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Attn: dSGEIS Comments
Bureau of Oil & Gas Regulation
NYS DEC Div. Mineral Resources
625 Broadway Third Floor
Albany NY 12233-6500

29 December 2009

RE: Draft Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program

Well Permit Issuance for Horizontal Drilling and High-Volume Hydraulic Fracturing to Develop the Marcellus Shale and Other Low-Permeability Gas Reservoirs

The Cayuga Lake Watershed Network is a not-for-profit citizens group which covers the Cayuga Lake and its tributaries with the mission to "Identify key threats to Cayuga Lake and its watershed and advocate for solutions that support a healthy environment and vibrant communities". It is in relation to this mission that we submit these comments.

We accept that natural gas is a valuable resource and will be for some time to come and that New York State uses more than it produces. Therefore, there is some obligation on the State to produce more. In addition gas production will generate valuable income for many rural people with limited incomes. Hence we do not object to gas drilling but demand that it be exploited only if the environment is adequately protected. The proposed draft SGEIS and its 1992 precursor do not as they stand adequately protect the environment.

Natural gas is a valuable commodity but clean water is even more valuable. Many residents in the watershed rely on groundwater, and many more residents and towns rely on Cayuga Lake and its tributaries for clean water, via municipal supplies and wells. Both sources, if seriously polluted, will take very large efforts and expense to clean up. Tourism and agriculture also rely on clean water and are amongst our main current industries. They must all be protected.

We regard exploitation of the Marcellus Shale, with the requirement for hydro-fracking, as a potential major threat to the 800 square mile Cayuga Lake watershed if it is not adequately regulated. We are very concerned about these proposed regulations and in particular the points covered below.

We are an organization with 500 members within the watershed but only a small staff. This restricts our ability to comment comprehensively on these lengthy regulations. We rely on larger sister organizations and our elected and appointed leaders to give a more detailed input. We fully support the comments submitted by the Tompkins County Water Resources Council, and those of

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Congressman Maurice Hinchey. However we do have some important additional points to make, as follows.

CUMULATIVE IMPACTS: We recommend that a much more in-depth and extensive consideration of cumulative impacts be adopted.

The SEQRA process calls for consideration of the cumulative impacts of proposed activities. This applies to activities that will be conducted in phases or over time. The draft SGEIS does not adequately address cumulative impacts on water resources, habitat, local economies, or quality of life.

The draft SGEIS states in section 6.13.2:
"This density was anticipated in 1992 and areas of New York, including Chautauqua, Cayuga and Seneca Counties, have experienced drilling at this level without significant negative impacts to agriculture, tourism, other land uses or any of the topics discussed in this report."

No studies on the impacts of vertical well drilling in Chautauqua, Cayuga, and Seneca Counties were cited. This is not sufficient evidence for concluding that there will be no significant impacts.

Further, the draft SGEIS in section 6.13.2 states:
"The level of impact on a regional basis will be determined by the amount of development and the rate at which it occurs. Accurately estimating this is inherently difficult due to the wide and variable range of the resource, rig, equipment and crew availability, permitting and oversight capacity, leasing, and most importantly, economic factors. This holds true regardless of the type of drilling and stimulation utilized. Historically in New York, and in other plays around the country, development has occurred in a sequential manner over years with development activity concentrated in one area then moving on with previously drilled sites fully or partially reclaimed as new sites are drilled. As with the development addressed in 1992, once drilling and stimulation activities are completed and the sites have been reclaimed, the long term impact will consist of widely spaced and partially re-vegetated production sites and fully reclaimed plugged and abandoned well sites."

One approach to overcome the difficulties of quantifying cumulative impacts is to define a collection of scenarios (numbers of wells and well pads, rates of development, and other factors) and to estimate impacts on water resources, habitat based on those scenarios. Cumulative impacts should not be ignored for the reason that quantification will be difficult.

Impacts on property values were not discussed but may be significant during development and after. Landowners needing to sell property in affected areas or areas where gas development may occur prior to and during development may be unable to find buyers or may have to sell at lower prices. Certainly any contamination of private wells or of soil will impact property values and examples of impacts of other types of contamination (leaks from underground gasoline tanks in Jacksonville, Tompkins County, NY, for example) can provide a starting point to estimating impacts.

STORMWATER POLLUTION PREVENTION PLANS: We recommend that full primary containment and secondary containment of drilling and hydrofracturing chemicals and flowback fluids AND other practices that minimize exposure be required for all sites.

