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EVALUATING HYDRAULIC FRACTURING REGULATION UNDER A THEORY OF STRICT LIABILITY

Michael R. Lieberman*

INTRODUCTION

Significant increases in production and exploitation of domestic fuels in recent years has spawned many arguments on contentious issues surrounding oil and gas production in the United States. One of the most debated and publicized issues involves the process of hydraulic fracturing and horizontal drilling, often known as “hydrofracking” or “fracking.”

This article explains how fracking works and proposes a means for regulating the activity in cases of groundwater contamination, which is one of the chief concerns associated with this controversial practice. Part I of this article provides a brief history of fracking and discusses how the process works. Part I also discusses the potential economic and societal benefits, as well as the environmental and health risks accompanying the fracking process.

Next, Part II explores the appropriateness of imposing strict liability for injuries caused by fracking. Using a common-law analysis, this part shows that fracking should be classified as an abnormally dangerous activity subject to strict liability. Thereafter, Part II considers statutory means of imposing strict liability.

Finally, Part III introduces a unique legislative proposal that would call for strict liability in cases of groundwater contamination caused by fracking, create a private right of action for homeowners, and establish an industry-financed fund to compensate those persons negatively affected by fracking. This article concludes with a brief summary of how an economic analysis of law supports the foregoing legislative proposal and its application of strict liability to hydraulic fracturing.

Ultimately, this article suggests that categorizing fracking as an abnormally dangerous activity subject to strict liability may increase accountability and encourage diligence on the part of well developers and operators, thus enhancing safety both in the workplace and the community while retaining the numerous benefits that fracking brings to the table.

I. FRACKING

A. What Is Fracking? Is It Dangerous?

Hydraulic fracturing is a process of natural gas and oil extraction by which fluid is pumped at high pressure down a wellbore creating fractures in the rock formations below to “stimulate the flow of natural gas or oil, thereby increasing the volumes that can be recovered.” This fluid, known as “fracking fluid,” is a proprietary mixture generally containing water, proppant, and chemicals. “Proppants” generally consist of “sand, ceramic pellets or other small incompressible particles” that “hold open” fractures once created. Fracking produces potentially harmful wastewater. Between sixty and eighty percent of the fracking fluid is absorbed into the shale formation deep below the surface, while the remaining twenty to forty percent returns to the surface as wastewater. The fracking fluid that returns to the surface is known as flowback.

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2 Id.
3 Id.
6 Id.
“contains clays, chemical additives, dissolved metal ions and total dissolved solids.” Additionally, some naturally occurring water also flows back up the wellhead to the surface. This is known as “produced water.” Produced water “contains dissolved hydrocarbons such as methane, ethane and propane along with naturally occurring radioactive materials . . . such as radium isotopes.” Well-regulated management and disposal of this wastewater is of central importance as “these by-products present significant risks to human health and the environment if not managed properly.”

Specifically, fracking chemicals and other naturally occurring compounds that return to the surface during the fracking process include over a dozen known or suspected carcinogens, developmental neurotoxins, volatile organic compounds, and endocrine disrupting chemicals. Exposure to these substances has been linked to miscarriage and stillbirth, preterm birth and low birth weight, among other serious reproductive and developmental health risks. The alarming list of possible health risks associated with fracking ultimately led New York Governor Andrew Cuomo to ban fracking in 2014.

B. History and Developments in Fracking

A Civil War veteran named Edward Roberts came up with an idea after observing artillery rounds during the war. He thought that he might be able to increase oil production by exploding what

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7 Id.
8 Id.
9 Id.
10 Id.
11 In Fracking’s Wake, supra note 4, at 10–11.
13 Id. at 311–12.
became known as a “Roberts Torpedo” inside an oil well and then filling the borehole with water.\textsuperscript{16} He was right; production quickly increased by more than 1,000 percent in test wells as a result of his new technique of production enhancement.\textsuperscript{17}

The first attempts at non-explosive fracturing began in the 1930s, when acid was used successfully in several drilling operations.\textsuperscript{18} In 1939, Ira McCullough developed an improved projectile-based technique that enhanced well production.\textsuperscript{19} By 1940, however, chemicals, rather than explosives or projectiles, became widely used in the fracturing process.\textsuperscript{20} Shortly after McCullough developed his method of oil production, a man by the name of Floyd Farris of Stanolind Oil and Gas Corporation came up with the idea of hydraulic fracturing, which uses water rather than explosions or acid to stimulate production.\textsuperscript{21} Hydraulic fracturing was used in the seventies and eighties with great success in enhancing well production in Texas, and it became widely used on a commercial scale in 2003.\textsuperscript{22}

