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AN ANALYSIS OF STRICT LIABILITY AS APPLIED TO HYDRAULIC FRACTURING

Casey Ball¹

Surges in natural gas production from Pennsylvania's Marcellus shale formation recently piqued national interest. Pennsylvania continues to enjoy the fruits of this increase in their local market, boasting per capita income increases between twelve and nineteen percent.² The future looks bright for the residents of Pennsylvania as worldwide energy consumption increases dramatically with the industrialization of China, India, and Russia. Increases in international energy demand places pressure on the United States to expand its domestic production of natural energy resources. However, America's economic boost could be short-lived. Recent lawsuits filed against firms extracting natural gas threaten the profitability of this market potentially causing serious repercussions for the U.S. economy.

Natural gas output and production are susceptible to market fluctuations. Natural gas companies will produce less gas as production costs increase. This leaves the U.S. susceptible to higher gas prices, energy shortages, and greater dependence on foreign energy source-

1 Casey is a senior studying international relations at Brigham Young University. After law school, he plans on working in the energy industry. He would like to give special thanks to Preston Rammell and Matthew Eddington for their significant contributions to this paper. Their quality writing has earned this author's sincere gratitude.

2 Diana Furchtgott-Roth & Andrew Gray, *The Economic Effects of Hydrofracturing on Local Economies: A Comparison of New York and Pennsylvania*, Growth and Prosperity Report, Manhattan Institute, May 2013, at 2.

es. Hydraulic fracturing serves as an economically viable method to extract natural gas, and has been proven extremely useful in shale formations.³ Many concerned environmentalists ask: What are the negative externalities associated with hydraulic fracturing, and in the event of environmental damage resulting from fracturing, with whom does the liability rest? In this vein, we often see the emergence of water pollution controversies.

Two major cases in Pennsylvania highlight the attempt of local residents to hold energy companies responsible for water pollution. In *Berish v. Southwestern Energy Production Company* and *Fiorentino v. Cabot Oil & Gas Co.*, plaintiffs sued for an application of strict liability, claiming that hydraulic fracturing qualifies as an abnormally dangerous activity.⁴ Defendants sought to dismiss the claim of strict liability, but the motions were denied in both cases.

The concept of strict liability claims is simple: firms are responsible to compensate for damages resulting from accidents, even when a due care standard is met. Strict liability applies to activities deemed “abnormally dangerous.” Plaintiffs prefer strict liability when pursuing a tort because they do not have to prove that the firm complied with industry due care standards. As will be explained in greater detail, this paper claims that strict liability is not a just and equitable pursuit for those claiming damages from hydraulic fracturing *because it is not an abnormally dangerous activity*.

Part I of the article discusses the process of hydraulic fracturing in some detail. Part II outlines the concept of strict liability and discusses two cases currently addressing strict liability in Pennsylvania. Part III will examine the legal standard for abnormally dangerous activities set by the Second Restatement of Torts. Each of the six criteria for abnormally dangerous activities will be weighed against hydraulic fracturing. Part IV evaluates counterarguments directed at both the process and pollution that arise from hydro-

3 Wendy Koch, *Fracking Puts U.S. First in Shale Gas Production*, USA TODAY, October 23, 2013, <http://www.usatoday.com/story/news/nation/2013/10/23/fracking-shale-gas-us-global-leader/3170255/>.

4 *Berish v. Southwestern Energy Production Company*, 763 F. Supp. 2d 702 (Pa. D. & C. 2011).

lic fracturing. The purpose of this paper is to show that the courts should not impose strict liability to the hydraulic fracturing industry.

I. HYDRAULIC FRACTURING

Contrary to popular belief, hydraulic fracturing is not entirely a drilling process. Excavators pre-drill wells to depths ranging from 6,000-10,000 feet below the earth's surface. Once the well reaches the shale formation, the drill then turns and drills horizontally for about a mile. During the drilling process, excavators construct a casing made of steel and cement to prevent contaminants from entering the drinking water supply. Once finished, the oil and gas industry injects a mixture of water, sand, and various chemicals into the well under extreme pressure. The pressurized fluids create fissures throughout the shale formation, which allows trapped natural gas to flow back to the surface.⁵ Figure A in the appendix provides an illustration of the fracturing process.

