, 184 A.3d at 156.

141. *Id.*

142. *Id.* at 158.

143. *Id.*

144. *Id.* at 162.

145. *Id.*

146. *Briggs*, 184 A.3d at 162–63.

147. *Id.*

rock formations such as sandstone and limestone. The court ultimately concluded that:

[H]ydraulic fracturing may constitute an actionable trespass where subsurface fractures, fracturing fluid and proppant cross boundary lines and extend into the subsurface estate of an adjoining property for which the operator does not have a mineral lease, resulting in the extraction of natural gas from beneath the adjoining landowner's property.¹⁴⁸

The court held that further evidence was necessary to demonstrate the actual distance traveled by the subsurface fractures from each wellbore on the defendant's lease, but that the plaintiff's allegations were sufficient to raise an issue as to whether there existed a trespass.¹⁴⁹ The trial court's grant of summary judgment in favor of the defendant was reversed, and the case was remanded to the trial court for further proceedings where the plaintiffs were given the opportunity to further develop their trespass claim.¹⁵⁰

Following this holding, Southwestern Energy petitioned for the Pennsylvania appellate court to allow it to reargue the case, but that petition was denied on June 8, 2018.¹⁵¹ Subsequently, Southwestern Energy appealed to the Pennsylvania Supreme Court and the appeal was granted on November 20, 2018.¹⁵² In a statement by Southwestern, the energy company expressed its satisfaction with the Pennsylvania Supreme Court, stating that the Superior Court's opinion has "potential to negatively impact Pennsylvanians who depend on natural gas for royalty payments, jobs, and affordable energy . . ." and that clarity on this matter is critical for neighboring landowners and energy companies.¹⁵³

Southwestern Energy was correct in stating that clarity regarding the implications of hydraulic fracking on trespass liability is critical for a broader understanding of this facet of property law across the United States. With the country becoming increasingly reliant upon natural gas, it is crucial for state legislators and courts to be clear on how hydraulic fracking is treated under the law. The best solution to

148. *Id.* at 163–64.

149. *Id.* at 164.

150. *Id.*

151. Kevin Randolph, *State Supreme Court to hear rule of capture appeal*, PA. BUS. REPORT (Nov. 27, 2018), <https://pennbizreport.com/news/11449-state-supreme-court-to-hear-rule-of-capture-appeal/>; see also Laura Legere, *Southwestern Energy asks Pa. high court to restore the 'rule of capture' for shale drilling*, PITT. POST-GAZETTE (July 11, 2018), <https://www.post-gazette.com/business/powersource/2018/07/11/Southwestern-Energy-Pa-Supreme-Court-restore-rule-of-capture-shale-drilling/stories/201807100131>.

152. Randolph, *supra* note 151; *Briggs v. Sw. Energy Prod. Co.*, 2018 WL 6069999 (Pa. 2018).

153. Randolph, *supra* note 151.

this issue, however, is one that Southwestern Energy would likely not find favorable. In hearing the *Briggs* appeal, the Pennsylvania Supreme Court should have adopted the reasoning of the Pennsylvania Superior Court and affirmed its decision in favor of the plaintiff landowners. The appellate court's reasoning correctly relied on the key critical fact that hydraulic fracturing and conventional oil drilling are two fundamentally different oil acquisition processes that warrant different treatment by the law. In assessing the issues on appeal, the Pennsylvania Supreme Court should have placed more weight on the case law and empirical data cited by the appellate court, which together provide an approach to the trespass issue that favors the autonomy of property owners and offers landowners a remedy for activity that was conducted on their property without their consent.