The storied rise of fracking across the country has not been without controversy and stark opposition. In New York, the issue has been particularly contentious. In fact, New York has been characterized as “[t]he most notable focal point of opposition to fracking.”\textsuperscript{23} In December 2014, Governor Cuomo announced a ban on fracking in New York State.\textsuperscript{24} Since his announcement, however, Governor Cuomo has declined to take steps to change the law

\begin{itemize}
  \item \textsuperscript{16} Id.
  \item \textsuperscript{17} Id.
  \item \textsuperscript{18} Id.
  \item \textsuperscript{19} Id.
  \item \textsuperscript{21} Rivenbark, supra note 15.
  \item \textsuperscript{22} Id.
  \item \textsuperscript{24} Kaplan, supra note 14.
\end{itemize}
such that the ban would become permanent.\textsuperscript{25} This leaves open the possibility that the ban could be changed or even lifted in the future by a subsequent administration.\textsuperscript{26}

If fracking is given the go-ahead in New York, important decisions about how to maximize public safety and how to compensate for injury must be made. Such decisions will be based, at least in part, on an understanding of the benefits and potential risks of fracking.

\textbf{C. Prospective Benefits of Fracking}

Fracking proponents point to its many economic benefits. For example, in 2011 the United States produced an estimated $36 billion worth of shale gas.\textsuperscript{27} Fracking also has a significant potential for creating jobs. Employment statistics show an increase of more than sixty-seven percent in the oil and gas extraction sector nationwide, with 198,400 jobs in that sector as of December 2012.\textsuperscript{28} Notably, “the shale gas industry supported 600,000 jobs in 2010, a number that would increase to 870,000 by 2015.”\textsuperscript{29}

In addition to jobs, fracking may bring the United States closer to energy independence, allowing it to meet its energy needs without seeking oil from overseas. According to the New York Department of Environmental Conservation, the Marcellus Shale formation—a black shale formation below the surfaces of Ohio, West Virginia, Pennsylvania, and New York—could potentially contain up to 489 trillion cubic feet of natural gas.\textsuperscript{30} This is roughly 444.5 times the amount of natural gas consumed in New York State each year.\textsuperscript{31}

\begin{thebibliography}{99}


\bibitem{} Id.

\bibitem{} Hasset & Mathur, \textit{supra} note 23, at 12.

\bibitem{} Id.

\bibitem{} Id. at 13.


\bibitem{} Id.
\end{thebibliography}
D. Potential Injuries Resulting from Fracking

Groundwater contamination, chemical spills, and methane releases are examples of major health risks that may be caused by fracking. Some claim that these risks are unavoidable; a former Shell Oil Company President once proclaimed that while most wells have not had any issues, “everybody knows that some wells go bad.” Ultimately, opponents argue that the health risks, natural resource degradation, and broader economic impacts outweigh any potential benefits derived from the controversial process.

II. IMPOSITION OF STRICT LIABILITY FOR FRACKING-RELATED INJURIES

A. Strict Liability in General

The theory of strict liability rests on the policy argument that “those who engage in activity of sufficiently high risk of harm to others, especially where there are reasonable even if more costly alternatives, should bear the cost of harm caused the innocent.” The name given to activities for which strict liability is imposed varies by jurisdiction, with some jurisdictions calling them “abnormally dangerous” and others calling them “ultrahazardous.” Notwithstanding the differences in name, the principle is the same, and this Article adopts the Restatement’s “abnormally dangerous” label.

36 See RESTATEMENT (SECOND) OF TORTS §§ 519, 520 (AM. LAW. INST. 1965).
The foundation of the strict liability doctrine is best understood through an analysis of an 1868 English case: *Rylands v. Fletcher*.

Plaintiff Fletcher operated a mine and defendants Rylands and Horrocks owned a mill in Fletcher’s neighborhood. Defendants sought to construct a reservoir near Fletcher’s land for storing water for their mill. Unbeknownst to either party, there were five vertical mine shafts and connected horizontal shafts beneath the adjoining property. The mine shafts were remnants of the “old and disused mining passage and works” beneath the property. When the defendants attempted to construct their reservoir, the shafts filled with water and overflowed, flooding Fletcher’s mine and causing considerable damage. Fletcher subsequently sued the defendants, and after multiple appeals, the Court of Exchequer Chamber found in his favor.