Hydraulic fracturing is not a recently developed process, but its application to shale deposits is an innovative development. The oil industry first used hydraulic fracturing more than sixty years ago, as a means to enhance production of already existing wells.⁶ Shale deposits contain high volumes of natural gas that is difficult to extract. The nonporous shale traps the gas, halting its flow to areas of lower pressure. A traditional vertical well cannot maximize output because it exposes only a small surface area of the shale. Hydraulic fracturing produces extremely fine cracks in the shale for miles, allowing the gas to flow back to the surface. Hydraulic fracturing transforms previously inaccessible shale deposits into a modern-day Sutter's mill.

5 FRAC FOCUS CHEMICAL DISCLOSURE REGISTRY, <http://fracfocus.org/hydraulic-fracturing-how-it-works/hydraulic-fracturing-process> (last visited Feb. 7, 2014).

6 Blaine D. Edwards, E. James Shepherd & Nicholas N. Deutsch, *Hydraulic Fracturing: Protecting Against Legal and Regulatory Risk*, 109 *Oil & Gas J.* (Aug. 1, 2011).

II. STRICT LIABILITY

Strict liability is generally defined as liability imposed on a defendant in the absence of a breach of duty to exercise reasonable care.⁷ In order to prove fault under strict liability, the plaintiff must be able to prove both harm and causality. Plaintiffs favor strict liability in environmental law suits because proving negligence can be very difficult. Often the transaction costs associated with proving negligence dissuade victims from filing actions against polluters. A rule of strict liability has been applied to various activities, most notably to abnormally dangerous activities and large-scale production industries. These include blasting, oil well drilling, and operating refineries in populated areas.⁸ One of many important factors that determine whether an activity is abnormally dangerous is its effect on the local population. As the population exposed to a dangerous activity grows, the risks associated with the activity begin to outweigh its benefits. Other factors include the degree of risk, the severity of potential damages, and whether safeguards exist to eliminate such damages.

The English case *Ryland v. Fletcher* established strict liability as a legal concept. Justice Blackburn of the Exchequer Chamber stated:

We think that the true rule of law is, that the person who for his own purposes brings on his lands and collects and keeps there anything likely to do mischief if it escapes, must keep it in at his peril, and, if he does not do so, is prima facie answerable for all the damage which is the natural consequence of its escape.⁹

7 Alexandra B. Klass, *From Reservoirs to Remediation: The Impact of CERCLA on Common Law Strict Liability Environmental Claims*, 39 WAKE FOREST L. REV. 904, 904-969 (2004) (explanation of strict liability applied to environmental claims).

8 *Id.* at 913.

9 *Rylands v. Fletcher*, House of Lords, (1868) L.R. 3 H.L. 330 (appeal taken from Eng.).

Rylands received mixed reviews in American courts. Some courts, mostly federal, rejected the concept of strict liability, preferring to stay with negligence. State courts varied in their use and acceptance of *Rylands*. Beginning in the mid-1900s, American courts began applying the rule of strict liability to activities deemed inappropriate for their location, or abnormally dangerous even when taking extreme care.¹⁰

The First Restatement of Torts, published by the American Law Institute in 1939, sought to address the issues of strict liability by focusing on the dangerousness of the activity and the impossibility of eliminating that danger through extra care. It also focused on how often the activity occurred.¹¹ While useful, the First Restatement of Torts still left some ambiguity in the definition of a dangerous activity.

In 1977, the American Law Institute published the Second Restatement of Torts, a more comprehensive treatise on the conditions necessary to pursue tort under United States law.¹² The Second Restatement contains six factors that define abnormally dangerous activities. The Second Restatement reads as follows:

Restatement 2d Torts § 519. General Principle:

(1) One who carries on an abnormally dangerous activity is subject to liability for harm to the person, land or chattels of another resulting from the activity, although he has exercised the utmost care to prevent the harm.

(2) This strict liability is limited to the kind of harm, the possibility of which makes the activity abnormally dangerous.

