

# [Research paper on legal issues in hydraulic fracturing](https://assignbuster.com/research-paper-on-legal-issues-in-hydraulic-fracturing/)

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## Introduction

Hydraulic is a term used in oil exploration to refer to the proliferation of fractures in a layer of rock. Hydraulic fracturing employs the use of a pressurized fluid to propagate the fractures on the layer of rock. This is referred to as induced hydraulic fracturing. Conversely, some hydraulic fractures can occur naturally devoid of interference from man. Good examples of these are veins and dykes that occur on layers of rock beneath the earth’s surface. These dykes and veins provide conduits along which petroleum and gas from source rocks can seep in through to reservoir rocks.
Through induced hydraulic fracturing, petroleum, gas and other materials are released from in between the rock crevices for extraction. Hydraulic fracturing technique has been refined over time, with its first use in extraction being dated back to 1947. The refining of hydraulic fracturing has given rise to a more modern method called horizontal slickwater fracturing. This method has made the extraction of gas more economical and was rolled out in 1998. It works by a mechanism where energy form a highly pressurized fracturing fluid is injected into rocks thereby creating new channels in the rock.
This increases the rate of extraction of the hydrocarbons trapped in between the rocks. Proponents of hydraulic fracturing endear to the economic benefits that the process brings forth through the extraction of large amounts of hydrocarbons trapped between rocks that were formerly inaccessible. Opponents of the process point to the environmental impact that the process has. These range from potential pollution of the ground water, proliferation of the gases and chemicals used in fracturing to the surface, risks in the quality of air especially exposure to silica gas. Owing to this, the process has been under close scrutiny in many countries even suspending and others banning its use (Spellman, 2012).
This paper will build on this by exploring the legal and environmental issues surrounding hydraulic fracturing. The paper will also address state and federal laws addressing the process with a comparison of approaches towards hydraulic fracturing from two states. The paper will also compare policies of the United States of America to foreign policies on hydraulic fracturing. I will also discuss the scope of the presidential order on hydraulic fracturing and position the use of hydraulic fracturing in meeting America’s energy needs. I will conclude by offering an opinion on the laws and regulations that should be instituted to administrate the employment of hydraulic fracturing in gas and petroleum exploration.

## Environmental issues in hydraulic fracturing

While there are differences between the various drilling sites, the legal and environmental concerns of hydraulic fracturing have always been the same across the board. One of the environmental concerns about hydraulic fracturing is the potential for contamination of water. As espoused earlier, the process uses pressurized fluid t force cracks in rocks. The most commonly used fluid is water and diesel and water. Firstly, large volumes of water are used so that when they are compressed, they can yield sufficient pressure to cause conduits in the bed rock. Other additives are included in the water in order to acquire optimization. Fears have been allayed that these additives that have been kept confidential, seep into the underground water used for drinking and other domestic purposes (Spellman, 2012).
Secondly, there have been concerns that the process wastes large volumes of water. For instance, in the last three years, wells in Pennsylvania have produced over 1. 3 billion gallons of waste water from hydraulic fracturing. This water was sent to wastewater treatment facilities that are not sufficiently equipped to remove the many toxic chemical using in the drilling process. If this water is pumped back into circulation, there is potential for contamination of the environment with nonbiodegredable wastes. There are health concerns where this water is used for domestic purposes like drinking by human beings and animals. In the same period, more than twelve sewage waste treatment plants received gas industry waste water and discharged it into streams, rivers and lakes when it was partially treated. This raises concerns about the pollution of the marine habitat and the animals that inhabit the habitat.
Thirdly more environmental concerns about radiation pollution and poisoning are abound. For instance, in the United States of America only, more than one hundred and seventy nine wells produced water with very high levels of radiation. Of the one hundred and seventy nine wells, one hundred and sixteen wells reported radioactive material, chiefly radium that was over a hundred times higher than recommended by federal drinking water standards. At least fifteen wells produced wastewater with over one thousand times the amount of radioactive material that is considered acceptable worrisome (, , , &
Fourthly, air pollution is another environmental issue raised by hydraulic fracturing. The areas around wells drilled through hydraulic fracturing are at risk of airborne pollutants. It is so serious that Wyoming failed to meet the air standards stipulated by federal laws in the year2009. This was due to proliferation of fumes containing toluene and benzene from oil wells. These gases have health implications on the people living around the wells. In the year 2010, hospital system reports in six countries with the highest drilling reported a twenty five percent asthma rate in young children. These figures are very high when compared to the seven percent state rates.