Spills and overflows during storm events from open containers, pits, and ponds are potential sources of contamination that can be minimized very easily by requiring full containment with secondary containment.

WATER WITHDRAWALS: We recommend that water withdrawals for hydrofracturing not be permitted in the unregulated areas outside of the Susquehanna River Basin and the Delaware River Basin, where water withdrawals will be regulated by the Susquehanna River Basin Commission and the Delaware River Basin Commission, until the NYS Department of Environmental Conservation is given regulatory authority over water withdrawals state-wide.

Dr. Susan Riha, Professor, Cornell University, and Director of the New York State Water Resources Institute, gave testimony to the NYS Assembly Standing Committee on Environmental Conservation on the draft SGEIS (http://blogs.cornell.edu/nyswri/files/2009/10/Testimony-Susan-Riha-10_15_092.pdf), stating that large withdrawals of water for fracturing rock to stimulate gas flow (hydrofracing) could disrupt ecosystem services provided by surface and ground water, and that there is insufficient analysis and description in the draft sGEIS of how water withdrawals for hydrofracing will be regulated in the Great Lakes and Mohawk- Hudson River Basins to avoid damage to stream ecosystem services.

Regulation of water withdrawals should include timing, location, and volume of withdrawals. A limited number of withdrawal locations should be designated and the location sites should be designed for long term use to prevent bank erosion and collapse, as well as being located to minimize impacts on stream ecology and/or groundwater levels.

WATER RESOURCES IMPACTS: Cayuga Lake is a major regional water supply for thousands of residents, as are many of its tributaries. No actions should be permitted that degrade this invaluable, non-renewable, limited resource. In an increasingly crowded world, clean water must take the highest priority for resource protection and use.

Further, the economy of the Cayuga Lake watershed (and those of its sister Finger Lakes) is dependent on clean water for recreation, tourism, and numerous traditional and modern industries. If our surface waters are seriously

- Education
- Communication
- Leadership

degraded by unconventional gas drilling impacts, there will be no recovery possible on any reasonable time-scale.

GROUNDWATER IMPACTS TO KARST: We recommend that the definitions of sensitive areas be defined to include the karst areas, which occur in the Cayuga Lake watershed and more widely across central New York State, as indicated on the enclosed figures (Geology Map of NY State and Appalachian Karst Map). Spills in karst areas can have far-reaching impacts compared to more geologically isolated aquifers partly because of the speed and uncertainty of movement in such strata.

DRILLING AND HYDROFRACTURING CHEMICALS: We recommend that the chemicals permitted be limited to the least toxic chemicals that will accomplish the task.

Dr. Anthony Hay, Professor, Cornell University, gave testimony to the NYS Assembly Standing Committee on Environmental Conservation on the draft SGEIS (http://blogs.cornell.edu/nyswri/2009/10/22/files/2009/10/Hay-S-GEIS-Hearing-Testimony-10-15-09.pdf) on the toxicity of drilling and hydrofracturing chemicals cited in the draft SGEIS and on energy company Web sites, and found in samples from flowback waters. Many are known carcinogens. Less toxic chemicals can be substituted for many of the reported and measured chemicals, reducing exposure.

ENFORCEMENT OF REGULATIONS: We are concerned about enforcement of these regulations. Regulations without good enforcement will not provide the protection for the environment that this watershed needs. We do not think that the DEC has adequate staff to protect the environment at all the locations of drilling. We think that the issuing of permits should reflect the ability of the DEC to regulate adequately each new site. If this unduly restricts the rate of exploration then perhaps the drilling companies should pay for more staff.

Please respond in writing to these comments.

