NEED TO KNOW

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HYDRAULIC FRACTURING (FRACKING)

WHAT IS FRACKING?

Hydraulic Fracturing, or "fracking," is a process of breaking up rock thousands of feet below the Earth's surface that contains oil or natural gas. The process works by pumping a fluid, 99% water and 1% sand and chemicals, at extremely high pressure into a resource-rich layer of rock. The pressurized fluid then creates tiny fissures in the rock to release trapped oil or gas. The released energy reserves and much of the fracking fluid is then pumped out of the ground and trucked to the appropriate storage or refinement installations.

Fracking has been industry standard practice for over 60 years because it is a safe, effective method of acquiring energy. Throughout the twentieth century, almost all fracking was practiced in vertically drilled wells. Around the turn of the century, new technology expanded drilling capabilities to include horizontal drilling, allowing drillers to extract resources that were impossible or uneconomical to reach using previous vertical drilling techniques. Thanks to horizontally drilled wells, natural gas production has rapidly increased in the past 15 years, most notably in shale rock formations. These recent developments have sparked a natural gas revolution, dramatically increasing supply and employment and reducing consumer costs. However, misinformed and reactionary opponents are trying to block fracking, despite its economic advantages.

ECONOMIC IMPACT: EMPLOYMENT, ENERGY, AND PRODUCTION

Natural gas production has been a major component to U.S. economic growth in the last ten years. Recent development has simultaneously increased employment and reduced the price of natural gas energy. According to a study commissioned by the U.S. Chamber of Commerce, operations at shale sites alone are responsible for employing 1.7 million people. As these processes are pursed at more shale sites across the country, an additional 2.3 million jobs can be created by 2020. Investment in natural gas operations has not only bolstered employment, but significantly contributed to economic growth as well ($238 billion added value in 2012) (4).

Increased production from shale rock has greatly increased the national supply of natural gas. As supply has increased, prices of natural gas utilities have fallen significantly. From 2007 to 2012, production from shale gas has increased 400%, cutting natural gas power rates for American families in half (5). In 2012 alone, American households saved $17 billion on lower natural gas power bills.

QUICK FACTS

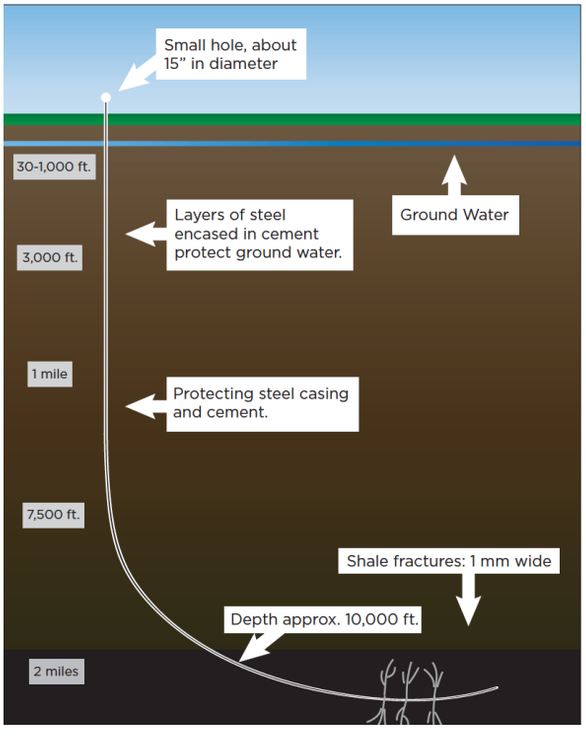
- Hydraulic fracturing has been a standard industry practice since the 1940s.
- Sodium fluoride, found in the majority of toothpastes, is far more hazardous and toxic than any chemical used in fracking fluid (1).

NOTABLE & QUOTABLE

"There are thousands of feet of rock between deep-shale formations and shallow aquifers, and it's precisely that barrier that keeps these fluids miles away from shallow drinking-water sources."

