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North Carolina's Dueling Property Rights Interests: Water and Hydraulic Fracturing

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NORTH CAROLINA'S DUELING PROPERTY RIGHTS INTERESTS: WATER AND HYDRAULIC FRACTURING

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ABSTRACT

This Article examines the numerous North Carolina specific legal doctrinal and statutory regimes impacted by hydraulic fracking[2] operations in the state. It seeks to assess the state-specific legal conflicts present between individual rights to frack shale oil, previously settled water rights, and liability issues. Additionally, the Article provides a bedrock synopsis of present legal doctrine that informs resolution of property rights conflicts between fracking rights and water protection stakeholders. The Article first establishes the technology and history behind hydraulic fracturing in the U.S. It then presents an overview of common law property rights that can influence legal decision makers, followed by an assessment of both North Carolina specific and federal statutes that impact the various property stakeholders.

1. Ms. Rupa Russe is a December 2018 graduate of North Carolina Central School of Law and served as Staff Editor of the NCCU Environmental Law Review (2018-2019).

2. Hydraulic fracturing is one step in a fracking mining process; this step is also known as 'hydrofracking'. *See* https://www.glossary.oilfield.slb.com/Terms/p/play.aspx (accessed Oct. 19, 2019).

INTRODUCTION

As water flows, so does the law. Legal doctrine can be established from the bottom up, or the top down. From the bottom up, the resolution of specific local stakeholder conflicts can result in changes to settled statewide legal doctrines. Conversely, settled legal doctrine can restrict a case-specific solution in a local stakeholder conflict. In real property law, absent regulations enacted by a governmental entity, a stakeholder's vested rights protect their interest in the control and relative unrestricted access to the resources located on, or within shallow depths, of their real property. Such vested rights include: access to water discoverable on one's real property[3]; and mining rights under one's real property.

In North Carolina, two doctrines govern the vesting of rights to resources on real property, riparian and statutorily defined mining rights. Riparian rights have long governed the vesting of water rights to a real property owner.[4] The riparian doctrine is reliant on an age-old expectation that an abundance of water exists in North Carolina.[5] Riparian water laws vest water rights to a property owner once the owner has established access, and use of, a naturally occurring water source on their real property.[6]

Mining rights became statutorily vested with North Carolina's Mining Act of 1971. This Mining Rights Act vested a property owner's rights to mine natural resources on their real property.[7] Since this Act, mining has been considered a property right that is "a basic and essential activity making an important contribution to the economic well-being of North Carolina and the nation."[8] The Mining Act of 1971 also recognized the need for "the greatest practical degree of protection and restoration" by the mining industry[9];

3. David G. Heeter, *Zoning Estoppel: Application of the Principles of Equitable Estoppel and Vested Rights to Zoning Disputes*, 1971 Urb. L. Ann. 63, 65 (1971).

4. Kimberly C. Simmons, Strong's North Carolina Index, 4th, 29A N.C. Index 4th Waters and Watercourses § 24, (Westlaw, February 2019 update) ("North Carolina adheres to the 'American Rule' of water use where the landowner has the right only to a reasonable and beneficial use of the waters upon the land or its percolations or to some useful purpose connected with his occupation and enjoyment." (N.C. Gen .Stat. §§ 143–211(a))).

5. Henry E. Smith, *Governing Water: The Semicommons of Fluid Property Rights*, 50 Ariz. L. Rev. 445, 478 (2008).

6. Sandra B. Zellmer, *Unbundling Property in Water,* 59 Ala. L. Rev. 679, 693 (2008) ("In the eastern United States, the public trust doctrine underlies the law of riparianism, where landowners adjacent to a natural watercourse possess usufructuary rights to water that flows through or past their land, but are liable for monetary damages or injunctive relief if they deplete the natural flow in a way that harms other users.").

7. "minerals, ores, or other solid matter", N.C. Gen. Stat. § 74-49 (2019).

8. N.C. Gen. Stat. §§ 74-46,47 (2019).

9. N.C. Gen. Stat. § 74-48 (2019).

however, it does not resolve the legal property rights conflicts between mining pollution and the common law doctrines protecting freshwater access.[10]

These two rights are squarely in conflict in North Carolina. Technological advancements in the hydraulic fracturing industry have created pros and cons regarding the conflicted vested property rights. Advancements in technology can create inspired solutions for more efficient resource harvesting. Yet, those same advancements can also create disruption to settled real property law by opening access to resource harvesting in ways never before envisioned or available.

The sudden introduction of technological advancements in a field can result in acute first impression legal conflicts that leave no settled remedial doctrine available to the decision maker. This results in an upending of previously calibrated law; an upending that has a profound impact on the very functionality of established legal doctrine. Dramatic developments in resource harvest technology exacerbate existing North Carolina legal doctrinal vulnerabilities. Hydraulic fracturing operations present a significant challenge to the delicate equilibrium between conflicting real property rights holders in the state.

NORTH CAROLINA'S GOVERNING STRUCTURE

Nationwide, fracking operations are causing much debate. A state's governing structure, Home Rule or Dillon's Rule, determines which governing body has regulatory power over the industry. Home Rule states allow for county by county determinations about the legality of fracking; while in Dillon's Rule states, the state government makes the determination statewide. North Carolina is governed under a structure similar to the Dillon's Rule, wherein all localities in the state are empowered to make decisions as delegated by the state's General Assembly via specific statutes[11].

A Dillon's Rule-esque approach to governance cements a top-down structure for addressing legal conflicts in a state. Local municipalities in such a state, serve as enforcers of the legislative body's statewide goals and policies.[12] A legislative body's inclination to regulate a natural resource-based industry indicates how the body views the natural resources and the rights of a state's population to access and harness those resources. Directives, or lack

10. N.C. Gen. Stat. §§ 74-50, 54, 55, 56 (2019).

11. The Dillon's Rule is a "broad delegation of authority" by the State's legislative body; however, in North Carolina, the General Assembly authorizes local authority on a statute by statute basis. https://canons.sog.unc.edu/is-north-carolina-a-dillons-rule-state/, (last accessed October 14, 2019).

12. "It is the policy of the General Assembly that the counties and cities of this State should have adequate authority to exercise the powers, rights, duties, functions, privileges, and immunities conferred upon them by law", N.C. Gen. Stat. § 160A-4.

thereof, in a trickle-down governance state, such as North Carolina, carry extensive implications for how localities and real property owners handle their individual legal responsibilities in the harvesting and safeguarding of natural resources.

HYDRAULIC FRACTURING

Fracturing has been used for the extraction of oil and gas from shale deposits since 1949.[13] Since that time, fracturing had been constrained to vertical mining shafts, limiting the industry's ability to access difficult to reach plays of oil and natural gas.[14] In recent years, advancements in mining technology have allowed for a new form of mining, horizontal fracturing. Horizontal fracturing technology allows the oil industry to drill horizontal mines deep into the subsurface of the earth.[15] Horizontal fracking is particularly useful when harvesting oil and natural gas that is trapped in smaller microfractures between compacted layers of shale.[16] Hydraulic fracturing involves the injection of a liquid mixture that usually contains proprietary combinations of chemicals, water, and sand that assist in the efficient extraction of oil from the deposits.[17] In horizontal hydraulic fracturing, a liquid mixture is injected into the drilled shafts at an angle and under high pressure.[18] Pressurized injection of the fluid mixture causes fractures which are then propped open by the fluid mixture sand. This creates pathways that allow the trapped oil or natural gas to be accessed for extraction.[19]

Hydraulic fracturing creates two primary safety concerns and a judicial concern. The first is due to the geology of earth being a series of compacted

13. https://aoghs.org/technology/hydraulic-fracturing/, (last accessed Oct. 15, 2019).

14. *See* Schlumberger, *Oilfield Glossary*, https://www.glossary.oilfield.slb.com/Terms/p/play.aspx (accessed September 14, 2018) ("An area in which hydrocarbon accumulations or prospects of a given type occur.").

15. The terms "fracking" and "hydraulic fracturing" denote the gas extraction process known more technically as high volume "slickwater" horizontal hydraulic fracturing. The process involves drilling a vertical well thousands of feet into the ground until reaching natural gas–rich shale rock, at which point the well is drilled horizontally to stay within the shale rock formation (a horizontal layer). For a more comprehensive background on the process, *see generally* George E. King, *Hydraulic Fracturing 101: What Every Representative, Environmentalist, Regulator, Reporter, Investor, University Researcher, Neighbor and Engineer Should Know About Estimating Frac Risk and Improving Frac Performance in Unconventional Gas and Oil Wells,* George E. King, (This paper was prepared for presentation at the SPE Hydraulic Fracturing Technology Conference held in The Woodlands, Texas, USA, 6–8 February 2012); Soc'y of Petrol. Eng'rs, Hydraulic Fracturing 101 (2012); *see also* U.S. Gov't Accountability Office, GAO-12-732, Oil and Gas: Information On Shale Resources, Development, and Environmental and Public Health Risks 6–13 (2012).

16. Terry W. Roberson, *Environmental Concerns of Hydraulically Fracturing A Natural Gas Well*, 32 Utah Env't. L. Rev. 67, 75 (2012).

17. *Id*.

18. *Id*.

