

June 5, 2013



The Hon. Ron Wyden, Chairman
The Hon. Lisa Murkowski, Ranking Member
Committee on Energy and Natural Resources
United States Senate
Washington, D.C. 20510

Dear Chairman Wyden and Ranking Member Murkowski:

This letter responds to the questions posed by participating Senators during the Committee's "roundtable" discussion on May 23, 2013, entitled "Shale Development: Best Practices and Environmental Concerns," and left open for the record. Please know that we also helped prepare the separate submission by America's Natural Gas Alliance (ANGA), and concur with its responses as well. The ANGA submission includes material responsive to the additional Questions for the Record received from the Committee on May 29.

Questions

- **Can you identify any site where hydraulic fracturing created contamination of groundwater or surface waters? (Sen. Landrieu)**

Many studies and government officials confirm that no such site exists.

In fact, the hydraulic fracturing technique itself poses little risk to groundwater. It typically occurs thousands of feet underground, and studies by the U.S. federal government and others have found no evidence that the fracturing process itself has contaminated groundwater aquifers. Nonetheless, sound operational practices concerning well design and construction must be followed to prevent accidental releases and mitigate other concerns.

Industry drills every well, conventional or unconventional, through the groundwater zone. After doing so, and before any fracturing or operations occur, the water resource is protected by multiple layers of steel casing and cement. Properly installed casing protects the water aquifer from gas migration. This groundwater zone penetration, and protection, occurs with all oil and gas wells, and industry has longstanding experience in ensuring well integrity.

Geologically, the hydraulic fracturing process occurs at great depths -- thousands of feet below the earth's surface depending on the location. The distance between groundwater aquifers, which are located a few hundred feet below the surface, and the natural gas reserves, which are typically located thousands of feet underground, is such that multiple layers of solid rock ensure the hairline fractures created by hydraulic fracturing do not extend up into the groundwater aquifers.

While the hydraulic fracturing process itself is not known to have contaminated groundwater, in terms of overall water management there have been limited incidents where spills or releases have occurred on the surface. These regrettable instances are limited in scope and subject to swift remediation. They are also not typical, as development occurs with sound design and operational practices.

The industry's record of responsible operations is strong. As noted in my opening remarks, over the past six years more than 42,000 wells have been drilled and fractured without major incident. This record of environmentally responsible performance reflects both the industry's risk management practices, and also that the technical and environmental risks associated with drilling an unconventional well onshore are low.

- **Can you provide reasons for or against disclosure of chemicals prior to the completion work being undertaken, and thoughts on whether a federal minimum standard on disclosure would be helpful? (Sens. Hoeven and Wyden)**

The current practice of prompt disclosure after fracturing takes place has proven to be effective, as it allows for "real time" adjustments during the process to additive content to optimize the procedure based upon field conditions, as well as product availability. Prior disclosure could result in unnecessary regulatory delays, less effective fracturing jobs, less productive development of the resource, and misinforming the public. It is important to remember the overall context where hydraulic fracturing has never contaminated drinking water sources. Also, the FracFocus website already contains a comprehensive listing of nearly 60 chemicals that are most often used in hydraulic fracturing operations, including a description of their intended functional purpose.

During the FracFocus discussion at the roundtable, the notion of a "federal backstop" was also raised. We do not support such federal legislation or minimum federal standards for FracFocus or otherwise. In terms of operational regulations, there simply exists no systematic state-level deficiency that necessitates federal intervention to address.

With respect to FracFocus, we agree with the comments by Mr. Davidson from Noble Energy who noted a minimum standard for FracFocus would eliminate one of its strengths – the dynamism of many states acting on the issue separately. The states have approached disclosure differently. Some have adopted FracFocus as the state's disclosure platform, others have not. Some have added additional requirements involving the disclosure of proprietary information to the state in case of medical or other emergencies. One result of a federal minimum standard could be the "freezing" of the field. To minimize controversy with the federal government and associated operational disruptions, states that must comply with a federal "backstop" standard may tend to adopt the federal minimum standard. Though not intended by federal "backstop" authors, the end result could be freezing in place the current notion of a federal minimum standard, and a loss of state experimentation and improvements in public disclosure as the issues change or mature.

New federal "minimum standards" for hydraulic fracturing operations would require a new federal bureaucratic infrastructure to be developed by regulatory and other officials who, compared to their state counterparts, have little knowledge of industry operations. Those who have comparatively little experience would be placed in the position of judging the rules developed by those who do have substantial experience and knowledge. The new system would have an inherently discordant and unproductive dynamic. It would impose numerous administrative and other burdens that could

jeopardize not just unconventional shale development, but also the potential domestic job creation and energy security benefits associated with the development of the nation's oil and gas resources that depend upon fracturing techniques to produce.

State-level oversight is the most appropriate and effective approach to protecting human health and the environment while accounting for local geology and other local factors. We work with state governments and multi-state entities to address concerns, implement effective regulatory frameworks, and develop industry consensus on sound management practices.

The nature of hydraulic fracturing in unconventional gas makes each drilling site unique. Wide variability exists in the surrounding geography and underground geology which determines the fluids used in hydraulic fracturing and what systems are both available and best for their disposal. In other words, there is no "one size fits all" approach, making local and state authorities the most appropriate regulators. States have multiple regulations that address environmental protection during oil and gas operations, including the protection of water resources. The rules cover well permitting, well materials and construction, safe disposition of hydraulic fracturing fluids, water testing, etc.

