FAQ:

Hydraulic Fracturing, SDWA, Fluids, and DeGette/Casey

Q: What is hydraulic fracturing? Why is it important?

- Put simply, hydraulic fracturing is a technology used to stimulate the flow of energy from new and existing oil and gas wells. By creating or even restoring millimeter-thick fissures, the surface area of a formation exposed to the borehole increases and the fracture provides a conductive path that connects the reservoir to the well. These new paths increase the rate that fluids can be produced from the reservoir formations, in some cases by many hundreds of percent.

- Hydraulic fracturing is an environmentally responsible way to make the most of our American energy resources, while limiting disturbance to land. Without it, wells that would have run dry years ago, or which never would have been productive in the first place, are made viable. Experts believe 60 to 80 percent of all wells drilled in the United States in the next ten years will require fracturing to remain in operation.

- That's especially true in and around our nation's "shale plays" – areas across the United States that hold hundreds of trillions of cubic feet of natural gas, but would be too deep, too hard, and too expensive to access were it not for hydraulic fracturing.

Q: Is the technology safe? Is it regulated? What chemicals are involved in the process?

- Hydraulic fracturing is a safe, well-regulated, environmentally sound practice that has been employed over one million times without a single incidence of drinking water contamination. Hydraulic fracturing's record of safety and impressive ability to help make the most of our domestic energy resources designate it as one of the most important tools in our nation's effort to achieve energy independence.

- Every step of the process—from the initial boring of the well to its sealing after it has run dry—is conducted in accordance with state requirements. Indeed before a well is even drilled, it requires approval by state officials and a Permit-to-Drill.

- Fracturing fluid is the most important component in the hydraulic fracturing process. Water and sand constitutes more than 99 percent of the solution.

- In addition to these main ingredients, there are small amounts of other materials involved, each of which play a critical role in the process. The vast majority of these materials can be found in the food we eat, beverages we drink and household cleaning items we keep under the sink. State regulators are made aware of those chemicals, and have access to all information they need regarding their safe use.

Q: How was hydraulic fracturing able to secure an exemption to regulation under the Safe Drinking Water Act?

- Hydraulic fracturing was never regulated under the Safe Drinking Water Act – and, by that definition, could never have been granted an "exemption" from it. Simply stated: How can something earn an exemption from a law that never covered or even conceived of it in the first place?

- In 2005, Congress passed (with the vote of then-Sen. Barack Obama) the Energy Policy Act, a key provision of which sought to **clarify Congress's historical intent** on whether the Safe Drinking Water Act (SDWA) of 1974 was ever designed to regulate hydraulic fracturing.

- The answer was no, and in this case, history proved an effective guide: When SDWA was passed in 1974, hydraulic fracturing had already been in use for 25 years. Hydraulic fracturing was never considered for inclusion under SDWA jurisdiction at the time. The Act was amended in 1980, and then again in 1986 and 1996. At no point in the process was the concept of SDWA regulation over fracturing ever considered a necessity – or even a possibility.

Q: Isn't it true that the oil and gas industry is the only industry in America to have been given this exemption?

- First, no "exemption" was granted. Second, it's important to understand the activities the Safe Drinking Water Act was implemented to regulate. Specifically as it relates to the law's Underground Injection Control (UIC) program, the program's chief objective is to properly manage the disposal of hazardous wastes for the purposes of permanent storage. But that's neither the purpose nor practical effect of hydraulic fracturing. Its purpose is to help facilitate the delivery of a resource from underneath the ground to above it, not the other way around.

- Millions of industries aren't federally regulated under the Safe Drinking Water Act – nor should they be, if in fact their business isn't engaged in the disposition and storage of hazardous waste materials underground.

Q: Are states really equipped with the resources/expertise that's needed to safely regulate this process?

- Since hydraulic fracturing became a commercially viable practice 60 years ago, state agencies have effectively monitored its implementation, setting guidelines and best practices. Each state in which hydraulic fracturing is used has a team of highly qualified inspectors and scientists whose job is to guarantee the proper execution of oil and natural gas extraction.

- The Ground Water Protection Council (GWPC), considered "one of the nation's leading groundwater protection organizations," released a report in May underscoring this record of safety and performance on the state level, finding the "current state regulation of oil and gas activities is environmentally proactive and preventive."

- GWPC additionally found that the "regulation of oil and gas field activities is managed best at the state level where regional and local conditions are understood and where regulations can be tailored to fit the needs of the local environment."

- Well operators not only work with state regulators, but also comply with numerous federal requirements. The Occupational Safety and Health Administration, the Environmental Response, Compensation and Liability Act and the Toxic Substances Control Act all contain record keeping and reporting rules followed by energy producers. These regulations ensure all chemicals used in the extraction process are properly handled and stored, and that workers and first responders are made aware of the substances they handle.

Q: How can states effectively regulate hydraulic fracturing if they have no idea what's in fracturing fluids?

- They do know. Not only are regulators apprised of the universe of materials used in fracturing operations in their state, but emergency response personnel also have access to that information as well. Some states, such as Pennsylvania, have even decided to post those materials on public agency websites. (http://www.dep.state.pa.us/dep/deputate/minres/oilgas/FractListing.pdf)

Q: How do you respond to reports suggesting more than 1,000 separate cases of drinking water contamination have been tied to HF?

- Not a single documented case of drinking water contamination has ever been credibly tied to hydraulic fracturing. Not one. In 60 years.

- From where does that "1,000 cases" figure arise? Last year, 452,000 wells produced natural gas in the United States. Opponents of hydraulic fracturing have asked state regulators to produce lists of each individual case in which a well was breached or any amount of methane compromised the integrity of the well. That none of these cases had anything to do with hydraulic fracturing is rarely mentioned.

