

August 26, 2019

Basil Seggos, Commissioner
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-6510

Attn: Part 370 Series regulations, Hazardous Waste Revisions

Cc: Martin Brand, Deputy Commissioner, Remediation and Materials Management
Michelle Ching, Division of Materials Management
Catherine A. Dickert, Director, Division of Mineral Resources
David Vitale, Director, Division of Materials Management

Dear Commissioner Seggos:

We, the undersigned organizations, thank you for the opportunity to comment on NYSDEC's proposed revisions to the Part 370 series Hazardous Waste regulations. Our organizations are calling on NYSDEC to use this opportunity to close what is commonly known as the "hazardous waste loophole," which exempts oil and gas waste from being classified as hazardous waste.

Many of the undersigned organizations also submitted comments during NYSDEC's 2017 rulemaking on the Part 360 series Solid Waste Management regulations. Many improvements to address oil and gas waste were made through that rulemaking; however, critically, the hazardous waste loophole was not closed.

Without the closure of this loophole, waste with chemical constituents inappropriate for disposal at solid waste facilities have been able to make their way to New York landfills. In fact, since 2010, approximately 650,000 tons and 23,000 barrels of oil and gas waste has been disposed in New York landfills from Pennsylvania's drilling operations.¹ This waste has included 3,300 tons of synthetic liners, which the US EPA clarified in 2010 "are not covered by the E&P exemption" from RCRA.²

As noted by the US Environmental Protection Agency (USEPA), were it not for the exemption for E&P waste in the US Resource Conservation and Recovery Act (RCRA), some oil and gas waste

¹ "Production / Waste Reports," PA DEP Oil & Gas Reporting Website, accessed November 28, 2018.

² Letter from USEPA to Michael S. Freeman, September 15, 2010,
https://www.dropbox.com/s/7s02cc58xlz5ink/liners_nonexempt_letter_2010.pdf?dl=0

would certainly meet the definition of “hazardous waste.”³ Although New York has replicated this exemption in its own waste laws and regulations, fortunately the state also has the ability to close the loophole and provide commonsense protection for the long-term health and safety of residents statewide.

The following comments detail the reasons and justifications for our position on this matter. In addition to our comments, we draw to your attention the attached report from Earthworks, *New York Frack Waste Report*, from July 2019. This report details oil and gas waste disposal in New York, the inherent dangers that come with accepting such waste, and, importantly, where the revisions to the Part 360 series have fallen short. The proposed rulemaking for the part 370 series offers a crucial opportunity to correct the missed opportunity during the part 360 rulemaking process.

1. Justification to Close the Hazardous Waste Loophole

As noted above, we believe that there is credible justification for NYSDEC to close the loophole in state law that exempts oil and gas waste from ever being subjected to classification as hazardous. NYSDEC has proposed regulatory amendments to Part 371 on the Identification and Listing of Hazardous Wastes, thereby opening up this section of regulation to revisions. Part 371.1(e)(2)(v)—Exclusions in effect serves as a loophole for hazardous oil and gas waste.

New York’s current hazardous waste regulations grant a special exemption that allows the oil and gas industry to circumvent state requirements for the generation, transportation, treatment, storage, and disposal of waste that would otherwise meet the definition of hazardous waste. NYSDEC should amend Part 371.1(e)(2)(v) by eliminating the words “crude oil, natural gas or” from this section. With that modification, the loophole would only exclude, “drilling fluids, produced waters and other wastes associated with the exploration, development, or production of geothermal energy.”

Nearly 30 years ago, the US Congress and USEPA established a categorical exemption for the regulation of E&P wastes under Subtitle C of the US Resource Conservation and Recovery Act (RCRA). As a result, oil and gas wastes are not defined as hazardous regardless of their actual

³ USEPA, Office of Solid Waste, EXEMPTION OF OIL AND GAS EXPLORATION AND PRODUCTION WASTES FROM FEDERAL HAZARDOUS WASTE REGULATIONS (2002). See also the discussion on RCRA and state waste laws in Nadia Steinzor’s and Bruce Baizel’s *Wasting Away: Four states’ failure to manage oil and gas waste in the Marcellus and Utica Shale* (Earthworks 2015), available at <http://wastingaway.earthworksaction.org>.

content and risks posed to the environment.

This federal exemption persists today, and has made it possible for states to define and manage oil and gas wastes as “solid” or “residual” regardless of whether or not they meet those definitions of waste with regard to their chemical make-up and potentially hazardous (and radioactive) characteristics. In turn, states have avoided the application of additional federal tracking, testing, transport, and disposal requirements established under RCRA.

Unfortunately, instead of using its authority to provide protections against E&P wastes with hazardous characteristics, New York has simply replicated the RCRA exemption. This “path of least resistance” may be convenient for oil and gas operators and reduce oversight and regulatory responsibilities for NYSDEC. However, ignoring the potentially hazardous nature of oil and gas waste poses risks to the environment and health—particularly because the volumes being transported, processed, and managed in New York (as well as nationwide) have increased over time.