3. *Reliance on Coastal Oil's Dissent*

The Pennsylvania appellate court was persuaded by Justice Phil Johnson's dissenting opinion in *Coastal Oil*, which rests on the rationale for the rule of capture and its ultimate inapplicability to natural gas obtained by hydraulic fracturing.¹⁵⁴ In his analysis, Justice Johnson stated that "the rationale for the rule of capture is the 'fugitive nature' of hydrocarbons. They flow to places of lesser pressure and do not respect property lines. The gas at issue here, however, did not migrate to Coastal's well because of naturally occurring pressure changes in the reservoir."¹⁵⁵ If it had migrated to the well on an adjacent property due to naturally occurring pressure changes, then the rule of capture might have applied, precluding liability for trespass.¹⁵⁶ However, because the rock formation at issue was shale rock—a tight, impermeable formation—rather than a more porous material, the gas was incapable of migrating across property lines due to naturally occurring pressure changes. Similarly in *Briggs*, the natural gas located within the subsurface of the plaintiff's property did not migrate to Southwestern Energy's well because of naturally occurring changes in pressure.¹⁵⁷ Rather, the natural gas contained in the shale formation underneath the plaintiff's property was extracted using the application of an external force—fracking fluids and proppant.¹⁵⁸

154. *Briggs v. Sw. Energy Prod. Co.*, 184 A.3d 153, 160 (Pa. Super. Ct. 2018).

155. *Coastal Oil & Gas Corp. v. Garza Energy Trust*, 268 S.W.3d 1, 42 (Tex. 2008).

156. *Id.* at 12 (citing Railroad Comm'n of Texas v. Manziel, 361 S.W.2d 560, 568–569 (Tex. 1962) (where a "salt water injection secondary recovery operation did not constitute a trespass when water *migrated* across property lines")) (emphasis added)).

157. *Briggs*, 184 A.3d at 154.

158. *Id.* at 163.

The appellate court's reliance on Justice Johnson's rationale in *Briggs* was the proper approach to the issue at hand due to the changing nature of technology and differences in oil acquisition methods. The purpose of using unconventional oil and gas acquisition methods is to target hydrocarbons that are not accessible to drillers and consumers through traditional or conventional acquisition technologies and methods.¹⁵⁹ Shale rock—the type of rock formation at issue in *Briggs* and *Coastal Oil*—is an unconventional reservoir, its very low porosity does not allow gas contained within the rock to flow to a well easily.¹⁶⁰ Instead, the unconventional rock reservoirs such as shale, tight gas, and coal bed methane, must be mechanically stimulated to create additional permeability.¹⁶¹ Therefore, unless these rocks are mechanically tapped, using applied force via fracking, the trapped oil or gas is unrecoverable. Conventional reservoirs, on the other hand, are made up of a source rock containing organic material which naturally releases hydrocarbons.¹⁶² These hydrocarbons then rise upward through a second rock, a reservoir rock with very high permeability, and are later trapped by drillers.¹⁶³ In contrast, unconventional reservoirs have the same source rock and reservoir rock, which have very low permeability.¹⁶⁴ Shale rocks are composed of mud, clay minerals, and other organic material, and their formations contain very small pores throughout the reservoir.¹⁶⁵ With the pores in the shale rock being so small, the permeability of this unconventional reservoir is approximately “[nine] orders of magnitude less than that of a conventional sandstone reservoir.”¹⁶⁶ In fact, the Marcellus Shale, the formation at issue in *Briggs*, has porosity of less than ten percent.¹⁶⁷ This means that the ability of liquids or gases to pass through the shale is very low, thereby inhibiting oil and gas production and ultimately affecting profitability. Ultimately, the *Coastal Oil* dissent accurately emphasized that the rationale of the rule of capture rests on the natu-

159. Beth E. Kinne, *The Technology of Oil and Gas Shale Development*, in *BEYOND THE FRACKING WARS* (Beth E. Kinne ed., 2013).

160. U.S. DEP'T OF ENERGY, *supra* note 11; *Briggs*, 184 A.3d at 154; *Coastal Oil*, 268 S.W.3d at 35.

161. *Id.*

162. Tiffany Gultinan, *Inside Shale Gas and Oil Geology*, DRILLINGINFO (Nov. 20, 2014), <https://info.drillinginfo.com/shale-gas-oil-geology/> [<https://web.archive.org/web/20151205042011/https://info.drillinginfo.com/shale-gas-oil-geology/>].