Yours sincerely,

John Mawdsley

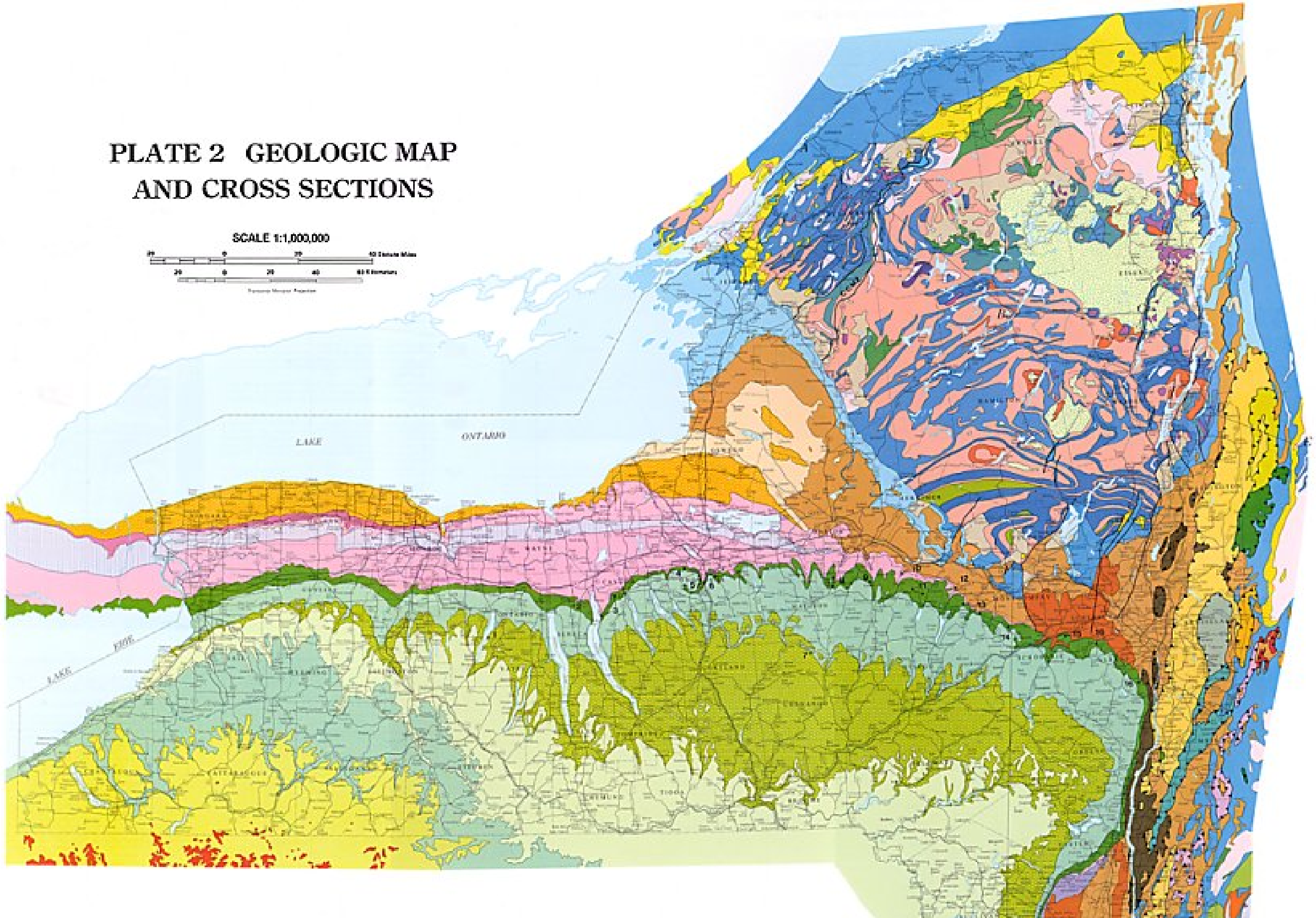
Dr. John Mawdsley
Chair of the Cayuga Lake Watershed Network

Hilary Lambert

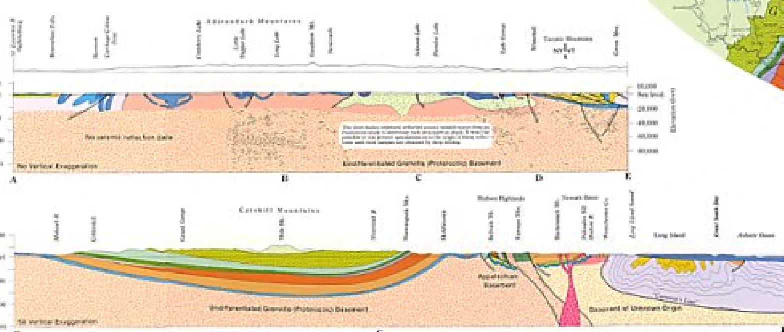
Dr. Hilary Lambert
Steward, Cayuga Lake Watershed Network