10 Jed Handelsman Shugerman, *The Floodgates of Strict Liability: Bursting Reservoirs and the Adoption of Fletcher v. Rylands in the Gilded Age*, 110 YALE L.J. 333, 338-46 (2000) (discussing the varying opinions in American courts).

11 Klass, *supra* note 7, at 914.

12 Joe Schremmer, *Avoidable "Fraccident": An Argument Against Strict Liability for Hydraulic Fracturing*, 60 U. KAN. L. REV. 1215, 1229 (2013).

Restatement 2d Torts § 520. Abnormally Dangerous Activities:

In determining whether an activity is abnormally dangerous, the following factors are to be considered:

- (a) existence of a high degree of risk of some harm to the person, land or chattels of others;
- (b) likelihood that the harm that results from it will be great;
- (c) inability to eliminate the risk by the exercise of reasonable care;
- (d) extent to which the activity is not a matter of common usage;
- (e) inappropriateness of the activity to the place where it is carried on; and
- (f) extent to which its value to the community is outweighed by its dangerous attributes.¹³

It is important to note that not all six criteria are needed to define an activity as abnormally dangerous. Nor are all factors equally important. The judge responsible for applying strict liability makes a decision using his or her best reasoning and research.¹⁴ Using the six criteria listed in section 520, this paper will demonstrate that hydraulic fracturing is not an abnormally dangerous activity and therefore should not be placed under strict liability.

(i) *Berish v. Southwestern Energy Production Company*; *Fiorentino v. Cabot Oil & Gas Co.*

13 RESTATEMENT (SECOND) OF TORTS § 519–520 (1977).

14 Schremmer, *supra* note 12, at 1230–31.

In the case *Berish v. Southwestern Energy Production Company*, several local residents filed a lawsuit, which included claims for negligence, private nuisance, strict liability, and trespass.¹⁵ Southwestern Energy Production engaged in fracking activities at a site located in nearby the plaintiffs' properties. The plaintiffs alleged that discharged fracking fluids contaminated their properties and contributed to physical illnesses.¹⁶

Similar complaints have been filed in *Fiorentino v. Cabot Oil & Gas Co.* These complaints arose from an explosion on New Year's Day 2009 in a water well containing high methane content. The Pennsylvania Department of Environmental Protection issued a notice of violation to Cabot for discharging natural gas into the drinking water of at least thirteen homes located near a drilling well. Cabot was ordered to permanently restore drinking water to the affected homes. Cabot complied with the order, and the EPA announced on December 2011 that the drinking water was safe; however, residents of nearby homes are in pursuit of litigation that could possibly award them compensatory and punitive damages.¹⁷

Judges for both cases dismissed preliminary motions to dismiss claims for strict liability on the grounds that the record has not been sufficiently developed to determine whether hydraulic fracturing is an abnormally dangerous activity.¹⁸ Several cases do not subject the transportation and storage of gas to strict liability, but none have specifically examined the process of hydraulic fracturing.¹⁹ Due to

15 *Berish v. Southwestern Energy Production Company*, 763 F. Supp. 2d 702 - Dist. Court, MD Pennsylvania, 2011.

16 JURIST, <http://jurist.org/feature/2013/07/fracking-litigation.php> (last visited Feb. 24, 2014).

17 Heather Cooley & Kristina Donnelly, *Hydraulic Fracturing and Water Resources: Separating the Frack from the Fiction*, Pac. Institute 19 (June 2012).

18 *Berish v. Southwestern Energy Production Company*, 763 F. Supp. 2d 702 (Pa. D. & C. 2011).

19 *See Smith v. Weaver*, 445 Pa.Super. 461, 665 A.2d 1215, 1220 (Pa.Super. Ct.1995) *see also*, *New Meadows Holding Co. v. Wash. Water Power Co.*, 687 P.2d 212, 216 (Wash. 1984).

the fact-intensive nature of determining whether an activity is abnormally dangerous, both cases are still in discovery and no final ruling has been made.²⁰

III. APPLYING THE SECOND RESTATEMENT OF TORTS TO STRICT LIABILITY

The six criteria listed in the second restatement of torts do not all need to exist for a judge to apply strict liability to an activity.²¹ Judges listen to expert witnesses, evaluate evidence presented, and rule based on how well the activity fits with the criteria. This paper focuses primarily on the third criterion of section 520, the inability to eliminate the risk by the exercise of reasonable care, while giving sufficient weight to the other criteria. Industry and government regulations, when met, eliminate the risk of water pollution. As part of this analysis, an overview of current legislation in the state of Pennsylvania regarding hydraulic fracturing will be provided.