163. *Id.*

164. *Id.*

165. *Id.*

166. *Id.*

167. *History of the Marcellus Shale*, UNIVERSAL ROYALTY CO., <http://www.universalroyaltyco.com/resources/history-of-the-marcellus-shale/> (last visited Jan. 31, 2020).

rally migrating, free flowing, and fugitive nature of hydrocarbons, which is distinctly different from the fracking process utilized to obtain oil from shale formations.

4. *The Pennsylvania Supreme Court's Flawed Approach*

Considered together, the appellate court's opinion in *Briggs*, the dissent by Justice Johnson in *Coastal Oil*, and the early rationales for the rule of capture all support a finding of fracking as trespass. In rejecting the notion that the rule of capture is inapplicable to hydraulic fracturing, the Pennsylvania Supreme Court improperly minimized the differences between conventional and unconventional oil acquisition. To support its holding, the court set forth the following analysis:

[A]ll drilling for subsurface fugacious minerals involves the artificial stimulation of the flow of that substance. The mere act of drilling interferes with nature and stimulates the flow of the minerals toward artificially-created low pressure areas, most notably, the wellbore. This Court has held that the rule of capture applies although the driller uses further artificial means, such as a pump, to enhance production from a source common to it and the plaintiff – so long as no physical invasion of the plaintiff's land occurs.¹⁶⁸

The court subsequently cited an amicus brief in support of Southwestern Energy by Professor Terry Engelder.¹⁶⁹ Professor Engelder stated that “[u]ntil a reservoir is entered by mechanical means (drilling and the fracturing that comes with drilling), the fugacious minerals remain static in both sandstone and shale, a property of conventional reservoirs.”¹⁷⁰ The Pennsylvania Supreme Court used this single statement to reason that since gas molecules in shale formations have the same properties as those in conventional formations, the minerals in both types of formation will “migrate when a migration path comes into existence.”¹⁷¹ The court thus rested its entire holding on the “imprecise” nature of the appellate court's suggestion that shale gas is non-migratory.¹⁷² This, however, is hardly the case. The view that shale formations are formations of low permeability is widespread.¹⁷³ Pro-

168. *Briggs v. Sw. Energy Prod. Co.*, __A.3d__ (2020), 2020 WL 355911, at *11 (Pa. 2020) (citations omitted).

169. *Id.* at *14 n.16; Brief of Amicus Curiae Prof. Terry Engelder at 12, *Briggs v. Sw. Energy Prod. Co.*, 2020 WL 355911 (Pa. 2020) (No. 63 MAP 2018) [hereinafter Brief of Prof. Engelder].

170. *Briggs*, 2020 WL 355911, at *14 n.16; Brief of Prof. Engelder, *supra* note 169.

171. *Briggs*, 2020 WL 355911, at *14 n.16.

172. *Id.*

173. See KEITH B. HALL, ROCKY MOUNTAIN MINERAL LAW FOUND. SPECIAL INST., SINGLE WELL SPACING AND POOLING: STATE SPACING AND JURISDICTION OVER CONSERVATION 12, 12–30 (Nov. 2019); Robert W. Howarth, *Methane emissions and climatic warming risk from hydraulic fracturing and shale gas development: implications for policy*, 3 ENERGY & EMISSION CONTROL TECH. 45, 45 (2015), https://www.eeb.cornell.edu/howarth/publications/f_EECT-

fessor Engelder is correct in stating that minerals will migrate when a migration path comes into existence. Even oil from shale, an unconventional formation, will use its own buoyancy to migrate in the formation if the shale is fractured naturally or broken by faults.¹⁷⁴ However, when the shale is unfractured, the formation is simply too impermeable for the oil and gas to move.¹⁷⁵ Therefore, “[t]o get oil and gas, you have to artificially fracture the shale.”¹⁷⁶ Alternatively, “in conventional natural gas deposits, the natural gas generally flows easily up through wells to the surface.”¹⁷⁷

This is the key point that the Pennsylvania Supreme Court in *Briggs* missed. Acquisition of oil and gas from shale formations necessarily requires the application of fracking technology. This point critically undermines the rationale for the traditional rule of capture and demonstrates that the court is unwilling to thoroughly assess the influence that technological advances such as fracking have on historically rooted legal principles.

