Headaches, Heartache, and Hydrofracking: Haudenosaunee visit Hedgehog Lane in Bradford, PA

By Lindsay Speer

In August of 2009, the Haudenosaunee Environmental Task Force and the Onondaga Nation's environmental team visited Bradford, PA to talk to neighbors there and witness first-hand the impacts of hydrofracking.

I was getting a headache. We'd only been there for ten minutes, but the periodic strong whiffs of propane gas were already getting to me. "It was worse two days ago," Yvonne Shafer explained to me, "the whole outside and inside of the house would smell like that, about every half hour. At its worst, I spent two hours in the basement because it was the only place I could breathe."

Such was our introduction to the domestic nightmare that the residents of Hedgehog Lane in Bradford, PA have to live through daily. This residential road winds up a valley outside of town, surrounded by forested hillsides. "We moved here because it was perfect," Yvonne explained. "You couldn't see the neighbors, there was lots of wildlife, clean air to breathe and clean water in the wells." This all changed about a year ago, when a company called Aiello began hydrofracking on the hillside above them.

Explanation of Hydrofracking

Hydrofracking (more accurately, slick-water horizontal hydrofracking) is a gas drilling method that allows gas companies to access the natural gas trapped in small pockets of the Marcellus and Utica shales, 500-11,000 feet below ground. A well is drilled deep into the earth to the appropriate layer, and then drilled sideways through the shale. A slurry of water, sand, and proprietary chemicals is pumped into the well at high pressures to fracture the shale and theoretically allow the trapped natural gas to flow upwards through the well. But not all of the 5 million gallons of water return, and it's impossible to know what effect the fracturing deep below the ground has had. Voids and other anomalies underground compromise the effectiveness of the "casings" which supposedly protect groundwater from the fracking fluids.

Many instances of drinking water contamination resulting from hydrofracking have been documented. A 2009 EPA study of drinking water in Pavillion, Wyoming documented contamination from hydrofracking in at least 11 household wells. In Dimock, PA in 2008, a water well exploded from methane contamination from nearby hydrofracking and many others have been rendered undrinkable. A massive 6,000-8,000 gallon spill of undiluted fracking fluids on September 17, 2009 in Dimock further threatens the residents of the area. And yet enforcement options are few, as the oil and gas industry was exempted from most environmental in the 2005 Energy Policy Act sponsored by V.P. Cheney. Of the companies that developed this method of hydrofracking, one name is particularly familiar: Halliburton.

"Of the 54 chemicals identified by [Pennsylvania's] DEP as being used in fracking fluids, 34 are soluble, allowing them to move into surface and underground water," wrote reporter Sandy Long in *The River Reporter* (Sullivan Co. NY's local newspaper) in December 2008. The findings of scientists at The Endocrine Disruption Exchange show that nearly all of those soluble chemicals are known skin, eye, and sensory organ irritants, and cause respiratory, gastrointestinal, and liver distress. Approximately 75% affect the brain, nervous system, and the cardiovascular system. Nearly half of them affect the kidneys, immune system, cause developmental difficulties, and have known ecological effects. And most importantly, a third of the chemicals are known carcinogens, endocrine disruptors, mutagens, and/or affect the reproductive system.

Drill rig in Dimock, PA. Photo by Lindsay Speer, May 2009.

This form of hydrofracking is happening in Pennsylvania, but not yet in New York. We know, however, that it is coming. The gas industry's landmen have been coercing landowners throughout the Southern Tier and Central New York to sign leases allowing the potential for gas drilling on their property. Because we have not seen the impacts, many people just trust what the landmen tell them and sign, for as little as $50/acre.

They might make a different decision if they saw the risks clearly. This was why the Haudenosaunee Environmental Task Force and the Onondaga Nation's environmental team had come to Bradford; to see for ourselves what impacts hydrofracking has on a community.

Bradford, Pennsylvania

We visited Yvonne's house first. It's a cozy little home tucked onto a hillside, surrounded by forest. Marring the secluded bliss, however, was the infernal drone of a generator nearby, which runs 24/7. Walking around to one side of the house, you could see the 40' wide swath of forest that had been cut for the steep, eroding road up the hillside leading to the 19,000 gallon propane tank that sits within a stone's throw and easy view of their property. "We were told it would be a house-sized propane tank," Yvonne's husband Matt explained. "We thought they meant like a residential tank, not one the size of a house."