19. *Id*.

layers with occasional stabilized pockets of air, gas or liquid. The intentional disruption of those layers can result in destabilization of subsequent layers that can cause earthquakes underground or sinkholes on the surface of the earth.[20] The second concern is, in order to withdraw the full potential of a shale oil reserve from a play, chemicals are introduced in order to better assist in the efficient extraction of the resource.[21] This second challenge creates a reasonable concern that groundwater could be contaminated by the chemicals used in the fluid mixture injected into the shale deposits, due to the mixture's travelling via the uncontrolled cracks into layers where aquifers lie.[22] This pollution could occur at either a mine injection site or, via cracks along the mining shaft casing.[23] Both these safety concerns raise questions about potential harms to real property owners.[24]

The judicial concern is the disruption of previously settled legal doctrines, such as notice requirements, by horizontal fracking operations. Horizontal fracking gives mining companies freedoms that do not comport with the traditional metes and bounds of property law.[25] The industry's use of horizontal drilling technology miles below Earth's surface raises legal questions about notice. The potential of the technology reaching real property not adjacent to the injection or extraction site, without providing visual surface-impact notice to property owners is significant. This presents legal questions including who has the right to subterranean reserves; who is liable for immediate or delayed injuries resulting from hydraulic fracking; and what are the standards for remedying injured parties?[26]

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20. *See* John Brodylo, et al., *The Stability of Fault Systems in the South Shore of the St. Lawrence Lowlands of Quebec: Implications for Shale Gas Development*, Can. Unconventional Resources Conf.(2011).

21. Roberson, *supra* note 15 at 75-76.

22. *Id*.

23. *Id*.

24. These harms could include: liability by landlords, of property with well water, to renters for unsafe living conditions; damages to property due to earthquakes; and personal injuries from contaminated well water or injuries sustained in an earthquake or sinkhole.

25. Nicholas S. Cortese, *Drawing Lines in the Shale: Local Zoning Bans, the Takings Clause, and the Clash to Come If New York State Promulgates Hydrofracking Regulations*, 64 Syracuse L. Rev. 489, 500 (2014); (Additionally, the industry's direct impact on contract law and the development of regulatory standards necessitate a review of the legal feilds balancing of interests standards), *see* Rural Advancement Foundation International-USA, *Issue Area: Landowner Rights & Fracking,* https://rafiusa.org/issues/landowner-rights-and-fracking/ (explanation of "forced pooling"); Local News, Fracking: *Many inN.C.don't control rights to gas under their land,* https://www.wral.com/fracking-many-in-nc-don-t-control-rights-to-gas-under-their-land/13660362/ ("split estates"), (accessed September 15, 2018). Metes and bounds are defined as, "the boundaries or limits of a tract of land especially as described by reference to lines and distances between points on the land", https://www.merriam-webster.com/legal/metes%20and%20bounds (*accessed* October 14, 2019).

26. "The chemicals used in fracking fluid can be quite hazardous, including boric acid, sodium chloride and acetic acid." Initiafy,https://www.initiafy.com/blog/fracking-in-oil-and-gas-industry/, (accessed September 14, 2018).

This article evaluates the laws applicable in North Carolina that are determinative of the aforementioned questions. Part I assesses the history of fracking, industry interest in North Carolina, environmental concerns, and technological advancements. Part II assesses established rights and common law property conflicts with legal doctrine. Part III assesses the state statutory and federal constitutional protections. Part IV addresses fracking operation influence on property insurance and business liability.

I. HYDRAULIC FRACTURING IN NORTH CAROLINA

A. History and Technology: Fracking

Industry interest in hydraulic fracturing mining for oil and natural gas is a recent development in North Carolina. The state has no history of large-scale oil and gas mining, and the "legislative framework for regulating drilling was, until recently, based on laws passed in the 1940s."[27] A rapidly emerging industry can create an unstable market and undermine settled regulatory schemes. Rapidly emerging industries often result in quickly formed policies that have the unintended effect of upsetting the equilibrium of settled legal doctrines. "The rapid expansion in the scope, intensity and geographic range of shale gas development in recent years dictates that…[m]any states regulate shale gas development primarily or exclusively with regulations written before unconventional drilling became common."[28]

When a new technology is introduced into the market and no assessment of existing legal doctrines occurs, one of two things can happen. First, existing legal doctrine can create an inhospitable environment for new technology, stamping out innovation. Conversely, the second possibility is that new technology can stampede settled legal rights, thus resulting in property conflicts that not only have economic impact, but also pose safety concerns. In North Carolina, neither the legislature, nor the judicial system have addressed the conflicting property interests between hydraulic fracturing operations and riparian rights to groundwater.

There are conflicting government assessments of the viability of an oil and gas industry in North Carolina. In 2008, the U.S. Geological Survey, an agency of the Department of the Interior, released a report that, for the first time, revealed the presence of hydrocarbon source rocks in two basins

27. Adrian Down, et al., *Shale Gas Extraction in North Carolina: Research Recommendations and Public Health Implications*. 121 Env't. Health Perspect. A292, A293 (2013), https://ehp.niehs.nih.gov/doi/pdf/10.1289/ehp.1307402.

28. Nathan Richardson et al., "*The State of State Shale Gas Regulation.*" Resources For The Future, (2013), http://www.oilandgasbmps.org/docs/GEN195-RFF-Rpt-StateofStateRegs_Report.pdf, (accessed September 14, 2018).

located in North Carolina.[29] Subsequent reports indicated that the total quantity of natural gas present in the North Carolina plays would meet approximately a total of five years of the state's domestic natural gas consumption needs.[30] However, the United States Energy Information Agency, an agency of the United States Department of Energy, reports that North Carolina has no natural gas wells that are producing, and there are no proven underground reserves that "are sufficient for production."[31]

B. Geological and Environmental Influences

North Carolina's western Piedmont and Blue Ridge geological substrata are composed of "thick sequences of regolith (surficial aquifer) above [a] fractured bedrock" aquifer.[32] These aquifers have solution cavities that can "act as channels for the transmission of sewage, surface contaminants, or other types of pollution."[33] The surficial aquifer is the most used aquifer in the state for serving individual wells, "[t]he surficial aquifer is the shallowest and most susceptible to contamination from septic tank systems and other pollution sources."[34] The wells that draw from these aquifers are miles apart from each other.[35] The State's geological substrata allows any type of leaking mine shaft, injection site, or disposal well to potentially run through pathways into cavities that house potable groundwater.[36] Because water is a naturally precious resource that is pivotal to sustaining life, it is difficult to calculate damages for a contamination injury such as this.[37]

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29. J. C. Reid & R. C. Milic, *Hydrocarbon Source Rocks in the Deep River and Dan River Triassic Basins, North Carolina: U.S. Geological Survey Open-File Report 2008-1108* (2008). The United States Geological Survey is a scientific agency of the United States government. https://www.usgs.gov/ , (accessed October 16, 2019).

30. *See* Marti Maguire, *North Carolina Signs Law Paving Way for Fracking*, https://www.reuters.com/article/us-usa-northcarolina-fracking-idUSKBN0EF1VC20140604 (83 million barrels estimated) (accessed September 14, 2018).

31. *See* https://www.eia.gov/state/analysis.php?sid=NC, (accessed September 14, 2018).

32. *See* http://geodata.lib.ncsu.edu/stategov/gws/2010/Aquifer%20Characteristics.htm *(accessed Oct. 19, 2019).*
("In the Piedmont and Blue Ridge Provinces of North Carolina, two major aquifer systems exist, and usually interact with one another. The surficial materials or regolith of these provinces forms the unconfined aquifer and the fractured rock beneath, is the unconfined to semi-confined bedrock aquifer. Usually the surficial aquifer feeds the fractures in the bedrock aquifer.")

33. *Supra* note 43.

34. *Supra* note 44.

35. *Supra* note 45 ("In large portions of these aquifers, sands and limestone materials are so well connected that withdrawals cause pressure reductions many miles from the pumping center [. . . T]he negative outcome is that pumping at one well affects water levels in wells for miles around.").

36. *Supra* note 46 ("The surficial aquifer is the shallowest and most susceptible to contamination from septic tank systems and other pollution sources.").

37. Kjellstrom, T., *Disease Control Priorities in Developing Countries.* Oxford U. Press (Jamison DT, et al., eds., 2 ed. 2006) ("Direct contamination can also occur from badly designed hazardous waste sites or from industrial sites.").

The potential interconnectivity of the well-supplying cavities makes preemptive identification of the cause of damage impracticable, until after the damage is done. Establishing a correlation between injury and causation in a groundwater contamination claim becomes exceedingly difficult as a plaintiff must "offer more than evidence of the contamination of their water and a release of contaminants in the area."[38] To succeed, the Plaintiff must be able to show a causal relationship between a defendant's pollution and the contaminants found in the plaintiff's water supply.[39] Unless a plausible connection is made, liability cannot be established.[40]

C. Groundwater Contamination Concerns

There is considerable concern that failing to require disclosure of the chemicals used in hydraulic fracturing operations would increase the likelihood of damages suffered by unaware stakeholders.[41] The potential impacted stakeholders are those whose water rights give them *reasonable use*, via wells or springs that are present on their real property.[42] Should water become contaminated by chemicals used in hydraulic fracturing operations, the lack of notice creates a damages problem that, depending on the chemicals used, poses a threat to both life and property interests.

The State, as arbiter of the public trust, has the duty to prevent damage to resources of value to the general public. The right to clean water would be permanently impacted by chemical contamination of the water aquifers located in the subterranean layers of the state. Unlike a property owner who is stuck using the slow-churning judicial system to prove that a threat warrants interference with another private landowner's rights, the state can use its right to eminent domain to gain immediate control of a polluting operations. However, regulatory guidance would best resolve the potential for conflict. The State's regulations can assist in preventing injury, or it could prevent the State from having to use eminent domain powers in order to provide remedy to the general public.

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38. David B. Spence, *Federalism, Regulatory Lags, and the Political Economy of Energy Production*, 161 U. PA. L. REV. 431, 446 (2013) ("[A] fracking operation may nevertheless cause groundwater contamination in any of three ways. First, if the natural gas well is poorly constructed, methane or fracturing fluids might leak from the well while passing through groundwater tables at shallow depths. Second, if fracking fluid constituents are improperly handled on the surface, they may be spilled and seep into groundwater tables. Third, the disposal of wastewater or other wastes on site, if permitted by law or the lease, can result in groundwater contamination if and when lagoons or other disposal facilities leak.") https://www.pennlawreview.com/print/Spence-161-U-Pa-L-Rev-431.pdf..

