Comments provided by Michelle Bamberger, June 9, 2010

Comments on EPA's Proposed Research Approach for Studying the Potential Relationships Between Hydraulic Fracturing and Drinking Water Resources

General Comments

- All studies must be conducted in a blinded, controlled manner. For example, controls must be incorporated into all water testing, and the testers should be blind to the test versus the control sample.
- All researchers, EEC and SAB members involved in this study should recuse themselves if they have conflicts or potential conflicts of interest, including having current gas leases, having stock in gas companies, or be in any other way unduly influenced by the gas industry.
- There is no mention of studying injection wells as a means of disposal of wastewater.
- A conservative estimate of the potential number of high volume, slickwater hydraulically fractured wells in the Marcellus Shale in New York State is 40,000. Currently the NYS DEC has fewer than 20 inspectors for the entire state. Should this EPA study show that drilling can be done in such a way that there is a low risk of water contamination, does that mean that all is well and we move forward, accepting this process as safe?
- There are two important issues that must be addressed in this study or other studies before this drilling process is approved: cost of regulating the gas industry and avoiding corruption in the regulation of the gas industry.
- Cost of regulation: Who will shoulder the costs to be sure that these rules and regulations requiring safe procedures are followed? Who will police each step in this complex process of fracturing the shale, of treating the radioactive flowback water, of monitoring surface and ground waters? How can New York State, with a current budget deficit of more than 3 billion dollars, adequately enforce safety regulations?
- Avoiding corruption: Currently, the DEC is set up to handle both permits and regulation. Such a system does not and cannot properly regulate the fossil fuel industry.
- If this study proves that the process can be done safely, how many states will be financially able to police the industry effectively while also preventing corruption?

Specific Comments

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Characterization of the Hydraulic Fracturing Lifecycle
The use of a lifecycle framework to plan a research study on the environmental impacts of hydraulic fracturing is appropriate. Lifecycle assessment (LCA) is a formal process for which the International Organization for Standardization developed an international standard, ISO 14040. However, a formal LCA does not necessarily need to be undertaken in this case. It would be useful to outline the hydraulic fracturing lifecycle and think about the components that would be included in a LCA to help identify critical knowledge gaps. A careful compilation and review of data and knowledge available in the peer-reviewed literature, in

industry, in professional and non-governmental organizations, and in government agencies should be conducted to ensure accurate identification of data gaps. It is important to realize that the open peer-reviewed literature in this field is limited and other literature must be carefully critiqued regarding its limitations and appropriateness for addressing ORD's specific research needs.

Comment:

To fully and scientifically assess cumulative impacts resulting from the hydraulic fracturing lifecycle, it is necessary to perform a formal LCA, and then use this full assessment to identify critical knowledge gaps. This is especially important as open peer-reviewed literature in this field is admittedly limited, and the results of a formal LCA would be used with confidence throughout this initial short-term study as well as in long-term studies.

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With definition of such boundaries, LCA can be used to separate conventional, well-understood issues such as impacts of site development, road construction, and trucking, from impacts that are not well understood, such as fate of chemicals in source fluids, flowback water and produced water that is co-mingled with the flowback water in storage ponds.

Comment:

Cumulative impacts from high volume hydraulic fracturing have not been addressed in the literature and are not well understood, including impacts of site development, road construction, and trucking.

While it is essential that a plan for the mitigation of cumulative impacts on water usage be in place before drilling is considered anywhere, other cumulative impacts affecting communities such as truck traffic and road damage, erosion and siltation, air pollution, noise pollution, light pollution, chemical spills and accidents, traffic accidents, worker safety, community emergency response burden, water consumption and regulation, water pollution, water waste treatment and disposal, illegal dumping, human and animal health risks from chemicals, habitat fragmentation, industrialization of rural landscape, increased rents and decreased property values, and degradation of the existing economy must also be studied in depth before drilling can be considered to be safe. Cumulative impact analysis is commonly used in sociological and environmental research. The lack of a cumulative impact analysis on most of the important factors associated with drilling is disturbing. This analysis can and must be done before issuing drilling permits could be considered.

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