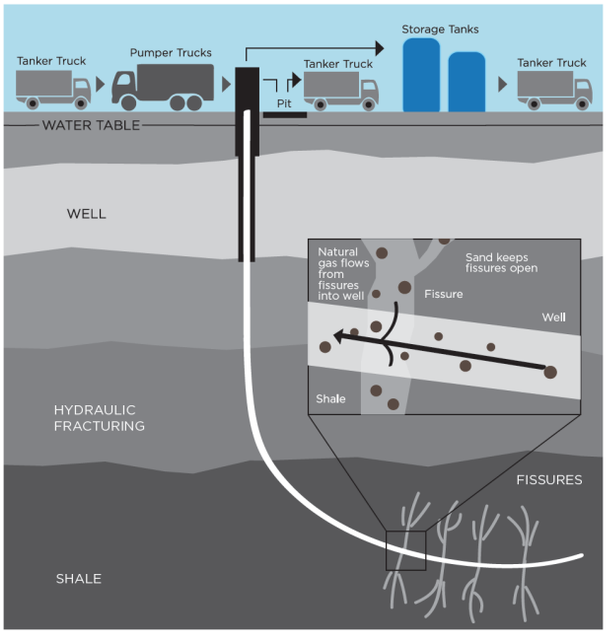
- **Simon Lomax**, research director of Energy in Depth (2)

Scale and Depth of Fracking[3]



Natural gas is also used to produce countless other goods. Steel, glass, paper, clothing, fertilizer, paints, plastics, antifreeze, dyes, photographic film, medicines and many more goods require natural gas as a component or energy source in their production processes (7). Increased natural gas supply has reduced the cost of production of these many essential products.

Fracking Process at Work[6]



FRACKING AND THE ENVIRONMENT: CLEAN RECORD, SULLIED REPUTATION

The most persistent myth that opponents pedal is that fracking causes water contamination. To the contrary, there has never been a recorded instance of drinking water being polluted by fracking (8). According to a study by the Pennsylvania State University, rare instances of contamination are the fault of poor well construction, not the fracturing of rock. In fact, the majority of water contamination complaints allegedly linked to fracking have actually been pre-existing problems or caused by other non-drilling activity (9). While the process does leave chemicals in the fractured rock, there are thousands of feet of impermeable rock between fracture zones and water stores that prevent injectant migration. Furthermore, the most commonly used chemicals can be found in the typical home and make up a very small percentage of the fracking fluid.

CONCLUSION

Fracking has played a pivotal role in stimulating economic growth and employment in recent years, primarily through increasing natural gas production. Despite opponent's accusations, fracking is a time-tested, safe process that has been extremely beneficial to American households and businesses alike.

Endnotes:
1. Dr. Barry Stevens, "The Truth about Fracking Fluid and its Disposal," OilPrice.com and CNBC (May 2012), http://oilprice.com/Energy/Energy-General/The-Facts-about-Fracking-Fluid-and-its-Disposal.html
2. Jim Efstathiou Jr., "Fracking Fluids May Migrate to Aquifers, Researcher Says," Bloomberg (May 2012), http://www.bloomberg.com/news/2012-05-03/fracking-fluids-may-migrate-to-aquifiers-researcher-says.html
3. "Fracturing," Penn Virginia Corporation, http://www.pennvirginia.com/operations/Fracturing/default.aspx
4. "America's New Energy Future: The Unconventional Oil and Gas Revolution and the US Economy," U.S. Chamber of commerce (December 2012), http://www.energyxxi.org/sites/default/files/Americas_New_Energy_Future_State_Main_Dec12.pdf
5. "Natural Gas Data," U.S. Energy Information Administration (February 2013), http://www.eia.gov/dnav/ng/hist/ngm_epg0_fgs_nus_mmcfm.htm, http://www.eia.gov/dnav/ng/hist/n3045us3m.htm
6. Jonathan Zasloff, "Is California Fracking Regulation Out of Focus?" Legal Planet (February 12, 2013), http://legalplanet.wordpress.com/2013/02/12/is-california-fracking-regulation-out-of-focus/
7. Michael B. McEclroy and Xi Lu, "Fracking's Future," Harvard Magazine (Jan-Feb 2013), http://harvardmagazine.com/2013/01/frackings-future
8. Nicolas Loris, "Hydraulic Fracturing: Critical for Energy Production, Jobs, and Economic Growth," The Heritage Foundation (August 2012), http://www.heritage.org/research/reports/2012/08/hydraulic-fracturing-critical-for-energyproduction-jobs-and-economic-growth
9. "Water Facts 28: Gas Well Drilling and Your Private Water Supply," Pennsylvania State University College of Agricultural Sciences (2008), http://www.lhup.edu/mkhalequ/Geology%20Seminar/gasdrilling.pdf

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