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HYDRAULIC FRACTURING LEGAL ISSUES

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Hydraulic fracturing: protecting against legal and regulatory risk

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Newspaper articles and television reports make hydraulic fracturing appear to be a new technology that pollutes drinking water, causes flames to leap from kitchen faucets, and constitutes the next great threat to freedom and democracy. The truth differs from the media reports.

The issue focuses on a sophisticated well-completion operation that, used in conjunction with horizontal drilling, has made possible the production of large volumes of oil and gas that are otherwise immobile in reservoirs of extremely low permeability. For the U.S., heavy-handed regulation or outright prohibition of the technique would foreclose development of an energy supply that grows as the industry gains experience with unconventional hydrocarbon reservoirs such as shales, coalbeds, and tight sands. For oil and gas producers, regulatory and legal issues have created immediate hazards.

This article discusses media and public relations issues relating to hydraulic fracturing, as well as legislative, regulatory, and litigation trends, and provides guidance to the industry to avoid legal pitfalls.

An established technique

Contrary to assertions that hydraulic fracturing is new and untested, the first documented use of the technique occurred over 60 years ago at the Klepper Gas Unit No. 1 in Hugoton gas field in western Kansas. The well was fraced in four zones with surplus napalm and a primitive packer system.[1] The Klepper Gas Unit frac job did not use proppant.

Since then, materials used in hydraulic fracturing have changed dramatically. Operators began using sand and, later on, various other proppants such as bauxite, ceramic beads, and resin-coated sand.

The carrier fluids for frac treatments have evolved even more since the first frac job was performed. The Klepper frac used napalm because the material possessed the viscosity required for the pumping project. Since that time, frac fluids have progressed from flammable hydrocarbons to refined oils to gelled crude at the end of the 1950s. Water-based frac fluids came into heavy use in the early 1960s, followed by advancements in water-soluble polymers, synthetic polymers, and guar-based polymers. Today, hydraulic fracturing companies possess a variety of complex fluids and additives designed to provide customized properties for each well with the goal to provide specific viscosities and desired conductivity for well stimulation.

Early frac jobs were fairly simple—fluid, proppant, and enough hydraulic horsepower to break down the formation. Current frac jobs are much more complicated. New frac fluid choices include slick water, borate cross-linked, metallic ion cross-linked, oil-based fluids, nitrogen and carbon dioxide foams, emulsions, and a variety of unconventional frac fluids. Additives for hydraulic fracturing jobs can now include gelling agents, cross-linkers, breakers, clay stabilizers, surfactants, buffers, biocides, friction reducers, and other specific additives designed to assist the frac or protect the formation. Due to advances in product design over the years, each one of these products can now contain any number of chemicals, ingredients, or additives.[2]

Two issues

Recently, two issues have emerged relating to hydraulic fracturing. The first issue arises from the recent contention that the operation pollutes underground sources of drinking water (USDW). The second issue centers on the disclosure of chemicals used in hydraulic fracturing operations.

To date, charges made against hydraulic fracturing do not live up to the facts.

Water concerns, EPA

News reports have led large numbers of people to believe that hydraulic fracturing has polluted numerous sources of drinking water. The media slant on this issue has been largely limited to hyperbole, conjecture, and reports of tap water containing methane or other hydrocarbons.

A recent documentary, "GasLand," asserted that hydraulic fracturing was responsible for water pollution. However, the accusations made in this video have been thoroughly

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researched and debunked by an oil and gas organization, Energy In Depth.[3]

In 2010, the U.S. Environmental Protection Agency, at the direction of Congress, commissioned a study to determine whether hydraulic fracturing causes or contributes to pollution of USDW. In conjunction with this study, the EPA first requested extensive historical hydraulic fracturing information from a number of operators and service companies by informal request in 2010.[4] The agency then conducted meetings gathering comments from environmental groups, state regulatory agencies, citizens, operators, service companies, and other interested parties.[5]

Nothing by the EPA beforehand had indicated that the agency was trying to prohibit the use of diesel fuel in hydraulic fracturing operations outside of coalbed methane wells in underground sources of drinking water.