Courts have heard cases regarding mineral rights since the late nineteenth century.¹⁷⁸ These cases often point to the rule of capture and courts articulate that the basis for its application is the transient, migratory nature of oil and gas.¹⁷⁹ These cases, however, represent the beginnings of a judicially-curated common law regarding oil and gas rights at a time when hydraulic fracturing was in its infancy. In the late nineteenth century, when these cases were originally being heard, fracking involved lowering gunpowder or other explosives in a hot iron tube into a well.¹⁸⁰ It was not until the 1930s that horizontal drilling technology emerged.¹⁸¹ In 1947 the first well in the United States was “fracked” in a more modern sense, introducing the pairing of hy-

61539-perspectives-on-air-emissions-of-methane-and-climatic-warmin_100815_27470.pdf; MICHAEL STEPHENSON, *SHALE GAS AND FRACKING: THE SCIENCE BEHIND THE CONTROVERSY* 54 (2015).

174. STEPHENSON, *supra* note 173, at 54.

175. *Id.*

176. *Id.* (emphasis added).

177. *Natural Gas Explained*, U.S. ENERGY INFO. ADMIN., <https://www.eia.gov/energyexplained/natural-gas/> (last updated Dec. 6, 2019).

178. *See e.g.*, *Brown v. Vandergrift*, 80 Pa. 142, 148 (Pa. 1875); *Westmoreland & Cambria Nat. Gas Co. v. DeWitt*, 18 A. 724 (Pa. 1889); *Brown v. Spilman*, 155 U.S. 665 (1985).

179. *See Brown*, 80 Pa. at 147–48 (noting that regarding petroleum, the “fugitive and wandering existence within the limits of a particular tract [of land] was uncertain”); *see also Westmoreland*, 18 A. at 725 (stating that as is the case with animals, minerals “have the power and the tendency to escape without volition of the owner”).

180. Milam, *supra* note 21.

181. Paul Stevens, *The ‘Shale Gas Revolution’: Developments and Changes*, CHATHAM HOUSE 2 (Aug. 2012), https://www.chathamhouse.org/sites/default/files/public/Research/Energy%2C%20Environment%20and%20Development/bp0812_stevens.pdf.

draulics and horizontal drilling as applied to shale formations.¹⁸² Other publications indicate that vertical wells were the “norm” until the 1970s.¹⁸³ This development makes clear that the courts that originally shaped the rule of capture’s boundaries were unable to keep up with the unpredictable advancements of fracking technologies. These courts would not have been able to predict that invasive forms of oil acquisition other than conventional drilling would be utilized in the future.

The rationale for the rule of capture—the fugitive nature of oil and gas—simply does not apply to shale formations because, as the *Briggs* Superior Court articulates in its analysis, shale rock formations do not contain oil and gas that are fugitive in nature. Shale formations are fundamentally distinct from sandstone or limestone formations and should not be treated in the same manner. With hydraulic fracturing growing increasingly popular and profitable among energy companies, it is imperative that the law keep up with this fast-changing technology, which will only continue to develop and create further complications when it comes to adjudication of landowners’ claims. It is not sound for courts to continue relying on a rule whose rationales originated over a century ago to resolve issues that emerged in the past three decades. Scientists, geologists, and environmental experts are still learning more about the mechanical and environmental effects of fracking on communities and will continue to do so as technology further advances.¹⁸⁴

In an industry as profitable as oil and gas, we should not expect the technological advances and research to slow. Oil and gas companies will continue to pursue their financial interests and attempt to deal with state legislatures in communities where oil and gas are fruitful. Issues regarding property law and trespass will grow more complicated, and courts and legislatures will have to form a baseline of certainty from which to build and expand. In order for courts to deal with changing technology, they must adopt rationales that emphasize these changes rather than rationales rooted in an inapplicable past. Technological advances and industry improvements were recognized in the Pennsylvania Superior Court’s modern approach to the issues in

182. *Id.*; Morton, *supra* note 25, at 87.

