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FRACKING AS A FEDERALISM CASE STUDY

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As is appropriate for an environmental law professor, I am going to take us from the forest level down into the trees. I want to discuss a federalism case study—the development of policy to address the risks posed by hydraulic fracturing and the associated shale gas boom. In fact, I’m going to focus even more narrowly, on the private governance organizations that work in this area, and those organizations’ influence over natural gas policy formation at the local, state, and federal levels.

I will begin by setting the context: introducing the topic of hydraulic fracturing and its associated risks, and briefly outlining the federalism debate in this area. Then, I will describe four of the private groups working on natural gas issues, and outline some of the groups’ salutary efforts to assist local, state, and federal governments in grappling with natural gas risks. Finally, I will conclude with a few caveats or lessons—my preliminary thoughts about the ways that private governance efforts like these may sometimes slow or impede the development of sound public governance strategies, and also the concerns raised by the “upward” percolation of new regulatory policies from a private entity to the local, state, and perhaps even federal level.

Hydraulic fracturing, or “fracking” as its opponents like to call it,¹ makes for a fascinating federalism case study. For one thing, the technology for extracting natural gas from shale and other porous but non-permeable rock is developing rapidly, generating a wide array of public health and environmental risks that we do not yet fully understand. Moreover, the risks vary geographically, depending on such factors as the local

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1. Jonathan Fahey, *No Energy Industry Backing for the Word ‘Fracking’*, YAHOO! NEWS (Jan. 26, 2012), <http://news.yahoo.com/no-energy-industry-backing-word-fracking-222649620.html>.

geology and hydrology. Public attitudes toward those risks—and toward the potential benefits of oil and gas development—also vary widely. Finally, the local, state, and federal policy debates are happening in real time.

Some background on the public health and environmental risks of the gas boom is helpful to understand the local, state, and federal policy debates. The risks involved in hydraulic fracturing are different in kind and also broader than most people assume. To date, the public conversation about these risks has largely focused on the idea that by drilling down and then fracturing rock, the industry is opening conduits for pollutants that were formerly trapped deep underground (including the gas itself) to leak up into our ground water.² Researchers and policymakers are increasingly realizing, though, that the actual fracturing—the “frac job”—is not the riskiest step of drilling a shale gas well. The fracturing happens thousands of feet underground. A properly scaled schematic makes clear that in most places, direct vertical flow of gas and contaminants through rock fractures from the shale layers up to drinking water aquifers is unlikely, because the shale layers lie thousands of feet below the aquifers.³

That said, natural gas drilling does create a potential conduit for pollutants: the well bore. Indeed, the well is *intended* to be a pathway for natural gas and other compounds to flow to the surface. Thus, some of the risks of hydraulic fracturing are common to any oil and gas drilling operation: the well must be adequately sealed during drilling and production and then permanently capped when it is no longer producing so that it does not act as a leaky straw connecting groundwater to underground sources of contamination. A second important set of risks is also familiar from other oil and drilling operations—namely, the risks associated with large-scale industrial development, including air-pollution risks from the operation of heavy machinery, pressures on community infrastructure from rapid economic development, and landscape and ecosystem

2. See Hannah J. Wiseman, *Risk and Response in Fracturing Policy*, 84 U. COLO. L. REV. 729, 736 (2013) (“[T]he debate has tended to focus on whether or not the injection of water and chemicals underground—the only stage of the process that is technically described as ‘fracturing’—pollutes groundwater.”).

3. *Hydraulic Fracturing: The Process*, FRACFOCUS, <http://fracfocus.org/hydraulic-fracturing-how-it-works/hydraulic-fracturing-process> (last visited Apr. 17, 2014) (see graphic).

disruptions from the construction of access roads and other infrastructure.⁴

Finally, hydraulic fracturing and the associated natural gas boom are also creating less-familiar risks related to water use and pollution. Specifically, each frac job uses millions of gallons of water, some of which remains trapped permanently underground. This consumptive use can increase the pressure on already depleted aquifers and reservoirs in arid areas of the country like Texas.⁵ Further, the water that flows back out of the well when the frac job is complete poses its own set of problems. Contaminated with gas and other compounds from deep underground, as well as with chemicals deliberately introduced by the drilling companies, this water must be handled carefully to avoid spills and must ultimately either be treated and discharged or recycled for use in another well. In short, hydraulic fracturing creates a broad array of environmental and public health risks, some familiar and some less so.⁶