The EPA will break the study into two groups. The prospective group will monitor hydraulic fracturing throughout the life cycle of local wells in the Haynesville shale in DeSoto County, La., and the Marcellus shale in Washington County, Pa. The retrospective portion of the study will examine areas to determine if historical hydraulic fracturing operations have affected USDW in the Marcellus shale (Bradford, Susquehanna, and Washington counties, Pa.), Barnett shale (Wise and Denton counties, Tex.), Bakken shale (Kildeer and Dunn counties, ND), and the Raton basin (Las Animas County, Colo.).[6]

To date, charges made against hydraulic fracturing do not live up to the facts. In over 60 years, hydraulic fracturing has never been linked to the pollution of USDW.[7] However, results of the EPA study will likely add fuel to the public relations fire on this issue.

Historically, the EPA has not regulated oil and gas operations or hydraulic fracturing. The agency's little-known first foray into hydraulic fracturing happened in early 2003 because of concerns about potential pollution of USDW in coalbed methane formations. That EPA study did not show that hydraulic fracturing had affected USDW. However, the EPA entered into a memorandum of agreement (MOA) with the three largest hydraulic fracturing service companies to alleviate concerns and reduce risk to the environment.

The service companies voluntarily agreed that they would stop using diesel fuel when hydraulically fracturing "into coalbed methane production wells in USDWs." The MOA also stated that the service companies would notify the EPA if they changed their policy and decided to use diesel fuel in coalbed methane reservoirs and would provide 30 days' notice to the EPA of a change in company policy regarding the use of diesel fuel in the coalbed wells in USDWs.[8] There was no requirement or agreement that diesel fuel not be used as a fracturing fluid in any other type of oil or gas reservoir.

In 2007, Congress requested information from the service companies that originally signed the MOA regarding compliance with the MOA. The service companies responded to Congress with the requested information. Subsequently, more publicity started to emerge regarding hydraulic fracturing, and in 2009 the FRAC Act was introduced in the House of Representatives and the Senate. Among the FRAC Act's requirements was the disclosure of chemicals used in hydraulic fracturing.[9]

The 111th Congress adjourned, and the act was reintroduced in the 112th Congress in March 2011. A follow-up request by Congress to various companies was also sent out in 2009 seeking additional information regarding fracturing.

In 2005, during the Bush administration, hydraulic fracturing was exempted from the Clean Water Act. Specifically, the relevant section states that the term "underground injections" excludes "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."[10]

Between the start of the MOA and mid-2009, no one thought that the EPA would ever start regulating hydraulic fracturing. However, in the fall of 2009, EPA posted a note on its web site stating: "While the [Safe Drinking Water Act] specifically excludes hydraulic fracturing from [Underground Injection Control] regulation under SDWA §1421 (d)(1), the use of diesel fuel during hydraulic fracturing is still regulated by the UIC program. Any service company that performs hydraulic fracturing using diesel fuel must receive prior authorization from the UIC program. Injection wells receiving diesel fuel as hydraulic fracturing additives will be considered Class II wells by the UIC program. The UIC regulations can be found in Title 40 of the Code of Federal Regulations Parts 144-148."[11]

This position by the EPA surprised the oil and gas industry. Nothing by the EPA beforehand had indicated that the agency was trying to prohibit the use of diesel fuel in hydraulic fracturing operations outside of coalbed methane wells in USDW. EPA had never issued any policy statements on this issue and never promulgated any regulations to address this new concern. In response to the EPA statements, the Independent Petroleum Association of America sued the EPA in Federal District Court in Washington, D.C., seeking to prevent enforcement by the EPA on this issue.[12] This litigation continues, with oral arguments before the court expected in the fall of 2011.

Although the EPA has not issued any regulations or real guidance concerning the use of diesel fuel in hydraulic fracturing operations, a real risk of EPA enforcement exists for operators and service companies that now use diesel fuel in any type of frac job (acid fracs, gelled oil fracs, using diesel

as a cleanout fluid prior to a frac job). EPA statements suggest that a producing oil or gas well could be reclassified as a Class II injection well and subject to the entire rules and regulations attendant to injection wells.