183. Kristine A. Uhlman et al., *Hydraulic Fracturing and your Private Water Well*, TEXAS A&M AGRILIFE EXTENSION 1, http://twon.tamu.edu/media/619617/sc-012__fracking-cxd_pta-3may1.pdf (last visited Jan. 31, 2020).

184. E. Claire Botner et al., *Monitoring concentration and isotopic composition of methane in groundwater in the Utica Shale hydraulic fracturing region of Ohio*, ENVTL. MONITORING & ASSESSMENT (May 2018).

Briggs and should be adopted by subsequent courts that assess this issue.

B. *The Illinois HFRA and Proposal for Illinois*

The *Briggs* outcome is important to locales beyond the forum state of Pennsylvania because courts in states with under-developed fracking laws will look both to other jurisdictions' approaches when disputes arise, as well as state legislation on fracking. It is problematic when states have both underdeveloped fracking laws and no court precedent on fracking issues, as courts are left with little guidance on how to adjudicate certain disputes.

This is the case in Illinois, where the state court has yet to address claims raised under Illinois' fracking statute, HFRA. This Section will argue that the Pennsylvania appellate court's approach in *Briggs* should be adopted in Illinois because the current state of Illinois' fracking law does not offer adequate property-based protections. Therefore, to bring fracking in line with the approach taken in *Briggs*, the agency responsible for the HFRA must amend the statute to (1) include more substantial provisions regarding interaction between officials at both the state and local level, and (2) specifically identify dimensions of oil and gas policy.

1. *HFRA Overview*

The HFRA is a law that was passed in May 2013 for the purpose of regulating high-volume, horizontal fracking operations in Illinois.¹⁸⁵ The HFRA is largely considered to be one of the most restrictive fracking laws in the country.¹⁸⁶ However, the "restrictive" nature of the HFRA's language is limited to restrictions on water pollution, drilling safeguards, and transparency assurance between the Illinois Department of Natural Resources and landowners.¹⁸⁷ While the HFRA does address important environmental and safety concerns, it seems to punt the property concerns of the small landowner. The HFRA's language provides no clarity regarding the regulation of mineral rights and fails to address property concerns in a way that would be useful for courts in analyzing the issue of fracking as trespass. The

185. ILL. DEP'T OF NAT. RES., *Hydraulic Fracturing Regulatory Act*, <https://www.dnr.illinois.gov/oilandgas/pages/hydraulicfracturingregularyact.aspx> (last visited Jan. 31, 2020); John Abendroth, *Fracking in Illinois: Implementation of the Hydraulic Fracturing Regulatory Act and Local Government Regulatory Authority*, 35 N. ILL. U. L. REV. 575, 579 (2015).

186. Abendroth, *supra* note 185, at 579; see also Jennifer Cassel, *Illinois's Hydraulic Fracturing Regulatory Act: A Successful Compromise*, 49 J. MARSHALL L. REV. 315, 316 (2015).

187. *Governor Quinn Signs Nation's Strongest Regulations on Hydraulic Fracturing*, ILLINOIS .GOV (June 17, 2013), <https://www2.illinois.gov/pages/news-item.aspx?ReleaseID=11278>.