The breadth and nature of these risks lead some to advocate for a federal regulatory regime as the only approach adequate to address the impacts of drilling in downwind or downstream states.⁷ In theory, existing federal environmental statutes should address many of these “spillover” risks, but in a classic example of a minority exercising a surprising degree of political power in a majority-rule democracy, the oil and gas industry has won exemptions from many of these statutes. The Safe Drinking Water Act,⁸ for example, pervasively regulates the underground injection of fluids—an activity that would seem, on its face, to extend to hydraulic fracturing. But that Act now includes an exemption for “the underground injection of fluids or propping agents (other than diesel fuels) pursuant

4. See generally Wiseman, *supra* note 2 (detailing the risks at all stages of tight gas development).

5. VIKRAM RAO, *SHALE GAS: THE PROMISE AND THE PERIL* 45–50 (2012).

6. *Id.* at 35–44; Wiseman, *supra* note 2, at 765–70 (mishandling of flowback), 788–92 (mishandling of produced water), 779–82 (improper casing), 799–801 (surface chemical and diesel fuel spills); see also *Study of Hydraulic Fracturing and Its Potential Impact on Drinking Water Resources*, U.S. ENVTL PROT. AGENCY, <http://www2.epa.gov/hfstudy> (last visited Oct. 16, 2013).

7. See, e.g., Michael Burger, *Response: Fracking and Federalism Choice*, 161 U. PA. L. REV. ONLINE 150, 162–63 (2013).

8. 42 U.S.C. §§ 300f–300j (2014).

to hydraulic fracturing operations.”⁹ In other words, natural gas drillers enjoy a clear and express exemption from this important national environmental law—a fact that some experts cite as evidence of the need for new national legislation to address drilling risks.

Other experts, however, favor keeping the regulatory focus at the state or local level, because the risks depend so closely on geology, the location and abundance of drinking water sources, and the proximity of population centers—factors that vary widely from county to county and state to state.¹⁰ According to these policy theorists, interstate variability necessitates that the governance regime for these risks allow for local or state control, or at least for cooperation between national and state government entities, and for flexible state or local implementation of any national standards. Some local governments are already experimenting with regulatory approaches to minimize drilling risks. In the 2013 elections, for example, three Colorado municipalities voted to impose a ban or moratorium on natural gas drilling and hydraulic fracturing within their city limits.¹¹ To date, over one hundred United States cities have similarly experimented with a ban or moratorium of some form.¹² Hydraulic fracturing thus affords an opportunity to watch the workings of what Heather Gerken has called “federalism all the way down.”¹³

9. *Id.* § 300h(d)(1).

10. See, e.g., David B. Spence, *Federalism, Regulatory Lags, and the Political Economy of Energy Production*, 161 U. PA. L. REV. 431, 492–93, 508 (2013).

11. Michael Wines, *Colorado Cities’ Rejection of Fracking Poses Political Test for Natural Gas Industry*, N.Y. TIMES, Nov. 7, 2013, <http://www.nytimes.com/2013/11/08/us/colorado-cities-rejection-of-fracking-poses-political-test-for-natural-gas-industry.html?smid=pl-share>. The industry may well challenge those bans as preempted by state law. Precedent in Colorado establishes that

while the [state’s] Oil and Gas Conservation Act does not totally preempt a home-rule city’s exercise of land-use authority over oil and gas development and operations within the territorial limits of the city, the statewide interest in the efficient development and production of oil and gas resources . . . prevents a home-rule city from exercising its land-use authority so as to totally ban the drilling of oil, gas, or hydrocarbon wells within the city.

Voss v. Lundvall Bros., Inc., 830 P.2d 1061, 1062 (Colo. 1992).

12. Wines, *supra* note 11.

13. Heather Gerken, *Forward: Federalism All the Way Down*, 124 HARV. L. REV. 4, 10 (2010) (“The nationalist account offered here . . . is an account in which localities serve as staging grounds for national debates, and the decisions of the variegated periphery feed back into national policymaking”).

Indeed, the dialog over development of natural gas policy extends “down” not just to local government entities, but also to numerous private-governance organizations, which are stepping in to fill the gaps in existing federal and state drilling laws. These organizations are playing all of the roles that one might expect government actors to play. Consider, for example, the problem of information gathering. One reason we do not currently understand the risks of this technology is that it is quite difficult to ascertain precisely what the companies are doing—where they are drilling, how deep, in what directions, and what chemicals they are adding to the water for the frac job. There has been considerable public outcry about this last issue.¹⁴ We know the companies use a lot of water at high pressure, and that they add compounds to make the water less viscous, to prevent bacteria from growing down in the fracture, and for various other purposes. However, we do not know precisely which chemicals are used or in what amounts, and companies have been quick to claim that these details are confidential business information.¹⁵