Neither NYSDEC nor landfills accepting oil and gas wastes currently have the regulations and systems in place to test for and determine the chemical constituents of waste. This step is necessary to ensure proper disposal at facilities capable of handling specific types of oil and gas wastes. Reversing the hazardous waste loophole would solve this problem, since testing and tracking requirements would then be required for these wastes.

The current rulemaking offers a critical opportunity for NYSDEC to remove the nonsensical and dated exemption for oil and gas wastes and subject oil and gas wastes actually exhibiting the characteristics of hazardous waste to the same comprehensive transport, treatment, and disposal standards and oversight that all other hazardous waste are subject to. Other industries and generators of potentially hazardous waste in New York are subject to these requirements—there is no reason for the oil and gas industry to enjoy a special preference.

A legal exemption does not make oil and gas waste benign. In fact, the USEPA study used to determine the RCRA exemption recognized that between 10 and 70 percent of the oil and gas wastes sampled “could potentially exhibit RCRA hazardous waste characteristics,” leading the agency to conclude, “It is clear that some portions of both the large-volume and associated waste

would have to be treated as hazardous if the Subtitle C exemption were lifted.”⁴

In addition, in the 30 years since the USEPA study was conducted, oil and gas development extraction methods have become more aggressive and generate more harmful wastes. New techniques, such as high-volume hydraulic fracturing, use much greater volumes of chemicals and create much greater volumes of waste, which are in turn influenced by many new contaminants acquired from the formations accessed (e.g., deep shale). In the revised draft SGEIS on high-volume hydraulic fracturing, 300 different chemicals—ranging from likely harmless to known toxins and carcinogens—are listed as potential constituents in oil and gas wastes.

Current testing practices and oversight capacity are insufficient to ensure that oil and gas wastes ending up in New York’s landfills are *not* hazardous, particularly in light of growing evidence that some wastes have characteristics that meet the definition of hazardous. In this context, a categorical exemption for oil and gas wastes from the state’s hazardous waste regulations is both illogical and environmentally risky.

Both the USEPA and New York use four technical criteria to determine if a waste is hazardous: ignitability, toxicity, corrosivity, and reactivity.⁵ Waste can be considered hazardous if it exhibits *any* of these characteristics.

A growing body of **documentation and scientific evidence confirms that oil and gas waste contains toxic (as well as potentially radioactive) substances that, if comprehensively tested, could meet concentration thresholds for the hazardous characteristic of toxicity.**⁶ During the determination on the RCRA exemption, USEPA clearly stated that oil and gas wastes contain toxic substances that endanger both human health and the environment, including benzene, phenanthrene, lead, arsenic, barium, antimony, fluoride, and uranium at “levels that exceed 100 times USEPA’s health based standards.”⁷ Of these, New York’s regulations include arsenic, barium,

⁴ USEPA, Regulatory Determination for Oil and Gas and Geothermal Exploration, Development, and Production Wastes, 53 Federal Register 25447, 25455 (Jul. 6, 1988).

⁵ USEPA, RCRA Orientation Manual, Chapter III: RCRA Subtitle C, Managing Hazardous Waste; 40 CFR § 261.20 et seq.; NYSDEC, 6 NYCRR § 371.3.

⁶ 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 U.S. Occupational Safety and Health Administration, Drilling fluid, <https://www.osha.gov/SLTC/etools/oilandgas/drilling/drillingfluid.html> (last accessed Sept. 12, 2016).

⁷ USEPA, Regulatory Determination for Oil and Gas and Geothermal Exploration, Development, and Production Wastes, 53 Federal Register 25447, 25448 (Jul. 6, 1988).

benzene, and lead among the contaminants that can give a waste the characteristic of toxicity.⁸

Drill cuttings, which can display toxic characteristics, make up a large proportion of the oil and gas wastes accepted at New York landfills. NYSDEC has stated that drill cuttings are simply “rock and soil residue” and that their disposal in municipal solid waste landfills is “environmentally safe.”⁹ As discussed in more detail below, NYSDEC appears to base this view on very limited sampling and analysis conducted in 2010, not on more recent scientific studies on the content of cuttings and potential environmental risks. NYSDEC also ignores the fact that because cuttings are essentially ground up bits of shale formations, they can contain heavy metals such as barium and chromium—both of which are included in New York’s list of substances with toxicity characteristics.¹⁰

In addition, NYSDEC’s assertion that drill cuttings are “safe” appears to be based on the specious faith that drill site operators are thoroughly separating drill cuttings from other wastes at the well-site and guaranteeing that they are not “oil-based.” As discussed below, drill cuttings can be coated with the fluids and muds used to bore oil and gas wells, which are made from chemicals and petroleum products.

In addition, different types of wastes are often stored in reserve pits and tanks at well sites for extended periods of time before they are removed for disposal. As a result, loads of cuttings may end up blended with liquid waste from other parts of an operation, including flowback, produced water, and chemicals used in hydraulic fracturing.

Drilling muds can also be of great concern. In a 2013 report developed for the West Virginia Department of Environmental Protection, researchers found that samples of drilling muds from vertical wells in the state contained high concentrations of contaminants, including chlorides, benzene, and surfactants.¹¹ Although little research has been conducted on the chemical content of fracturing sand, it is mixed with chemicals before being used—and thus the waste may contain toxic substances.