The court provided what has become something of a defining statement of the theory of strict liability:

> We think the true rule of law is, that the person who, for his own purposes, brings on his land 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.

The court further noted that “[b]ut for his act in bringing it there no mischief could have accrued, and it seems but just that he should at his peril keep it there, so that no mischief should accrue, or answer for that natural and anticipated consequence.” The court explained the basic rationale underlying the theory of strict liability,
stating that “the doctrine is founded on good sense. For when one person, in managing his own affairs, causes, however innocently, damage to another, it is obviously only just that he should be the party to suffer.”

B. Applying Strict Liability in Cases Involving Injuries Resulting from Fracking: The Common-Law Analysis

1. Abnormally Dangerous Activities

The process of classifying an activity as abnormally dangerous begins with an analysis of multiple factors, none of which is necessarily determinative. This is a fact-based analysis; that is, whether an activity is abnormally dangerous depends on the specific circumstances surrounding the activity, and just because an activity is abnormally dangerous in one situation does not mean it is automatically so in every situation. Strict liability is concerned with risk creation that is so unusual, based on the magnitude of the risk and the attendant circumstances, that no amount of reasonable care should relieve the actor of liability for harm that results.

2. The Second Restatement of Torts

With regard to strict liability, two provisions of the Second Restatement of Torts generally govern; namely, sections 519 and 520 provide a framework within which most states conduct their strict liability analyses. Section 519 provides a definition, and Section 520 provides a six-factor test that has been adopted by the New York Court of Appeals. The purpose of this section is to discuss these provisions and provide some insight into how they may be applied to fracking litigation.

See id.

Doundoulakis v. Town of Hempstead, 42 N.Y.2d 440, 448 (1977). Interestingly, this decision came out in the same year that the second Restatement of the law of Torts was published. See Restatement (Second) of Torts (Am. Law Inst. 1977).

Doundoulakis, 42 N.Y.2d at 448.

See Restatement (Second) of Torts § 520 cmt. f.

See Doundoulakis, 42 N.Y.2d at 448.
Section 519 provides that “[o]ne 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.”

Furthermore, Section 520 provides the factors considered by courts in determining whether an activity is abnormally dangerous. In most cases, several factors must be present for strict liability to be imposed. No one factor is indispensable, and not every factor is required in every case.

The first factor to consider is the “existence of a high degree of risk of some harm to the person, land, or chattels of others.” Specifically, “[t]he harm threatened must be major in degree, and sufficiently serious in its possible consequences to justify holding the defendant strictly responsible for subjecting others to an unusual risk.” In the case of fracking, the risks may include groundwater contamination and air pollution, which may affect the person, land or chattels of a great number of people who rely on a water source in close proximity to a well or who breathe the air close to a well.

The next factor is the “likelihood that the harm that results from it will be great.” This factor involves a sliding scale analysis; the greater the potential harm, the less likely its occurrence needs to be in order for the activity to be regarded as abnormally dangerous. Even if fracking can be conducted safely and with the utmost care, this factor may still be satisfied because the potential harm can be quite significant.

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51 Restatement (Second) of Torts § 519; see also Restatement (Third) of Torts § 20 (Am. Law. Inst. 2010) (“An actor who carries on an abnormally dangerous activity is subject to strict liability for physical harm resulting from the activity.”).

52 See, e.g., Doundoulakis, 42 N.Y.2d at 448 (applying the six factors provided in Restatement (Second) of Torts § 520); see Restatement (Second) of Torts § 520.

53 See Restatement (Second) of Torts § 520 cmt. f.

54 Id.

55 Id. § 520(a).

56 Id. § 520 cmt. g.

57 See Powell, supra note 35.

58 Restatement (Second) of Torts § 520(b).

59 See id. § 520 cmt. g.
Another factor is the "inability to eliminate the risk by the exercise of reasonable care."\footnote{See id. § 520(c).} With regard to this factor, the risk need not be the kind of risk that cannot possibly be eliminated.\footnote{See id. § 520 cmt. h.} It is sufficient under this factor that an inherent, substantial, and unavoidable risk remains, despite the exercise of reasonable care and the absence of any negligence.\footnote{See id.} Under the Third Restatement, this factor is characterized as "indispensable."\footnote{Id.} Notably, the Third Restatement also suggests that this factor is "substantially, and often primarily, relied on" by courts.\footnote{Id.}