Private governance organizations have stepped up in this area. For example, the industry has developed a private entity, FracFocus,¹⁶ that provides a web platform for companies to disclose information voluntarily about their drilling practices. According to an industry watcher, as of October 2013, twelve states had adopted the website as the platform for their own voluntary (or, in some cases, mandatory) hydraulic fracturing disclosure rules, and seven other states were in the process of doing so¹⁷—evidence that private governance efforts can exert

14. See, e.g., Mike Soraghan, *Hydraulic Fracturing: Two-Thirds of Frack Disclosures Omit ‘Secrets’*, ENERGYWIRE (Sept. 26, 2012), <http://www.eenews.net/stories/1059970474> (“It’s outrageous that citizens are not getting all the information they need about fracking near their homes,” said Amy Mall, who tracks drilling issues for the Natural Resources Defense Council. “Companies should not be able to keep secrets about potentially dangerous chemicals they’re bringing into communities and injecting into the ground near drinking water.”).

15. See, e.g., *id.* (“Two out of every three times oil and gas companies have publicly disclosed the chemicals in their hydraulic fracturing fluid, they’ve left something out. At least one chemical was kept secret in 65 percent of fracking disclosures by companies that said they needed to protect confidential business information, according to a review of [a fracking database].”).

16. FRACFOCUS, <http://fracfocus.org/> (last visited Apr. 17, 2014).

17. Edith Allison, *Self Compliance Joins ‘Best-Practices’ List*, AAPG EXPLORER 46, 46 (Oct. 2013), <http://www.aapg.org/explorer/2013/10oct/10explorer13.pdf>.

a strong influence over the development of public policy.

However, the influence of private governance entities is not limited to information gathering. For example, several private groups are working to develop standards or best practices for hydraulic fracturing. The Center for Sustainable Shale Development (CSSD),¹⁸ is a collaborative entity with both industry and environmental representatives. CSSD has developed fifteen “initial performance standards for [natural gas well] operators that are protective of air quality, water resources and climate,”¹⁹ but the group is too new to measure the success of these standards. A second, industry-led entity, the American Petroleum Institute (API), also has developed best practices for hydraulic fracturing.²⁰ Like CSSD, API has not yet studied the success of its relatively new hydraulic fracturing standards, but the group’s broader oil and gas standards fare quite well in statehouses and federal agencies: some two hundred of API’s oil and gas standards have been cited over 3,300 times in state regulations, and one hundred of those standards have been cited over 270 times in federal regulations.²¹ In other words, there is clear evidence that the private, API-authored standards are percolating up and influencing the shape of state and federal oil and gas regulations.

Finally, from a federalism perspective, the most interesting private governance group in this area is an entity called STRONGER—State Review of Oil and Natural Gas Environmental Regulations.²² STRONGER describes itself as a collaborative review team of stakeholders from industry, the environmental community, and state environmental regulatory

18. CTR. FOR SUSTAINABLE SHALE DEV. (CSSD), <http://www.sustainableshale.org/> (last visited Mar. 6, 2014).

19. *Performance Standards*, CTR. FOR SUSTAINABLE SHALE DEV., <https://www.sustainableshale.org/performance-standards/> (last visited Mar. 6, 2014).

20. *Overview of Industry Guidance/Best Practices on Hydraulic Fracturing*, AM. PETROLEUM INST. (2012), http://www.api.org/~media/Files/Policy/Exploration/Hydraulic_Fracturing_InfoSheet.pdf.

21. *See Overview of Industry: Guidance/Best Practices Supporting Hydraulic Fracturing*, AM. PETROLEUM INST. (2013), http://www.api.org/~media/Files/Policy/Hydraulic_Fracturing/Hydraulic-Fracturing-Best-Practices.pdf. Cf. NATHAN RICHARDSON ET AL., *THE STATE OF STATE SHALE GAS REGULATION, RESOURCES FOR THE FUTURE* 7 (June 2013), http://www.rff.org/RFF/Documents/RFF-Rpt-StateofStateRegs_Report.pdf (noting the authors’ use of API standards as a benchmark).

22. STRONGER, <http://www.strongerinc.org/> (last visited Mar. 6, 2014).

programs.²³ The team actively reviews state efforts to implement best practices for oil and gas drilling and issues state report cards and works with states to improve their regulatory regimes.²⁴ As with API, STRONGER has not yet assessed its efficacy with respect to hydraulic fracturing practices per se, but overall the group has conducted surveys and follow-up studies and claims that close to 75 percent of the recommendations in its state report cards have led to improvement in state regulation.²⁵

As the examples of FracFocus, API, CSSD, and STRONGER illustrate, private governance entities can play important roles in catalyzing experimentation with new policy approaches. Specifically, these entities can develop a menu of policy options for states to sample, assist with data gathering, and help states in implementing suitable policies.

