

July 8, 2010

Law Applicable to Hydraulic Fracturing in the Shale States

The use of hydraulic fracturing has made it economically possible to produce hydrocarbons from reservoirs which previously would have been uneconomical to develop. Now, an extraordinary oil and gas boom is afoot in America, and onshore natural gas production is advancing at an extraordinary pace. For some states, this production is without historical precedent. Consequently, these states are now facing the environmental and surface-use issues that states with established production have wrestled with for a long time. Whatever regulatory path these states with newer production decide to take, the laws and regulations they have enacted or are considering will play a significant role in how gas, oil, and coalbed methane are ultimately developed in the United States and how that development will affect rural landowners and towns.

Haynes and Boone, LLP has completed a comprehensive analysis of the national phenomenon of enhanced oil and gas recovery through hydraulic fracturing. This report appears in the June 2010 edition of the Oil, Gas and Energy Resources Law Section Report of the State Bar of Texas.

This report first covers what hydraulic fracturing is and why it is done. Generally, hydraulic fracturing, also known as "fracing," is a process in which fluid is injected into non-permeable hydrocarbon-bearing strata at very high pressures to either widen existing cracks or create new fractures. The process, combined with horizontal drilling, allows these "tight" formations, primarily shale or coal, to produce volumes of hydrocarbons in wells that would otherwise not be economical. The fracing fluid typically is about 99.5% water and sand and 0.5% surfactant additives. The sand, or other proppant, holds open the resultant fractures, heightening the permeability of the target formation after the fracing fluid is removed.

Next, we detail how development in the Barnett Shale in Texas signaled the start of the current wave of fracing and how fracing has expanded to the Marcellus Shale in the central Appalachians, the Woodford Shale in Oklahoma, and the Haynesville Shale in parts of Texas and Louisiana, among many other plays. Formations thought to be geologically analogous to the Barnett and Marcellus are popping up in West Texas, the Southern Appalachians, and in Canada. Estimates suggest that the U.S. has almost 1,750 Tcf of technically recoverable natural gas, including over 200 Tcf of proved reserves. The Marcellus Shale is thought to be prospective over an area larger than Greece. In terms of natural gas alone, the United States has enormous reserves available only through fracing.

Oil and gas jurisprudence is being changed by fracing, a topic covered here in detail. The traditional legal rivalry between surface owners and mineral owners and developers has in some cases been aggravated by fracing, resulting in nuisance actions. In addition, questions have arisen about whether fractures which cross property boundary lines can be considered a trespass. We describe how the Supreme Court of Texas has recently ruled against the trespass idea and how this court-made law will color how other courts in other states may react when they take up the issue.

This widespread use of fracing has raised environmental concerns. Opponents of fracing, which include environmentalists and landowners, argue that water supplies are in jeopardy and that drilling companies should be required to disclose the chemicals used in fracing fluid. A few people living near areas where hydraulic fracing occurs are also complaining that their water is being contaminated. In response, industry groups have rebutted

allegations that fracking is causing the contamination, arguing that such claims are, upon examination, without merit, that the EPA studies on fracking have not found contamination, and that fracking opponents need to establish a credible body of scientific evidence showing that existing rules and regulations are not adequate before further regulatory intrusion takes place.

This report then examines the regulatory frameworks currently in place in thirteen states that are undergoing prolific shale gas drilling. This state-level analysis is made with an eye towards regulations specific to hydraulic fracturing and the fluids used, as well as more overarching regulations that include hydraulic fracturing, such as general pollution disposal regulations that cover used hydraulic fracturing fluid. In several instances, this report describes bills under consideration, as well as important opinions from state courts, as state regulation is rapidly evolving in response to the quick rise of fracking.

Federal regulation of fracking is currently abated by an exception to the Safe Drinking Water Act (the “**SDWA**”) which removes hydraulic fracking from coverage by the SDWA. Recently, Congress has considered bills which would remove or reduce this exception and require states to submit their regulations of the fracking process and the disposal of fracking fluid to federal oversight. States need also to consider how inaction on their part may lead to federal oversight.

As noted in the report, few states currently have statutes and regulations that deal exclusively with fracking, but all have some general rules which govern underground injection, the protection of groundwater, and the disposal of drilling waste and contaminants. In addition, remediation and emergency response requirements are being formulated specifically for fracking. Proliferating county and municipal ordinances are also discussed, such as those limiting hours of operations, noise levels, traffic volume and routes. In response, drilling techniques are mentioned that have been developed to protect groundwater aquifers from contamination by fracking.

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