The next factor is the "extent to which the activity is not a matter of common usage."\footnote{See Restatement (Third) of Torts § 20 cmt. h.} For the purposes of this section, common usage refers to an activity that is "customarily carried on by the great mass of mankind or by many people in the community."\footnote{Id.} With regard to oil wells, the central importance of oil to American society dictates that wells be drilled, and certain land contains oil and lends itself to drilling.\footnote{See Restatement (Second) of Torts § 520(d).} Thus on the one hand, the drilling of oil wells can be said to be a matter of common usage on certain oil-rich lands. On the other hand, most individuals are not engaged in the activity, and drilling is only carried out in certain places.\footnote{Id.} Even if drilling were to be considered a matter of common usage of land containing oil, it is not a matter of common use of land in general.\footnote{Id.} It is unclear how this factor applies in the context of fracking, and the analysis of this factor seems likely to be factually driven.

An additional factor for courts to consider is the "inappropriateness of the activity to the place where it is carried on."\footnote{See id. § 520(e).} For this factor, courts consider whether a certain use is a
“non-natural use.”71 If an activity is to be conducted but can only be conducted in one place, then this necessarily must be considered an appropriate place.72 For example, conventional wisdom dictates that “oil wells can be located only where there is oil.”73 However, it may be more accurate to say that oil wells can only be located where we can reach the oil. The high demand for oil dictates that it be extracted from the earth, constantly improving technology allows for the extraction of oil from places never previously accessible. Thus, while the location of then-extractable oil has in the past dictated where wells were located, today’s wells can be located in significantly more places, including peoples’ backyards,74 making this factor more important today than ever before. In addition, where a highly dangerous activity must be carried out in a particular location, whether that activity is regarded as abnormally dangerous for strict liability purposes will depend on the activity’s value to the community. Interestingly, there is a divide, even among states with a large oil industry presence, regarding whether drilling an oil well is an abnormally dangerous activity.75 This factor therefore is less predictable.

The final factor is the “extent to which [an activity’s] value to the community is outweighed by its dangerous attributes.”76 This factor is of cardinal importance in communities whose economic wellbeing is so directly tied into an activity that their prosperity depends on its being carried out there.77 Members of such a community are understandably biased in favor of the industry upon which their wellbeing depends, whereas others are more distant and less invested, and may not have a strong opinion either way, or may oppose the industry entirely. It should be noted that the decision to impose strict liability lies solely with the court, “and it is no part of

71 See id. § 520 cmt. j.
72 Id.
73 See id.
75 RESTATEMENT (SECOND) OF TORTS § 520 cmt. k.
76 See id. § 520(f).
77 Id. § 520 cmt. k.
the province of the jury to decide whether an industrial enterprise upon which the community’s prosperity might depend is located in the wrong place.”

To some extent, the fourth, fifth, and sixth factors can be viewed as variations of the same factor. The appropriateness of the activity to the place where it is carried on is, in essence, a question of whether a particular use of land is a “natural use.” This is just another way of determining the extent to which an activity is a matter of common usage. The degree to which an activity’s value to the community is outweighed by its dangerous attributes defines how appropriate the activity is for the place where it is carried on, and an activity on which a community depends is likely to be a matter of common usage for that community. Therefore, these final three factors are substantially intertwined and can be considered together.

Ultimately, it is likely that fracking is a good candidate for the imposition of strict liability. There is a high degree of risk of harm to the person, land, or chattels of those living in close proximity to a well in that groundwater contamination and air pollution may pose significant health risks. Along those same lines, the second factor is probably satisfied because the health risks posed to many people have the potential to be substantial. It is currently unclear whether the risks can be eliminated with the exercise of reasonable care, and, as will be set forth in more detail below, this is likely to be a very important, if not the most important factor. The final three factors, that is, the extent to which the activity is a matter of common usage, the appropriateness of the activity to the place where it is carried on, and the extent to which its value to the community is outweighed by its dangerous attributes, are likely to vary from state to state.

In New York these factors would most likely favor the imposition of strict liability. This is because unlike states such as Texas and Pennsylvania, oil and gas extraction is not a common use of New York land, and many parts of New York are fairly heavily populated making fracking inappropriate in large portions of the state. Its value to the community is essentially unknown at this time. However, unlike states such as Texas and Pennsylvania,

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78 Id. § 520 cmt. 1.
New York does not have longstanding and deeply rooted community dependence on, and support for, the oil industry. Finally, it should be noted that courts in many jurisdictions have imposed strict liability for activities that cause the pollution of water sources. Thus, it may be appropriate to impose strict liability upon fracking operations in New York where groundwater contamination results.

