



HYDRAULIC FRACTURING: WHAT ARE THE LEGAL ISSUES?

By Keith B. Hall

Hydraulic fracturing uses a mixture of water and additives at high pressure to create fractures in underground rock formations, thereby facilitating the production of oil or natural gas from low-permeability formations such as the Haynesville Shale in northwestern Louisiana. In recent months, the process has received substantial publicity and has become controversial. Numerous media sources describe the process, explain its various economic and other benefits, and discuss the concerns many people have about the process.¹ This article provides an overview of several legal issues raised by hydraulic fracturing.

Source of Water

Hydraulic fracturing uses a considerable amount of water — about 4 million gallons for a typical well in the Haynesville Shale. When companies began fracturing wells in the Haynesville in 2008, they usually used groundwater from the Carrizo-Wilcox aquifer, the same aquifer that supplies water for domestic use to many landowners. The Louisiana Office of Conservation (Conservation) began receiving complaints from landowners that their private water wells were “going dry.”² Under traditional rules regarding use of groundwater, if the companies performing the “fracking” owned a water well, or had permission to use someone’s well, they would be entitled to pump as much water as they wished, even if their usage disadvantaged others by causing the aquifer’s level to drop.³ That rule was modified slightly by legislation enacted in 2003 that gives Conservation limited authority to restrict usage.⁴

On Oct. 16, 2008, Commissioner of Conservation Jim Welsh issued a memorandum which “encouraged” oil and gas operators to use water from surface sources (such as streams and ponds) for their fracking “where practical and feasible.”⁵ Further, if that was not feasible, Welsh “recommended” that they use water from the Red River Alluvial aquifer, which has water that is less suitable for domestic use than the water in the Carrizo-Wilcox aquifer. Most operators complied with Welsh’s request that they switch to using surface water. Statistics show that, from October 2009 through January 2011, surface water supplied 80 percent of the water used for fracturing wells in the Haynesville.⁶ The operators’ voluntary response avoided the need for regulation.

But the switch to surface water raised another issue. La. Civ.C. art. 450 provides that the water in running streams and navigable water bodies belongs to the state. Also, Art. VII, § 14(a) of the Louisiana Constitution prohibits the donation of state property. If the state allows companies to use surface waters without charge, is that a prohibited donation? The Louisiana Attorney General issued an opinion suggesting that it is.⁷ The Legislature responded

by enacting legislation that authorizes the Department of Natural Resources (DNR) to enter cooperative endeavor agreements that allow companies to use surface water.⁸ The agreements must be in writing and companies must pay “fair market value” for the water. Since then, DNR has entered a number of such agreements.

Groundwater Protection — Safe Drinking Water Act

Many people worry that hydraulic fracturing might cause contamination of underground sources of drinking water (USDWs). The federal Safe Drinking Water Act (SDWA)⁹ is the main statute that protects USDWs. Part C of the SDWA regulates underground injections, but “underground injection” as defined expressly excludes fracturing from regulation under the SDWA, unless the fracturing fluid contains diesel.¹⁰ Further, the underground injection control regulations applicable in Louisiana (like those in most states) have never been used to regulate fracturing, even when the fracking fluid contains diesel. Thus, hydraulic fracturing is not regulated under the SDWA within Louisiana. The United States Environmental Protection Agency (EPA), however, is planning to regulate.

Groundwater Protection — Well Construction Standards

Most analysts believe there is very little chance that the fractures created in the fracking process will allow cross-contamination between the Haynesville Shale and water aquifers. The Haynesville Shale is located about two miles below the surface, much deeper than drinking water aquifers, which generally lie a few hundred feet or less below the surface.

A more plausible way for contamination to occur is for fluids to travel upward along the side of the well, from a formation containing oil or gas to a shallower formation that contains drinking water. But this scenario would require a well construction failure. Drillers use casing and cementing to provide multiple seals that prevent such

flow. The casing and cementing of wells are regulated by Conservation.¹¹ The casing and cementing regulations have been in place for many years because most oil and gas wells — including those that are not hydraulically fractured — are drilled to target formations that are deeper than drinking water aquifers. In this respect, a well that will be hydraulically fractured is no different from a conventional well, and long experience with conventional wells shows that casing and cementing almost always prevent cross-contamination.