The third criterion (c) of the Second Restatement of Torts evaluates the inability to eliminate the risk by the exercise of reasonable care. The cement casing surrounding the natural gas well at the water table, if made correctly, prevents fracking fluids and natural gas from contaminating the water supply.²² Well casings are constructed from steel pipes and reinforced by cement. As detailed in figure (b), engineers create well casings in a telescopic formation. Each layer of steel pipe is reinforced with cement for stabilization and protection. These casings allow the gas to travel to the surface without interaction with other substances in the ground. A proper well casing protects the water supply from contamination and protects the well from

20 Penn State, The Agricultural Law Resource and Reference Center, *Berish v. Southwestern Energy Production Company*, http://law.psu.edu/_file/aglaw/Marcellus_Shale/Berish_case_summary.pdf. Jan 9, 2013.

21 Schremmer, *supra* note 12, at 1230.

22 Daniel J. Rozell, Sheldon J. Reaven, *Water Pollution Risk Associated with Natural Gas Extraction from the Marcellus Shale*, 32 RISK ANALYSIS 1382–93 (Aug. 2012).

collapses, changes in pressure, or contamination from underground salt deposits.²³

In 2005, the US Congress exempted hydraulic fracturing from the Safe Drinking Water Act.²⁴ This left states with the responsibility to provide the appropriate regulations and enforce safe fracturing procedures. Accordingly, Pennsylvania has created many regulations to both protect the environment and encourage natural gas production. Pennsylvania passed the Oil and Gas Act in 1984; further revision incorporated the expanded use of hydraulic fracturing.²⁵ This act regulates drilling permits, sets distance requirements for well locations, regulates well casing standards, and establishes when companies are liable for damages caused by natural gas production. In 2011, major changes to well casing regulations were added to address growing complaints of methane contaminating water supplies.²⁶

By enforcing regulations on well casings and proper plugging of dry wells, Pennsylvania essentially eliminates the risk of water pollution. If, for some reason, a well is not constructed according to regulation, predrill water tests will confirm the drilling company's negligence and therefore hold them liable for the damages. Pennsylvania's legislation also provides some protections to gas companies in the event of water pollution. Companies can appeal for exemption from liability when homeowners refuse a predrill water test, when the pollution occurs six months after drilling, or when the plaintiff lives outside the 1000-foot radius of the well.²⁷ These regulations provide a natural due care standard required for simple negligence. As illustrated above, the natural due care standard set by Pennsylvania is inclusive and protects both residents living near hydraulic fracturing sites and fracturing companies. Therefore, when the due

23 ECANA, <https://www.encana.com/environment/water/protection/construction.html>, (Last visited March 6, 2014).

24 Kendall Gurule, *Pennsylvania Fracking Regulation*, FRACKWIRE (July 15, 2013), <http://frackwire.com/pennsylvania-regulations-on-fracking/>.

25 Pennsylvania Oil and Gas Act § 201

26 Gurule, *supra* note 24.

27 Pennsylvania Oil and Gas Act § 208

care standard has been met, requesting to hold natural gas producers strictly liable for damages is unnecessary.