- In 2004, no less an authority than EPA itself undertook an exhaustive project of research and analysis aimed at finding out, once and for all, whether hydraulic fracturing posed a legitimate risk to ground and drinking water. It found "no evidence" of any such risk.

Q: What constitutes "contamination"? Isn't it enough that wells have exploded, faucets have gone flammable, and methane has gotten into drinking water?

- What constitutes HF-related contamination of drinking water? Here's a definition: The existence of fracturing-related fluids in a drinking water supply, found to reside there in sufficient quantities pursuant to activities directly related to hydraulic fracturing. When we say that no documented cases exist that credibly tie hydraulic fracturing to drinking water contamination, that's what we mean. And it's accurate.

- Hydraulic fracturing related contamination would result if the hydraulic fracturing stimulation is the sole cause of the well integrity to fail. In cases where states have investigated complaints suggesting that contamination is the result of hydraulic fracturing, they look for compounds from the fracturing fluids. If they don't find them, then the source of the problem is elsewhere. A good example is testing for potassium chloride (KCL) that is used for many fracturing jobs and is not otherwise present in producing wells.

- 932,000 separate wells produce natural gas in the United States. Virtually all are managed in a way that ensures the integrity of the operation remains intact. But when leaks occur, or pressure from the rising natural gas forces an unplanned disruption to take place, it's not adequate to simply assume hydraulic fracturing was the cause – even though none of the tracer frac fluids were located in the reservoir – and call it a day.

- Basic point: If we're going to have an honest debate about whether the EPA should be given permit-authority over fracturing operations nationwide – and a key justification for that effort is the charge that hydraulic fracturing is mucking up our drinking water – we should take great care to make sure we've got the evidence to back up that assertion first.

Q: What practical impact would EPA regulation over hydraulic fracturing actually have?

- Though the DeGette legislation is unclear of how the mechanics of her legislation would work, a plan-English reading of the Safe Drinking Water Act sheds some light on this question.

- At its core, SDWA prohibits underground injection of anything – water, sand, or other materials – absent authorization by permit or rule. EPA currently has no regulations written or mechanisms in place that would allow it to issue either. As it is right now, EPA isn't capable of even accepting applications for permit, let alone issuing one.

- In this case, lack of regulations on the books is just as effective as having the most restrictive ones imaginable. The outcome is the same: no hydraulic fracturing – at least until EPA gets its appropriate operational and personnel apparatus in place to allow it. Without hydraulic fracturing, access to potentially massive natural gas resources in America's shale regions would be cut-off immediately.

- For a more detailed and technical explanation of Class I and II UIC well regulation, considerations related to primacy, and Section 1425 issues, contact Energy In Depth (202.346.8825).

Q: The DeGette bill simply seeks to create a process whereby operators can disclose chemicals to federal regulators. What's wrong with that?

- The DeGette bill is about regulation, not reporting.

- By eliminating the provision in the Safe Drinking Water Act clarifying Congress's regulatory intent on the question of hydraulic fracturing, the DeGette bill would destroy the current partnership between state and federal regulators in favor of an EPA-driven approach.

Q: Has any rigorous study taken place on whether hydraulic fracturing is a threat to human health?

- Studies conducted by respected authorities have all concluded that hydraulic fracturing is safe. The Environmental Protection Agency (EPA), Ground Water Protection Council (GWPC) and the Interstate Oil and Gas Compact Commission (IOGCC) have all found hydraulic fracturing non-threatening to the environment, our ecosystems, or public health.

- The GWPC survey of state energy regulatory agencies found no documented cases of contaminated drinking water linked to hydraulic fracturing. GWPC also concluded – in two separate reports, released more than a decade apart – that state regulations were sufficient to ensure the integrity of the water supply.

- A 2002 study conducted by the IOGCC—a multi-state government agency that represents thirty-seven governors—confirmed the GWPC's conclusion that no evidence of contaminated drinking water due to hydraulic fracturing could be found.

- In 2004, the EPA conducted an extensive survey of hydraulic fracturing practices and their effect on drinking water. Focusing on the shallowest of wells (those that have the highest potential of harming the water supply), the EPA found that several factors (fluid recovery, the small amount of chemicals contained in frac fluids, their dilution in water and their absorption by rock formations) minimize the potential risks associated with hydraulic fracturing.

- More specifically, the EPA concluded that no hazardous chemicals were found in fracturing fluids, and that hydraulic fracturing does not create pathways for fluids to travel between rock formations to affect the water supply.

Q: Have any studies been commissioned on what sort of economic impact federal regulation over HF could have?

- Yes. Several reports issued by the U.S. Department of Energy consider this question in depth, including the 2001 study titled “More Restrictive Regulation of Hydraulic Fracturing Could Impact Natural Gas Supply,” and the 2008 report “Potential Economic and Energy Supply Impacts of Proposals to Modify Federal Environmental Laws.”

- Additionally, a coalition known as Energy In Depth recently released the findings of a report authored by Advanced Resources International, a firm that has also done extensive work for the Department of Energy. Among its key findings as it relates to economic impact of new and duplicative federal regulation:

    - U.S. oil wells shut in: 204,272
    - U.S. natural gas wells shut in: 150,202
    - Lost oil production: 67 million barrels (183,000/day)
    - Lost natural gas production: 245 billion cubic feet (670 million cubic feet/day)
    - $602 million in foregone royalties
    - $285 million in foregone state severance taxes
    - $505 million in foregone state income taxes
    - $1.2 billion in foregone federal income taxes

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