Fighting over Fracking

By PAUL LIVINGSTONE, Senior Editor, *R&D*

Netflix is wonderful for the mailbox. Alongside bills, credit card offers and a never-ending stream of fat magazines, that familiar red-and-white envelope holds the promise of an hour or two of mindless entertainment. Inevitably, though, for every dumb movie or stand-up comedy, I feel obligated to add a documentary, exposé or heart-wrenching Oscar-winner.

The latest was *Gasland*, which sat on the shelf unwatched for some weeks until I heard it mentioned on the radio during my morning commute. I got what I expected: a Michael Moore-esque “j’accuse” laced with free-form cinematography and folk music.

The filmmaker, Josh Fox, was offered $100,000 to allow natural gas wildcatting on his land. Instead of just accepting the money, he investigated the history of the Marcellus Shale drilling projects. Curious about rumors that one type of extraction method, fracking, was responsible for destroying drinking water wells, he began filming his visits to unfortunate landowners.

Fox isn’t really as interesting, shocking or clownish as Moore, so the style didn’t quite work. His home visits did, however. He spoke to enough real people, like ranchers, with real problems, like flaming faucets, bubbling creeks, dead fish, to make a convincing case about the dangers of allowing fracking companies to tap wells. It didn’t to show a little clownish behavior on the part of the gas industry and state DEP officials.

But is a single documentary enough to encourage the entire natural gas industry to abandon fracking? Not really. None of Moore’s documentaries were enough to change the car industry, the oil industry, the health industry or even GM. And America is still a fast-food nation. The fact is that a documentary about environmental hazards could be made about nearly any energy-related industry. Living creates waste.

But his project helped open the floodgates on some reality checks for the natural gas industry and the wildcat-like atmosphere surrounding the Marcellus Shale, the repository of enough gas energy to keep the U.S. running for decades. The ability to harvest this resource through fracking — pumping water and chemicals deep

underground to crack open gas deposits — has been celebrated as the short-term answer to foreign oil.

But nobody in the natural gas industry has had to answer for what is becoming a major issue: What should we do with the waste?

Waste is the head scratcher for many industries. Take solar energy. Silicon manufacturing creates toxic by-products, like silicon tetrachloride. In 2008, a Chinese company caught dumping this material, which can break down to hydrochloric acid, gave the “green” solar industry a black eye.

This is the ugly part of process development. Perhaps R&D can close the loop and find a good use for that by-product. The Dai-ichi reactors would not have caused such an awful mess had they not been holding so many spent fuel rods. The reason they were is because the nuclear industry as a whole still doesn’t have a good solution for its waste.

And this is what’s biting the natural gas industry. The fracking itself occurs deep underground, where most of the fracturing and propping open of cracks is accomplished with treated water and sand. This water also returns to the surface, laden with chemicals. Recently, staffers working for the House Energy and Commerce Committee [1] found that 14 hydraulic fracturing companies used 866 million gallons of products, hundreds of which contained chemicals that are or might be carcinogenic or are listed as hazardous air pollutants. Laced with a variety of common (benzene, toluene) and custom (proprietary) chemicals, this water is a liability and a cost as soon as it comes out of the ground. Drillers have been increasingly finding way to recycle this water, which is typically held in above-ground ponds. It’s used to melt ice or tamp down dusty roads. With a little research, perhaps the chemicals can be separated before it's dumped or evaporated.

But other by-products are also causing headaches. Methane, a gas well-known for its greenhouse properties, is dissipated from drilling wells and equipment [2]at a far higher rate than initially thought. In addition, as we’ve seen with oil drilling, accidents happen. Many of the complaints about contaminated water so far have probably resulted from blowouts and casing failures, both of which will spread contaminants through groundwater. T. Boone Pickens, who is backing legislation that would transition the 18 million diesel trucks in the U.S. to natural gas power, has defended the fracking practice [3], saying that he wasn’t aware of a single lawsuit or complaint that arose from its use. With legislation in play, it certainly doesn’t help his case any to claim that natural gas drilling can be bad.

But while Pickens is right that it would be a great idea to stop burning diesel and start burning domestic fuel, it’s also true that public is now more educated about fracking. Even beyond the media reports, experts are now gauging the impacts of natural gas, and gas doesn't always win. And there are legal conundrums that plague the mature industry, too. Proprietary chemicals, for example, are undisclosed to environmental agencies. Without independent oversight, we simply can't know for sure the long-term impacts of their use.

In Pennsylvania, where Fox filmed some of his documentary, coal mining was the first energy rush. Some coal mines caught fire, and at least one there has never stopped burning. The town above it remains abandoned. The gas industry fortunately doesn’t face runaway fires and ghost towns, so we can call it progress. And I certainly love the benefits of a gas stove and gas heat, and would probably buy a natural gas-powered car if one was offered.

But the industry can do a better job of explaining what these chemicals do to water in the long-term, how we can dispose of the wastewater responsibly and how the benefits of natural gas outweigh the inevitable environmental impacts.

What's your take on the subject? Please feel free to email me at paul.livingstone@advantagemedia.com *[4].*

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