3. The Third Restatement of Torts

The Third Restatement provides that “[a]n actor who carries on an abnormally dangerous activity is subject to strict liability for physical harm resulting from the activity.” Abnormally dangerous activities are defined as those activities that are “not of common usage” and “create[] a foreseeable and highly significant risk of physical harm even when reasonable care is exercised by all actors.” Notably, this applies only to harm flowing from the activity, the occurrence of which was among the risks inherent in the activity. In other words, strict liability is not imposed for the realization of completely unforeseen risks. An important distinction, then, between the second and third Restatements’ strict liability provisions is that the Third Restatement appears to place greater emphasis on foreseeability. This may reflect an important shift in

79 See, e.g., Branch v. Western Petroleum, 657 P.2d 267, 274–75 (Utah 1982) (holding defendants strictly liable for causing oil well waste waters to pollute plaintiff’s water well).
80 RESTATEMENT (THIRD) OF TORTS § 20(a) (AM. LAW. INST. 2006).
81 Id. § 20(b)(1)–(2).
82 See id. cmt. e.
83 See id. cmt. i. The First Restatement reserved the imposition of strict liability for situations in which a defendant should have recognized that a given result was a likely consequence of his or her actions. See id.; RESTATEMENT (SECOND) OF TORTS § 519. Without explanation, this focus on the foreseeable harm was abandoned in the Second Restatement. See RESTATEMENT (THIRD) OF TORTS § 20 cmt. i; RESTATEMENT (SECOND) OF TORTS § 520 cmt. g (explaining that “[i]t is not enough that there is a recognizable risk of some relatively slight harm,” while remaining silent as to whether it might be sufficient that there is a recognizable, that is, a foreseeable risk, of harm that is relatively significant). However, the Second Restatement’s “recognizable risk” language was interpreted, over time, as requiring that the risk be foreseeable. See RESTATEMENT (THIRD) OF TORTS § 20 cmt. i (citing
the way that strict liability will be imposed moving forward, and courts that rely on the restatements may be inclined to focus much more on the foreseeability of the risk in determining whether an activity is abnormally dangerous.

4. Application of Case Law and Restatement Factors to Fracking

In recent years, fracking has become highly politicized and controversial. The issue is particularly contentious in New York, and there are certainly interesting arguments on both sides. The ideal solution would be to find a middle ground that allows for the retention of the numerous benefits of fracking while ensuring that it is conducted safely and that those harmed by it will have open avenues of relief.

As will be set forth in greater detail, categorizing fracking as an abnormally dangerous activity subject to strict liability may increase accountability and encourage diligence, thus enhancing safety both in the workplace and the community while retaining the numerous benefits that fracking brings to the table. This Article posits that the imposition of strict liability forces the internalization of at least some negative externalities associated with fracking, and strict liability may also lead to increased safety measures, thereby encouraging greater efforts to prevent groundwater contamination. The result might be to make fracking more acceptable.

To determine if fracking may properly be deemed an abnormally dangerous activity, the long-standing factors set forth in the Second Restatement should be applied in addition to the relevant case law to determine how courts will likely analyze the issue. First, perhaps the most important of the Section 520 factors in terms of hydraulic fracturing litigation will be the degree to which the risks can be avoided with the exercise of reasonable care.

New York courts have held that “where the evidence supports a finding that the dangers associated with the activity in question can be eliminated or diminished with the exercise of reasonable care, dismissal [of a lawsuit] is appropriate, since an activity which can be safely performed generally will not be deemed to be [abnormally dangerous].”\textsuperscript{84} For example, in New York, courts have held that the storage and transportation of gasoline is not an abnormally dangerous activity.\textsuperscript{85} An important aspect of this determination is that with adequate precaution, the risks associated with such activities can be prevented or eliminated.\textsuperscript{86} It is therefore worth discussing this issue in greater detail. The first step is to determine whether “safe fracking” is a realistic possibility.