## Legal issues in hydraulic fracturing

There are also numerous legal issues surrounding hydraulic fracturing. Featuring above them is that drillers using hydraulic fracturing are not regulated by the clean air act, clean water act and the safe drinking water act. These acts were passed in order to regulate the quality of drinking water and air. They offer provisions that regulate activities that can potentially pollute the air or contaminate water bodies. They ensure that the citizens’ right to clean drinking water and breathing air are not violated. The fact that drillers using hydraulic fracturing, a potential producer of contaminants of both air and water are not regulated by these three acts is worrying.
As espoused in the discussion above on the environmental issues raised by hydraulic fracturing, Wyoming State did not meet the required air quality standards. This implies that the provisions of the air quality act cannot be used to prosecute the drillers. The discussion above has also highlighted the numerous violations in water safety standards by petroleum and gas exploration companies. Best practices require them to use methods and chemicals that are not harmful to the environment. In order to enforce these best practices, laws are put in place to punish offenders. The fact that an important act of parliament like the safe drinking water act does not regulate the activities of oil drillers is worrisome (, , , &
In the year 2005, the United States congress made provision in the Energy Policy Act. Under the act, the United States congress made provisions for all oil drillers prohibiting the regulation of hydraulic fracturing based on the provisions of the safe drinking water act. Under the new provisions in the Energy Policy Act, oil and gas industry players do not have to abide by the regulations of the Clean Water Act that aims to regulate contaminants and pollutants at construction sites. The industry players do not have to put up with by the provisions of the Clean Air act that seeks to regulate emissions from industries. This has led to the unabated pollution of the air and contamination of water bodies by industry players in the oil and gas exploration industry.
I believe the most important issue is the exemption from the regulations of the Safe Drinking Water act, Clean Water Act and Clean Air act by the congress. This is because the exemption has a ripple effect that leads to the increased pollution and contamination of water bodies by the oil industry. Were these acts in operation, there would be less blatant degradation of the environment.

## Federal and state regulations that address hydraulic fracturing

Hydraulic fracturing is regulated by a number of acts passed by the United States congress. Firstly, the Energy Policy Act passed in 2005 exempted drillers of oil wells using the hydraulic fracturing from observing requirements of various acts chief of them being the Safe Drinking Water Act, Clean Air act and the Clean Water Act. These provisions regulated the activities of industries to prevent the pollution of air and water bodies. However, the Energy Policy Act of 2005 created a whole set of comprehensive provisions regulating the activities of the players in the oil and gas exploration industry.
The Eleventh Circuit Court ordered the Environmental Protection Agency to consider its stance on the regulation of hydraulic fracturing. Prior to this decision, the Environmental Protection Agency had deemed hydraulic fracturing to fall under the provisions of the Safe Drinking Water Act. Consequently, the Environmental Protection Agency, reviewed the stance placing the wells under the regulation of the act, although this was repealed by the Energy Protection Agency of 2005 The FRAC Act of 2009 eliminated the exemption granted to the oil drillers by the Energy Policy Act of 2005. If this happens, the producing wells will be reclassified as injection wells thereby placing them under the control and jurisdiction of the states.

## Comparison of approaches between two states

The state of Pennsylvania has approached the hydraulic fracturing issue by passing a new law, The new Marcellus Shale Law. This new law requires all municipalities to permit Marcellus Shale well drilling in all zones including residential zones. The law also requires municipalities to allow wastewater pits in all zones, including residential zones. The new law also allows compressor stations in agricultural and industrial zoning districts. It also allows gas processing plants in industrial zoning districts. The law also bars municipalities from limiting the operation hours for gas related activities and allow gas pipelines in al zoning districts. Finally, the law allows doctors in the state the right to use lists of chemicals used in hydraulic fracturing fluid, although in emergency situations only. However, the doctors are forbidden form ever discussing the details with their patients (Tiemann, 2010).
Conversely, the state of Ohio passed a bill that sought to regulate oil and gas drilling. The bill also regulated hydraulic fracturing. As per the provisions of the bill, drilling companies are required to perform tests on water within four hundred and sixty meters of proposed drill sites. They are also required to report and provide a full disclosure of the chemicals and fluids to be used during fracking and drilling say for those considered proprietary. However, the disclosure is to be done after the wells have been drilled or fractured, something opponents of the bill are against.
The bill allows for sixty days after drilling and fracking to post the list of chemicals and fluids used on their websites. However, opponents want the lists revealed before fracking is done so that well owners can have the baseline levels of the elements taken in their wells. The bill refuses the public the right to appeal a drill permit that has already been granted and contends that permits do not require public notices to be given prior. Unlike in Pennsylvania, the bill allows doctors to disclose the formulation of the chemicals only to the patient, the family and any other doctors involved. This disclosure is exclusively for the function of treatment, and not legal or any other proceedings.