The propane tank was a new one on me. What did this have to do with hydrofracking? I was educated quickly. When the raw gas comes up from the ground, it isn't just pure natural gas. What had been placed up the hill from Yvonne and Matt was a facility called a "propane stripping plant", which separates the propane out of the natural gas.

We hiked up the steep hill on their property, through gorgeous old moss-carpeted forest, stepping over the many small springs and seeps that ran off of the hillside. We didn't all make it; the propane fumes were strong and caught us by surprise. One of our group noted a feeling of burning around her mouth and nose and elected to go back to the car. I was getting a headache but we'd driven four and a half hours to see what we could see, so I was determined to get up that hill.

About 600 feet uphill of their house, another road had been cut, traversing the hillside. We walked down the road and Matt showed us a pumping station on the pipeline that ran through there, and poured water on a joint to show the leaking propane from a faulty seal. We then walked to the edge of their property, from where we had a good vantage point of the "stripping plant", an open air industrial site with a maze of pipes and a co-generator to run it.

A solitary worker on the site noticed us and came up the road to "see if there was a problem". The following discourse proved very educational, as he denied that there was any problem with the noise, fumes, or water issues in the surrounding homes. "Would you light a match around here?" Dan Hill, the Cayuga HETF representative asked, thinking of the pipeline monitoring station we'd seen only moments earlier that was clearly leaking propane through a faulty seal. "Oh yeah, it's perfectly safe."

Propane stripping station associated with the natural gas drilling operations. Situated in a residential area in Bradford, PA. Photo by Lindsay Speer, August 2009.

Photo: Lighting residential drinking water on fire.
Bradford, PA. Photo taken by Lindsay Speer, August 2009.

The neighbors across the street at the bottom of the hill have been told differently. “I wouldn’t light a candle inside if I were you,” was what the DEP had told them. Even with re-drilled wells, I still watched one of them fill a bottle of water out of his hose, shake it up and let it sit for a minute, then *light the air in the bottle on fire*.

The Pennsylvania Department of Environmental Protection had moved him out of his home when he had first shown them that trick, because they deemed it unsafe. This was a few weeks after the drinking well in Dimock, PA had exploded due to natural gas contamination from

hydrofracking. But after 13 weeks the drilling company refused to pay for his family's hotel room any longer, and suddenly the DEP told him his house was deemed safe to live in once again. Unable to afford the hotel on their own, they had no choice but to move back in.

Eventually new drinking wells were dug; but as evidenced above, they're still not safe. A jar filled with water from the tap is cloudy with contamination; not particulate matter, but rather a liquid or gas of a different density. The water smells contaminated as well; it's not an identifiable smell like sulfur or iron, but certainly "off". Human instinct is a wonderful thing; even when science doesn't know the right questions to ask, the gut will tell you when you might want to think twice about drinking something.

The water at the neighbor's house still has 8.5 ppm methane in it; the Pennsylvania DEP says that the maximum allowable is 5 ppm and they'd prefer it to be under 3 ppm. And yet, nothing has been done to further remedy the situation. Running the clothes washer sets off the methane detector at their house.

The neighbors explained to us that the environmental regulations regarding well drilling were unprotective and barely enforced. The drilling industry is expected to self-report accidents and errors. In the case of the wells that destroyed their water, a driller mentioned to them after the fact that the casing around the well was clearly inadequate. However, it wasn't reported or addressed until it impacted neighbors' drinking water. They've had a hard time finding out whether or not the wells were fixed; again, the drillers were left to self-report. Supposedly they have been fixed. But these neighbors still have polluted water coming out of their taps.

The Source of the Contamination

The drilling companies are not necessarily the same as the companies that do the hydrofracking or even the ones that own the well; this creates a regulatory nightmare for all involved, generally; it's hard to know whose fault a problem might be. It also means that sometimes you can get someone to tell you the truth.

"I got a chance to talk to one of the drillers once," said Steve, one of the affected homeowners. "He told me that he had hit a 'void' in the earth when drilling. He said there was no way to tell how large it was."

Pennsylvania gas drilling regulations require that all wells are "cased" with concrete; the volume needed is calculated from the depth and circumference of the well. The regulations further stipulate that 125% of this volume is required to be put into the well; in theory, the level of the concrete will return to surface and you theoretically have created a well that is isolated from groundwater supplies. Anomalies such as that void throw off these calculations.