Congress has asked the EPA to conduct a study on the potential impacts of fracking on drinking water.\textsuperscript{87} The EPA’s ultimate findings will likely play an important role in the courts’ determinations regarding whether the risks of fracking can be eliminated with reasonable care. EPA released a progress report in 2012, and a draft report is expected to be released in 2014.\textsuperscript{88}


\textsuperscript{86} Plainview Water Dist., 2006 N.Y. Misc. Lexis 3730, at **33–34 (“[T]he Court finds that the overall inference to be drawn from the plaintiff’s expert submissions, is that by adopting reasonable precautions and utilizing properly constructed and designed tanks, the defendants could effectively have prevented tank failure, leakage and contamination.”); Searle, 700 N.Y.S.2d at 591 (declining to label the use and storage of propane as an ultrahazardous activity because there are “reasonable precautions that can be taken to prevent explosion”).


\textsuperscript{88} See id.; ENVTL. PROT. AGENCY, STUDY OF THE POTENTIAL IMPACTS OF HYDRAULIC
The EPA's progress report has revealed that 652 different products containing chemicals classified as known or suspected carcinogens were used in fracking operations between 2005 and 2009, with fourteen hydraulic fracturing service companies reporting. Data collected by the EPA also suggests that the preparation for production of natural gas wells that have been fractured is one of the leading causes of air pollution in the natural gas industry.

On the other hand, there appear to be some indications that safe fracking is a realistic possibility. The New York State Health Department has suggested that fracking can be conducted quite safely, with minimal, if any human chemical exposure. Moreover, new industry standards are thought to be capable of reducing air pollution and methane emissions, and the standards are “expected to yield a nearly 95 percent reduction in [gas emissions] from more than 11,000 new hydraulically fractured gas wells each year.”

It may be difficult, if not impossible, to prove that risks can or cannot be eliminated, but activities may be subject to strict liability even in the absence of proof regarding the inability to eliminate the risks with reasonable care. Therefore despite its likely importance,

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89 PROGRESS REPORT, supra note 88, at 29.
93 See Town of New Windsor v. Avery Dennison Corp., No. 10-CV-8611, 2012 U.S. Dist. LEXIS 27264, at **42–43 (S.D.N.Y. Mar. 1, 2012) (finding it plausible that defendant plant operator’s use of hazardous solvents that resulted in groundwater and other contamination was an ultrahazardous or abnormally dangerous
this factor—like any other Section 520 factor—is not necessarily decisive in determining whether fracking is an abnormally dangerous activity.

C. Applying Strict Liability in Cases Involving Injuries Resulting From Fracking: The Legislative Approach

The application of strict liability in cases of groundwater contamination caused by hydraulic fracturing may also be accomplished through state or federal legislation.

At the federal level, Congress has exempted hydraulic fracturing from many of the safeguards that were previously in place and would otherwise have offered some measure of protection to those who might be impacted by its harmful effects. For example, the Energy Policy Act of 2005 amends the Safe Drinking Water Act to exclude “the underground injection of fluids or propping agents (other than diesel fuels) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities.” In other words, the “[u]nderground injection of fluids related to oil and gas production (including flowback and produced water) is authorized by the Safe Drinking Water Act.”

Moreover, harmful waste resulting from the exploration or production of oil and gas is exempt from the Resource Conservation and Recovery Act. This is yet another example of the extreme leeway at the federal level given to the oil industry with regard to

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activity where all restatement factors supported this finding except factor (c), the inability to eliminate the risks with reasonable care, which had not been established).


96 PROGRESS REPORT, supra note 88, at 19 n.12.

fracking operations. As a result, many states have attempted to fill the void through state-level legislation. One strategy for closing the fracking liability loopholes is to create statutory presumptive liability for groundwater contamination caused by hydraulic fracturing.

1. Presumptive Liability

The concept of presumptive liability has been raised frequently with respect to fracking. Presumptive liability differs from strict liability in that it creates a rebuttable presumption, allowing a defendant to raise a limited number of defenses to escape liability. In Michigan, a proposed amendment to the “Natural Resources and Environmental Protection Act” creates a rebuttable presumption that any person conducting hydraulic fracturing operations is liable for contamination of groundwater in the vicinity of a well if one or more of the substances that were injected into that well are discovered in the water.