## Comparison of the U. S and Foreign policies on hydraulic fracturing regulation

The United States of America allows for hydraulic fracturing. As a matter of fact, most of the wells drilled in the United States are drilled through hydraulic fracturing. The activities of hydraulic fracturing are controlled by the Environmental Protection Agency based on the provisions of the Energy Policy Act of 2005. Regulation is done at the state and federal levels with states allowed to instill regulations and standards that are in tandem with the regulations provided by the federal laws. Policies in hydraulic fracturing protect the industry players from disclosing the details of the chemicals they use in the pressurized injection fluids used during fracking. Nonetheless, some states have allowed doctors access to these details in cases of emergencies, although the doctors are limited in the use of this information.
Some foreign countries have banned hydraulic fracturing. For instance, France banned the use of hydraulic fracturing in the exploration of natural gas and petroleum in the year 2011 due to public pressure. Other countries still allow the use of the process. For instance, South Africa allows the use of hydraulic fracturing to perk up the efficiency of boreholes sank into the bed rock. South Africa also allows the use of hydraulic fracturing in the extraction of shale gas. Although a moratorium had been imposed on the use of the process against the interest of various energy companies, it was lifted allowing the use of hydraulic fracturing in the extraction of shale gas.

## The scope of the president's executive order on hydraulic fracturing

Early in the year, the president of the United States of America issued an executive order supporting the use of hydraulic fracturing in a safe and responsible manner in order to develop unconventional resources of domestic natural gas. The executive orders were welcomed across the board by the American Chemistry Council touting the move as outstanding in the efforts of the country to become energy secure. The executive orders means there will be coordination between the diverse state and federal agencies in order to agree on modalities that will enhance safety and sustainability in the exploration of shale gas. This implies that provisions regulating hydraulic fracturing will be galvanized so that they are not conflicting. It also implies that there will be a common policy to be used by all the states in the regulation of the activities of hydraulic fracturing.
The place of hydraulic fracturing of oil and gas in meeting U. S. energy needs
Hydraulic fracturing is very important in meeting the enormous energy needs of the United States of America. Many oil wells in America are drilled using the hydraulic fracturing method. Through the process, the country is able to access many barrels of otherwise inaccessible crude oil that is refined to fuel the country. Through hydraulic fracturing, the country is able to meet a significant percentage of its energy needs. The country is also able to tap into the shale gas reserves that remain underutilized thereby augmenting its energy sources (Andrews, 2009).

## The economic impact of hydraulic fracturing

Hydraulic fracturing enables the United States of America to tap into otherwise inaccessible reserves of petroleum and natural gas. Through this, it saves the money it would have used to import oil drilled through other means from other countries. Through hydraulic fracturing, the country is not over reliant on foreign sources of energy thereby balancing its imports and export quotient. However, the extraction of oil through hydraulic fracturing comes with its fair share of costs. Without looking at the operation costs incurred by the drillers, the cost used in treating and management of the enormous wastes that the process produces are enormous. The process also has cost implication in terms of environmental pollution. The health concerns emanation from the pollutants passed on to the humans through the consumption of contaminated water and breathing of air of low quality also has economic implications on the country (Rocky Mountain Mineral Law Foundation, 2011).

## Conclusion

It is very evident that hydraulic fracturing contributes to environmental pollution to a considerable extent. Through the review of literature, I have not seen the Pollution Prevention Act of 1990 come into effect. It is my opinion that the provisions of the act be used to regulate the activities of hydraulic fracturing. The act seeks to prevent the production of pollutants at source where feasible. It also seeks to promote proper treatment and disposal of contaminants where their production cannot be prevented at source. I reserve the opinion that the various provisions of governing the activities of the oil industry should be consolidated for harmony in the regulation.

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