HFRA has not been implemented in any pending legal action in Illinois, nor has the HFRA's "permit system" for fracking operations been utilized by any oil companies.¹⁸⁸ The appellate opinion in *Briggs* explicitly outlines that the court's holding rested in part on its determination that landowners cannot adequately protect their interests by drilling on their own wells to prevent drainage to an adjoining property.¹⁸⁹ The court stated:

Further, we are not persuaded by the *Coastal Oil* Court's rationale that a landowner can adequately protect his interests by drilling his own well to prevent drainage to an adjoining property. Hydraulic fracturing is a costly and highly specialized endeavor, and the traditional recourse to "go and do likewise" is not necessarily readily available for an average landowner.¹⁹⁰

This reliance on the protections afforded to private landowners is an approach that should be adopted in Illinois's fracking legislation. Due to the HFRA's inadequate protection for small landowners and the lack of precedent regarding fracking and trespass in Illinois, the HFRA should be amended in a way that legislatively supports the idea of adequate property protection for small landowners in the face of changing technology.

2. Increase Intergovernmental Interaction

State and local governments can work together to reduce conflict and promote community interests when it comes to regulating shale gas development.¹⁹¹ One approach to creating effective legislation is to increase intergovernmental deliberative capacity.¹⁹² The HFRA currently contains one provision that address intergovernmental cooperation.¹⁹³ However, this provision, while labeled "intergovernmen-

188. Alex Ruppenthal, *Lawmakers Push for Transparency in Illinois Fracking Law*, WTTW NEWS (Feb. 27, 2018), <https://news.wttw.com/2018/02/27/lawmakers-push-transparency-illinois-fracking-law>; see also Alex Ruppenthal, *Fracking Permit is First to Be Approved in Illinois*, WTTW NEWS (Sept. 1, 2017), <https://news.wttw.com/2017/09/01/fracking-permit-first-be-approved-illinois> (stating that Woolsey Operating Co. was the first company in Illinois to be issued a fracking permit. The company subsequently withdrew its permit citing market conditions and Illinois' "burdensome and costly regulations").

189. *Briggs v. Sw. Energy Prod. Co.*, 184 A.3d 153, 163 (Pa. Super. Ct. 2018) (This finding supports the discussion outlined in the dissent in *Coastal Oil & Gas Corp. v. Garza Energy Trust*, 268 S.W.3d 1, 14 (Tex. 2008).).

190. *Id.* (internal citations omitted).

191. See generally JONATHAN M. FISK, *THE FRACKING DEBATE: INTERGOVERNMENTAL POLITICS OF THE OIL AND GAS RENAISSANCE* (2d ed. 2017).

192. *Id.* at 205.

193. 225 ILL. COMP. STAT. 732/1-10 (2013) ("The Department shall have the primary authority to administer the provisions of this Act. The Illinois State Geological Survey, the Illinois State Water Survey, the Office of the State Fire Marshal, and the Agency shall be advised of high

tal,” ignores a key player in the regulation of fracking: local government. To promote the idea of protecting small landowners that the appellate opinion in *Briggs* supported, Illinois fracking legislation needs to contain a provision that explicitly demonstrates an intent for the government to interact at both the state and local levels. In his book, Fisk discusses a research study on state and local government interactions which concluded that when “state lawmakers had previous experience with . . . local governments, they were typically more receptive to local interests.”¹⁹⁴ Instead of using the current language that fully defers to the Illinois Department of Natural Resources and the Illinois Environmental Protection Agency—both state actors—the HFRA should be amended to include language that integrates input from local governments at the outset of the operation. Rather than limiting the ability to “lend assistance” to the Illinois State Geological Survey, the Illinois State Water Survey, the Office of the State Fire Marshal, and the Illinois Environmental Protection Agency, the inter-governmental cooperation provision should provide for the ability of local government positions to have input and lend assistance regarding the issuance of fracking permits.¹⁹⁵ For example, such a provision could provide that in addition to the named state agencies:

The mayor, city manager, and planning director shall be advised on fracturing permit applications received by the department and lend assistance as required by the provisions of this Act.

This will provide a first line of protection for landowners, as officials at the local level can advocate for the particular interests of the city’s landowners, which may include property interests.¹⁹⁶

3. *Articulating Policy Dimensions*

In addition to engaging officials at the local level, another way for Illinois legislators to further landowner protection is to identify oil and natural gas policy dimensions beyond environmental concerns. Another tool that can be employed when adopting legislation regarding oil and gas is the engagement of local stakeholders.¹⁹⁷ This would

volume horizontal hydraulic fracturing permit applications received by the Department and lend assistance as required by the provisions of this Act.”).