North Carolina has passed legislation in the same vein. It provides in pertinent part that, subject to a limited number of specified defenses, oil or gas well developers or operators are presumed to be responsible for water supply contamination occurring within 5,000 feet of a wellhead. In addition, the law requires well developers or operators to provide an adequate replacement water supply in the event water contamination occurs within 5000 feet of a well. This is in addition to any other remedies that may be available, including, but not limited to, monetary compensation for any damage done to the water supply. Thus, North Carolina’s legislative solution

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98 See 225 ILL. COMP. STAT. 732/1-85 (2013) (establishing a rebuttable presumption of liability regarding pollution or diminution of a water supply); N.C. GEN. STAT. §§ 113-421 (2012) (creating presumptive liability for water contamination caused by an oil or gas well developer or operator).
101 See N.C. GEN. STAT. §§ 113-421.
102 Id.
103 Id.
104 Id.
with regard to liability for groundwater contamination caused by hydraulic fracturing, much like Michigan’s, is to create a rebuttable presumption of liability and provide substantially more protections against groundwater contamination than the federal framework. Moreover, the North Carolina statute provides that the presumption may be rebutted if it can be proved by a preponderance of the evidence that the contamination pre-dates the drilling activities, the oil or gas developer or operator was refused access to the land in order to conduct a pre-drilling test of the water supply, the water supply is not within 5,000 feet of one of the oil or gas developer’s or operator’s wellheads, or there is another cause of the contamination.\textsuperscript{105}

2. Proposed Legislation in New York

In New York, a bill that has been introduced in the Assembly proposes the imposition of strict liability for those who undertake hydraulic fracturing within the state.\textsuperscript{106} The bill states that the legislature deems fracking activities, including the transportation of fracking chemicals and wastewater, to be hazardous and imposes strict liability upon anyone who undertakes such activities in New York.\textsuperscript{107} Moreover, this bill provides further protection for those harmed by fracking by providing for an award of attorneys’ fees and costs of litigation to plaintiffs who are awarded damages.\textsuperscript{108} If enacted, the legislation would force oil and gas well developers and operators to internalize one of the costly negative externalities associated with fracking; that is, the high costs of litigation.

3. A New Legislative Direction

One way to address the issue of liability in fracking-related groundwater contamination in New York would be to enact legislation

\textsuperscript{105} Id.
\textsuperscript{107} Id.
\textsuperscript{108} Id.
specifically pertaining to hydraulic fracturing operations and the chemicals it uses. The legislation would borrow the fee-shifting provision from the New York bill discussed above and would be modeled in large measure on New York Navigation Law Article 12, also known as “the Oil Spill Act.” The proposed legislation would call for the creation of a fund similar to the New York environmental protection and spill compensation fund established by the Oil Spill Act. The fund would be created from monies collected from various sources, including a licensing fee assessed upon all well operators and other major participants in fracking operations, who must renew their licenses every five years, taxes assessed on a per-barrel basis for each barrel extracted from a given well, and a one-time fee charged to all well operators for the specific purpose of financing the fund.

The fund would serve to ensure that those affected by groundwater contamination as a result of fracturing operations would not be without redress when the specific source of the contamination cannot yet be determined. Much like the Oil Spill Act, the fund would cover the costs of cleanup and remediation, as well as direct and indirect damages. Once the source of the contamination is established, the fund would then be able to bring an action under this proposed law to recover these costs. Any damages recovered would be returned directly to the fund.

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109 See N.Y. NAV. LAW §§ 179–190. “Any person who has discharged petroleum shall be strictly liable, without regard to fault, for all cleanup and removal costs and all direct and indirect damages.” Id. § 181(1).

110 See id. § 171. The Oil Spill Act establishes the New York environmental protection and spill compensation fund, comprised of two separate accounts, which are funded by license fees and penalty assessments under the Act, as well as surcharges collected per barrel of petroleum. This fund “finances State cleanup efforts when the discharger is unknown, unwilling or unable to pay these costs.” See State v. Green, 96 N.Y.2d 403, 406 (2001) (“Once the Fund has disbursed monies for the cleanup, it must then seek reimbursement from a responsible party.”).

111 See N.Y. NAV. LAW § 181(3) (“The owner or operator of a major facility or vessel which has discharged petroleum shall be strictly liable, without regard to fault, subject to the defenses enumerated in subdivision four of this section, for all cleanup and removal costs and all direct and indirect damages paid by the fund.”).
However, unlike the Oil Spill Act, which deals only with the discharge of petroleum, this proposed law would deal specifically with the discharge of chemicals and byproducts of petroleum extraction, as well as the petroleum itself. In doing so, the proposed law would cover all contamination caused by fracking operations. Additionally, the proposed law would create a private right of action for homeowners whose groundwater is contaminated, providing yet another avenue for recovery and increasing the likelihood that injured parties will be made whole.

