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January 11, 2012

New York State Department of Environmental Conservation  
Division of Mineral Resources  
Bureau of Oil & Gas Regulation  
625 Broadway, 3rd Floor  
Albany, NY 12233-6500

Re: Comments on the 2011 Revised Draft Supplemental Generic Environmental Impact Statement (rdSGEIS) on the Oil, Gas and Solution Mining Regulatory Program, and the Proposed High-Volume Hydraulic Fracturing (HVHF) Regulations.

I commend Governor Cuomo for establishing, at the outset of his Administration, that sources of drinking water and watersheds are "sacrosanct" with respect to the possible adverse impacts of HVHF, and I applaud DEC's proposed prohibition on HVHF within the New York City drinking water supply watershed. This proposal is a reversal of previous recommendations from the State. It represents a step in the right direction with respect to protecting one of New York's most vital natural assets – the City's *unfiltered* drinking water supply – as well as more than 9 million New Yorkers who depend on it daily. It is significant that DEC has acknowledged the unacceptable threat that HVHF poses to New York City's drinking water supply and is offering this greater level of protection.

However, in the main, DEC's rdSGEIS (and therefore DEC's proposed HVHF regulations which are based on the rdSGEIS) remains fatally flawed. In my judgment as a trained geologist and environmental policymaker with over twenty years of experience in matters related to water resource and watershed protection, if DEC continues down its current path without making fundamental changes to the rdSGEIS and overall policy toward HVHF, New York City's drinking water and water supplies throughout the State will be irresponsibly and, perhaps irreversibly, endangered.

The remainder of my comments will focus on some of the grossest deficiencies in DEC's plan for HVHF and the rdSGEIS primarily as it pertains to New York City's drinking water supply – consistent with the New York City Council's jurisdiction and based on evidence collected over the course of four years and six public hearings on HVHF that I have held as Chairman of the City Council's Committee on Environmental Protection.



## **Insufficient Scientific Research on Possible Adverse Consequences of HVHF**

There is significant uncertainty and inadequate scientific understanding with respect to industrial HVHF and its possible consequences, including subsurface migration of fracking fluids and gaseous compounds, microseismic phenomena and induced seismic activity. For example, a link between HVHF and induced earthquakes was only recently confirmed (Blackpool and Eola Gas Field), subsequent to the release of DEC's rdSGEIS, and research on this connection is only in its early stage. In other words, the rdSGEIS was developed without this critical information about HVHF, its effect on subsurface geology and hydrogeology, and to what extent HVHF may induce seismic activity in New York, and the possible impacts of any seismic activity.

The stakes in New York cannot be overstated. In New York City's case, policymakers in City Hall and Albany have worked together for decades to safeguard our drinking water, implementing a comprehensive watershed protection plan that includes land acquisition and management programs. If the City's water supply became contaminated, potential consequences include health risks to 9.4 million New Yorkers, the need to construct a \$10 billion filtration plant which would cost \$100 million annually to operate, and an estimated 30% water rate increase.

In the absence of an adequate scientific understanding of the potential adverse consequences of HVHF, DEC does not, in my opinion, have the ability to assess these potential consequences, let alone develop a regulatory and enforcement paradigm that will be sufficiently protective of our water, air and land resources. The State's policy regarding HVHF must err on the side of extreme caution to the risks and emerging scientific evidence regarding HVHF impacts.

## **Critical Water Supply Infrastructure Protection**

The rdSGEIS proposes a grossly inadequate 1,000-foot buffer zone around New York City's critical water supply infrastructure. In 2009 the New York City Department of Environmental Protection (DEP) produced a scientific study demonstrating that there are extensive geologic features, such as faults and rock fractures that intersect with this critical infrastructure and extend for many miles. The features could serve as migration pathways, exposing the infrastructure to contamination and elevated pressures that aging aqueducts, tunnels and pipelines are not designed to withstand. This study found that roughly 90% of these geologic features near the City's critical water supply infrastructure are seven miles or less in length. Approximately 10% of these features are longer than seven miles.

Based on the extent of known subsurface features, it is imperative that DEC impose a buffer zone of *at least 7* miles around the City's critical water supply infrastructure. HVHF must be explicitly and permanently prohibited within this buffer zone – as opposed to simply subjected to additional site-specific environmental assessment. Finally, the buffer zone must apply not only to surface disturbances, but also to

subsurface drilling. The buffer zone distance should be measured from the end of the nearest horizontal lateral to the edge of the structure being protected.

### **Additional Protection for New York City Water Supply Watershed**

The proposed HVHF ban within the City's watershed is a very positive and meaningful step. It will mitigate a number of threats to the City's ability to sustain its unfiltered water supply system. However, the proposed 4,000-foot buffer zone around the watershed needs to be strengthened, in my opinion. Current horizontal drilling technology is capable of extending drill-legs roughly a mile from a well pad. The proposed buffer zone does not clearly prohibit well pads that are located outside the 4,000 foot zone from drilling horizontally toward and even beneath the watershed. At a minimum, the 4,000-foot buffer zone must be clarified to eliminate this possibility.

Additionally, the watershed ban applies only to HVHF, defined as fracturing activities involving more than 300,000 gallons of water. At the least, this definition must be expanded or clarified to include any drilling, horizontal or vertical, that uses more than 300,000 gallons of water. DEC should also consider the impacts associated with drilling that involves volumes less than 300,000 gallons of water.

### **Wastewater Disposal**

The rdSGEIS makes clear that HVHF produces vast volumes of toxic wastewater containing chemical mixtures used for hydraulic fracturing as well naturally occurring pollutants including radioactive material, metals and salts. Mismanagement of produced wastewater and its impacts has been well documented. For example, the Monongahela River in Pennsylvania was contaminated by wastewater discharges from municipal sewage treatment plants. Yet inexplicably the rdSGEIS offers no plan, does not address at all the management and disposal of the massive amounts of wastewater DEC expects HVHF will produce in New York.

Moreover, my research shows New York currently does not have any wastewater treatment plants equipped to receive HVHF waste. Existing facilities could potentially be retrofitted to accept this waste, but this raises issues that were entirely neglected in the rdSGEIS such as wastewater transportation and spills.

## **Need for a Full Health Risk Assessment**

The rdSGEIS fails to assess the health risks associated with HVHF. DEC needs to analyze potential air and water quality impacts on communities downwind and downstream from industrial hydraulic fracturing activities. A full health risk assessment is a critical component of understanding how HVHF affects public health and true economic costs.

## **Conclusion**

In my expert opinion as a geologist and Chairman of the New York City Council Committee on Environmental Protection, the State is not prepared to advance its plan for HVHF at this time. The many deficiencies of the rdSGEIS, especially the significant uncertainty and inadequate scientific understanding of the possible adverse consequences of industrial HVHF, render the State grossly unprepared to even assess such adverse consequences, let alone create an effective regulatory and enforcement paradigm to protect the State's water, air and land resources from such consequences. It is regrettable that the DEC's efforts to date fall woefully short of the vision articulated personally by Governor Cuomo that "[A]ny drilling in the Marcellus Shale must be environmentally sensitive and safe. New York State must ensure that, if and when the Shale's natural gas is obtained, it does not come at the expense of human health or have adverse environmental impacts. In particular, it is critical that no drilling be conducted that might negatively affect any existing watershed and that best practices in drilling are adopted and enforced by the State...existing watersheds are sacrosanct and I would not support any drilling that would threaten the State's major sources of drinking water."

I urge the DEC to develop an rdSGEIS that is faithful to Governor Cuomo's vision.

Respectfully submitted,



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New York City Council Member, 24th District  
Chair, Committee on Environmental Protection