"The wells affecting our properties never had a 'return'" [of the concrete to the surface], Steve was told. "The gas wells that affected ours with no cement returns also were over

pressured, creating more damage underground. The Pennsylvania regulations do not say that you have to have a return; only that you must put 125% into the earth." Loopholes such as these, and the arrogance on the part of the companies and workers that use them, are what endanger all of our water supplies.

Another resident later told us about how he had lost his drinking water. For 30 years he's had beautiful clear spring water. When the roads were built on the hillside above him, the roads cut deep enough into the hillside to disrupt the flow of his spring. It still flows, but it now is unpalatable, and runs muddy out of his shower after a rain. He expressed extreme frustration with the drilling companies who only think of themselves and their profits and don't take the proper precautions when developing a site.

The final home we visited was adjacent to the local Water Authority's land, which provides water for the majority of Bradford (ironically, however, not for the residents of Hedgehog Lane). The mining and drilling rights for most the area were sold off in a series of shady deals over a century ago; the Water Authority was shocked to find that their land was included. Previously, it hadn't been drilled; it was known that it wouldn't produce much. But the current drilling company is a performance company, not a production company. The company can put in an oil well for $125,000 and collect $150,000 from investors. Having already turned a profit, they don't care if it produces.

We viewed a grassy clearing that was obviously recently disrupted. Trees on the edge of the clearing tilted dangerously into the forest around them, evidence of a degree of carelessness in the development of the site. "There used to be a huge hole there, about 12 feet deep and 20 feet long. They were looking for shale. It was very steep and dangerous," our host told us. Now the site has been remediated, perhaps having to do with the halting of their operations by the DEP. "They had to stop for thirty days," she explained, "Part of the deal is they can only develop five sites at a time now, because they'd been developing so many sites at once that the DEP couldn't keep track of them."

In all of our tour, we did not see the 5 acre drill pads like I saw in Dimock, PA, or that are slated for Central New York. Most of this area was developed with 1 acre drill pads, and all that sat on the pads now were relatively small well pumps. I found this much more frightening; if all of these impacts are felt with relatively small-scale drilling, what will the large-scale hydrofracking in New York look like? How will it affect people, and our environment?

Peter Grannis, the Commissioner of New York State's Department of Environmental Conservation, claims that NY will do a better job of oversight. I hope so, but I don't believe it. As I write this, NYSDEC is developing a Supplemental Generic Environmental Impact Statement, intended to be released for public review and comment in late September 2009, which will allow drilling companies to breeze through the environmental review if their operations fall within the State's guidelines for a "standard" well. This makes the whole permitting process less work for the chronically underfunded DEC, which also is tasked with the schizophrenic role of both regulating and promoting drilling and mining in New York State. If the DEC's track record with monitoring the

water and air pollution permits it issues is any indication (see Environmental Advocates' 2008 publication "Permission to Pollute"), New York will not fare any better than Pennsylvania from the impacts of hydrofracking.

It doesn't help that the process was exempted from the regulations of the Safe Drinking Water Act under the last administration. There is legislation pending in Congress to repeal this exemption, cosponsored by Maurice Hinchey (D-NY) in the House and Sen. Chuck Schumer (D-NY) in the Senate. Known as the *Fracking Responsibility and Awareness of Chemicals Act* (FRAC Act), it won't stop the process of hydrofracking but will at least require the companies to tell us what chemicals they're using. Ultimately, our best protection lies with neighbors who will band together and refuse to sign leases, like the Onondaga Nation has done.

"It amazes me how human beings keep finding new ways to damage the earth," Denise Waterman of the Onondaga Nation Communications Office noted on our four hour drive home. Jeanne Shenandoah, the Onondaga representative for the Haudenosaunee Environmental Task Force agreed.

"People need to pay attention. This process is so damaging and severe. We have to spend all of our energy spreading the word to people so that they will not take part in this extreme degradation of the earth and the water. We don't want this anywhere near our area."

About the author: Lindsay Speer is a community organizer on behalf of the Onondaga Nation, working with neighbors throughout the aboriginal territory of the Nation to help protect the environment.

Drill site in Dimock, PA. May 2009. Photo: Lindsay Speer