39. *Ellington v. Hester*, 127 N.C. App. 172, 177, 487 S.E.2d 843, 846 (1997).

40. *Id*.

41. *Infra* note 47.

42. *Supra* note 45.

D. Industry Interest

Despite the projected limited reserves, the 2008 U.S.Geological Survey report initiated a strong push from investor/speculator entities in the oil and gas industry to pursue fracking of these reserves in North Carolina.[43] Property owners with direct access to the plays identified in the 2008 U.S. Geological Survey report joined intrastate oil industry entities to lobby the N.C. General Assembly in order to pass legislation that would remove barriers to hydraulic fracturing operations in North Carolina.[44] Starting in 2012, North Carolina enacted multiple laws in support of hydraulic fracturing in the state. The Clean Energy and Economic Security Act authorized hydraulic fracturing in North Carolina[45]; statutes were passed that lifted the state's[46] previous ban on horizontal fracturing[47]; and legislation was enacted to prevent the disclosure of the chemicals used in the hydraulic fracturing process.[48] The sum of these laws enabled a new technologically advanced mining practice in the state but failed to address the conflicts the new technology creates with pre-existing legal doctrine, specifically those protecting groundwater rights.

The long-term impact of hydraulic fracturing by the oil and gas industry in North Carolina requires the state's legislature and judiciary to assess and balance the stakeholder interests and determine risk-benefit of allowing such operations.[49] Upending settled legal doctrines that protect the rights of owners to critical groundwater supplies for an industry that has the potential of only providing short term financial benefit to a small number of entities must not be done lightly.[50] Interested stakeholders, such as real property owners, have legitimate concerns regarding the development of a high-pollution-risk industry within the state[51]. Thus, protecting the state's clean groundwater

43. Lori Riverstone-Newell; The Rise of State Preemption Laws in Response to Local Policy Innovation, *Publius: The Journal of Federalism*, Vol. 47, Issue 3, 1 July 2017, Pages 403–425, https://doi.org/10.1093/publius/pjx037.

44. *See* Jesse Coleman, *Fracking Rules in North Carolina* (Sept. 14, 2018) https://www.huffingtonpost.com/jesse-coleman/fracking-rules-in-north-c_b_5352907.html.

45. N.C. § SB-820.

46. Stanford D. Baird, James L. Joyce, Amy H. Fullbright, *North Carolina Legalizes Horizontal Drilling and Hydraulic Fracturing*, July 13, 2012 blog (accessed September 14, 2018), , http://www.klgates.com/north-carolina-legalizes-horizontal-drilling-and-hydraulic-fracturing-07-13-2012/.

47. Clean Energy and Economic Security Act, 2012 N.C. Sess. Laws; N.C. Gen. Stat. § 113-393.

48. N.C. Gen. Stat. § 113-393; The term "industry" is used broadly in this Article including oil and gas companies, mineral rights owners, industry associations or trade groups, and other proponents for fracking with limited regulations.

49. The term "industry" is used broadly in this Article to include oil and gas companies, mineral rights owners, industry associations or trade groups, and other proponents for fracturing operations with limited regulations.

50. *Supra* note 26.

51. Clean water supplies are at a higher risk of contamination in areas where hydraulic fracturing operations occur due to the high potential of mine shaft failure that would allow the 'trade secret' protected

supply is more important than the short term financial advancement of a few individual oil and gas entities.

The recent indictments of fracking industry speculators heighten the concern over its rapidly developing industry. Speculators' tactics and behaviors in support of the industry in other states have led to some facing felony charges based on substantive claims that the speculators "inflated production estimates, oversold investments in wells," presented themselves as experts yet "had no background in the industry" in order to divert investment funds for personal use, or in at least one recent case, were charged with working to suppress fair market practices in the oil industry.[52] Though any large industry is apt to possess individuals willing to take advantage of an industry's weaknesses, the speed with which North Carolina's hydraulic fracturing industry has developed has not afforded the state an ability to keep regulatory pace with the industry's varied stakeholders, thereby creating an environment where property rights and liability issues are put in unnecessary legal conflict.

Cogent efforts to cement legal doctrines in the state are frequently disturbed by the politicization of the process.[53] Politicization of issues also results in a lack of comprehensive regulations, leaving the judiciary to piecemeal and adapt settled common law legal doctrines to provide remedy. This defacto problem-solving by the judiciary can lead to the misuse of an unregulated market. Worse, it encourages speculation in a market, the result of which could be damages owed by judgment-proof defendants that leave only the state to provide remedy in the form of medicaid healthcare to cover injuries to the person and superfund clean-up costs for harms caused to the public

chemical mixtures used in hydraulic fracturing to escape into a water aquifer, due to the nature of how shale geology is structured.

52. Jeff Mosier, *'Frack Master,' now infamous oil industry darling from Dallas, arrested in $80 million fraud case*, The Dallas Morning News, https://www.dallasnews.com/business/energy/2018/06/20/frack-masterwho-posed-oil-industry-expert-arrested-sec-called-80-million-scam (last updated June 21, 2018). *See also, Former CEO Indicted for Masterminding Conspiracy Not to Compete for Oil and Natural Gas Leases*, Dept. of Justice (March 1, 2016), https://www.justice.gov/opa/pr/former-ceo-indicted-masterminding-conspiracy-not-compete-oil-and-natural-gas-leases ("Aubrey K. McClendon has been charged by a federal grand jury with conspiring to rig bids for the purchase of oil and natural gas leases in northwest Oklahoma" in violation of The Sherman Act).

53. The process of resolving the doctrinal conflicts legislatively is stymied by a legislative branch that is uninterested in working with the state's executive branch, thereby setting up a power standoff that leads to no resolution on behalf of likely conflicted property interests. *See* Ferrel Guillory, *The latest attempts by the legislature to strip power from the governor aren't the only ones inN.C.history*, The News & Observer (Aug. 25, 2018, 09:00 AM) https://www.newsobserver.com/opinion/op-ed/article217278790.html; *see also Richard Fausset & Jonathan Martin, Battle Lines Turn North Carolina's Moderation Into a Distant Memory, N.Y. Times* https://www.nytimes.com/2016/12/23/us/north-carolinas-republican-legislature-governor.html (last updated Dec. 23, 2016).

interest.[54] These risks are best addressed preemptively through comprehensive state legislative regulations of the industry.

II. IMPACTED RIGHTS AND CLAIMS

A. Established Rights

In North Carolina, one's right to property is protected by deed or possession. The state's common law doctrines assume the owner of real property has the right "to possess and use it to the exclusion of others."[55] The N.C. General Assembly codified an equitable owner's rights in the title of real property to: transfer all or part of the property, transfer some rights, and restrict or modify use of said real property.[56] The Torrens system is one of two ways real property rights are established in the state. Under the Torrens system, to gain legal recognition of an ownership interest, the owner must register the deed to the real property at a state county courthouse.[57] These same registration requirements apply to mineral ownership rights in the state.[58]

Required registration of deeds to real property, or minerals, at a courthouse is beneficial in a state where technological advancements allow for a harvesting of subterranean resources without notice to the surface property owner.[59] North Carolina's Torrens system provides an added level of security for real property owners who may come into conflict with parties from such a technologically advanced and unrestricted industry as the hydraulic fracturing industry. This security exists, for registered property owners, because any concern of who has a priority interest in a property conflict is more readily resolved by the record on file at the courthouse, thus remedying the legal issues of notice.

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54. *See* David Gutman, See the Freedom Industries' chemical spill into the Elk River, Charleston, West Virginia (2014). *Freedom Industries bankruptcy case officially settled,* Charleston Gazette-Mail, https://www.wvgazettemail.com/news/freedom-industries-bankruptcy-case-officially-settled/article_99bc86c9-8b79-5451-9f5d-49320aee7359.html, (last updated Oct. 7, 2015).

55. Real property is defined as a "term that is applied to land and immovable property on land such as buildings." Real Property, *Black's Law Dictionary*, (2nd Ed.,1995).

56. N.C. Gen. Stat. § 22-2; N.C. Gen. Stat. § 39-6.4; N.C. Gen. Stat. § 22-2.

57. "The Torrens system, in general, is a method of creating a certificate of title and then registering a legal and basically absolute title to real property." Todd Barnet, *The Uniform Registered State Land and Adverse Possession Reform Act, A Proposal for Reform of the United States Real Property Law*, 12 Buff. Envt'l. L.J. 1, 19-20 (2004). N.C. Gen. Stat. § 43-14; "For over a century, North Carolina property owners have been offered an alternative to the traditional deed and recording system. Title to land may instead be entered in the Torrens system of registered titles."John V. Orth, *Torrens Title in North Carolina - Maybe a Hundred Years Is Long Enough*, 39 Campbell L. Rev. 271 (2017).

58. N.C. Gen. Stat. § 46-4.

59. "A holder of the mineral rights located under real property can petition a state court to partition the mineral rights without involving the surface owner.", https://www.sosnc.gov/documents/forms/land_records/training/Land_Records_Mineral_Rights_2014.pdf (accessed Oct. 14, 2019).