- **Would you provide ideas for infrastructure improvements? (Sen. Hoeven)**

Infrastructure is a broad topic, but because our discussion focused on flaring of associated gas, I will focus on the flaring that is used in various stages of exploration and production operations throughout the world.

Oil and natural gas producers in North Dakota support the expansion of pipeline infrastructure and increased gas processing capacity to reduce flaring as Bakken production in the region continues to grow. Progress is being made as industry invests and regulators approve the infrastructure required to reduce flaring.

According to the North Dakota Pipeline Authority, over 70 percent of the natural gas produced is currently captured and sold. This number has increased from about 64 percent since September 2011. The industry is investing an estimated \$4 billion over several years to build infrastructure such as pipelines and gathering systems to capture and transport natural gas. Federal and state permitting can be required for such infrastructure, so the federal government expediting permitting processes could provide assistance in addressing this issue more swiftly.

For its part, XTO Energy is currently investing \$10-15 million to expand process capacity at its Nesson Plant in North Dakota, which will come online in 2013 and increase throughput by 16 million cubic feet per day (MMcf/d) (from 9 MMcf/d to 25 MMcf/d).

LNG Exports

While we did not have the opportunity to participate in the second roundtable discussion involving LNG exports on May 21, as the nation's largest natural gas producer we would like to comment on this important issue.

With vast domestic natural gas resources available in the United States, LNG exports will lead to a less carbon intensive global energy mix by reducing emissions for receiving nations, particularly in power generation, as it has done in the United States.

According to the IEA (Golden Rules outlook in "Golden Rules for a Golden Age of Gas," 2012), the total volume of natural gas traded between regions will increase 50 percent between 2010 and 2035, and LNG from the U.S., "plays an important role in creating a more competitive international market for gas supply."

For the U.S., numerous studies* demonstrate that LNG exports will help increase economic growth, create jobs, and add to government tax revenues. LNG exports also will result in an increase in other products such as natural gas liquids that are important to U.S. industrial businesses, including chemical manufacturing.

The breadth of the U.S. natural gas resource base means the U.S. can continue to meet growing domestic industrial, power and other demand while also exporting LNG. According to a 2012 study by Ebinger, Massy and Avasarala of the Brookings Institution, the chemical industry is among those sectors that will benefit:

... the evidence suggests that the competitive advantage of U.S. industrial producers relative to its competitors in Western Europe and Asia is not likely to be affected significantly by the projected increase in natural gas prices resulting from LNG exports. As European and many Asian petrochemical producers use oil-based products such as naphtha and fuel oil as feedstock, U.S. companies are more likely to enjoy a significant cost advantage over their overseas competitors.

It is a false choice to claim that increasing exports comes at the expense of domestic manufacturing. Increased exports of LNG will likely end up increasing domestic gas production, as numerous studies have suggested. This is because domestic energy supplies are not static – they expand and contract as they become more or less economic to produce. If more markets are opened to their sale, then there will be more demand, more investment and more production. In other words, more trade means more supply – and with it, more jobs and economic expansion.

* Economic studies include:

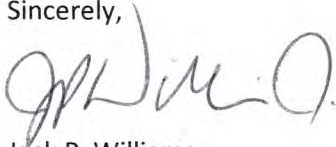
- NERA Economic Consulting, "Macroeconomic Impacts of LNG Exports from the United States" (Dec. 2012) [Report commissioned for the U.S. Dept. of Energy]
- Small Business & Entrepreneurship Council, "The Benefits of Natural Gas Production and Exports for U.S. Small Businesses" (May 2013)
- ICF (for API), "U.S. LNG Exports: Impacts on Energy Markets and the Economy" (May 2013)
- National Regulatory Research Institute, "LNG Exports: What State Utility Commissions Need to Know" (Nov. 2012)
- Baker Institute at Rice University, "Shale Gas and U.S. National Security" (July 2011), and "U.S. LNG Exports: Truth and Consequence" (August 2012)
- Levi, Michael, "A Strategy for U.S. LNG Exports" (June 2012)
- Brookings Institution, "Liquid Markets: Assessing the Case for U.S. Exports of Liquefied Natural Gas" (May 2012)

LNG exports are also consistent with long-standing U.S. efforts to expand international trade and reduce barriers to trade, and with the President's National Export Initiative to expand all kinds of exports as a catalyst to spur economic growth and job creation in the U.S. In addition, the U.S. has been a strong advocate of WTO action to remove artificial barriers to the export of natural resources by other countries.

In contrast, restrictions on U.S. LNG exports would threaten the ability of the natural gas industry to expand production, create new jobs, increase economic growth and expand U.S. export revenues. Enactment of protectionist policies in law or regulatory practices would undermine U.S. efforts to promote free trade globally. The DOE should expeditiously evaluate and act upon pending LNG export applications, and allow the competitive market to direct investment and capital expenditures. This will allow businesses to create a durable, international LNG value chain that will not only reduce global GHG emissions, but also lead to jobs and economic benefits in the U.S. for decades to come.

Thank you again for the opportunity to participate in the May 23 roundtable discussion, as well as the opportunity to submit these additional comments. I hope they are valuable in helping the Committee understand the issues related to unconventional resource development.

Sincerely,

A handwritten signature in black ink, appearing to read "JP Williams". The signature is fluid and cursive, with a large initial "J" and "W".

Jack P. Williams

c: Committee Members