Disposal of Flowback

After hydraulic fracturing is complete, a large portion of the fracking water is recovered (the recovered water is called “flowback”). Flowback will contain whatever additives were mixed with the water to facilitate the fracking process, as well as substances that dissolve into the water from the rock formation that is fractured. These substances can include salts, naturally occurring radioactive materials, and dissolved solids. Operators typically dispose of flowback in one of two ways. One way is by sending the flowback to a wastewater treatment facility, which typically will discharge its treated water into a natural body of water, subject to Clean Water Act¹² regulations.

But in Louisiana and some other states, underground injection is the most common means of disposal. Underground injection wells are regulated by the SDWA, which is enforced within Louisiana by Conservation (Louisiana, like numerous other states, has been delegated “primacy” by the EPA to enforce the SDWA within its borders).¹³ Unlike the fracturing process itself, disposal of flowback is not exempted from SDWA regulation.

Another option is for companies to recycle flowback by using it for subsequent fracturing operations. DNR encourages this because recycling reduces the amount of “new” water needed for fracking, and it reduces the amount of flowback requiring disposal. Companies have not yet developed the ability to recycle 100 percent of flowback, but they are increasing their recycle rates.

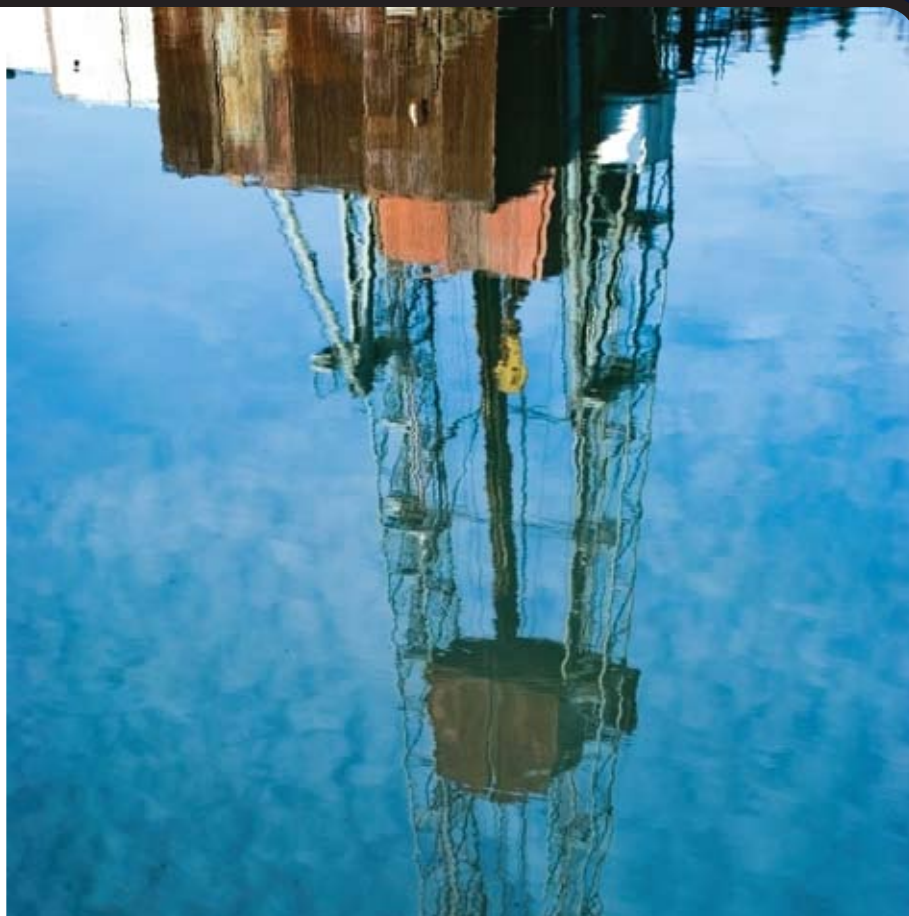
Subsurface Trespass

La. Civ.C. art. 490 states: “Unless otherwise provided by law, the ownership of a tract of land carries with it the ownership of everything that is directly above or under it.” Further, an unlawful invasion of property constitutes a trespass and will support an action in tort.¹⁴ This raises a question— if fractures and fracturing fluid cross from beneath one property to a neighboring property without the neighbor’s consent, would that constitute a subsurface trespass? The question is unresolved under Louisiana law, but several opinions are worth considering.