B. North Carolina Water Rights

North Carolina's water rights laws are based on the premise that groundwater must be captured in order to have possession, a premise that does not acknowledge basic hydrogeology.[60]

> [T]he old cases on groundwater try to distinguish between "underground streams" versus more slowly "percolating" groundwater . . . Judges made this distinction thinking that the rules for surface water ownership could be transferred to "underground streams" and thus avoid the legally perplexing problem of water slowly sloshing around beneath us in unpredictable ways. In reality, it was and is difficult or impossible to prove the existence of an underground stream.[61]

North Carolina's geological makeup varies based on the region. The geology is as an old ocean floor with unconsolidated sediment that results in groundwater existing under the surface in "a series of aquifers that lie somewhat like a tilted layer cake, one on top of another[,]" each interconnected.[62]

The state's geological aquifer structure makes isolation of property rights along real property boundaries difficult to ascertain as "groundwater moves through preferential pathways in rock."[63] Because groundwater has been easily accessible and of ample supply in North Carolina, the doctrine of *reasonable use* has governed the rights to groundwater access in the State.[64] The *reasonable use* doctrine establishes that a property owner making non-distributary use of pumped groundwater for an economically beneficial use can use as much water as needed, without concern for other landowners' needs, as long as the property owner does not engage in waste.[65]

Due to the geological makeup of North Carolina aquifers, a property owner may have rights to one of ten confined pools of water, which are separated by sand, clay or limestone.[66] An undelineated pool of water, with multiple

60. *See* Richard Whisnant *, Who Owns the Water, Part I Groundwater,* The Envtl. Fin. Blog (Apr. 29, 2015), http://efc.web.unc.edu/2015/04/29/who-owns-groundwater/.

61. *Id*.

62. *Id*.

63. *Id*.

64. *Id*.

65. *Valuing Ground Water: Economic Concepts and Approaches,* National Research Council, National Academy Press, 106 (1997).

66. "The hydrogeologic framework of the North Carolina Coastal Plain aquifer system consists of ten aquifers separated by nine confining units. From top to bottom the aquifers are: the surficial aquifer, Yorktown aquifer, Pungo River aquifer, Castle Hayne aquifer, Beaufort aquifer, Peedee aquifer, Black Creek aquifer, upper Cape Fear aquifer, lower Cape Fear aquifer, and the Lower Cretaceous aquifer. The uppermost aquifer (the surficial aquifer in most places) is a water-table aquifer and the bottom of the system is underlain by crystalline bedrock. The sedimentary deposits forming the aquifers are of Holocene to Cretaceous age and are composed mostly of sand with lesser amounts of gravel and limestone. Confining units between aquifers are composed primarily of clay and silt. The thickness of the aquifers ranges from zero along the Fall Line to more than 10,000 feet at Cape Hatteras." Winner Jr., M.D. and Coble,

rights holders, makes contravening influences, like toxic pollution, more challenging to remedy because identification of the responsible tortfeasor is difficult if multiple sources could be the cause of the damage or injury. Inability to identify a responsible polluting party sets up a legal environment where any contravening interest to water rights has the likelihood of benefitting from *damnum absque injuria*. A defacto legal protection results because identification of the interested parties to the pool of water is unascertainable.[67]

At first, it may be enticing to the legal community to leave this conflict as an unavoidable legal quandary because there is no *animus possidendi*.[68] However, failure to resolve the conflicts between ownership, responsibility, and liability ultimately result in a default policy that burdens state taxpayers. Thus, it is the taxpayers who bear the negative impacts from the mismanagement of operations that cause pollution of water. This is specifically true in industries whose operations risk having chemicals seep into aquifers that provide drinking water for millions of people.

C. Common Law Property Rights Conflicts

1. Adverse Possession

The potential for an adverse possession claim exists regarding mineral rights. Specifically between fracking operations and groundwater access rights.[69] Although no claims of adverse possession of property, real or mineral, have occurred since the North Carolina Mining Act of 1971 was enacted[70], the potential for such a claim does exist. Once a mineral right is severed from the land, it is permanent.[71] Once severance occurs, the mineral rights can be harvested, freely traded, and possessed by either the owner of the right or by any interloper who has the capacity to harvest the mineral.[72]

Severed mineral rights can be adversely possessed once harvested. In *Hoilman v. Johnson*, the North Carolina Supreme Court established the common

R.W., *Hydrogeologic framework of the North Carolina Coastal Plain aquifer system*, Open-File Report 87-690, U.S. Geological Survey (1989).

67. *Damnum absque injuria* translates to "loss or damage without injury."

68. "An intention to possess"; Marjorie L. Benson, et al., *Understanding Property: A Guide*, Thomson Carswell (2008) (2nd ed.) ("In order to claim possessory rights, an individual must establish physical control of the res [/property] and the intention to possess.")

69. Adverse possession is the statutory method of acquiring title to land under certain conditions. *Black's Law Dictionary*, (2nd Ed.,1995).

70. It established a required permitting process for any mining of minerals in the state.

71. W. E. Shipley, *Grant, reservation, or exception as creating separate and independent legal estate in solid minerals or as passing only incorporeal privilege or license*, 66 A.L.R.2d 978 (1959) ("grant only a right to take ore, not a corporeal interest.").

72. N.C. Gen. Stat. § 46 - 4.

law approach to adverse possession of mineral rights when it held a mineral right's holder "must be disseised[73] to lose his right, and there can be no disseisin by any act which does not actually take the minerals out of his possession."[74] Once an adverse possessor takes control or possession, for the necessary duration of time, permanent ownership of the mineral transfers to the adverse possessor.[75]

The State's statutory permitting system protects owners from the potential of adverse possession under various statutory requirements of notice to adjacent landowners; and state pre-approval of a permit by a regulatory commission. However, the inherent conflict persists under common law as the open and notorious possession elements are difficult to assess in mines that run horizontally without regard for the metes and bounds of established property boundaries. Of specific concern are mines, whose advanced technology allow for the extraction of shale oil or natural gas reserves that could be located miles from the mine injection point.

The Fourth Circuit held that defined boundaries are not necessary in order to establish adverse possession of property.[76] In *Duke Power Co. v. Toms* the Court, relying on testimony alone, held that an adverse possession of mineral rights was established even though some of the boundaries could not be located.[77] The *Duke* ruling, that predates North Carolina's Mining Act of 1971, established under common law, that natural resources could be taken without verified proof of the location of where the ownership existed. This ruling challenges the state's regulatory presumption that surface metes and bound demarcations are sufficient to define notice requirements.

Adverse possession of mineral rights poses a significant risk to stakeholders of water rights. The capacity of horizontal hydraulic fracturing to access neighboring oil or shale reserves implicates the potential, pursuant to *Duke,* of the adverse possession of shale deposits of oil and natural gas plays that exist outside the metes and bounds of defined property laws.[78] During the adverse possession accrual period, secondary stakeholders, such as those reliant on wells for groundwater, can be impacted without due notice.

Lack of proximity of a groundwater stakeholder's well to the mining injection or shaft site may prohibit notice. A real property owner may have open and notorious notice of an adverse possession of their mineral rights

73. Disseised is defined as "to be disposed of."

74. *Hoilman v. Johnson*, 80 S.E. 249, 250 (1913) ("The presumption that the party having possession of the surface has the possession of the subsoil containing minerals does not exist when surface rights and mineral rights are severed.").

75. *Id*.

76. *Duke Power Co. v. Toms*, 118 F.2d 443, 445 (4th Cir. 1941).

77. *Id*..

78. *Infra* note 13.

(geological activity impacting their real property). However, under state statute, water rights stakeholders who are secondarily impacted by the adverse possession of oil deposits through hydraulic fracturing on another person's property, would not have open and notorious notice of the subsurface harvesting. Additionally, without proximity to the mine injection site the water rights' stakeholder would not be due notice under the State statutes of such activity taking place in proximity to their well.

2. Tort Doctrines

Tort law in North Carolina is available to protect any individual harmed through negligence, intentional misconduct, or conduct that carries strict liability. Undertaking a duty creates an obligation by that party to use due care. Furthermore, a duty to act arises when: (1) a wrongdoer causes harm with an instrumentality that was under her control; or (2) if it was foreseeable that the act would cause harm to the specific plaintiff, and the wrongdoer had the opportunity and ability to exercise care to prevent the harm.[79] The critical elements of a common law tort claim for one's failure to act when they had a duty to, are: (1) the nature and underlying risk of the harm; and (2) an intentional disregard of the risk of harm. The North Carolina statute of limitations for personal property damages is three years.[80] In addition, North Carolina's statute of repose is ten years[81], following the wrong-doer's last culpable act. As a result of these statutory time constraints claims may be barred as tort injury claims resulting from toxic poisoning from a tainted water source can take years to become known.[82]

A dangerous condition in an industrial activity can give rise to a common law tort claim because the tortfeasor is on notice of the potential risk of the activity. Taking action that has a known high likelihood of dangerous results shows an intent to disregard the risk. Should an owner maintain an artificial condition with high risk, the owner must exercise reasonable care and give notice to those outside the premises who would be affected by the artificial condition.[83] North Carolina is a jurisdiction that has adopted contributory

79. *See L.S. Ayres & Co. v. Hicks*, 40 N.E.2d 334, 336 (1942) (The duty is not the point where the child was negligent; the duty arises at a reasonable point when they could have stopped the escalator*).*

80. Statute of limitations is the "[t]ime frame set by legislation where affected parties need to take action to enforce rights or seek redress after injury or damage." *Black's Law Dictionary*, (2nd Ed.,1995); N.C. Gen. Stat. § 1-15.

81. Statute of repose is, the number of years after the event the party has to act, *Black's Law Dictionary*, (2nd Ed.,1995); N.C. Gen. Stat. § 1-15.

82. *See* Catherine Watson Kozoil, Massachusetts Practice Series TM, § 9.28. Particular injuries and diseases—Lead poisoning and other toxic injuries, (Westlaw, 3d ed., November 2018 Update).