PLATE 2 GEOLOGIC MAP AND CROSS SECTIONS

SCALE 1:1,000,000



GEOLOGIC CROSS SECTIONS

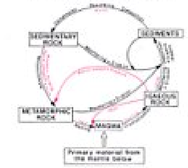


BEDROCK GEOLOGY OF NEW YORK

SURFICIAL GEOLOGY OF NEW YORK

ROCK FORMING PROCESSES

ROCK CYCLE in EARTH'S CRUST



Explanation for the numbers that appear on the map

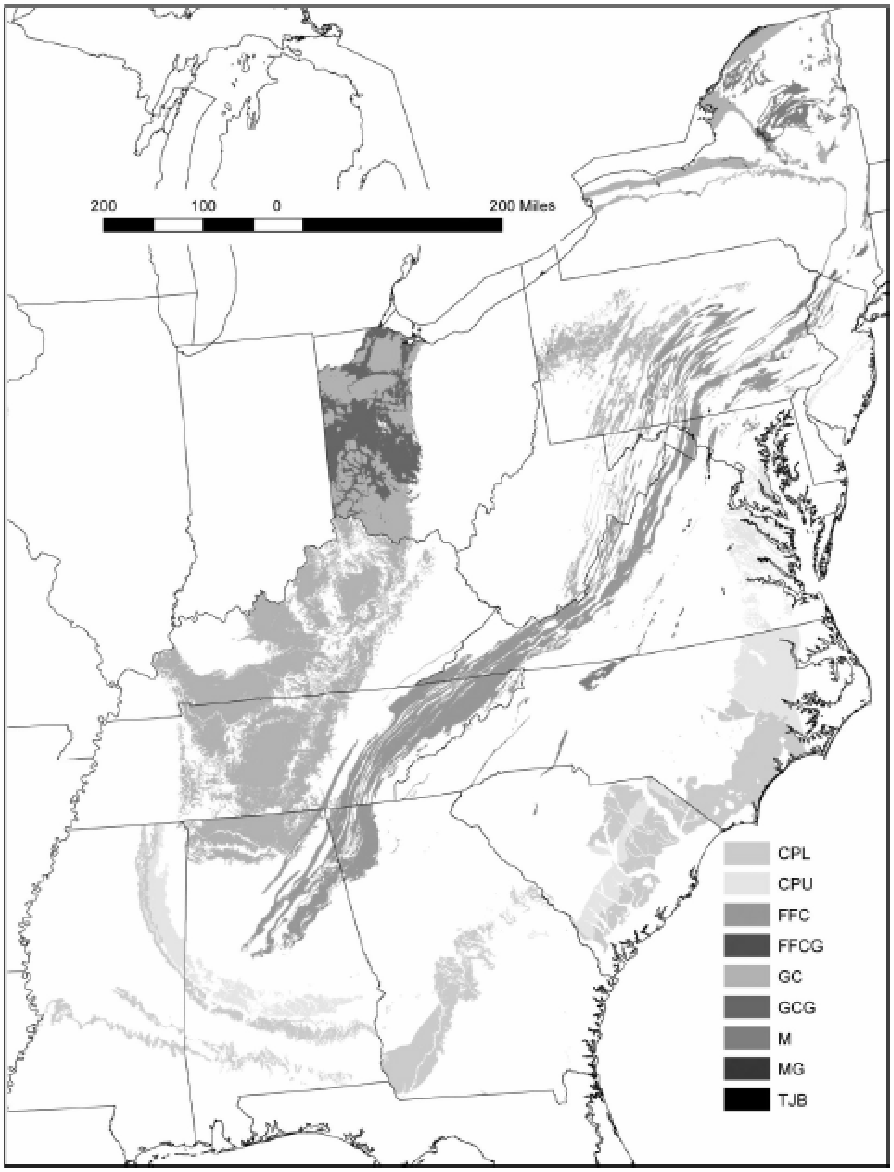


Figure 3. Draft map of Appalachian karst. CPL = Coastal Plain limestones; CPU = Coastal Plain unconsolidated calcareous sediments; FFC = folded and faulted carbonate rocks; FFCG = folded and faulted carbonate rocks with glacial cover greater than 50 ft thick; GC = flat-lying to gently folded carbonate rocks; GCG = flat-lying to gently folded carbonate rocks with glacial cover greater than 50 ft thick; M =marble; MG = marble with glacial cover greater than 50 ft thick; TJB = Triassic and Jurassic basin-fill carbonates.

U.S. Geological Survey Karst Interest Group Proceedings, Rapid City, South Dakota September 12-15, 2005

An Appalachian Regional Karst Map and Progress Towards a New National Karst Map

By D.J. Weary
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