In *Gliptis v. Fifteen Oil Co.*,¹⁵ a plaintiff brought suit for subsurface trespass. He alleged that a well had been drilled by a rig located on his neighbor’s property, but that the drilling had deviated from vertical and the bottom of the well was beneath his property. The Louisiana Supreme Court remanded the case for additional fact finding but recognized the concept of subsurface trespass.¹⁶

In *Nunez v. Wainoco Oil & Gas*,¹⁷ the plaintiff similarly alleged that a well had been drilled from his neighbor’s property, but that the bottom of the well was beneath his property. In *Wainoco*, however, the Louisiana Supreme Court ruled against the plaintiff. *Wainoco* relied in part on the fact that the plaintiff’s land was in the same “compulsory unit” as the neighbor’s land. Under the traditional “rule of capture,” a person has the right to all the oil or gas produced from a well on his property, even if his well drains oil or gas from beneath his neighbor’s land. But when Conservation enters a unitization order, all persons owning land within an area designated as the “unit” share in all production, no matter where the well is located. *Wainoco* did not reject the concept of subsurface trespass, but held that orders of Conservation, including unitization orders, can alter private property rights and thereby preclude trespass claims in some circumstances.

In *Coastal Oil & Gas Corp. v. Garza Energy Trust*,¹⁸ the Texas Supreme Court held that it was not a subsurface trespass for fractures and fracking fluid to cross property boundaries. *Garza* could provide persuasive authority for a court in Louisiana. Finally, in a few federal court



decisions from Louisiana, plaintiffs sued, alleging that fluids injected into a properly permitted disposal well on neighboring land had migrated to locations beneath plaintiffs’ land. Those courts concluded that a plaintiff has no trespass claim under Louisiana law in such circumstances in the absence of actual damages, but that a plaintiff can pursue a claim if he can show actual harm.¹⁹

Local Restrictions

Drilling sites can be noisy, smelly, dusty, brightly lit (to allow drilling around the clock), and the focus of increased auto traffic. The Office of Conservation has issued Order No. U-HS to regulate dust, noise, vibration, lighting, fencing, general upkeep of drilling sites, and minimum distances between a well and residences²⁰ for Haynesville Shale drilling in urban areas.

But could a local government enact and enforce its own drilling regulations? Such local laws might be preempted by state law. Louisiana law requires a person to obtain a

permit from Conservation before drilling a well and provides that Conservation’s grant of a permit constitutes “sufficient” authority to drill.²¹ La. R.S. 30:28 F further provides, “No other agency or political subdivision of the state shall have the authority, and they are hereby expressly forbidden, to prohibit or in any way interfere with the drilling of a well or test well in search of minerals by the holder of such a permit.” The U.S. 5th Circuit Court of Appeals held that this statute completely preempted a Shreveport ordinance that attempted to bar drilling within 1,000 feet of a lake that served as a source of drinking water and to regulate drilling that occurred further away.²²

In a different case, however, an agency obtained injunctive relief that placed restrictions on drilling near the expressway crossing Lake Pontchartrain. The Louisiana 5th Circuit affirmed, concluding that state law would bar any agency other than Conservation from establishing permit requirements, but that state law would not prohibit issuance of an injunction “to protect the public safety and welfare.”²³

Spills

Typically, about 99.5 percent of the fracking fluid is water and “proppants” (often sand), with the remaining portion being various other additives.²⁴ Many of these additives are harmless substances, but some are hazardous. Further, because the additives are not mixed into the frack water until after they reach the drilling site, the additives initially are present at the site in higher concentrations. As with any liquid, spills can occur. In one well-publicized incident, 17 cattle died in north Louisiana after allegedly drinking hydraulic fracturing fluid that spilled from a well pad during a heavy rain.²⁵

Louisiana regulations require operators to develop a spill prevention, containment and control (SPCC) plan for each well site within 180 days from the start of operations, and to fully implement the plan within one year of starting operations.²⁶ Recently, the nonprofit group State Review of Oil and Natural Gas Environmental Regulations (STRONGER) studied all aspects of Louisiana’s regulations relating to fracturing.²⁷ STRONGER gave Louisiana high marks but recommended that the State revise its regulations to require operators to implement SPCC plans more quickly.

Disclosure of Fracking Water Additives

Traditionally, companies that perform hydraulic fracturing have kept the composition of their fracturing fluid confidential in order to (1) shield the identity of chemicals that constitute trade secrets, and (2) preserve any competitive advantage they obtain through experience as to what composition of fracturing fluid works best in particular circumstances. But as concern about hydraulic fracturing has grown, a few states have enacted requirements that companies disclose the composition of fracturing fluid to regulators on a well-by-well basis. The information, except for the identity of chemicals that qualify as trade secrets, is then made available to the public.

