EARTHWORKS

Waste Dangers: Why New York needs to change how it manages oil & gas waste

New York faces a growing volume of oil and gas waste from both conventional operations in New York and unconventional shale operations in Pennsylvania. Despite being toxic and potentially hazardous and radioactive, waste from oil and gas operations—such as drill cuttings, fracturing fluids, muds, and used fracturing sand—often end up in landfills for disposal. Once there, contaminants may leak into soil and eventually groundwater supplies.

The New York Department of Environmental Conservation (DEC) doesn't have any public data on the oil and gas waste stream, so it's impossible to know how much is being produced in the state or where it ends up. But according to data from Pennsylvania, between 2010 until mid-2015, nearly 600,000 tons of solid waste and over 23,000 barrels of liquid waste from that state were accepted by New York landfills.[1] At the same time, road-spreading and waste treatment companies in New York took over 55,000 barrels of fluids from Pennsylvania.[2]

In early 2016, DEC proposed revisions to its regulations on solid waste and landfills, which provides the opportunity to change some aspects of how oil and gas waste is managed.[3] This is necessary because current regulations on oil and gas waste date back to the 1970s-1990s. These rules don't address the current realities of a growing volume of waste, new production practices, and potential impacts on water, soil, land, wildlife, and health.

The proposed revisions include important changes that should be supported, such as new tracking requirements for drilling waste and stronger testing and storage standards for landfill leachate. But Earthworks and partner organizations want DEC to go much further. In comments on the regulatory revisions (known as Part 360), we are calling upon DEC to:

1. **Prohibit disposal of oil and gas waste in landfills.** DEC has never taken the important step of determining whether landfill disposal is an appropriate management approach for oil and gas wastes. The overall category of "drilling and production waste" in reality represents a chemically complex mixture of fluid and solid organics, salts, minerals, metals, and radionuclides. Yet DEC continues to categorize oil and gas wastes simply as general "solid waste," effectively sanctioning the disposal in landfills of substances with unknown environmental consequences.

2. **Prohibit Publicly Owned Treatment Works (POTWs) from accepting leachate from landfills that dispose of oil and gas waste.** A recent analysis of leachate from West Virginia landfills that accept oil and gas waste indicates that it contains contaminants like chloride, arsenic, and barium, as well as Radium 226 and 228.[4] Another analysis of leachate from six West Virginia landfills found that barium was present in leachate only from those landfills that accept drill cuttings.[5] Yet the leachate wastewater collected from landfills in New York is not necessarily treated for all hazardous or radioactive contaminants before being discharged into rivers and streams.

3. **Prohibit application of oil and gas waste on roads.** DEC currently allows the use of production brine from low-volume (conventional) oil and gas production wells and gas storage facilities as a road de-icing and dust suppressant agent, classifying this as a "Beneficial Use" of waste. Yet brine can contain chemicals, metals, excess salts, and carcinogens like benzene and radioactive material.[6] Brine from gas storage facilities contains similar contaminants.[7] Currently, chemical testing of liquid waste before it is applied to roads is minimal, chemical thresholds are set very high, and restrictions on where spreading can occur are vague and limited. Moreover, DEC lacks oversight mechanisms in place to ensure that the brine being used isn't from Marcellus Shale drilling, which is prohibited.

4. **Close the loophole in state law that exempts oil and gas waste from ever being classified as hazardous.** Nearly 30 years ago, the US Environmental Protection Agency (EPA) exempted oil and gas exploration and production wastes from the US Resource Conservation and Recovery Act (RCRA). EPA has clearly stated that were it not for the exemption, much oil and gas waste would meet the definition of hazardous because it contains substances such as benzene, arsenic, and lead.[8] Scientific research increasingly shows that oil and gas waste has toxic characteristics.[9]

   New York has authority to close the RCRA loophole by issuing state regulations that are more protective of human health and the environment than federal law. The state's definition of hazardous waste currently excludes "drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas or geothermal energy."[10] As a result, operators can dispose of waste at municipal solid waste, industrial, and construction & demolition landfills—none of which are equipped to detect or manage the chemicals, toxic substances, and radioactivity that the waste may contain.