To explore just one of these functions in a little more depth, it is interesting to consider the role that a group like STRONGER can play in diffusing information about different states' successes and failures with experimental policy approaches. A little-explored weakness in the states-as-laboratories model of federalism²⁶ is the difficulty that *other* states may encounter in attempting to ascertain the precise contours of a particular state's experiment. Put differently, even when states are experimenting with new policies, as is happening in the natural gas area, it can be very hard for regulators in one state to get information about what other states are actually doing on the ground—for example, what the other states' drilling permits require and how stringently those permits are being enforced.²⁷ A group like STRONGER, which does the legwork of surveying state policies and polling state regulators, can serve an important role in gathering this information and diffusing it from state to state, so that if there is a successful experiment in state A, other states can learn from state A's experience.

23. *Id.*

24. *The Process*, STRONGER, <http://www.strongerinc.org/process> (last visited Mar. 6, 2014).

25. *Id.*

26. See *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting) ("It is one of the happy incidents of the federal system that a single courageous state may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country.").

27. See RICHARDSON ET AL., *supra* note 21, at 2–3, 6.

Importantly though, private governance entities' effects on policy development may not be entirely salutary. I want to identify a few concerns that these groups should raise for anyone interested in the sound functioning of our federal system. First, to the extent that these groups are offering a suite of potential best practices for individual businesses to choose from, they may contribute to state policy experimentation, because state regulators can wait to see which voluntary practices work under the particular conditions of a given state and then adopt those practices as state requirements. But to the extent that private governance groups are instead handing states a *prix fixe* menu of standardized options, the groups may instead be operating to *reduce* state experimentation and, in turn, to limit any individual state's ability to tailor policy to local conditions.

Let me take one concrete example: FracFocus. As noted above, numerous states have adopted FracFocus's information platform for disclosures about well sites. Unfortunately, however, FracFocus's disclosure platform is not always perfectly tailored to match a state's disclosure requirements. Indeed, one author concludes that the "[u]se of FracFocus . . . appears to *reduce* compliance with some state reporting requirements," because the website "contains [data] fields for only a very limited subset of the information that state disclosure rules [purport to] require."²⁸ Another author notes that FracFocus does not solicit such information as the distance from the well to surrounding surface water bodies.²⁹ When a state adopts FracFocus as its information disclosure platform, therefore, the opportunity to gather that important and local variable information is lost.

The work of groups like FracFocus, CSSD, API, and

28. MATTHEW MCFEELEY, STATE HYDRAULIC FRACTURING DISCLOSURE RULES AND ENFORCEMENT: A COMPARISON, NRDC Issue Brief 8 (July 2012), <http://www.nrdc.org/energy/files/Fracking-Disclosure-IB.pdf> (emphasis added); see also KATE KONSCHNIK ET AL., LEGAL FRACTURES IN CHEMICAL DISCLOSURE LAWS: WHY THE VOLUNTARY CHEMICAL DISCLOSURE REGISTRY FRACFOCUS FAILS AS A REGULATORY COMPLIANCE TOOL, HARV. L. SCH. ENVTL. L. PROGRAM POL'Y INITIATIVE 1-2 (Apr. 23, 2013), <http://blogs.law.harvard.edu/environmentallawprogram/files/2013/04/4-23-2013-LEGAL-FRACTURES.pdf>.

29. Hannah J. Wiseman, *The Private Role in Public Fracturing Disclosure and Regulation*, 3 HARV. BUS. L. REV. ONLINE 49, 63, 66 (Feb. 8, 2013), <http://www.hblr.org/2013/02/the-private-role-in-public-fracturing-disclosure-and-regulation/>.

STRONGER may therefore be slowing or even impeding state experimentation—simplifying the work of state regulators, but in so doing, discouraging states from trying new and different approaches to mitigating risks. That is not a worrying trend if the one-size-fits-all products offered by the groups are sound, but it is quite worrying if there is any reason to be concerned about those products.

That leads me to my last point, which is that we ought to recognize these private governance entities' bottom-up influence on the development of state and federal regulatory approaches, and demand that the groups learn the lessons of administrative law with respect to transparency, accountability, and efficacy. Much of administrative law aims to increase public participation in agency policy development, to provide for fair adjudicatory procedures in case of enforcement disputes, and to ensure outside oversight of all agency activities. The examples of FracFocus, CSSD, API, and STRONGER suggest, though, that much of the lowest-level policy development is happening not in statehouses or agencies but in private entities. If that is the case, then it is incumbent on those entities to follow procedures similar to those used by government agencies: to put draft standards out for public comment; to receive comments from a wide variety of audiences; to consider and respond to those comments; and to implement sound adjudicatory procedures to resolve disputes over policy implementation and enforcement. One might even argue that the very integrity of our federal system hinges on such reforms.