

Fracking: The more you know



The controversies around hydraulic fracturing of shale deposits continue to swirl even as tens of thousands of new wells are being drilled every year in a number of states. Opponents of fracking cite poor drilling practices, drinking water contamination, growing fresh water scarcity and methane (a Greenhouse Gas) leakage as reasons to ban the technology. It was therefore timely for the Chemical Heritage Foundation's Joseph Priestley Society to plan an extensive program of speakers and a symposium on this subject this fall.(Check website chemheritage.org).

One of the most interesting presentations was given by Jim Ladlee, Associate Director, Marcellus Center for Outreach and Research at Penn State. Starting with an overview of shale plays in the Continental U.S., he described in some detail what has been happening in Pennsylvania, where hydraulic fracturing in the Marcellus and Utica Shale started to build in 2008 and has expanded rapidly ever since that time, reaching an average of 7.79 Billion Cubic Feet(BCF) per day of natural gas during the first half of 2013, with tremendous benefits to the local economy.

While Pennsylvania experienced bad publicity in the earlier days for some instances of drinking water contamination from escaped methane and chemicals attributed to shale fracking, the state has been vigilant by increasing inspections and applying enforcement of Federal, State and Local regulations. Over the 2008 to 2012 period, inspections increased from 1267 to 12,561. This roughly 10 times higher number of inspections saw a very significant drop in violations per well inspected and in required enforcements, indicating that the drilling companies were in much greater compliance on a percentage basis.

Ladlee also put the water "scarcity" issue in perspective, as depicted on the other graphic. This shows that of the roughly 10 billion gallons per day of water used for various purposes, more than half is used for electric power production, with public water supply, mining, industrial, agriculture and livestock and irrigation taking much larger amounts of water than fracking (Size of water "bubbles" on graphic not all to scale). The conclusion here is that Pennsylvania does not have a problem using water for this technology. That would not necessarily be true for certain other states.

If too much methane leaks into the atmosphere during drilling operations, the advantage of substituting fracking-derived natural gas for coal (to reduce carbon dioxide emissions) can

disappear, given the fact that methane is a substantially more objectionable GHG than carbon dioxide. The Environmental Defense Fund, which has for some time cooperated with industry and several states to disclose chemicals used in hydraulic fracturing and in groundwater testing near shale fracking wells, is now cooperating with the State of Colorado to regulate methane leakage. Other states will, no doubt, join this initiative.

As for New York State, Governor Cuomo has still not announced a decision whether to lift the moratorium on shale fracking that was imposed by previous Governor Paterson in 2008 (See my post dated Oct. 12, 2012). The latest on this appears to be a growing lack of current interest by the large oil companies to drill in New York's Marcellus shale, where the gas, now selling at low prices, contains very little of the more valuable hydrocarbon liquids, while permission to drill might conceivably be granted to drill a number of wells in New York's Utica shale in the Western part of the state.

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