83. *See* Stephane A. Giggetts, et al, Strong's North Carolina Index, 22 N.C. Index 4th Negligence § 67 (Westlaw, February 2019 Update).

negligence as an affirmative defense to negligence claims.[84] As such, an injured party who failed to take action to prevent their own injury is barred from seeking a tort remedy.

i. Nuisance

Under North Carolina's common law, a property owner can bring a claim of nuisance if their right to use and enjoy their real property is negatively impacted by the primary or secondary effects of hydraulic fracturing. Nuisance is "that which annoys and disturbs one in the possession of her property, rendering its ordinary use or occupation physically uncomfortable to her".[85] Moreover, nuisance is a common law tort that protects a landowner's right to the quiet use and enjoyment of her property from interference by a wrongdoer.[86] Physical invasion of another's property is not necessary in order to establish a nuisance claim.[87]

Nuisance claims are classified as either public or private.[88] A public nuisance is one that affects a large group of members of the public, it is not specific to land.[89] Public nuisance is not actually a tort, as it lacks a required element of a tort claim, particularized injury; the harm is spread generally.[90] Thus, a government agency instead usually brings a public nuisance claim as a public action.[91]

While a public nuisance involves an injury to a community, a private nuisance involves a particular injury to a specific individual. In a private nuisance claim, the affected individual can bring suit directly against the wrongdoer. The burden is on the plaintiff to establish that the quiet enjoyment of her property was significantly diminished in order to recover monetary damages and/or injunctive relief.[92] Private nuisance claims may be brought under a theory of strict liability, intentional tort, or negligence.[93]

84. N.C. Gen. Stat. § 1-139; 15A N.C. Admin. Code 5H.1802(b) supercedes the state's Last Clear Chance doctrine.

85. Alan D. Woodlief, Jr., North Carolina Law of Damages, Definitions, N.C. Damages § 31:1 (Westlaw, 5th ed. December 2018 Update).

86. *Midgett v. North Carolina State Highway Commission*, 265 N.C. 373, 144 S.E.2d 121 (1965).

87. *Hoffman v. Vulcan Materials Co.*, 91 F. Supp. 2d 881, 883 (M.D.N.C. 1999).

88. 22 N.C. Index 4th Nuisances Summary (2019).

89. *Id*.

90. "Public nuisance is properly regarded as a public action rather than a tort, as revealed by a number of its features, including the nature of the interest protected – rights common to the general public – and the traditional understanding that public nuisance is a crime." Thomas W. Merrill, *Is Public Nuisance a Tort?*, 4(2) J. Tort L. ii (2011).

91. *Id*.; N.C. Gen. Stat. § 14-308 (In addition to a civil suit, the government may seek criminal charges against a wrongdoer for public nuisance.).

92. N.C. ST. § 1-539.

93. *Id*.

ii. Nuisance per Accidens

The Hydraulic fracturing industry in North Carolina is susceptible to a *nuisance per accidens* tort claim, as any industry would be. A *per accidens* claim arises when "by reason of [the nuisance's] location, or by reason of the manner in which [the nuisance is] constructed, maintained, or operated," the activity or building becomes a nuisance.[94] In *Watts v. Pama Mfg. Co.*, the Supreme Court of North Carolina held that in order to establish a prima facie case of nuisance *per accidens*, a plaintiff must prove: (1) that the wrongdoer's use of her property, under the circumstances, unreasonably invaded or interfered with the plaintiff's use and enjoyment of the plaintiff's property; and (2) because of the unreasonable invasion or interference, the plaintiff suffered substantial injury.[95] A *per accidens* claim can arise when an activity is intended to function without creating a nuisance, but results in a nuisance.[96]

iii. Nuisance Remedy

The available remedy for an identified private nuisance depends on the circumstances of each case, and are heavily fact determinate. One remedy is an injunction, also known as an *abatement*. An injunction is appropriate when the condition is one that can be avoided.[97] When the challenged condition cannot be abated, monetary damages are available to a plaintiff. Any monetary damages awarded to a plaintiff are based on the loss in property value caused by the permanent nature of the nuisance. A court may choose to impose both remedies to a matter.[98] In deciding whether to enjoin a nuisance or to award monetary damages, the court often balances hardships and benefits in its decision. The North Carolina Court of Appeals has distinguished between two balancing tests, the *unreasonable interference test* and *remedy*. With the *unreasonable interference test* the court looks at the unreasonableness of the defendant's action to determine the resolution.[99] In the *remedy* test used in the context of nuisance, the court looks at the consequences of the defendant's actions to determine the resolution.[100] These two tests give courts maximum flexibility in considering the best remedial resolution to a conflict.

94. *Elliott v. Muehlbach*, 620 S.E.2d 266, 269 (2005).
95. *Watts v. Pama Mfg. Co.*, 256 N.C. 611, 618, 124 S.E.2d 809, 814 (1962).
96. "[L]awful business is not normally *nuisance per se*, but may become nuisance *per accidens* because of its operation or other factors." *Rudd v. Electrolux Corp.*, 982 F. Supp. 355 (M.D.N.C. 1997).
97. 6A N.C. Index 4th Courts § 88
98. *Id*.
99. *See Mayes v. Tabor*, 77 N.C. App. 197, 200, 334 S.E.2d 489, 490 (1985).
100. *Id*.

iv. Strict Liability and Permits

An industry can be strictly liable if it is engaged in activities with a known high risk, such as ones with the foreseeable potential of polluting. Strict liability applies liability to a wrongdoer if the activity of the wrongdoer or the condition of the property are abnormally dangerous. However, a permitted activity, such as hydraulic fracturing, is less likely to be found strictly liable. The "only way that a permit-authorized activity can be enjoined under a nuisance theory is if it is operated negligently."[101]

A permit exists to authorize an activity. But permitted activities can become an intentional tort nuisance if the activity is done with intent to cause a nuisance. Such an instance can arise if a neighboring landowner notifies the active party of the nuisance and the person creating the nuisance refuses to stop. Thus, the action becomes intentionally negligent and a claim for intentional tort arises. The intent must also be unreasonable (i.e., (a) the gravity of the harm outweighs the utility of the conduct or (b) the harm caused is serious and the cost to compensate for it makes the conduct impractical). Thus, the common law does provide potential avenues for holding polluting industries liable. However, an industry that is permitted, has greater protections than those without.

v. Potential Solutions

Hydraulic fracturing operations pose significant challenges to individual plaintiffs seeking a remedy against non-adjacent hydraulic fracturing mines and disposal wells. Furthermore, proof of the source cause of a particular injury is required to establish a common law tort claim. Statutes that prohibit disclosure of the chemicals used in hydraulic fracturing as 'trade secrets' further prohibit property owners from being diligent stewards through proactive testing for chemicals in their own water supply. Due to North Carolina's geology, tracing contaminating sources for causation purposes is impracticable.[102] The costs of litigation, and the difficulty in establishing causation are deterrents to individuals bringing common law tort claims.

C. Defacto Liability and Remedy In Tort Claims

Relying on private Tort claims to resolve conflicts with permitted industries in North Carolina creates an undue burden on the citizenry to find remedy when the regulation of the industry was insufficient to address

101. 58 Am. Jur. 2d Nuisances § 395.

102. Henry Trapp, Jr. & Marilee A. Horn, *Ground Water Atlas of the United States, Segment 11*, U.S. GEOLOGICAL . SURV.L17 (1997).

foreseeable conflicts. Tort law seeks to require a party to internalize the costs associated with the externalities it creates for another party. Tort law is fair because it forces the responsible party to bear the cost of injury to another. However, tort law is a system of interconnected legal doctrines. Unfortunately, as applied to industry, it accomplishes its goal in an imperfect manner, requiring fact-specific determinations. Additionally, the transaction costs associated with the legal system are prohibitively high for some individuals. Accordingly, the present scheme does a poor job of handling small but meritorious tort claims.

The tort doctrines are not designed to remedy injuries that develop without notice over a long period of time, such as low-level chemical exposure.[103] Proving the required element of causation can defeat a claim due to the lag times involved and the difficulty in isolating the source of injury[104] For example, North Carolina's Neuse River contains an excess of Nitrogen.[105] However, most of the sources of nitrogen are small and diffuse.[106] Therefore, it is impossible to prove that any particular source caused any specific harm. Nonetheless, taking all the sources together, the cumulative effect is enormous. Thus, society has been forced to supplement the tort system with a system of regulation. A second reason for regulation is that tort liability is only available once actual injury occurs. Jurisprudent efficiency would dictate that reliance on a regulatory system, instead of tort doctrines for remedy, achieves desirable prevention when dealing with issues of public trust and pollution.[107]

Unless North Carolina enacts strict liability statutes specific to hydraulic fracturing operations, the potential litigation associated with harms caused by its operations could be complex, numerous and span many years. Establishing strict liability for hydraulic fracturing accidents could preemptively address the potential judicial inefficiencies.

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103. "Statutes of limitations and statutes of repose both are mechanisms used to limit the temporal extent or duration of liability for tortious acts." *CTS Corp. v. Waldburger*, 573 U.S. 1 (2014).

104. "[I]n toxic tort litigations, unlike traditional tort cases, causality is profoundly elusive both because biology does not afford clear and distinct explanations of the causal mechanisms by which toxic exposures produce birth defects, cancers, and other diseases, and because such medical problems are not usually traceable back to any one particular source." Alani Golanski, *General Causation at A Crossroads in Toxic Tort Cases*, 108 Penn St. L. Rev. 479, 481 (2003).

105. See *Effects of Excess Nitrogen in the Neuse River Basin, North Carolina, USA,* U.S. EPA, https://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=96624&Lab=NERL (last updated June 6, 2005);
https://www.americanrivers.org/river/neuse-river/ (last visited Sept. 15, 2018).

106. *Id*.

107. *Id*.