194. FISK, *supra* note 191, at 202.

195. 225 ILL. COMP. STAT. 732/1-10 (2013).

196. See Alex Ruppenthal, *Fracking Transparency Bill Moves Forward in Illinois Senate*, WTTW NEWS (Apr. 16, 2018), <https://news.wttw.com/2018/04/16/fracking-transparency-bill-moves-forward-illinois-senate> (“It is imperative that we protect the citizens of this state from big oil industries looking to make a profit at the expense of Illinoisans’ property rights.”).

197. FISK, *supra* note 191, at 205.

include adopting legislation that highlights the ability for citizens and industry representatives to negotiate together.¹⁹⁸

The HFRA entirely fails to address any policy concerns or issues regarding property ownership or disputes as a result of fracking, instead shifting the sole focus to environmental concerns. This leaves both the small landowner and the courts with no guidance as to how the law in Illinois would treat claims of trespass in the context of fracking operations. Illinois should therefore implement a requirement that local citizens pursue voluntary agreements with oil companies, where oil companies agree to certain standards or property boundaries that are negotiated by the company and landowner.¹⁹⁹ Requiring citizens to negotiate directly with oil companies in areas where fracking is planned would give both parties the opportunity to air out property concerns prior to the commencement of the fracking operation. This will allow courts to look both to the agreement for property-specific guidance, and to the legislation itself, which promotes the idea of property protection by landowners—a premise in line with the Pennsylvania appellate court’s approach in *Briggs*.

III. IMPACT

Legislative and judicial interpretation in line with the appellate court’s reasoning in *Briggs* would ultimately benefit landowners by preserving their autonomy over their land. The issue of whether hydraulic fracturing constitutes a trespass has widespread implications for the oil and gas industry as a whole. Broadly, if courts align with the reasoning set forth by *Young/Butcher* and the appellate court in *Briggs*, energy companies may be less likely to engage in fracking in fear of being held liable for trespass and the high amount of damages that may need to be paid to a plaintiff should a lawsuit ensue. Damages typically are calculated based on the value of the gas drained, and, if high enough, these amounts could inhibit energy companies from attempting to engage in subsurface fracturing in the first place.²⁰⁰

If energy companies began to refrain from utilizing fracking as a main oil acquisition method, the country’s economy would almost cer-

198. *Id.*

199. This approach is adapted from Fisk, *supra* note 191, at 206, which suggests that parties engage in deliberative efforts between local governments and industry, where industry operators agree to standards more stringent than what the state requires.

200. *Coastal Oil & Gas Corp. v. Garza Energy Trust*, 268 S.W.3d 1, 20 (Tex. 2008).

tainly be impacted.²⁰¹ The practice of hydraulic fracturing has had a massive impact on revenue and jobs. According to a study conducted by the U.S. Chamber of Commerce's 21st Century Energy Institute, the extraction of unconventional shale oil and gas through horizontal hydraulic fracturing has created a job boom not only in states whose subsurfaces contain major shale plays, but also in states that do not contain shale deposits.²⁰² Further, recent proposals to ban fracking have led to further research on fracking's impact on employment—with a 2019 study by the Global Energy Institute showing that “a ban on fracking would eliminate 19 million jobs between 2021 and 2025.”²⁰³ The fracking industry has produced direct job opportunities for workers, such as construction, extraction, metal fabrication, and truck transport.²⁰⁴ Indirect job opportunities have also been made available through the development of fracking, such as “financial and administrative services and real estate linked to oil and gas extraction.”²⁰⁵ This establishes that it is not only massive capitalist oil companies who rely on fracking, but that big impacts on the industry—such as an abrupt decrease in fracking operations—can have an impact on the ordinary real estate worker. It is therefore critical for courts to clarify the legal implications on fracking, which allows legislatures to work with state constituents and property owners in crafting laws. These laws can benefit both those who work in the fracking industry, as well as property owners who rely on royalties from energy companies who engage in lawful agreements.