Regulatory disclosure

The second legal issue involves the disclosure of chemical constituents of hydraulic fracturing fluids and additives. Historically, states have regulated the drilling and permitting of oil and gas wells. In response to the recent controversies, state legislatures and regulators have begun to enact new laws and regulations concerning hydraulic fracturing.

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At this point, the new regulations focus on the disclosure of chemicals used in hydraulic fracturing operations.[13] The disclosure regimens basically fall into one of two broad categories: full disclosure and modified disclosure.

However, an inherent problem exists with disclosure. The service companies that develop new fracturing fluid systems often spend millions of dollars on research and development of new products. They consider their formulas and ingredients proprietary. Service companies and operators also buy chemicals and other ingredients from third-party vendors, which also have proprietary and trade secret chemicals in their products. Ultimately, a major frac job might have 10 or more major suppliers, all of which have trade secret concerns with disclosure mandates.

The legal analysis for the disclosure of proprietary or trade secret information can, and does, fill textbooks. This discussion is necessarily condensed.

Under the state and federal statutes, a business may legally protect its trade secret and business proprietary information from disclosure to the public, competitors, or third parties.[14] Outside parties such as litigants in a lawsuit can seek disclosure of such information from a service company or operator, such as in a case where one party alleges that its water well has been polluted by drilling or fracturing operations. In such a situation, the rules of discovery allow the aggrieved party to receive such information, usually subject to an order that will keep the information confidential (only to be used by the parties, experts, and attorneys in a lawsuit).

Operators and service companies must now disclose much more information than ever before.

In the current environment, state regulatory authorities have requested information concerning all chemical constituents of hydraulic fracturing fluids or processes. To the extent operators and service companies have such information for all products they must provide the requested information. However, interested parties can seek to protect certain information by declaring it trade secret or confidential business proprietary information. Upon such declaration, the regulatory agencies become subject to state and federal open-records or freedom-of-information laws, which have provisions to protect trade secret or confidential business information.[15] If a third party later requests access to confidential information, the affected party may block the disclosure based on provisions of the applicable state or federal statute.

At this point, the disclosure of chemical constituents to state regulatory authorities has started in a number of states. Wyoming now requires full disclosure of all chemical constituents in all frac fluids and additives. The Wyoming regulators understand the trade secret and confidential business information issues and have worked very well with the industry to gather the information and protect the business and confidentiality concerns of the industry participants. Arkansas is also requiring "full disclosure" both up front and on a well by well basis.

The other form of disclosure, adopted by Texas and being considered by a number of states, is best described as "modified disclosure." It basically requires the disclosure to regulators of all toxic, hazardous, or carcinogenic chemicals in hydraulic fracturing fluids or additives.[16] Modified disclosure rules basically follow the requirements for disclosure currently required for material safety data sheets (MSDS) under federal regulations.[17]

Regardless of which type of disclosure regimen applies, operators and service companies must now disclose much more information than ever before.

New risks

With the current EPA position and changing regulatory environment, the legal environment for operators and service companies is fraught with risk.

EPA has started developing guidance documents concerning the diesel fuel issue. The best estimate is that a draft guidance document will go to the US Office of Management and Budget late this summer with publication and comment period to occur sometime in the fall. Unfortunately, the EPA's current position raises more questions than it answers.

The SDWA only states "diesel fuel" and does not address or provide any further definition regarding that particular product. Valid questions include: What exactly constitutes diesel fuel? Do we need to eliminate diesel fuel, kerosine, or both? What constitutes hydrau-

lic fracturing? Does fracture initiation pressure have to be reached, or will the term "hydraulic fracturing" include other activities that historically have not been considered frac jobs (acid wash or acid jobs)? Does diesel fuel also include the various constituents of diesel fuel so that benzene, ethylene, toluene, and xylene are now prohibited in any type of hydraulic fracturing? Are these chemicals prohibited as additives in hydraulic fracturing fluids?