III. STATUTORY PROTECTIONS

A. Regulatory Controls

The Supremacy Clause of the U.S. Constitution grants the federal government the right to preempt state and local laws, in certain circumstances.[108] However, states have the power to regulate intrastate industries based on their general policing powers.[109] In some areas of the law, the federal government explicitly chose not to preempt state and local regulations. For example, the Clean Water Act leaves it to the states to govern water rights within their own borders.[110] As a state that follows the Dillon's Rule, North Carolina's legislative body has final authority on any intrastate regulations.[111] In addition, state governments have historically regulated "mining, oil and gas drilling and other extractive industries that do not operate on federal lands or in connection with offshore production."[112] However, if a federal agency is involved in the permitting of operations that could impact water supplies, a state defers to the federal oversight.[113]

1. Purpose

Regulations serve a critical role in maintaining standards for the benefit of the industry and those impacted by industry. When an industry is not state regulated, a 'race to the bottom' can begin within the industry in which the most production is sought without consideration of the impact of the industry's waste. Business interests have significant advantages to organize and pressure political actors to achieve an industry's narrowly focused goals. The goals of an industry often do not comport with public interest responsibility.[114] A race to the bottom concern includes "states competing for mobile

108. "Supremacy clause invalidates all state laws that conflict or interfere with act of Congress." *Rose v. Arkansas State Police*, 479 U.S. 1, 107 S. Ct. 334, 93 L. Ed. 2d 183 (1986); U.S. Const. art. VI, cl. 2.

109. Shaun A. Goho, *Municipalities and Hydraulic Fracturing: Trends in State Preemption*, 64 PLAN. & ENVTL. LAW 7, 3 (2012).

110. 33 U.S.C. 1251 (2002).

111. *Supra* note at 11.

112. Richardson et al., *supra* note 28 at 5. The Bureau of Land Management (BLM) proposed a rule in May 2012 that would require disclosure of fracturing fluid constituents in connection with fracking operations on BLM lands. *Oil and Gas; Well Stimulation, Including Hydraulic Fracturing, on Federal and Indian Lands*, 77 Fed Reg. 27,691, 27,710 (proposed May 11, 2012) (to be codified at 43 C.F.R. pt. 3160) (The proposed rule would also establish certain wellbore construction rules and rules governing the handling and disposal of produced and backwater flow from fracking operations on BLM lands).

113. *Warren Cty. v. State of N.C.*, 528 F. Supp. 276, 288 (E.D.N.C. 1981) ("when dealing in a highly technical area particularly within the expertise of the EPA, the agency's interpretation of its regulations should be given great weight by the Court"), *see generally Federal Power Commission v. Florida Power & Light Co.*, 404 U.S. 453, (1972).

114. Spence, *supra*, note 38 at 466 ("Because businesses have more at stake and face fewer transaction-cost impediments to organizing, they find it easier to form pressure groups (compared to broader

capital investment by lowering their regulatory standards."[115] An industry's dangling of economic improvements to a state can reasonably be expected to influence the lack of impediments a state creates for that industry.

In order to avoid the risks associated with economic-motivated influences that can result in a race to the bottom scenario, it is necessary for states to establish strong bodies of policy. These policy decisions should focus on conflicting interests that industries, such as fracking, have on all stakeholders in a state; including neighboring property owners and users of impacted resources. The state's rights at issue with hydraulic fracturing operations, from intrastate commerce, to policing powers, to quality of life concerns and property rights issues, require North Carolina's legislative body develop statutory standards that specify priority of the impacted rights in order to prevent piecemeal remedies that impose on the rights and undermine the state's broader policy goals.

2. Zoning

North Carolina is free from the challenges legislatures in Home Rule states have in controlling permitting and prevention of fracking in their states.[116] In Home Rule jurisdictions, local municipalities have more independence from state legislatures than in Dillon's Rule jurisdictions.[117] However, in a Dillon's Rule state, when the "republican moments" of a legislature favor less environmental regulatory protections, the state's judiciary can intervene, in support of local ordinances confined to "matters of zoning and community character have a strong likelihood of success".[118] The judiciary can support local municipality's zoning ordinances as a way to restrict hydraulic fracturing operations when the state legislature has not provided such protections.

North Carolina courts consistently hold that "agencies, not being elected, just can't possibly be legitimately as powerful a legal force as the

mass interests, many of whose potential members either do not find it worth their while to contribute to the formation of groups or are content to free ride on the efforts of others). Another public-choice idea, capture theory, articulates ways in which business interests can capture the regulatory process (and regulatory agencies) for their own benefit to erect barriers to entry, capture rents, and otherwise pursue their own interests.").

115. Richard L. Revesz, *Rehabilitating Interstate Competition: Rethinking the "Race-to-the-Bottom" Rationale for Federal Environmental Regulation*, 67 N.Y.U. L. REV. 1210, 1235 (1992) (arguing that a state's decision to prioritize economic development over environmental protection should be respected).

116. Mumby, William C., *Trust in Local Government: How States' Legal Obligations to Protect Water Resources Can Support Local Efforts to Restrict Fracking*, 44 Ecology L. Q. 195 (2017).

117. *Id*.

118. Spence, *supra* note 38 at 468 ("A republican moment is a function of the amount of public attention devoted to a particular policy decision.").

legislature."[119]The rules promulgated by a commission or agency are not held to the same precedential standard as a legislative statute would be.[120] However, the N.C. General Assembly granted zoning power to county commissioners.[121] Local counties in the State can use their zoning powers to prevent any conduct that "poses a significant threat to [a county's] residents' health, safety, and general welfare."[122] North Carolina's judiciary can enforce the zoning laws as an act of the State's General Assembly over the regulations promulgated by a commission or agency, thus providing a grant of powers that a county could rely on in defense of their prohibition of hydraulic fracturing.

B. Statutes: Water

Access to groundwater in North Carolina has been a right valued by its citizens for generations. The N.C. General Assembly expressly declared that it is the "public policy of this State to provide for the conservation of its water and air resources."[123] The State's General Assembly previously sought to establish the importance of water standards for the purpose of protecting human health. However, in 2015 the N.C. General Assembly added language that reframed the prior importance of clean groundwater from a right of the State's citizens, to it being an important element for the legislature's end-goal of industrial development:

> Standards of water and air purity shall be designed to protect human health, to prevent injury to plant and animal life, to prevent damage to public and private property, to insure the continued enjoyment of the natural attractions of the State, to encourage the expansion of employment opportunities, *to provide a permanent foundation for healthy industrial development* and to secure for the people of North Carolina, now and in the future, the beneficial uses of these great natural resources.[124]

The equilibrium amongst stakeholders changes when the interests of an industry are added to a protective statute. This change equalized industry rights

119. *See* Richard Whisnant, *Rulemaking Authority in N.C. — Are Rules Legally as Powerful as Statutes?, U.N.C. Sch. of Gov't; Envtl Law in Context* (Dec. 14, 2015) ("an administrative agency has no power to promulgate rules and regulations which alter or add to the law it was set up to administer or which have the effect of substantive law").

120. *Id*.

121. *See* 18 N.C.Gen. Stat. §153A-320.

122. *See Matter of Wallach v. Town of Dryden*, 16 N.E.3d 1188, 1201 (N.Y. 2014); *see also Robinson Twp. v. Commonwealth*, 52 A.3d 463, 484 (Pa. Commw. Ct. 2012) (holding partially that Pennsylvania statute requiring municipalities to permit oil and gas operations in all zoning districts violated substantive due process because "it allow[ed] incompatible uses in zoning districts and does not protect the interests of neighboring property owners from harm, alters the character of the neighborhood, and makes irrational classifications").

123. N.C. Gen. Stat. § 143-211. (2015).

124. *Id.* (emphasis added).

with that of the Mining Act of 1971's original intent to protect individual rights to clean groundwater. Thus, disturbing the previously established priority of the right to clean groundwater over industrial operations; marking a critical rebalance in which industrial rights became prioritized over clean groundwater rights. The 2015 legislative changes to priority of rights created more potential for conflict between the rights, because of the varying opposing interests. Further regulations are now necessary to maintain a balance between the interests which can foreseeably conflict due to hydraulic fracturing operations.

Following the legislative adoption of priority of industrial interests, a bevy of related statutes were enacted in an attempt to reign in the complex relationships between the stakeholders. For example, in 2017 the N.C. General Assembly passed N.C. Gen. Stat. § 143-215.1; a bill designed to provide better preventative oversight by requiring permits for certain activities affecting water pollution. The statute provides, in relevant part:

> The Commission shall act on all permits so as to prevent, so far as reasonably possible, considering relevant standards under State and federal laws, any significant increase in pollution of the waters of the State from any new or enlarged sources.[125]

This statute further provides for permitting of industrial wastewater discharge facilities that a violator must thence pay damages to the State, not to the impacted real property owner. The present statutes that impact water have lessened the individual's rights to groundwater, prioritized water for industrial development, and made polluters of groundwater supplies liable to the state; leaving individual property owners with only individual tort claims to remedy any damages they personally suffer.

C. Statutes: Hydraulic Fracturing

As mentioned above, North Carolina's mining rights have undergone a dramatic change in priority amongst interests in it's more recent legislation, since the State's first significant mining rights act. The State's Mining Rights Act of 1971 established specific procedural and permitting regulations for mining operations in the State.[126] N.C. Gen. Stat. §74-50(b1)(2) requires an applicant to notify any landowner of adjoining land "that lies within 1,000 feet of the permit boundaries" of the mining operation permit application.