In Illinois specifically, 38,652 jobs have been created either due to fracking directly, or indirectly from other producing states, such as Ohio.²⁰⁶ A newly-utilized shale rock play may therefore have the power to greatly impact the economy of the state of Illinois, making the clarity regarding trespass laws critical. Industry groups have recently indicated that Illinois is “poised for a possibly significant growth in fracking for natural gas in the New Albany shale.”²⁰⁷ The New Albany shale is a shale rock formation located in the Illinois Ba-

201. This Comment does not purport to engage in a discussion of whether or not fracking *should* be conducted in Illinois.

202. Kari Lydersen, *U.S. Chamber's fracking job boom: Behind the numbers*, GLOB. ENERGY INST. (Jan. 10, 2013), <https://www.globalenergyinstitute.org/us-chamber's-fracking-job-boom-behind-numbers>.

203. *Press Release: New Chamber Analysis Quantifies Economic Risks of Proposed Fracking Ban*, GLOB. ENERGY INST. (Dec. 19, 2019), <https://www.globalenergyinstitute.org/new-chamber-analysis-quantifies-economic-risks-proposed-fracking-ban>.

204. Lydersen, *supra* note 202.

205. *Id.*

206. *Id.*

207. *Id.*

sin, an oval depression stretching approximately 60,000 miles of southern Illinois, southwest Indiana, and northwest Kentucky.²⁰⁸ The Illinois Basin has produced over 4.2 billion barrels of oil as of 2017, with most of this oil being sourced from the New Albany shale, and research has indicated that this may only be the beginning for oil production from the New Albany shale formation.²⁰⁹ This ultimately means that the New Albany shale and Illinois Basin may have beneficial economic impacts on the state and Midwest region.²¹⁰ However, until Illinois clarifies the language it employs in the HFRA, oil and gas companies will continue to refrain from utilizing Illinois as a fracking site due to the complicated and inefficient regulations imposed by the Illinois legislature. Through enactment of the HFRA, it is clear that Illinois intends for fracking to exist as an industry in the state. To truly provide benefits to both oil companies and landowners, legislation must be enacted that requires clear agreement, cooperation, and discussion between parties at the state, local, and industrial levels.

CONCLUSION

Fracking's place in the American economy only continues to grow, and laws across the country are struggling to catch up. Courts across the country have come to a crossroads regarding the treatment of hydraulic fracturing as an actionable trespass, and both opposing paths have recently been championed in the state judicial systems, namely, in Pennsylvania. Some courts subscribe to the view set forth by the Pennsylvania appellate court in *Briggs*: Due to the unnatural and mechanical force utilized in the acquisition process, certain fracking operations should constitute trespass. Other courts, however, take the opposite approach and follow the line of reasoning set forth by the Pennsylvania Supreme Court in *Briggs*: Fracking should be treated as an operation entirely precluded by the rule of capture. Ultimately, the rationale for the rule of capture—the fugitive nature of oil and gas—simply does not apply to shale formations. Shale rock formations do not contain oil and gas that are fugitive in nature. Further, small landowners cannot adequately protect themselves by simply “doing likewise” and drilling on their own land themselves, due to lack of

208. Schaefer, *supra* note 97.

209. Charlie Passut, *Illinois Approves First Fracking Permit for New Albany Shale*, NGI's SHALE DAILY (Sept. 6, 2017), <https://www.naturalgasintel.com/articles/111643-illinois-approves-first-fracking-permit-for-grassy-creek-shale>; *see also* Schaefer, *supra* note 97 (A study conducted in 2002 predicts that the New Albany shale is deep enough to generate up to 300 billion barrels of oil.).

210. Schaefer, *supra* note 97.

knowledge, expertise, and financial means. This key reasoning should push Illinois lawmakers to amend the Illinois HFRA to provide greater protection for the landowners' autonomy over their property.

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