The remaining five criteria in the second restatement of torts will now be examined to confirm that hydraulic fracturing is not an abnormally dangerous activity. The first criterion (a) states that existence of a high degree of risk of some harm to the person, land or chattels of others.²⁸ In 2004, the Environmental Protection Agency published a study on the impacts to underground sources of drinking water (USDWs) by hydraulic fracturing. In this study, the EPA noted that “the injection of hydraulic fracturing fluids into coalbed methane wells poses little or no threat to USDWs.”²⁹ The study explained that the fluids are either recovered in flowback or significantly diluted by underground water sources. The review states that no confirmed cases of water pollution were linked to hydraulic fracturing, and that the construction of wells included enough barriers to protect the USDWs.³⁰ The EPA also reviewed incidents of drinking water well contamination reported to local and state authorities in its 2004 study. Although many complaints pointed to methane being present in their water supply, the EPA found no evidence of fracking fluids.³¹ This signaled to investigators that the methane traveled through the water supply by some other means, such as natural fractures in the coalbed.³² If hydraulic fracturing had caused the methane seepage, fracking fluids would have also been present in the water supply.

The second criterion (b) states that an activity is abnormally dangerous if the likelihood that the harm that results from it will be great.³³ Based on the EPA’s analysis of hydraulic fracturing fluids, it is reasonable to conclude that should the groundwater become pol-

28 RESTATEMENT (SECOND) OF TORTS § 519–520.

29 U.S. ENVTL PROTECTION AGENCY, EVALUATION OF IMPACTS TO UNDERGROUND SOURCES OF DRINKING WATER BY HYDRAULIC FRACTURING OF COALBED METHANE RESERVOIRS STUDY 7-3 (June 2004).

30 *Id.* at ES–17.

31 *Id.* at ES–1

32 *Id.* at 7–2

33 RESTATEMENT (SECOND) OF TORTS § 519–520 (1977).

luted, the harm will be minimal. At worst, diluted fracking fluids would run into the USDWs at low enough concentrations to be safe. Any natural gas that leaks into the groundwater is harmless and dissipates into the atmosphere when brought out of the ground.³⁴

As previously discussed, *Fiorentino* alleges that the methane causes adverse health problems, and as a result, oil production companies should be strictly liable. In *Fiorentino*, however, discovery already performed shows that Cabot used improper well casings, and as a result, the methane may have seeped into the fresh water supply. Strict liability does not apply in this case, as Cabot disregarded construction regulations. The methane levels were directly related to Cabot's negligence, and therefore cannot be placed under the umbrella of strict liability, but rather would more reasonably be considered acts of negligence.

The fourth factor (d) relies on precedent set forth by *Rylands v Fletcher*. If the extent to which the activity is not a matter of common usage, then it can be defined as abnormally dangerous.³⁵ In *Rylands*, building a large reservoir on the property was not a common action. However, drilling for natural gas in a shale deposit is quite common. The process has been used on over 1 million producing wells. Operators now fracture as many as 35,000 wells each year.³⁶ Precedent is set for conventional oil well drilling. In *Williams v. Amoco Prod. Co.* the court concluded that drilling for natural gas was a "matter of common usage" and "an appropriate activity for the place in which it is carried on."³⁷ Factor (e), addressing the appropriateness of the activity could be a deciding point in cases such as *Berish* and *Fiorentino*. Large populations live on the Marcellus shale formation. If a large accident were to occur, some speculate that the

34 Williams v. Amoco Production Co., 734 P. 2d 1113 - Kan: Supreme Court 1987.

35 RESTATEMENT (SECOND) OF TORTS § 519–520 (1977).

36 FRAC FOCUS CHEMICAL DISCLOSURE REGISTRY, <http://fracfocus.org/hydraulic-fracturing-how-it-works/history-hydraulic-fracturing>, (last visited Feb. 7, 2014).

37 Williams v. Amoco Production Co., 734 P.2d 1113 (Kan. 1987).

water supply of millions could be affected.³⁸ The courts have yet to rule whether hydraulic fracturing beneath a large population center would be uncommon or inappropriate. Most likely, the courts will outweigh factors (d) (discussing the extent to which an activity is a matter of common usage) and (e) (addressing the inappropriateness of an activity) by factor (f), as explained below.