125. N.C. Gen. Stat. § 143-215.1 (2017).
126. The Mining Act of 1971, ch. 74, Art. 7, (1971).

These permitting requirements resolve any mineboring issues with prescriptive easements.[127]

The language of the Act does not require notice to all potential stakeholders, it requires only that notice be given to surface landowner's who are within 1,000 feet of a well. The issuance of the permit will determine who gains notice based on their surface presence within 1,000 feet of the mining shaft. However, the Act does not require notice to individuals impacted by horizontal shafts that are designed to reach long distances. Such lack of notice beyond 1,000 feet is a risk, as the potential distance of the shaft on the surface coupled with the potential of undisclosed chemicals spreading through geological substrata presents the need for notice to a larger distance of impacted stakeholders.

1. The Mining Act of 1971

The Mining Act of 1971("The Act") provides standards for mining operations occurring within North Carolina.[128] The Act seeks to protect the mining industry in the state, while reasonably preserving the general welfare, health, safety, beauty, and property rights of North Carolina's citizens.[129] The Act provides conditions for the proper operation of mines and the reclamation of mining lands and waste.[130] The Act was amended in 2017, extending mining permits from a ten-year permit to a life-of-the-site permit.[131] Considering the aforementioned permit notification issues, this amendment furthers the concern that impacted citizens will not have proper notice of the chemicals potentially found in their drinking water, until injury occurs.

2. Energy Modernization Act

In 2014, the N.C. General Assembly passed the Energy Modernization Act, a series of statutes that establish hydraulic fracturing as a legal mining operation in the state.[132] The Energy Modernization Act and the Oil and Gas Conservation Act of 2014, together provide legal grounds for the exploration of potential natural gas and oil extraction in North Carolina.[133] The Energy Modernization Act established a commission to oversee the permit

127. "In order to acquire an easement by prescription, the use must be adverse, hostile, or under a claim of right; open and notorious; continuous and uninterrupted for a period of 20 years; and there must be a substantial identity of the easement claimed." 11 N.C. Index 4th Easements § 36

128. N.C. Gen. Stat. § 74-46-69.

129. *Id*.

130. *Id*.

131. N.C. Gen. Stat. § 74-50 (2017).

132. N.C. Gen. Stat. § 143B-293.1; N.C. Gen. Stat. § 143B-290.

133. *Id*.

process.[134] The Oil and Gas Conservation Act created a commission to enact rules that seek to achieve the non-wasteful harvest of the oil reserves and protects the confidentiality of the content of the hydraulic fracturing fluid which the fracking company deems a proprietary "trade secret".[135]

The Energy Modernization Act relies on local health departments to field review of fluids used in the oil extraction processes. Yet, the Energy Modernization Act also criminalizes disclosure of the proprietary chemical content by any medical provider or fire chief.[136] The Energy Modernization Act further burdens the responding safety personnel with administrative liability to the civilian owner of the proprietary information requiring the medical provider or fire chief, upon demand by the owner of the proprietary information to both provide a written statement of need and a confidentiality agreement from the Fire Chief prior to public disclosure.[137] The Energy Modernization Act makes the disclosure of the confidential information a class 1 misdemeanor.[138]

The Energy Modernization Act also provides for commission review and override of any zoning ordinance that may, from the commission's perspective, unnecessarily bar hydraulic fracturing.[139] Finally, the Energy Modernization Act requires that mineral rights owners engaging in activities that impact the surface landowner need only provide thirty days notice of planned entry prior to beginning its permitted activity.[140] Summarily the Energy Modernization Act restricts the N.C. General Assembly's zoning act[141], safety responders in their ability to warn the public of danger, burdens safety responders with a duty to gain permission from private enterprise prior to disclosure of chemicals that could be dangerous to the public, and criminally and civilly penalizes safety responders if they disclose the potential contents of the danger without pre-approval.

North Carolina recognizes rebuttable presumptive liability for water contamination.[142] The presumption is rebuttable for a number of reasons, including two predictable situations: (1) where the surface owner refuses to allow the mining company to test the water supply prior to drilling; and (2) where the water supply is over one-half mile from a well-head.[143] This creates the

134. N.C. Gen. Stat. § 143B-293.1.
135. N.C. Gen. Stat. § 113-391.1.
136. *Id*.
137. *Id*.
138. N.C. Gen. Stat. § 113-391.1(d).
139. N.C. Gen. Stat. § 113-415.1.
140. N.C. Gen. Stat. § 113-420.
141. N.C. Gen. Stat. § 113-415.1(c1).
142. 15A N.C. Admin. Code 5H.1802.
143. *Id*.

potential for individual real property owners to lose their rights to claim damages should the property owner fail to cooperate with a private industry access to their property.

The N.C. General Assembly has taken significant steps with its trifecta of legislative acts and amendments to provide the fracking industry opportunities to engage in operations within the state. N.C. Gen. Stat. § 113-378 is the only requirement that places any pre-emptive liability on mining operations.[144] Cumulatively, present mining and fracking legislation places a fair amount of responsibility on local government agencies, such as fire and health departments, to manage potential liabilities that are created by private industry mining and fracking operations. Relying on local agencies without providing statutory provisions for training or standardized administration of hydraulic fracturing operation oversight statewide could result in needless liability and criminal charges.

3. State Environmental Policy Act of 1971

The State Environmental Policy Act of 1971 ("SEPA") was passed the same year as the Mining Rights Act[145]. In 1971, the N.C. General Assembly established the importance of the ability to harvest and utilize the natural resources available in the state. However, in that same 1971 legislative session, the N.C. General Assembly passed SEPA that articulated protections forthe environment from misuse and abuse.[146] SEPA expressly provides that man's role, as trustee for future generations of the earth, requires conservation and protection of natural resources.[147] SEPA also requires that people "maintain conditions under which man and nature can exist in productive harmony."[148] SEPA emphasizes maintaining safe and aesthetically pleasing environments in the state and prioritizes the "beneficial uses of the environment without degradation, risk to health or safety."[149] SEPA, in tandem with the Mining Act of 1971, prioritizes health and safety above harvesting natural resources found in the State.[150]

The legislation of 1971 marked a profound commitment to health over industry. If still applicable, the commitment to health over industry should be cemented in clear regulatory measures that protect citizens from risks due to poor administrative foresight. Without measures that take the risk out of

144. N.C. Gen. Stat. § 113-378 requires that a mining entity must provide a $1 million dollar bond.
145. N.C. Gen. Stat. § 113A-1 (2019).
146. *Id.*
147. *Id*.
148. N.C. Gen. Stat. § 113A-3 (2019).
149. *Id*.
150. N.C. Gen. Stat. § 113A-2.

impacts to health by speculative industries, property owners are left to fend for themselves in expensive, and judicially burdensome, actions in state courts.[151] Such a foreseeable outcome of a state policy scheme that has open doors to an industry, with the potential to cause large numbers of claims, requires oversight in ways the judiciary should not be tasked to resolve.

The N.C. General Assembly's recent statutes equalize hydraulic fracturing rights with other property rights, resulting in the private owner's rights being of less import than the right to frack. North Carolina tort law offers benefits for both hydraulic fracturing business and private owners injured by hydraulic fracturing chemicals. However, rights of the industry are, by default, raised in priority against individual rights stakeholders due to the deterring effect the cost of litigating individual fact-reliant claims has. This lack of successfully litigated individual claims, results in unsettled doctrine that the judiciary and public cannot rely upon. Without a settled legislative solution, the courts may be forced to make decisions that can result in piecemeal jurisprudence of these conflicts. The right to engage in commercial activity must be weighed against the cost of the risk and the loss of the property owner's right to groundwater. The state's legislature cannot leave such determination to piecemeal jurisprudence.

D. Constitutional Protections

The primary legal claim made by oil and gas industry representatives, when presented with governmental regulations that seek to protect non-industry property owners by restricting mining operations, is a violation under the Takings Clause of the Fifth Amendment of the U.S. Constitution.[152] The Takings Clause of the Fifth Amendment, provides that "private property [shall not] be taken for public use, without just compensation."[153] The Clause's underlying premise is that the government should not be "forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole."[154]

A state is permitted to engage in takings when it exercises its police power, acting to protect the "public health, safety, morals and general welfare."[155] In *Beroth Oil Co. v. N. Carolina Dep't of Transp.*, the Court of Appeals in North Carolina held that wholesale deprivation of all rights is not required to sustain a takings action. However, the owner must establish "an interference

151. N.C. Gen. Stat. § 74-66.

152. Kevin Lynch, *Regulation of Fracking Is Not a Taking of Private Property*, 84 U. Cin. L. Rev. 38 (2016).

153. U.S. Const. amend. V.

154. *Armstrong v. U.S.*, 364 U.S. 40, 49 (1960).

155. *A–S–P Assocs. v. City of Raleigh*, 298 N.C. 207, 213, 258 S.E.2d 444, 448 (1979).

substantial enough to reduce the market value of his property."[156] Thus, a state can interfere with economic use of real property by an owner, without engaging in a *taking*.

The oil and gas industry has attempted to defeat regulatory measures that restrict extraction of oil and gas through fracking.[157] Industry representatives argue that fracking is an absolute right they are entitled to.[158] The industry claim is that any regulation or prohibition of the industry is a regulatory taking of private property, a matter the government must pay for.[159] Companies threaten local governments and complain that regulations would "bring dire consequences following any government regulation that reduces the economic value of oil and gas interests."[160] These threats by the industry to file what would involve long litigious battles of potentially bankruptable rewards have been successful in discouraging some communities from enacting regulations.[161] When government bodies are intimidated, it destroys the very notions of fairness and justice that are at the core of *takings* jurisprudence. It forces the government to let harm occur as a default in order to avoid the preemptive economic risk of litigation, a consequence most municipalities do not wish to bear.[162]

However, the Takings Clause is not as favorable to the hydraulic fracturing industry as the companies assert. The clause is a provision that protects property owners from the complete loss of their ownership rights. Takings jurisprudence "does not extend a right to compensation for a reduction in value of the property due to the governments regulations."[163] In fact, facial takings claims rarely succeed. Specifically, the plaintiff's takings claim must pass the Agins Test.[164] The Agins Test consists of two inquiries; the first question is "does the regulation substantially advance a legitimate governmental interest?"; and second, "does the regulation deprive the owner of economically

156. *Beroth Oil Co. v. N. Carolina Dep't of Transp.*, 367 N.C. 333, 351–52, 757 S.E.2d 466, 479 (2014); *see Long v. City of Charlotte*, 306 N.C. 187, 199, 293 S.E.2d 101, 109 (1982).