While fracking is currently banned in New York State, the ban is not necessarily permanent.\textsuperscript{112} The legislation herein proposed could be helpful in laying the groundwork for a sensible and effective legislative regime if the ban is lifted in the future. Moreover, this proposal could potentially serve as a model for other states.

4. An Economic Analysis of the Proposed Legislation

The legislation proposed in this paper would likely be supported by the economic analysis of law. In general, the economic theory of law “explains tort law as that body of rules designed to minimize the social costs of accidents.”\textsuperscript{113} It serves to achieve this goal of cost minimization because, “by holding a party strictly liable for harm caused by its actions, the party will make efficient market decisions and change its actions so as to internalize the cost of the damages incurred by its risky activity.”\textsuperscript{114}

In particular, the proposed legislation would seemingly appeal to those who subscribe to the exclusively “welfare-based normative approach” to lawmaking.\textsuperscript{115} This theory posits that “legal rules should be selected entirely with respect to their effects on the well-being of individuals in society.”\textsuperscript{116} The proposed legislation

\textsuperscript{112} See supra Part I.B.
\textsuperscript{116} Id.
advances societal well-being by encouraging firms to internalize the costs of causing, for example, groundwater contamination. Collecting money from firms before any potential problems arise and throughout the life of a well provides those who are harmed with assurance that at least some costs of accidents will be paid by the responsible firms. This mechanism allows for the retention of the many benefits of fracking while also providing a safety net for those who might be adversely affected. Therefore the proposed legislation promotes the maximization of the wellbeing of individuals.

Furthermore, an important theme of the economic analysis of law is that behavioral incentives are influenced by substantive legal rules. A regime designed to impose strict liability upon firms engaging in hydraulic fracturing would likely affect the behavior of those firms. This is likely to be the case because firms are guided by profit maximization and are thus likely to modify their behavior to minimize costs and maximize profits. If a firm will be forced to bear the costs of accidents, including the costs of remediation and any damages, direct and incidental, then a profit maximizing firm would, in theory, always choose to incur the costs of preventing an accident where they are less than the potential costs of failing to do so.

Laws can be enacted to encourage firms to make decisions that will minimize potential harm to people, but anything less than strict liability is unlikely to achieve the desired effect. This is because sophisticated parties will modify their behavior, not according to the laws as they are written, but to the laws as they are enforced, or to the extent that they are enforceable. In other words, where a firm believes that it can escape liability based on inadequate laws or loopholes, it is likely to actively seek to do so. A rational, profit-maximizing firm will not, therefore, bear additional costs of risk minimization in an effort to reduce the incidence of accidents for which it believes it will not be liable. The costs of accidents are then borne entirely by society. Strict liability makes it clear that, should an accident occur, the costs of the accident are likely to be borne by the responsible firm rather than the injured party or parties.

118 Id.
III. Conclusion

Governor Cuomo has closed the door on Fracking in New York State, but he has not locked the door and thrown away the key. The time is right to begin considering how to establish a workable, sensible regulatory regime should the ban be lifted in the future—a regulatory regime that protects the public without stymying economic growth. Specifically, the state must determine how to deal with the issue of liability for groundwater contamination arising out of fracking operations. Upon considering the restatement factors traditionally used to determine whether an activity is abnormally dangerous, fracking would appear to be an excellent candidate for a strict liability regime.

The most efficient and perhaps the most appropriate way to impose strict liability may be to do so through legislation. The proposed legislation herein would call for strict liability in cases of groundwater contamination caused by fracking, create a private right of action for homeowners, and establish an industry-financed fund to compensate those persons negatively affected by fracking. In doing so, the proposed legislation would be modeled on the most effective elements of New York’s Oil Spill Act, as well as a bill proposed in the New York State Assembly and similar legislation in other states. Additionally, the proposed legislation would contain a fee-shifting provision, so the high cost of litigation would not be a bar to recovery for individuals harmed by groundwater contamination caused by fracking.

Finally, this proposal makes sense under an economic analysis of law. The proposal maximizes societal wellbeing by allowing society to enjoy the benefits of fracking while reducing the exposure of individuals to the potential harm that might come with it. Moreover, the proposal would help ensure that those who are adversely affected may recover for the harm done to them or to their property. The regulatory regime set forth in this article offers a middle ground where the State of New York can realize the benefits of fracking while mitigating the potential harm. This is the best of both worlds.