5. **Reclassify and regulate drill cuttings as Technologically Enhanced Radioactive Material (TENORM).** Many tons of waste are brought to the surface during the process of drilling underground to create an oil or gas well. DEC's assertion that drill cuttings are just "rock and soil" relies on a single, unreliable study from 2010.[11] More recent science shows that cuttings can contain chemicals, toxic fluids, and radioactive material.[12] DEC doesn't require operators to conduct chemical testing of drill cuttings or have any oversight mechanisms in place to verify that they are "uncontaminated" prior to disposal, as required by law.

   In addition, DEC specifically excludes cuttings from ever being defined as "processed and concentrated," so state laws on the disposal of radioactive waste can never apply.[13] The EPA defines drill cuttings as TENORM but allows states to choose whether to apply the TENORM classification to oil and gas wastes. DEC's failure to adopt the EPA's position means that potentially radioactive and toxic waste can continue to be disposed of at landfills.

For more information:

- *Wasting Away: Four states' failure to manage gas and oil field waste from the Marcellus and Utica Shale*. Earthworks. April 2015. http://wastingaway.earthworksaction.org

- *License to Dump.* Environmental Advocates of New York. February 2015. http://www.eany.org/our-work/reports/license-dump-february-2015

- "The Facts about New York and Fracking Waste." Riverkeeper. http://www.riverkeeper.org/campaigns/safeguard/gas-drilling/the-facts-about-new-york-and-fracking-waste/#

[1] PADEP Oil & Gas Reporting Website, Waste Reports by Waste Facility. Data downloaded and summed for all NY facilities included in the database https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/Waste/WasteByWasteFacility.aspx (accessed August 17, 2016).
[2] Ibid.
[3] NY DEC, Solid Waste Management Facilities, Part 360 Proposed Regulations. http://www.dec.ny.gov/regulations/81768.html
[4] M. Glass and K. Hatcher. Comments on Proposed Changes to the West Virginia Solid Waste Management Rule, 33CSR1. Downstream Strategies, 2014.
[5] Marshall University Center for Environmental, Geotechnical and Applied Sciences, *Examination of Leachate, Drill Cuttings and Related Environmental, Economic and Technical Aspects Associated with Solid Waste Facilities in West Virginia.* Study and report for West Virginia Department of Environmental Protection, 2015.
[6] Robert B. Jackson, et al., The Environmental Costs and Benefits of Fracking, Environment and Resources, Vol.39 (2014); U.S. Geological Survey, Radium Content of Oil and Gas Field Produced Waters in the Northern Appalachian Basin (USA): Summary and Discussion of Data (2011).
[7] In 2013 and 2014, Riverkeeper obtained records from NYSDEC regarding BUDs for use of oil and gas brine on roads. These records included associated test results that showed excessive levels of chloride (salts) in brine from both natural gas production wells and gas storage facilities. Sample results for brine from gas storage facilities also revealed the presence of benzene and toluene. *See* Riverkeeper, The Concerns in New York, http://www.riverkeeper.org/campaigns/safeguard/fracking-waste-in-new-york/the-concerns-in-new-york (last accessed July 6, 2016).
[8] 53 Federal Register 25448.
[9] See e.g., M. Glass and K. Hatcher. Comments on Proposed Changes to the West Virginia Solid Waste Management Rule, 33CSR1, Downstream Strategies, 2014; and US Occupational Safety and Health Administration, "Drilling fluid."
[10] NY DEC, Chapter IV, Quality Services, Part 371, "Identification and Listing of Hazardous Wastes." Exclusions, section 371.1 (e)(2)(v).
[11] NYSDEC, *In the Matter of Chemung County, 2011 WL 6934245,* p. 11, August 4, 2011.
[12] Marshall University Center for Environmental, Geotechnical and Applied Sciences, *Examination of Leachate, Drill Cuttings and Related Environmental, Economic and Technical Aspects Associated with Solid Waste Facilities in West Virginia.* Study and report for West Virginia Department of Environmental Protection, 2015.
[13] Richard Clarkson, NY DEC Division of Materials Management, presentation on "Current Solid Waste Disposal Regulatory Framework for Gas Development Wastes." 2013.