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ATLANTIC CHAPTER

March 4th, 2014

Linda Palmer Clerk of the Legislature
Chemung County Legislature
203 Lake Street
Elmira, New York 14901

Dear Ms. Palmer:

The Sierra Club Atlantic Chapter has reviewed the Draft Environmental Impact Statement for the Proposed Chemung County Landfill Expansion (DEIS) and we appreciate the opportunity to comment.

The proposal to more than double the size of the Chemung County landfill brings to the forefront concerns that Sierra Club members across the state have about the environmental and health effects of radioactive shale gas drilling wastes going into solid waste landfills in New York. This concern is reflected by the more than 4,500 comment letters our members and colleagues have emailed to Governor Cuomo and DEC Commissioner Martens in the last six months asking the DEC to ban radioactive gas drilling waste in New York landfills. The radium 226 found in waste drill cuttings can cause irreversible damage to water, air, land, soil and food supplies, and we urge you not to proceed with your expansion plans until you have made a careful study of the radiation issues.

As you are no doubt aware, the issue of Marcellus shale drilling waste is of statewide concern. Twelve other county legislatures in New York have banned the treatment of fracking wastes in wastewater treatment facilities or roads spreading operations in their counties. These counties are: Albany, Erie, Nassau, Onondaga, Oneida, Orange, Putnam, Rockland, Suffolk, Tompkins, Ulster and Westchester. These laws were passed because many residents of this state are fearful of the legacy Marcellus Shale gas drilling wastes may have on drinking water resources and air quality. The most recent county law, the Onondaga County law enacted Dec. 17, states, "The toxins and radioactive materials found in hydraulic fracturing waste are detrimental to the public health."

Appendix 13 of the DEC's Revised Draft SGEIS on Hydraulic Fracturing shows that gross alpha and beta in produced brine from Marcellus wells drilled in New York have been as high as 123,000-123,480 pCi/L. Such levels of radioactivity mandate proper handling and tracking of these wastes. A copy of this appendix is attached.

After a number of disturbing experiences with radioactive gas drilling waste in Pennsylvania, the PA Department of Environmental Protection (DEP) began a study in early 2013 to analyze

the radioactivity levels in flowback waters, treatment solids and drill cuttings, as well as issues with transportation, storage and disposal of drilling wastes, the levels of radon in natural gas, and potential exposure to workers and the public. Copies of the DEP's very detailed sampling and analysis plans are attached.

The PA DEP issued an update on their radioactivity study last fall and reported that they had sampled 54 landfills, including nine that were sampled extensively. They reported that their sampling will end this month and that their report will be finalized in August 2014.

We urge you to wait until the DEP study is completed before proceeding with the environmental review for increasing the amount of gas drilling wastes in the Chemung County landfill. We suggest that you withdraw the current DEIS and instruct the applicant to prepare a DEIS that addresses radiation issues. That will give the public an opportunity to discuss their concerns about radioactivity and waste at a new hearing.

The final scoping document for the Chemung Landfill DEIS states that the DEIS will not incorporate issues on impacts relating to radiation, radon and/or acceptance of materials from the Marcellus shale because those impacts were examined in a prior environmental review before the NYSDEC, and/or are not environmentally significant based on the composition of Marcellus shale waste materials that are currently being deposited at the landfill. Although radiation issues were presented in a prior Chemung Landfill permit proceeding before the DEC, that proceeding was not an environmental review, and the DEC Administrative Law Judge in the permit proceeding made no determination that precluded future investigation the risks of radioactivity in the drilling waste.

This is a different type of proceeding. The State Environmental Quality Review Act requires consideration of all the environmental impacts of expanding the size of the landfill. As the lead agency under SEQRA, this legislature has a duty to take a hard look at all possible environmental and health impacts of the proposed expansion. That includes radioactivity issues.

We know there is pressure on landfills in New York and Pennsylvania to accept sludges, solidified flowback and produced brine. The gas industry has very few disposal options in either state because the bedrock geology is too fractured to make underground disposal wells a viable option. It is extremely costly to build treatment plants that can adequately treat the radioactivity and high salt levels of flowback from the Marcellus shale.

Furthermore, exemptions from Federal and NY hazardous waste laws for wastes from petroleum production allow toxic gas drilling wastes, including production flowback, to be categorized as industrial waste and placed in landfills as long as this waste constitutes more than 20% of its mass as solid. See *Fracking's future dependent on hazardous waste loophole—Anti-fracking strategy in NY: Ban or death by regulation?* Tom Wilbur's Blog, August 22, 2012, <http://tomwilber.blogspot.com/>

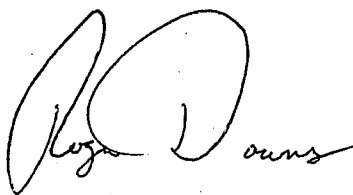
Economic pressures and regulatory exemptions have led certain landfills in our area, including

the Chemung County landfill, to accept Marcellus shale gas drilling wastes without an adequate understanding of the radiation risks. This lack of understanding is demonstrated in the final scoping document's claims that concerns about radioactivity "are not environmentally significant based on the composition of Marcellus shale waste materials that are currently being deposited at the landfill." It is also demonstrated in the reference to gamma detectors at the entrance to the landfill on page 146 of the DEIS, which states that, "Radiation detectors are also in place and will continue to be utilized at the weigh scales for the Site. Staff are also trained in the proper use and response protocols for the radiation detectors. Use of these proposed mitigation measures will mitigate any potential significant adverse environmental impacts to the maximum extent practicable."

The landfill is not testing the radioactivity of wastes coming into the landfill in an adequate manner. Until you have adequate radiation testing, you are not in a position to determine whether the waste you are taking is safe or not. The gamma detectors installed at the entrance to the Chemung landfill do not measure alpha and beta radiation, the principle types of radiation emitted by the radium and radon found in gas drilling wastes from the Marcellus Shale. Unlike the gamma spectroscopy tests that are referenced in the PA DEP sampling and analysis plan, which are able to differentiate the gamma coming from radium from the gamma coming from other elements—the inexpensive gamma meter installed at the landfill entrance does not differentiate between sources. Because radium is a low gamma emitter, if radium is present in a load, measuring gamma will not trigger the levels of gamma needed to set off a radiation detector.

In conclusion, the Sierra Club Atlantic Chapter supports the comments on the Draft EIS submitted by Attorney Gary Abraham on behalf of Residents for the Preservation of Lowman and Chemung (RFPLC).

Thank you for your consideration of these comments,

A handwritten signature in cursive script, appearing to read "Roger Downs".

Roger Downs, Conservation Director
Sierra Club Atlantic Chapter
353 Hamilton Street, Albany NY, 12210