

Take It Easy On Fracking

Law360, New York (March 15, 2011) -- In the past 18 months, hydraulic fracturing — the process by which large amounts of water and other liquids, including chemicals, are pumped into shale oil and gas formations to increase the production of oil and natural gas — has garnered increased attention from federal and state regulators, as well as the national press.

Just in the past month, however, recent developments regarding hydraulic fracturing, commonly known as “fracking” or “hydrofracking,” have reached a veritable fever pitch, as continued concerns over the process’ potential environmental impacts, in addition to the U.S. Environmental Protection Agency’s release of a draft study of the impact of fracking on drinking water have gained considerable national media attention.

Hydrofracking

The process of hydraulic fracturing is not new, in fact, far from it. Fracking was first developed and used in 1949, and has been used increasingly ever since as a means by which to extract oil and natural gas from previously impenetrable shale formations, and other unconventional sources of oil and natural gas.[1]

The fracking process generally involves the injection of water at high-pressured speeds into a shale formation. The water is mixed with differing-sized granules of sand (which is used as a “proppant” to delay the closure of the fractures); and in some fracking operations very small amounts of gels or other chemical additives are used.

These chemical additives comprise less than half a percent of the fluids injected in the fracking process, and should not be hazardous to the environment under federal or state environmental pollution control laws or regulations. When these fluids are injected at high pressure, exceeding the strength of the rock, the pressure opens or enlarges fractures, resulting in the release of the natural gas or oil. As a natural result of the fracking process, certain amounts of the fluid rise to the surface, where they must be disposed of or recycled.[2]

There are typically two types of hydraulic fracturing used in the U.S., horizontal and vertical fracturing. Both are accomplished the same way, except in horizontal fracturing gas recovery is maximized by turning the drill bit horizontally after the initial vertical bore-hole is made.

To say the practice of fracturing is widespread is an understatement. According to recent reports, in 2009 there existed over 493,000 natural gas wells in the country, 90 percent of which employed hydraulic fracturing to increase the flow of natural gas.[3]

The use of fracking to obtain natural gas from so-called “unconventional” sources is also sure to increase. The EPA estimated that, while natural gas production from such sources accounted for only 28 percent of total natural gas production in the U.S. in 1998, these sources currently provide 50 percent of the total natural gas, and are expected to increase to 60 percent by 2035.[4]

The U.S. Energy Information Administration (EIA) also estimates that, in less than a decade, shale gas will comprise 20 percent of the nation’s gas supply.[5]

Recent Developments

The past month has seen a swell of activity in both the press and through the action of federal and state regulators that has continued to draw attention to the practice of hydraulic fracturing. First, on Feb. 8, 2011, the EPA released a draft plan for its study on the impact of the process of fracking on drinking water and groundwater to the agency’s Science Advisory Board (SAB). The State Assembly in New York quickly acted on the EPA’s submission of a draft plan by submitting a bill proposing to ban the practice of hydraulic fracturing until the federal government takes further action.

However, it is not only regulatory attention, but economic conditions that have continued to make fracking a “hot button” issue. In January of this year co-chairs of the Congressional Natural Gas Caucus, Reps. Tim Murphy, R-Pa., and Dan Boren, D-Okla., implored the Secretary of the Interior Ken Salazar to forestall further regulation until issuance of the U.S. EPA study as “hastily proposed regulatory burdens on natural gas will increase energy costs for consumers, suppress job creation in a promising energy sector and hinder our nation’s ability to become more energy independent.”

And the events of the past weeks have only reinforced such statements, as, according to the EIA, during the week of Feb. 21 to 28, 2011, the price of a gallon of gasoline rose almost 20 cents, to a current price of \$3.38 — 70 cents higher than the same week in 2010.[6]

And on Feb. 21, 2011, the Australian mining company BHP Billiton announced a purchase of \$4.75 billion in shale oil assets held by Chesapeake Energy Corp., the company’s largest purchase in six years. This purchase included Chesapeake’s interest in the Fayetteville shale natural gas field, located in Arkansas.

Federal Regulation

In 1997, the Eleventh Circuit decided *LEAF v. U.S. Environmental Protection Agency*, 118 F.3d 1467 (11th Cir. 1997), concluding that the hydraulic fracturing of coalbeds constituted “underground injection” so as to bring the practice under the jurisdiction of the federal Safe Drinking Water Act (SWDA).

As a result of such ruling, the EPA conducted its first major study analyzing the impact of hydraulic fracturing on drinking water quality in Evaluation of Impacts to Underground Sources of Drinking Water by Hydraulic Fracturing of Coalbed Methane Reservoirs Study (2004).

In that study, the EPA determined that “the injection of hydraulic fracturing fluids into coalbed methane wells poses little threat to [underground sources of drinking water].” The study resulted in what became known as the “Halliburton exception” to the Safe Water Drinking Act as, in the Energy Policy Act of 2005, Congress specifically exempted “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.”[7]

In March of 2010, however, the EPA announced that it would be undergoing a revised fracking study, this time to analyze “the full lifespan of water in hydraulic fracturing,” from the acquisition of water through its ultimate treatment and disposal after use in the fracking process.[8]

On Feb. 8, 2011, the EPA submitted a draft proposal to the SAB for review, which the SAB is set to review on March 7 and 8. Upon receipt of SAB’s comments, the EPA will issue preliminary research results by the close of 2012, with a full report to follow in 2014. However, until such study is completed, Congress is unlikely to repeal the fracking exception in the SWDA.

