

Putting the Brakes on Natural Gas Fracking – Red, Green, and Blue

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This tapwater is so contaminated by fracking chemicals it catches fire



Fracking, the process of blasting deep rock strata to release methane that can then be pumped to the surface and sold as natural gas, is one of the [ugliest](#) innovations the energy industry has come up with. And unlike the ugliness of the [Alberta Tar Sands](#), fracking takes place in pristine rural farmlands of the Appalachian Mountain region, such as Pennsylvania and West Virginia.



But not in New York State, where Governor David Patterson imposed a moratorium on new drilling until July 1, 2011.

Complicated [story](#):

- The NY State Legislature passed a moratorium that would have banned all new drilling (including non-fracked wells, the kind that have been drilled for decades).
- Governor Patterson vetoed that bill (“too broad” and “would put people out of work”), allowing the drilling industry to declare a moral victory.
- Patterson then issued [his own moratorium](#) prohibiting high-volume fracking of horizontally-drilled wells, pleasing environmentalists and local residents (but not industry, which would have preferred no restrictions at all)

As the Wall Street Journal noted, not everyone was happy.

In vetoing the Legislature’s oil and gas-drilling moratorium, Paterson said it would have applied to all conventional, low-volume, vertically drilled wells, effectively shutting down an industry that has been operating safely for decades...

A coalition of about a dozen environmental groups released a statement praising Paterson’s moratorium while warning that it creates a “loophole”

that industry can exploit. That is, it doesn't apply to vertical wells, "exactly the kind of wells that were responsible for ruining nine square miles of aquifer and poisoning the drinking water of more than a dozen families in Dimock, Pa.," the groups said.

In Dimock, homeowners sued last year after Houston-based Cabot Oil & Gas Corp. drilled faulty wells that allowed methane and, possibly, toxic drilling chemicals to escape into their drinking water aquifer.

So much for "Operating safely for decades".

The moratorium will give New York time to investigate a number of safety issues.

Trade secrets and toxic soup

One of the questions the fracking industry has been tapdancing around regards the toxic soup of chemicals it pumps into the earth to fracture shale deposits (hence: "Fracking"), freeing up the gas.

For years they've gotten away with claiming the mix is a "trade secret", meaning nobody knew exactly what chemicals were going into the ground (and quite probably contaminating groundwater). But that's not going to cut it. Earlier this year [Wyoming](#) set up disclosure rules, which were quickly followed by subpoenas from the EPA, since it's their responsibility to insure that toxins don't get into the water supply.

The EPA says the industry groups have now complied – the last holdout, [Halliburton](#), cut a deal on December 7th to turn over its data sheets.

The White House is coordinating a complete examination of the practice, and the Interior Department now [may issue regulations of its own](#). Secretary Ken Salazar said,

"As the nation's largest land manager, the Department of the Interior has a responsibility to ensure that natural gas is developed in a safe and environmentally sustainable manner and protects the other valuable resources on those lands, including preventing harm to the air, water and species that call these lands home."

Or, as senior policy adviser Scott Anderson of the Environmental Defense Fund [told a forum on fracking](#) at the Conservative Heritage Foundation last week, "Nothing good is going to happen in the natural gas industry ... until this disclosure issue is behind them. It's not as if it looks like the industry is hiding something. They **are** hiding something."

What's the problem here? Aside from [tap water that catches fire](#)?

A November appearance on 60 Minutes by the CEO of Chesapeake Energy to paint a

happy picture about how safe and wonderful fracking is moved author James Howard Kunstler to do a point-by-point debunking on his [website](#). What follows is the basic facts; for Kunstler's colorful embroidery, go to his website for [the full article](#).

At the present time, with America anxious about any kind of future energy, shale gas sounds like a dream-come-true. Mostly what the public saw on *60 Minutes* last night was a sell-job for Chesapeake Energy to boost its stock price. Here are some facts:

- Over a 50 year period ahead, all the shale gas drilling of the Marcellus fields in New York State will produce the equivalent of three years US consumption at 2008 levels.
- A price of \$8 per unit is required to make shale gas fracking economically viable in theory even for a short time. Gas is currently around \$4. Expect to pay at least twice as much for gas.
- Even at higher costs, shale gas fracking is arguably uneconomical. It requires huge numbers of rigs, generally 8 wells per "pad," meaning very high capital investments. The wells produce nicely for a year, average, and then deplete very steeply – meaning you get a lot of money up front and very soon all that capital investment is a wash. Translation: Chesapeake can make a lot quick money over the next few years of intense drilling and they don't care what happens after that.
- Chesapeake itself estimates that 5.5 million gallons of fresh water are needed per well, often delivered in trucks, which require fuel.
- It takes three years, average to prepare a drilling "pad" and the up to 12 wells on it, working 24/7 in rural areas with significant noise and electric lighting
- The fracking fluid is a secret proprietary cocktail formula amounting to 5 percent of the liquid injected into the earth. It's composed of: sand; a jelling agent to suspend the sand because water is not "thick" enough; biocides to kill bacteria that thrive in jelling agent; "breakers" to thin out jell-thickened water after fracking to get the fluid out of the way of released gas and improve "flowback;" fluid-loss additives to decrease "leak-off" of fracking fluid into rock; anti-corrosives to protect metal in wells; and friction reducers to promote high pressures and high flow rates. Of the 5.5 million gallons of fluid injected into each well, 27,500 gallons is the chemical cocktail.
- Mr. McClendon said on *60 Minutes* that it couldn't possibly harm the public's water supply because they were drilling so far below the 1000-foot-deep maximum of most water wells. He left out the fact that they have to drill *through* those drinking water layers to get down to the shale gas, and pump the fracking fluid through it, and then get the gas up through it. He also left out the fact that the concrete casings of drill holes sometimes crack and leak at any depth.
- The fracking fluid cannot be re-used. You have to mix new cocktail fluid for each injection.
- "Flowback" fluid inevitably comes back up with the gas, sometimes spilling over the ground. In any case, the stuff that does come back up is stored on the surface in

lagoons. Often it contains heavy metals, salts, and radioactive material from drilling through strata of radon-bearing granite and other layers. Liners of flowback fluid lagoons have been known to fail.

- Gas well failures in Pennsylvania, where production was ramped up quickest in recent years, have ended up polluting well water to the degree that residents can no longer use their wells.
- Little is known about the migration of fracking fluids underground.

Check out the trailer for the documentary [Gasland](#), about the fracking industry and the people hurt by it: