



The League of Women Voters of New York State
62 Grand Street, Albany, New York 12207
Phone: 518-465-4162 Fax: 518-465-0812
www.lwvny.org E-Mail: lwvny@lwvny.org

THE LEAGUE OF WOMEN VOTERS *of New York State*

December 30, 2009

Attn: dSGEIS Comments
Bureau of Oil & Gas Regulation
NYSDEC Division of Mineral Resources
625 Broadway, Third Floor
Albany, New York 12233-6500

Re: League of Women Voters of New York State Written Comments on dSGEIS

The League of Women Voters of New York State (League) believes that democratic government depends upon the informed and active participation of its citizens at all levels of government and that governmental bodies must protect the citizen's right to know by giving adequate notice of proposed actions.

The League recognizes that, due to the public outcry that included the League, the comment period has been extended to ninety days. However, since the release of the draft SGEIS, the League questions whether or not there has been enough time for the public to review this large, 809- page document in order to adequately address the numerous and complex issues.

Water Resources

The League supports:

- water resource programs and policies that reflect the interrelationships of water quality, water quantity, groundwater, and surface water and that address the potential depletion or pollution of water supplies;
- stringent controls to protect the quality of current and potential drinking water supplies, including protection of watersheds for surface supplies and recharge areas for groundwater;
- measures to reduce water pollution from direct point-source discharges and from non-point sources.

The League is particularly concerned about the cumulative impacts of gas drilling on water quality and quantity. The draftSGEIS identifies several major impacts on water resources, including:

- 1 – **Withdrawals:** The huge amounts of withdrawals needed for hydraulic fracturing, up to five million gallons per fracking, could lead to “stream flow and

groundwater depletion, loss of aquifer storage capacity, and water quality degradation” according to the SGEIS... While consumptive use will be regulated by the Susquehanna and Delaware River Basin Councils, the shale extends beyond these jurisdictional boundaries. How will withdrawals in these areas be regulated? In general, the League questions if these excessive quantities are sustainable, and if it is the best use of a precious resource;

2 – **Stormwater Runoff:** “All phases of gas well development.....have the potential to cause water resource impacts....if stormwater is not properly mitigated” Stormwater would carry contamination from spills, equipment, pit leaks or failures, poor well construction, accidental release of fracturing fluids, or from flowback water. Proposed mitigation measures rely primarily on Stormwater Pollution Prevention Plans to be implemented by industry operators. There are so many opportunities for contamination from stormwater runoff (sixteen pages) that the League questions whether or not all of these can be properly monitored and controlled if there is not regular oversight by DEC. The current shortage of staff does not reassure us that this will happen;

3 – **Wastewater Disposal:** For each fracture, the recovered water contains 15,000 gallons of chemical additives in addition to brines, heavy metals, radionuclides, and organics forced out of the shale. There is no consensus on the best way to dispose of this waste. According to an article by the US Geological Survey¹, it is questionable whether or not wastewater treatment plants can adequately treat this type of wastewater, as mentioned in the SGEIS. Underground injection could contaminate aquifers, and dehydration beds do not seem practicable in this area. The USGS article concludes that “While extraction technology has improved, our knowledge of how this extraction might affect water resources has not kept pace” and that there needs to be “ better understanding of the impacts of drilling and wells on water supplies and a clearer idea of options for wastewater disposal.”

A phone conference with Deputy Commissioner Val Washington informed the League that options being considered by industry to date are not viable, e.g. desalination/dilution for the brine, is too expensive and energy intensive. We were also told that the DEC is recommending onsite short-term storage in steel tanks, this to be piped to “impoundments” for treatment involving possible re-use of the water after purification. The League has concerns about the transfer by pipes (underground or above ground?) with yet another area for potential leakage; and we have no information on the “impoundment” facility. Judgment on this must wait for more complete information. The League is heartened by Washington’s comment that there will be no permits granted until wastewater disposal has been satisfactorily resolved because wastewater disposal is a major problem and to date, mitigation is not adequately addressed;

4 – **Chemical Additives:** Industry considers these products to be proprietary information so there is no information on what is being injected into the ground or contained in the wastewater. Therefore, there has been no analysis of these chemicals to determine their effect on our water and more importantly on public

December 30, 2009

health. There are numerous recent reports of contamination of drinking water supplies from gas drilling in several states. For example, the Pennsylvania Department of Environmental Protection determined that a gas drilling operation contaminated at least seven water supplies² and in 2008 EPA reported toxic chemicals in a water supply in Wyoming that included 2-butoxyethanol, a component of fracking fluid. This chemical is known to damage the kidneys, liver, and bone marrow. The League asks that permits be suspended until the EPA can complete its study as directed by Congress. Our recommendation is to use toxic-free additives as required for off-shore drilling;

5 – Drinking watersheds: In consideration of the issues we have discussed and others not mentioned, it is inconceivable to the League that this type of activity would be allowed in any drinking watershed, much less in the New York City water supply for 9 million people. There are no protections for the supply infrastructure and no regulations that address gas drilling in drinking watersheds. The draft SGEIS is relying on the Watershed Rules and Regulations for this even though these do not regulate industrial gas drilling. The League asks that no gas drilling be allowed within one mile of drinking watersheds and the water supply infrastructure;

6 – Aquifers: The DSGEIS states “The primary concern regarding groundwater withdrawal depletion is aquifer depletion that could affect other uses, including nearby public and private water supply wells”. There is also the threat of contamination as well as cross-contamination of aquifers from released fracking fluids migrating through groundwater, according to EPA reports. The League is pleased that aquifer depletion is under review by DEC; however, the potential for contamination is not mitigated. The League calls for no gas drilling within one mile of primary and principal aquifers. In addition, the same threats apply to individual drinking water wells; these also should be protected by a no gas drilling within one mile.

In addition, the Final Impact Assessment Report on the production of natural gas in the New York City watershed (west of the Hudson River) was released by New York City on December 23. The report, by the engineering firm Hazen and Sawyer, concluded that gas drilling will pose a considerable risk to the city's watershed and could jeopardize the Filtration Avoidance Determination granted to the City by the EPA. This conclusion was reached by an analysis of the impact not of one well but of thousands over a period of 5 to 10 years. High levels of land disturbance and truck traffic will result from the develop of gas wells in the watershed. The integrity of subsurface tunnels will be compromised by high-pressure fracking, and the real danger of subsurface migration of fracking chemicals and their infiltration into overlying groundwater, watershed streams, reservoirs, and aqueducts must be considered. Huge amounts of water withdrawals, chemical usage, surface spills and the problem of disposal of wastewater treatment and disposal of fracking water from hundreds or thousands of wells was analyzed. Mitigation efforts were briefly discussed in an appendix. Much of DEC's own data in the dSGEIS, pertaining to one well, were extrapolated to multiple wells to demonstrate the

significant impact of the above factors in the development of industrialized drilling for gas in the Marcellus Shale. The League believes that this report should be given serious consideration.

Air Quality

The League supports:

- regulation of pollution sources by control and penalties
- inspection and monitoring
- full disclosure of pollution data
- vigorous enforcement mechanisms including sanctions and fines
- regulation and reduction of pollution for mobile and stationary sources
- regulation and reduction of ambient toxic-air pollutants

The League, which has been working nationwide to reduce greenhouse gasses, is very concerned about the amount of air pollution that will be generated by gas drilling.

According to DEC Deputy Commissioner Washington, truck traffic is a major concern. The League concurs. NYSERDA contracted with NTC Consultants to perform an impact analysis on community character re gas drilling. The first determination was that drilling activity would require significantly more trucking than was addressed by the 1992 GEIS. NTC estimates for all phases of drilling for just one well range from a low of 895 truckloads to a high of 1300 truckloads; remember – only one well. Multiply this by unknown thousands of wells. This is an enormous amount of traffic that will produce an enormous amount of CO₂. To this must be added all of the equipment; most of the trucks and equipment are diesel, producing a lot of pollution. The League requests that all diesel motors be required to have filters.

In addition there will be venting and flaring to burn off methane; this emits volatile organic compounds and nitrous oxides. These pollutants could be mitigated using green completions. There is also other equipment using internal combustion engines, producing greenhouse gasses. The compressors used once drilling is completed produce air pollutants, including high levels of benzene. If the gas is under sufficient pressure the compressors may be located somewhere other than the original drilling site; wherever they are located, they may run 24/7 for 10-50 years. How will all of this be mitigated, or more importantly, regulated? It is mentioned in two instances that emissions may be mitigated by building fences around the area to keep people away; but, this does protect the workers and it certainly does not keep the air emissions from the soil or from traveling through the air!

