

**EPA Science Advisory Board
Hydraulic Fracturing Research Advisory Panel
Public Teleconference February 1, 2016
Oral Statement of Erik Milito**

From: Erik Milito
Sent: Friday, February 05, 2016 2:39 PM
To: Hanlon, Edward <Hanlon.Edward@epa.gov>
Cc: Stephanie Meadows
Subject: RE: Teleconference of Hydraulic Fracturing Research Advisory Panel - Request to Make Oral Statement

Ed,

Thanks for the e-mail. My written is attached.

Thank you.

Regards,

Erik

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Milito Statement, as prepared for delivery, for EPA Science Advisory Board, Hydraulic Fracturing Research Advisory Panel, February 1, 2016 Public Teleconference on Draft Assessment on the Impacts of Hydraulic Fracturing on Groundwater Resources:

We have known for some time that hydraulic fracturing is an engineering technology that is safe and environmentally protective, and that provides environmental benefits. But don't take my word for it; take the U.S. Department of Energy's. In the 1990s, DOE studied hydraulic fracturing and various other oil and gas technologies. In 1999, during the Clinton Administration, DOE released a report entitled "Environmental Benefits of Advanced Oil and Gas Exploration and Production Technology." In this report, DOE identified hydraulic fracturing as an advanced technology that provides environmental benefits. The benefits listed by DOE include:

Optimized recovery of valuable oil and gas resources;

Fewer wells drilled, resulting in less waste requiring disposal; and

Protection of groundwater resources.

Let me repeat that, the U.S. Department of Energy has identified protection of groundwater resources as an environmental benefit of hydraulic fracturing. We know this to be true today because hydraulic fracturing is inherently designed to protect groundwater resources. In its report, DOE acknowledged that hydraulic fracturing had already been applied more than a million times by the 1988, and in the late 1990s about 25,000 wells were being hydraulically fractured annually.

The only real changes since that DOE report is that the technology has continued to improve. And we also know that, according to DOE, at least 2 million wells have been hydraulically fractured, and up to 95 percent of new wells drilled today use HF, accounting for more than 43 percent of oil and 67 percent of natural gas production.

The evidence is overwhelming ----- and sound science, the data, and the facts support, by 100%, EPA's statement that "hydraulic fracturing activities have not led to widespread, systemic impacts to drinking water resources." This technology has been applied than 2 million times with no documented cases of groundwater contamination. The terms widespread and systemic are far from vague – they are clear and used properly by EPA in its draft assessment. You can only conclude that there are no widespread, systemic impacts.

EPA looked at more than 950 data points and more data points have been published since EPA released its draft assessment in June. Kern County, California, where hydraulic fracturing has been used for more than 60 years, recently conducted a comprehensive environmental impact

review and concluded there has been no evidence of contamination to drinking water or irrigation water from HF. All other credible studies arrive at the same conclusion – there is no link between hydraulic fracturing and drinking water impacts. There have been numerous studies by the U.S. Geological Survey, the state of California, the Susquehanna River Basin Commission and others that all reach this same conclusion. And a recently conducted study by Molofsky and others tested 1701 water wells in northeastern Pennsylvania and found that shale gas extraction has not resulted in regional gas impacts on drinking water sources and that methane in water wells is best correlated with topography and groundwater geochemistry, rather than shale gas extraction.

The environmental benefits of HF are far-reaching and should be embraced. Hydraulic fracturing has been the catalyzing force behind the recent decline in U.S. greenhouse gas emissions to near 20-year lows. This is because HF has unleashed vast supplies of clean, affordable gas, and this in turn has allowed natural gas to produce much more of American's electricity – with natural gas emitting half the carbon emissions as other sources and virtually no hazardous air pollutants. In other words, but not for hydraulic fracturing, our carbon emissions would be much higher. The consumer has also benefited through lower cost gasoline at the pump, and lower cost natural gas for home heating and electricity. And geopolitically, the U.S. has much greater leverage globally because our production as a result of hydraulic fracturing has effectively diminished the ability of countries like Russia and Iran to use energy as a geopolitical tool.

The science in support of EPA's conclusion of no widespread, systemic impacts is credible and clear. Any other conclusion would simply ignore the science. The public by a wide margin supports continued American oil and gas production. The credible science makes it a slam dunk.