



By Benjamin H. Grumbles

An analysis of the friction
over fracking

Drill, Maybe, Drill!

Energy and water policy collisions are dominating headlines and court dockets these days, from offshore drilling and spilling (in the Gulf of Mexico) to the quake- and tsunami-driven nuclear emergencies along Japan's Pacific coast. One of the most contentious debates is about work deep underground in America: hydraulic fracturing for shale gas. The friction over fracking underscores the growing need for energy security and environmental sustainability to be on the same page—in balance rather than at odds—in battle.

Most agree that natural gas has a bright future as a “bridge” fuel to cleaner, renewable energy. It makes sense to develop homegrown energy, such as natural gas, particularly when it has a smaller carbon footprint than coal or imported oil and is in large supplies under our feet (sometimes 5,000 to 9,000 ft under our feet).

But the “Shale Rush,” prompted by technology breakthroughs in horizontal drilling and hydraulic fracturing over the last decade or so can raise significant concerns in some communities. Legitimate questions are surfacing about the drilling boom's large footprint on the landscape and the cumulative impact of drilling operations on air, water, wildlife and public health. Water is a particular concern because as much as 5 million gal may be used at each site to fracture the organic-rich, tightly compacted shale to recover valuable natural gas. Massive amounts of water—mixed with sand and chemicals, and injected under intense pressure—can mean potential issues down under, downstream or downwind.

The Marcellus Shale—the Saudia Arabia of natural gas to some—exists under much of southern New York, Pennsylvania, West Virginia, eastern Ohio, western Maryland and even a portion of western and southwestern Virginia. The U.S. Geological Survey estimates the shale rock could include as much as 500 trillion cu ft of natural gas. That could be a big step forward for energy independence and economic development.

A recent Pennsylvania State University study reports the Marcellus gas industry generated \$3.9 billion in total value added revenue, more than 44,000 jobs and \$389 million in state and local taxes. For 2011, the estimated potential is more than \$10 billion in total value added revenue, 100,000 jobs and nearly \$1 billion in state and local tax revenues in Pennsylvania.

The U.S. Environmental Protection Agency (EPA) is no stranger to fracking and its legal and environmental issues, and neither am I. A 1997 court in Alabama ruled for the first time that the EPA should be regulating coal bed methane fracking under the Safe Drinking Water Act's (SDWA) Underground Injection Control program. This created some uncertainty across the country and within the EPA.

The agency then oversaw a scientific study on potential risks of fracking to groundwater. A commission of experts, including several from industry, reviewed existing literature and concluded in the final 2004 report that fracking presented “little or no risk” to underground drinking water. As EPA's assistant administrator for water at the time, I signed off on the report and testified to Congress about the findings. The EPA, however, never intended for the report to be a perpetual clean bill of health for fracking or to justify a broad statutory exemption from any future regulation under the SDWA.

In 2005, Congress used the report to justify a

broad exemption from the SDWA's Underground Injection Control program. The exemption did not include potential safeguards and sideboards, except a condition that diesel fluids not be used in the process. This then prompted a lively debate over what type of chemicals and propping agents go into the fracking fluids and what are the proper boundaries and differences between a community's right to know and a competitor's right to know the special ingredients of a fracking company's product.

A lot has happened since 2005, and it makes sense to review the SDWA landscape as well as the relevance of Clean Water Act (CWA) programs. Political and legal battles have been growing in state and federal courts and agencies, with particular attention to fracking for shale gas, which is different from fracking for coal bed methane, the primary subject of the EPA's 2004 report.

The good news is that the EPA is developing a more complete, up-to-date study on fracking risks to groundwater and seeking upfront input from its Science Advisory Board. If budget shutdowns and other complications do not intervene, the new report is anticipated by the end of 2012. The expanded review is important, as much more information exists, including complaints from communities and individuals about methane migration and contaminated water supplies. The agency also is reviewing surface water impacts, such as from total dissolved solids (TDS) and naturally occurring radioactive materials, particularly after a detailed series of stories by *The New York Times*. The EPA is probing current and potential new CWA requirements for onsite pretreatment and permitting responsibilities at publicly owned treatment works and centralized waste treatment facilities, including the testing and handling of biosolids from facilities treating frack water.

States in Shale Gas regions are stepping up efforts to study, regulate and monitor the impacts of natural gas drilling and fracking and the management of “flow-back” fracking fluids. TDS, radionuclides and biosolids seem to be getting some of the greatest attention.

Easy predictions: more disclosure to the public and/or regulators of previously undisclosed chemicals in fracking fluids, increased onsite recycling of frack water by industry and more detailed monitoring by drinking water and wastewater officials of frack water and biosolids, especially radioactive constituents. These are all good steps that also can reduce the likelihood of broad-sweeping bans.

“Drill, maybe, drill” means more review along a more thoughtful path—one that can include fracking, even in large amounts, but in the right place, at the right time and with the right amount of government oversight. Water should not be an afterthought in the rush to create energy and jobs. Haste makes waste, and water is too precious to waste. Ready, aim, save. **WWD**

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