State Regulation

In the absence of definitive federal regulation, states and municipalities have gotten into the act of regulating fracking. Not surprisingly, the states with greatest regulation are those housing the largest shale gas formations. The largest and most productive natural gas shales in the U.S. include the Barnett (Texas), Haynesville (Alabama), Bossier and Marcellus (New York and Pennsylvania) shales.

In particular, the expansive Marcellus Shale has received the most recent attention (containing up to 500 trillion cubic feet of natural gas across six Eastern states) and predominantly, much of Pennsylvania and western New York. On Feb. 23, 2011, the New York State Assembly proposed a bill that would bar any new permits for horizontal fracking until the EPA releases its proposed report. The bill would expire and be renewed 120 days after the EPA issues its report. In October of 2010, then Governor Ed Rendell instituted a similar ban in Pennsylvania, although expiration was not contingent on the issuance of EPA’s report.

Two cities in New York and Pennsylvania have also gotten into the act, as both Buffalo and Pittsburgh instituted bans on fracking within the city limits.

Like the federal Fracturing Responsibility and Awareness of Chemicals Act, some state regulations have focused on requiring the full disclosure of the chemical constituents comprising the hydraulic fracturing fluids. In Sept. of 2010, Wyoming became the first state to require the full disclosure of the chemicals included in a company’s proprietary fracking formula. Earlier this month, however, Montana declined to adopt a similar law.[9]

Litigation and Liability

As a result of the increased regulatory attention, there has also been increased litigation concerning fracking in recent months. In November of 2009, for example, 15 families in Susquehanna County, Pa., filed suit against Cabot Oil & Gas Corp., alleging that Cabot polluted their groundwater through fracking. The suit eventually settled in December of 2010, with Cabot paying \$4.1 million to the plaintiffs and \$500,000 to the Pennsylvania Department of Environmental Protection (DEP) to offset the costs of their investigation.

In September of 2010, an additional 13 Pennsylvanian families filed suit against Southwest Energy Co., alleging that Southwest's hydraulic fracturing practices, which include the use of such chemicals as barium, manganese and strontium, have resulted in property damage and personal injury.

The families have brought claims under Pennsylvania's Hazardous Sites Cleanup Act, in addition to private nuisance and trespass claims, negligence, and strict liability claims, and are seeking a preliminary and permanent injunction to bar Southwest Energy from continuing the practice. Two more suits alleging similar theories of liability were filed in Texas in December of 2010 regarding hydraulic fracturing practices in the Barnett Shale.

However, the potential for liability arising from hydrofracking does not stop at toxic tort claims. Fracking will surely generate other types of litigation. Companies involved in the practice of hydrofracking must also be cognizant, not only of potential toxic tort litigation, but also, of claims brought under the federal Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. § 9601, et seq.

CERCLA imposes both strict, and joint and several liability, for the contamination of soil and water through hazardous substances, defined under the act. So it is important that fracking operations not contaminate the environment with substances listed under the act.

Future of Fracking Regulation and Litigation

As energy independence becomes an increasingly hot political topic, the oil and natural gas industry will be looked upon to conceive of new ways to ensure that the U.S. can supply itself to meet growing industrial demands. Evidenced by the events of only the past months, the U.S. will need to rely less on production and supply from foreign governments with unstable governments and growing social unrest.

Indeed, in the past two weeks, the average price of gasoline in the U.S. is \$3.52, an increase of 30 cents, and the increase is almost a dollar more than the price of gas at the same time last year. The use of fracking to tap the country's previously un-minable reserves of natural gas is one of the most promising methods by which to gain such independence. Before increasing federal regulation and oversight into the fracking industry, then, Congress must give careful consideration to the ramifications of so severely taxing this long-practiced, yet still burgeoning technology.

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[1] <http://www.spe.org/jpt/print/archives/2010/12/10Hydraulic.pdf>.

[2] http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/wells_hydrowhat.cfm.

[3] http://www.nytimes.com/2011/02/27/us/27gas.html?_r=1.

[4] EPA Draft Plan, February 8, 2011.

[5] EIA, Annual Energy Outlook 2009 (available at [http://www.eia.doe.gov/oiaf/archive/aeo09/pdf/0383\(2009\).pdf](http://www.eia.doe.gov/oiaf/archive/aeo09/pdf/0383(2009).pdf)).

[6] See <http://www.eia.doe.gov/oog/info/gdu/gasdiesel.asp> (Gasoline and Diesel Fuel Update as of March 1, 2011).

[7] SWDA § 1421(d)(1).

[8] <http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/index.cfm>.

[9] http://www.bozemandailychronicle.com/news/article_ffdf5c3c-2ff8-11e0-89ae-001cc4c002e0.html.

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