Factor (f) of the Second Restatement of Torts seeks to outweigh the benefits of a dangerous activity with the risks it carries. The courts will need to examine additional profits gained by landowners as a result of hydraulic fracturing and weigh them against the minute chance that their water might become polluted. The Marcellus shale formation currently holds enough natural gas to satisfy U.S. energy demands for about 14 years.³⁹ Even more impressive is the extraction rate attained by hydraulic fracturing. The Marcellus shale formation produced over 1.4 trillion cubic feet of gas during the first half of 2013, enough to power one in seven homes for a full year.⁴⁰ The royalties paid to local landowners, as well as the tax revenue resulting from increased firm profits, substantially outweigh the potential harm. Additionally, “jobs are created both directly in the gas industry and indirectly as regional and national economies benefit from lower energy costs...and if natural gas displaces coal, then fracking is good not only for the economy but also for the global environment”.⁴¹

38 See Kara Cusolito, *The Next Drilling Disaster?*, THE NATION (June 21, 2010), <http://www.thenation.com/article/next-drilling-disaster#>. See also Karen Charman, *Trashing the Planet for Natural Gas: Shale Gas Development Threatens Freshwater Sources, Likely Escalates Climate Destabilization* 21 CAPITALISM NATURE SOCIALISM 72, 74 (Nov. 24, 2010).

39 OHIO ENVTL. PROTECTION AGENCY, DRILLING FOR NATURAL GAS IN THE MARCELLUS AND UTICA SHALES: ENVIRONMENTAL REGULATORY BASICS 1 (Jan. 2014).

40 Marie Cusick, *Marcellus Shale Gas Production Numbers Surge*, STATEIMPACT, Aug. 19, 2013. <http://stateimpact.npr.org/pennsylvania/2013/08/19/marcellus-shale-gas-production-numbers-surge/>

41 Susan Brantley, *The Facts on Fracking*, N.Y. TIMES, Mar. 13, 2013, http://www.nytimes.com/2013/03/14/opinion/global/the-facts-on-fracking.html?pagewanted=2&_r=0.

IV. COUNTERCLAIMS TO HYDRAULIC FRACTURING

Leonard S. Rubin, in his article “Frack to the Future,” argues that applying strict liability to hydraulic fracturing would protect public health and the environment while allowing the continuation of natural gas production in the area. Rubin’s argument also highlights the *Fiorentino* and *Berish* cases and gives focus to the contamination of drinking water from inadequate well casings. Rubin recognizes state and federal regulations, but argues that the standards are inadequate. He states, “Fracking can be characterized as a low-risk activity when wells are constructed properly, but given that the process is new and the geology involved is extremely complex, it is difficult determine what constitutes ‘proper construction’ in every situation.”⁴²

Rubin argues that hydraulic fracturing is an abnormally dangerous activity because poor well-casings have the potential to leak. This argument would be better served to strengthen the enforcement of regulations than apply strict liability. When establishing whether an activity is abnormally dangerous, one must examine the activity itself and the regulations in place, not their enforcement. Properly constructed well casings will prevent environmental damage and that is the basis by which the third criterion (c) of the Second Restatement of Torts should be judged by.

Anthony Ingraffea, Professor of Engineering at Cornell University, uses a similar line of reasoning. He argues that while hydraulic fracturing is sixty years old, the current extraction process used in the industry is only a few years old, and “the jury is still very much out on its safety.”⁴³ He argues that recent findings in Canada revealed an astonishing “twelve percent of newer wells leaked.”⁴⁴ Ingraffea’s

42 Leonard S. Rubin, *Frack to the Future: Considering a Strict Liability Standard for Hydraulic Fracturing Activities*, 3 GEO. WASH. J. ENERGY & ENVTL. L. 117, 121 (2012).

43 Anthony Ingraffea, *Does the Natural Gas Industry Need a New Messenger*, CBC NEWS (Nov. 29, 2011), <http://www.cbc.ca/news/canada/new-brunswick/does-the-natural-gas-industry-need-a-new-messenger-1.1002634>.

44 *Id.*

argument is hinged on a mistrust of large gas companies, one shared by many opponents of hydraulic fracturing. Certainly, pollution has occurred in faulty wells, but each of these articles has yet to show tangible and credible evidence of pollution from a properly-constructed well. Until such evidence arises, these authors should focus on improving regulation rather than strengthening the severity of the law.