In Section 7.6.6 *Well Production* the draft SGEIS states "... the ongoing production phase of any given well is the most significant period and contributor of GHG's, CO₂ and CH₄. Natural gas compressors which run virtually around-the-clock, produce both CO₂ and CH₄ emissions. Equipment required to process produced natural gas, specifically the glycol dehydrators (i.e., vents and pumps) and pneumatic devices, generate CH₄ emissions during normal production operations. Examples of measures that could be included in a greenhouse gas emissions impacts mitigation plan include " and there follows an impressive list of EPA's Natural Gas STAR Best Management Practices. In Section 7.6.7 *Mitigating Greenhouse Gas Emissions Impacts – Conclusion* it is further stated that permit conditions will include a requirement that the operator construct and operate the site in accordance with a greenhouse emissions plan that **may incorporate** the above practices (EPA STAR BMP) and considers, **to the extent practicable**, any relative Department policy documents. The League asks that the STAR BMP be a requirement without all of the loopholes e.g. "may incorporate" and "to the extent practicable"; that these plans must be approved by DEC, not just "available on request"; and that there is oversight for implementation of the plans.

Mitigation

Chapter 7 on Mitigation is really disappointing. Rather than regulations, the numerous impacts are “discussed” with suggestions for how the gas industry can deal with them. There are also many gray areas and others which seem to be contradictory, including:

Some examples:

1 - Stormwater mitigation: uses Stormwater Pollution Plans, the Multi-Sector General Permit, which DEC is “proposing” to amend to address specific pollution discharges associated with drilling. How can the public respond to a plan that is in the process of being amended? And, while monitoring and reporting, inspections and reports and site compliance are mentioned, who will be doing this on a regular basis for thousands of wells? The League would like to presume that DEC inspectors will be responsible; it is not clear;

2 – Spill Prevention and Mitigation Measures: relies primarily on “Guidance Documents” which are helpful; but, where is the enforcement? In discussing Reserve Pits for drilling fluids, it is stated that “Time constraints on drilling caps do not allow adequate time for percolation tests which should be performed to check permeability of a clay lined pit”. Yet, these pits are to contain toxic chemicals. Why not test for permeability? The liners are not infallible, so every precaution should be taken against leakage. It is also mentioned that the double plastic liners “should be factory seamed to prevent groundwater contamination”. Yet, in another section, the “guidelines” proceed to give directions for seaming onsite. This is very confusing. What is being required? Also, it is recommended that electric leach location sensors be installed at the pits. Why not require them? In addition, the League recommends public reporting of spills and leaks;

3 – Road spreading: states that flowback water “may not be spread on roads”, but later states that produced brine may receive a beneficial use determination for road spreading. Isn’t brine a component of flowback water?

4 – Radium 226: a component of flowback, DEC’s analysis of thirteen samples revealed that this radionuclide measured 267 times greater than is safe for the environment and thousands of times beyond the safe limit for drinking water. How is this hazard being addressed?

5 – Natural gas in water wells: This is another real problem. Not only are the wells contaminated but should the gas build up in an enclosed space (e.g. the house), it can explode. How is this being mitigated?

Mitigations are either not clear, contradictory, or left to industry with no little or no oversight. This huge undertaking with its numerous, often irreversible impacts is not being adequately regulated.

December 30, 2009

While gas extraction may have an economic benefit to individuals, communities and state government, these benefits must be balanced against the environmental and social costs. For example, not addressed are the potential economic losses to agriculture, wineries, and tourism nor the impact on real estate values. There is no consideration of reimbursement to communities for repair/maintenance to roads and infrastructure. These costs should be evaluated by considering the cumulative impacts of multiple wells rather than per unit, i.e. each well pad, as is done in the draft SGEIS. One drilling pad can accommodate up to sixteen wells; there is the potential for tens of thousands of wells in the Marcellus Shale. The cumulative impacts of potentially thousands of wells should be studied and mitigation measures and/ or regulations put in place before any permits are issued. Further, the League asks for a moratorium on any gas drilling until EPA completes its new study on hydrofracking.

The League of Women Voters of New York calls upon its government to issue strict regulations to mitigate the numerous potential environmental, social, economic and health impacts posed by drilling in the Marcellus Shale, to provide sufficient staff to enforce these regulations supported by a severance tax, and to redraft the SGEIS, considering the findings of the new EPA study.

Respectfully submitted,

Betsy Swan, President

Roberta Wiernik, Natural Resources Specialist

¹ USGS Fact Sheet 2009-3032: *Water Resources and Natural Gas Production from Marcellus Shale*, Daniel J. Soeder and William M. Kappel

² <http://www.ahs2.dep.state.pa.us/newsreleases/default.asp?ID=5494#%3E%3Chttp://>