

Can Gas ‘Fracking’ Pollute Groundwater? Unlikely.

Christopher Helman, Forbes, 8-8-10

Can hydraulic fracturing of oil and gas wells pollute groundwater? The anti-drilling crowd wants you to think so, and has convinced the Environmental Protection Agency to launch an investigation into fracking. Don't believe them.

The fracking process basically consists of injecting millions of gallons of water mixed with a wee amount of chemicals and tiny ceramic balls down a well at high pressure to break up stubborn rock formations and release the natural gas trapped inside.

In recent years there's been a handful of cases where groundwater in the proximity of fracked gas wells has allegedly been contaminated—some say by fracking chemicals, some say by gas infiltrating the water table through an improperly completed well.

Oil and gas execs dismiss the concerns. Speaking at a recent conference in Houston Aubrey McClendon, chief executive of Chesapeake Energy said, “We consider a frack successful if we can move fluid 300 feet, so the concern is scientifically curious.”

“You can't say there's zero risk,” Jeff Ventura, president of Range Resources told me. “It all comes down to how you case your well. If you're drilling to 8,000 feet deep, you have to drill through the water. What we do is set a string of pipe and cement to protect the water, to prevent cross flowing.”

Adding confidence is a study is a study just out by Pinnacle, a division of Halliburton, which looked at more than 3,000 frack jobs done over the past decade (see article on the study here).

Using underground sensors they monitored the success of these fracks—how the rock cracked, how far the frack fluids infiltrated into the gas reservoirs. What they found was that even in the most successful fracks, none of the fractures or chemicals migrated closer than 4,500 feet below the surface—thousands of feet below the nearest water aquifer.

In short, if water reservoirs are ever contaminated it's because of a problem with how wells are cased close to the surface, not because frack chemicals are oozing up from a mile underground.

We need to end this debate. Many oil and gas companies would be ok with regulations covering how wells must be cased. But it's absurd to even consider a ban on fracking. Without the process the U.S. would go from being self-sufficient in natural gas to depending on shipments of LNG from the likes of Qatar. Without fracking, gas would cost a lot more, as would electricity, chemicals, plastics, everything.

Analyst Dave Pursell at oil and gas investment bank Tudor, Pickering & Holt has related some choice words for the anti-frack crowd, inspired by Jack Nicholson's character in *A Few Good Men*.

You want the truth? You can't handle the truth! We live in a world that needs clean natural gas, and gas wells have to be frac'd by men with rigs and pumps. Who's gonna do it? Microsoft? Apple? The energy industry has greater responsibility than you could possibly fathom. You weep for your i-phone app, and you curse the frac crews. You have that luxury. You have the luxury of not knowing what we know. That fossil energy fuels economic growth. And the existence of frac'ing, while grotesque and incomprehensible to you, powers our economy. You don't want the truth because deep down in places you don't talk about on Facebook, you want them on that frac, you need them on that frac. We use words like pressure, proppant, conductivity. We use these words as the backbone of a life spent producing gas. You use them as a punchline. We have neither the time nor

the inclination to explain ourselves to someone who takes a hot shower every morning using the natural gas that we provide, and then questions the manner in which we provide it. We would rather you just said thank you, and went on your way, Otherwise, we suggest you pick up a pipe wrench, and meet us on location. We have wells to frac!