EPA issues

Given all of these uncertainties, operators and service companies should consider the following steps to protect against potential future liability from the EPA and the potential reclassification of a producing oil well into a Class II UIC well:

1. Do not use diesel fuel in hydraulic fracturing operations.
2. When using diesel fuel to clean out tubing or casing, have proof that pressure was not great enough to fracture the formation. If challenged, the company might need to produce documents showing that hydraulic pressure was not used and that the fracture initiation pressure was never reached.
3. Don't use kerosine in hydraulic fracturing operations.
4. Don't use benzene, ethylene, xylene, or toluene in hydraulic fracturing operations.
5. Work with reputable service companies that have knowledge concerning the products they are supplying or the products they have received from third-party vendors.
6. Get statements from vendors that diesel fuel is not contained in any of their products and that diesel fuel is not a constituent product or additive to any of the products they supply or receive from other vendors.
7. Keep documentation in well files; if the EPA raises the issue, the burden of proof that diesel wasn't used in a frac job likely will fall on the operator.

Regulatory issues

As additional states enact disclosure requirements for hydraulic fracturing products, that ability to do business or procure drilling permits in a particular state will require compliance. For service companies, development of a computer program or other type of assistance to provide detailed disclosures on a well by well basis will prove helpful. In this light, the authors recommend that operators:

1. Know exactly what products are being pumped into each well.
2. Keep a copy of invoices, well product listings, and disclosures provided by service companies and outside vendors.
3. Make certain before a well program begins that all products and fluid systems to be used have been disclosed and approved by state regulators.
4. Be careful about inserting or substituting new products or additives (breakers, surfactants, etc.) during the actual frac job. These products may not have been approved or disclosed to regulators.
5. Be wary of using new vendors or new third-party chemical suppliers on a frac job. These vendors may not know about the disclosure requirements and might be supplying unapproved products.
6. For service companies and chemical suppliers, be prepared to protect proprietary and trade secret information provided to state regulators. Be sure to have followed the applicable law for labeling and designating confidential information. Also, ensure that the regulators know whom to notify if third parties or competitors seek access to confidential information. A company might have to file suit on very short notice to protect information from disclosure.
7. Cover trade secret and proprietary information in lawsuits with a protective or confidentiality order.

With the current EPA position and changing regulatory environment, the legal environment for operators and service companies is fraught with risk.

Third-party litigation

The real issue driving disclosure and EPA action the last several years is the concern, whether real or not, that hydraulic fracturing has impacted USDW. Citizens, landowners, and neighbors adjacent to oil and gas operations are all concerned about water quality. Practical considerations for the avoidance of litigation from neighbors, municipalities, water districts, and other parties include the following:

1. Know what is being pumped into the subsurface. Get the MSDS sheets for each product from the relevant service company and outside vendors.
2. Retain in well files the information, printouts, and MSDS sheets for the products pumped into the well. The information can serve as proof in lawsuits that may arise about what was and what was not pumped into the well.
3. Determine which chemicals should not be used. Work with vendors and service companies to eliminate use of those chemicals.
4. Get statements or information from vendors that products used do not contain the embargoed chemicals.
5. When drilling within 1-2 miles of water wells, meet with the landowner or owner of the water well and test the well before drilling to determine if any pollutants are present. Baseline information is always the best way to defend a lawsuit.
6. Test the water well after drilling to ensure that pollutants did not enter the USDW from casing leaks, drilling operations, or some other problem. It is much easier to fix this problem early than it is later on when people have been drinking from a contaminated well.

7. Be a good neighbor. Explain to adjacent landowners and citizens of the community exactly what will happen. Explain how the well architecture protects USDW and what happens during drilling (use of pits, cementing, casing, etc.) to protect the environment and USDW. Go on a public relations offensive.

8. Be proactive. Try to act ahead of problems. Don't think problems will go away. In this environment, plaintiffs' lawyers constantly troll for cases. The cost of defense and subsequent judgment in a polluted-well case is generally more expensive than the cost to fix the problem as soon as it arises.

9. Make sure that all information is contained in well files, and do not destroy or delete any documents except in accordance with an accepted document retention schedule. Otherwise, it will always be assumed that missing documents will be detrimental to the company.

Oil and gas drilling and hydraulic fracturing in particular exist in a highly unstable regulatory climate at this time. In such a situation, being proactive and moving to protect the company's interest can potentially save millions of dollars in future costs of litigation and judgments if an USDW becomes contaminated. OGJ

The real issue driving disclosure and EPA action the last several years is the concern, whether real or not, that hydraulic fracturing has impacted underground sources of drinking water.

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