157. Lynch, *supra* note 152 at 41.

158. Ford J.H. Turrell, *Frack Off! Is Municipal Zoning a Significant Threat to Hydraulic Fracturing in Michigan,* 58 Wayne L. Rev. 279 (2012).

159. Lynch, *supra* note 152 at 45.

160. *Id*.

161. *Id.* at p. 41; Fort Collins, Colorado's city council initially placed a moratorium on fracking in place, it later exempted the only operator, Prospect Energy, from that moratorium. The citizens of Fort Collins proposed to reinstate the full moratorium at the ballot box. The city council adopted a resolution urging the defeat of the measure, in part due to concerns over the cost of litigation that the city would face from the industry. *See* Fort Collins City Council, Meeting Minutes, Oct. 1, 2013 at 314-18.

162. Lynch, *supra* note 152.

163. *Id.* at 41-42.

164. *Agins v. City of Tiburon*, 447 U.S. 255, 260 (1980).

viable use of her property?"[165] The economic deprivation is not measured by the property owner's choice of industrial use.[166] The jurisprudence of the Takings Clause encourages the government to balance the private and public interests as a whole. The Takings Clause leaves the government with the responsibility of making the decision to balance the interests involved.[167] The balance considers the private owner's interests, an industry's access to alternative operations, and the "great risks to the health, safety, and environment of neighboring communities" by allowing the interest to be asserted.[168]

IV. ADDITIONAL ISSUES

A. Impact on Insurance Industry

The risk of upending settled liability doctrine can have a deleterious effect on secondary industries that operate in the state, such as providers of insurance. Insurance companies can lose interest in conducting business in a state where potential risks are unpredictable due to unsettled legal doctrine.[169] A property owner's homeowner's insurance provider is responsible for covering the costs associated with injuries suffered by guests on the premises. A property owner's inability to test their groundwater for chemicals, deemed proprietary and used in a state-approved industry[170], could burden the property owner and their insurance company with a liability as due diligence is not available. If visitors became ill, the homeowner's insurance company would be responsible for remedy of the injury.[171] If notice or diagnosis of illness is delayed, liability protections are further complicated by the state's statute of repose.[172] Liability protections will also be frustrated if there is a

165. Wendie L. Kellington, *New Takes On Old Takes: A Takings Law Update* ALI-ABA 17th Annual Land Use Institute, http://landuselaw.wustl.edu/takings_update.htm (accessed September 14, 2018).

166. *Id*.

167. *Id*.

168. The Supreme Court has recognized a reasonable expectation of limitations on private property are constitutional, based on the legal doctrine of nuisance. Furthermore, the Court has held that there is no taking if a previously deemed legal activity is found illegal because it challenges "health, morals or safety of [a] community." *See e.g.*, *Mugler v. Kansas*., 123 U.S. 623, 668 (1887); *Hadacheck v. Sebastian*, 239 U.S. 394 (1915); *Miller v. Schoene*, 276 U.S. 272 (1928).

169. Mary Esch, *Nationwide Insurance: Fracking Damage Won't Be Covered*, HUFFPOST GREEN (Sept. 12, 2012), http://www.huffingtonpost.com/2012/07/13/nationwide - insurance - fracking_n_1669775.html; Peter Behr, *Hydraulic Fracturing: Insurance Issues Loom Over Shale Gas Development*, EnergyWire, (Aug. 1, 2013), http://www.eenews.net/stories/1059985449.

170. *Infra* note 15.

171. 18 N.C. Index 4th Insurance § 673.

172. ""[A] statute of repose *extinguishes* a plaintiff's cause of action after the passage of a fixed period of time, usually measured from one of the defendant's acts." § 6:7.Statutes of repose, Defending Pesticides in Litig. § 6:7 (2019).

delay in identifying which hydraulic fracturing mine or disposal well was the direct cause of the harm.[173]

North Carolina's failure to establish strict liability regulations or provisions that allow for notice to real property owners, has created a vast pool of high-risk insurance product consumers. An unstable *pool of risk* is unattractive to insurance companies because their economic success relies on low volumes of high-risk clients in order to be profitable. For these reasons, the market of insurance providers have begun refusing to insure homes in areas where the hydraulic fracturing industry is active.[174]

B. Business Law - Triangular Mergers

In business, assets are desirable, liabilities are not. A fiduciary duty is owed to the corporation and its shareholders by the corporation's board of directors; it imposes that decisions must be made in the best interest of those entities that own and are the corporation.[175] Therefore, a governing board is legally required to reduce the liabilities of a corporation, by any means legally possible, if the reduction in liabilities will be in the best interest of the corporation. In remedying a liability, an economic commodity takes priority over an entity's debt, including liabilities. A mining operator can bypass large losses in payouts for injuries it caused by becoming judgment-proof via a *triangular merger* of the polluting business with another entity.[176] Most fracking entities are corporations that could become judgment-proof by merging with other business entities.[177] It is not unreasonable for corporations to engage in a triangular merger conditioned on the voluntary denial of liabilities in the merger contract.[178]

North Carolina does not require a corporation to buy a prior company's liabilities in a merger. A company's acquisition of a target company's assets, but not the debts, creates an issue when lifelong lease of mineral rights exist.

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173. "The result of a direct action and cause of loss to property that sets in motion a chain of events that is unbroken and causes damage, injury and destruction with no other interference." *Black's Law Dictionary*, (2nd Ed.,1995).

174. *Id*.

175. Tamar Frankel, *Fiduciary Law*, 71 Ca. L. Rev. 795 (1983).

176. Pursuant to I.R.C. § 368(a)(1)(D), a corporate entity can acquire the assets of a company in a merger called a "Triangular merger". Triangular mergers occur when the buyer corporation's subsidiary merges into the target company, to protect the buyer from the acquired entity's liabilities. *See* Theodore W. Grippo, Use of the Tax-Free Triangular Merger for the Acquisition of Two Corporations with Cross-Ownership, 14 J. Marshall L. Rev. 33 (1980).

177. https://www.investopedia.com/articles/markets/080814/fracking-cant-happen-without-these-companies.asp , (accessed Oct. 19, 2019).

178. https://www.investopedia.com/terms/f/ftm.asp (accessed Oct. 19, 2019) ("The buyer's subsidiary is merged into the target company [to] have the advantage of protecting the buyer from the target's liabilities.").

Failure to require liability acquisition could result in targeted and acquiring corporations benefiting from business law doctrines to avoid the costs of liability.[179] The use of business law doctrines by companies to avoid bearing liability for damages also creates the inevitability that the taxpayers and government (federal and/or state) will be left to remedy the damage created by an industry. The hydraulic fracturing industry benefits from the present conditions in North Carolina that allow it tooperate under diminished governmental oversight, with low risk of tort liability, and a potential to inflict permanent damage to water supplies of a naturally occurring resource that is necessary for life.[180]

CONCLUSION

This article sets forth an assessment of a wide array of legal doctrine and statutory law that influences stakeholders interests, risks and liabilities from active hydraulic fracturing operations in North Carolina. It provides a synopsis of law that reveals the potential for substantial legal conflict among a large number of stakeholders in North Carolina if hydraulic fracturing operations commence.

Together, the varied stakeholders have conflicts that common law alone cannot settle and present statutory remedies fail to resolve. Common law has in many ways withstood historical advancements and, in some instances, has itself evolved. Yet, the technological advancement of horizontal hydraulic fracturing presents unique challenges to settled common law doctrine in North Carolina. These conflicts indicate significant oversight of the industry is required; and the N.C. General Assembly must regulate with consideration to avoid conflicts with settled legal doctrine. This is especially true when horizontal hydraulic fracturing is at issue; it creates complex rightsholders conflict, where the competing right's interests are sometimes subtly, yet significantly, interwoven.

Failure to address foreseeable harm is a dereliction of duty to prevent harm. Empowering an industry, or protecting a resource, such as water, is only as beneficial as it is productive. If pollution by an industry creates

179. Use of business law protections to avoid liability is common, as an example see Freedom Industries Inc. Bankruptcy filing to avoid liability in W. Virginia water contamination suit. https://www.wsj.com/articles/freedom-industries-bankruptcy-plan-close-to-judges-approval-1443824687 (accessed Oct. 19, 2019).

180. *See* federal agency response to Elk River Spill, https://infocus.nlm.nih.gov/2016/03/09/rapid-response-west-virginia-elk-river-2014-spill/ (accessed Oct. 19, 2019); https://www.wvgazettemail.com/news/special_reports/judge-concerned-freedom-industries-won-t-clean-up-elk-river/article_178fa67d-78d8-595a-bc9f-e06ede9f6f1f.html (accessed Oct. 19, 2019) ("while efforts "will be undertaken to remediate the site," there are "financial limitations" to what Freedom "can viably undertake by way of compliance with" the remediation plan for its Etowah Terminal").

foreseeable injury, that alone is grounds to regulate it. If protecting a resource destroys community, that alone is grounds for opening access through regulation. The present approach in the N.C. General Assembly must reflect its responsibility to assist the judicial branch in avoiding inefficient and ill-considered legislation that results in burdens to the court system, and injury to North Carolina's citizenry.