Louisiana recently enacted mandatory disclosure regulations that went into effect

on Oct. 20, 2011.²⁸ Operators must report fracturing fluid composition on a well-by-well basis to either the Department of Natural Resources or FracFocus, a website jointly created by the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission as a site where companies may voluntarily post information about the fracturing fluids they use. Visitors to the website can search for information on wells by location, operator or other criteria, and the site already has information on a significant number of wells in Louisiana as several companies began posting to the site even before Louisiana’s mandatory disclosure rules became effective.²⁹

Contamination Litigation

In some states, landowners have brought suit alleging that fracking has contaminated their drinking water. If such litigation occurs in Louisiana, the relevant statutes could include those raised in “legacy litigation” cases in which property owners allege that their property has been contaminated by past oil and gas activity. These provisions include La. Civ.C. art. 2315 (tort liability), La. R.S. 31:122 (reasonably prudent operator standard), 30:29 *et seq.* (requirements that money awards be used for remediation and that DNR be involved in development of the remediation plan), and 30:2015.1 (Groundwater Act).

Conclusion

This article has outlined major legal issues relating to hydraulic fracturing that have arisen to date, but the regulatory landscape continues to evolve quickly and will require close attention by those who represent affected parties.

FOOTNOTES

1. *E.g.*, <http://www.oilgaslawbrief.com/>.
2. Remarks of Commissioner Jim Welsh at EPA Workshop on 3/29/11, available at <http://dnr.louisiana.gov/assets/docs/conservation/documents/EPAWors.pdf>.
3. *Adams v. Grigsby*, 152 So.2d 619 (La. App. 2 Cir.), *writ ref’d*, 244 La. 662, 153 So.2d 880 (1963); La. R.S. 31:4, 31:14.
4. La. R.S. 38:3097.1 *et seq.*
5. <http://dnr.louisiana.gov/index.cfm?md=newsr>

[oom&tmp=detail&aid=509](http://dnr.louisiana.gov/index.cfm?md=newsr&tmp=detail&aid=509).

6. “Sustaining Louisiana’s Freshwater Aquifers,” available at <http://dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=442&pnid=0&nid=170>.

7. La. Atty. Gen. Op. 07-0176.

8. 2010 La. Acts, No. 955, enacting La. R.S. 30:961-963.

9. 42 U.S.C. § 300f *et seq.*

10. 42 U.S.C. § 300h (d)(1)(B)(ii).

11. La. Admin. Code 43.XIX.109.

12. 33 U.S.C. § 1251 *et seq.*

13. Class II injection wells are regulated by La. Admin. Code 43.XIX. Class I, III, IV and V wells are regulated by La. Admin. Code 43.XVII.

14. *Hogg v. Chevron USA Inc.*, 09-2632 (La. 9/3/10), 45 So.3d 991.

15. 204 La. 896, 16 So.2d 471 (1944).

16. *Id.* at 904, 16 So.2d at 474.

17. 488 So.2d 955 (La. 1986).

18. 268 S.W.3d 1 (Tex. 2008).

19. *Boudreaux v. Jefferson Island Storage & Hub*, 255 F.3d 271 (5 Cir. 2001); *Mongrue v. Monsanto Co.*, 1999 WL 970354 (E.D. La.), *aff’d*, 249 F.3d 422 (5 Cir. 2001).

20. http://dnr.louisiana.gov/assets/OC/eng_div/20090806-U-HS.pdf.

21. La. R.S. 30:28 F.

22. *Energy Management Corp. v. Shreveport*, 397 F.3d 297 (5 Cir. 2006).

23. *Greater New Orleans Expressway Comm’n v. Traver Oil*, 494 So.2d 1204 (La. App. 5 Cir. 1986).

24. *Modern Shale Gas Development in the United States: A Primer at 61-2* (available at http://www.fossil.energy.gov/programs/oilgas/publications/natural-gas_general/ShaleGasPrimer_Online_4-2009.pdf).

25. <http://un-naturalgas.org/weblog/2010/04/chesapeake-schlumberger-fined-22000-each-in-hydraulic-fracturing-related-deaths-of-cattle/>.

26. La. Admin. Code 33.IX.905(B).

27. <http://www.strongerinc.org/documents/Final%20Louisiana%20HF%20Review%203-2011.pdf>.

28. The rules are found at 2011 La. Register 3064 and are available online at <http://www.doa.louisiana.gov/osr/reg/1110/1110.pdf>.

29. <http://fracfocus.org/>.

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