In an article published in the Boston College Environmental Affairs Law Review, Hannah Coman uses the case *Berry v. Shell Petroleum* to show that strict liability should apply to these Pennsylvania cases. In *Berry v. Shell Petroleum* the court ruled that the water supply of the state is of “greater importance than the operation of a business at a reduced cost.”⁴⁵ Coman argues that the water supply surrounding the Marcellus shale deposit in Pennsylvania supplies water to Philadelphia and New York City. Any complications resulting from water contamination would affect not only rural populations, but also major population centers.⁴⁶

Coman finishes her argument by discussing the message a strict liability ruling would send to eastern states. She claims that water rights have traditionally been upheld more in the arid western states due to the scarcity of water.⁴⁷ Coman claims that it is important for the eastern states to also see the importance of clean, drinkable water supplies. If the court were to place the drilling for natural gas above pure drinking water, it would send a message that clean water is unimportant. However, it is unlikely that imposing strict liability would prevent companies from drilling in Pennsylvania, nor would it change the population’s view towards a common commodity like water.

Unsubstantiated fear causes most of the opposition to hydraulic fracturing. The public understands very little of the fracking process or the risks associated with fracking. What information they have

45 Hannah Coman, *Balancing the Need for Energy and Clean Water: The Case for Applying Strict Liability in Hydraulic Fracturing Suits*, B.C. EVNTL. AFF. L. REV. 2012.

46 *Id.* at 140–41.

47 *Id.* at 159.

often comes from biased sources on both sides of the debate. Unsubstantiated videos of flammable tap water flood the internet along with rumors of illnesses attributed to fracking fluids. Fracking companies often gloss over their methods. Such incomplete information leads many to mistrust the safety and integrity of hydraulic fracturing wells. Public fear led to a moratorium on fracking in New York, a move that has cost New York a great deal of economic growth.⁴⁸ One would hope that cooler heads prevail in the courts as both sides are carefully investigated.

V. CONCLUSION

Despite recent documentaries, movies, and public panic created over the hydraulic fracturing debate, evidence shows that fracking is not an abnormally dangerous activity. These next few years will decide the fate of domestic natural gas production in the United States. If the courts strike down strict liability, natural gas production will increase, and the economy could see potentially substantial benefits, both in form of increased tax revenue and firm profitability as well as decreased regional unemployment. Conversely, if the courts decide to impose strict liability on firms performing hydraulic fracturing, the price of natural gas will likely rise, harming the profitability of the Marcellus Shale formation. The courts should thoughtfully consider the low potential risk of harm and weigh it against the considerable benefits the United States stands to gain from natural gas production, before making a decision that could impact one of the key economies in world natural gas production.

48 Furchtgott-Roth, *supra* note 2, at 9.

Appendix

Figure A⁴⁹

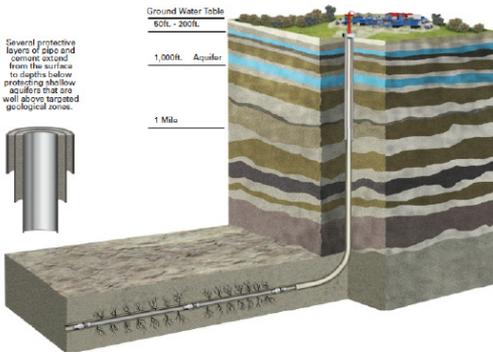
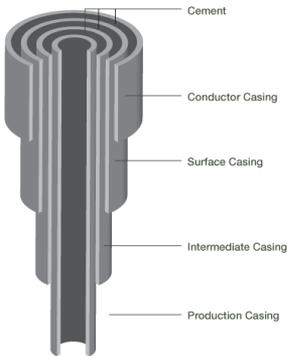


Figure B⁵⁰

Typical Well Casing Diagram

(Not to Scale)



49 BP. *About Hydraulic Fracturing*, <http://www.bputica.com/go/doc/4919/1356915/About-Hydraulic-Fracturing> (last visited Mar. 22, 2014).

50 ENCANNA, *Wellbore Construction*, <https://www.encana.com/environment/water/protection/construction.htm> (Last visited Mar. 22, 2014).