The line between “solid” and “liquid” can easily be blurred prior to acceptance and disposal at

⁸ 6 NYCRR § 371.3(e) tbl.1.

⁹ NYSDEC, CHEMUNG COUNTY LANDFILL EXPANSION RESPONSIVENESS SURVEY SUMMARY, at response R2 (2016).

¹⁰ 6 NYCRR § Part 371.3(e) tbl 1; *See* Tracy L. Bank, Lauren A. Fortson, et al., A GEOCHEMICAL AND GEOSPATIAL INVESTIGATION OF HEAVY METALS IN THE MARCELLUS SHALE (University of Buffalo and Chevron USA Inc. 2012).

¹¹ W. VA. WATER RESEARCH INST., ASSESSING ENVIRONMENTAL IMPACTS OF HORIZONTAL GAS WELL DRILLING OPERATIONS (2013).

landfills. Since cuttings are brought to the surface after drilling, they can become coated with both drilling fluids and produced (formation) water. Although produced water, flowback, and fracturing fluids are primarily disposed of at industrial wastewater treatment plants or centralized waste treatment facilities, they can also end up in landfills designed for solid waste. In fact, operators in Pennsylvania have reported sending “drilling fluid waste,” “fracing fluid waste,” “produced fluid,” and “servicing fluid” to landfills; as noted above, New York landfills have accepted nearly 23,000 barrels of liquid waste from Pennsylvania since 2010.¹²

Even if New York landfills only take loads of oil and gas wastes that they deem to be “solid waste,” it is highly possible that some of this waste contains flowback, fracturing fluids, production brine, or muds that have simply been dewatered and bulked either prior to transport to New York landfills or at the landfills themselves.

New York’s threshold for wastes being defined as “solid” is only 20 percent solid content,¹³ i.e., landfills are allowed to accept wastes which can be as much as 80 percent liquid. In the absence of regulatory requirements and oversight to ensure the proper chemical characterization of wastes there is simply no way to categorically exclude muds, fluids, and other substances from disposal at landfills. NYSDEC continues to insist that solid waste “will not consist of brine or similar wastes.”¹⁴ Yet NYSDEC has never provided a credible basis for this assumption nor documentation that the oil and gas wastes accepted at landfills consist solely of drill cuttings that have not been additionally contaminated by chemicals used in drilling, fracturing, and other processes.

Importantly, samples of flowback from the Marcellus Shale have shown consistently high levels of the toxic substance barium,¹⁵ as well as toxic volatile organic compounds such as benzene and trichloroethylene.¹⁶

Many of the chemicals used in drilling and hydraulic fracturing that could end up in oil and gas

¹² PADEP Oil & Gas Reporting Website, Waste Reports by Waste Facility, <https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/Waste/WasteByWasteFacility.aspx> (last visited Aug. 17, 2016) (data downloaded and summed for all New York facilities included in the database).

¹³ Richard Clarkson, NYSDEC Div. of Materials Mgmt., Presentation on Current Solid Waste Disposal Regulatory Framework for Gas Development Wastes (2013).

¹⁴ NYSDEC, CHEMUNG COUNTY LANDFILL EXPANSION RESPONSIVENESS SURVEY SUMMARY, at response R12 (2016).

¹⁵ Paul Ziemkiewicz, John Quaranta, and Michael McCawley, *Practical Measures for Reducing the Risk of Environmental Contamination in Shale Energy Production*, ENVIRONMENTAL Science (2014).

¹⁶ U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, HYDRAULIC FRACTURING AND FLOWBACK HAZARDS OTHER THAN RESPIRABLE SILICA (2014), available at <https://www.osha.gov/Publications/OSHA3763.pdf>.

wastes are known to be toxic, while the health effects of others are unstudied but potentially harmful. A recent investigation of EPA's regulation of new chemicals proposed for use in drilling and fracturing found that the agency had health concerns about 88 of 105 such chemicals reviewed between 2009 and 2014, ranging from developmental toxicity, liver toxicity and neurotoxicity to irritation to eyes, lungs, mucous membranes, and skin.¹⁷

Yet EPA had approved all but seven of the chemicals for commercial use, in most cases without receiving or asking for health testing data from the manufacturers. In EPA's draft study of hydraulic fracturing and drinking water published in 2015, the EPA acknowledged that "major knowledge gaps exist regarding the toxicity of most chemicals used in hydraulic fracturing fluids or detected in flowback/produced water"¹⁸ The agency reported that among the chemicals used in hydraulic fracturing and found in flowback were arsenic, benzene, ethylbenzene, toluene and xylene.¹⁹

Similarly, a 2011 Congressional review of hydraulic fracturing fluids found that they included more than 650 different products that contained chemicals that were known or possible human carcinogens, regulated under the Safe Drinking Water Act for risks to human health, or listed as hazardous air pollutants under the Clean Air Act.²⁰

New York's current solid waste regulations provide another reason why oil and gas waste would likely be defined as hazardous if the exemption were reversed. Part 371.1(d)—Definition of hazardous waste specifies that wastes excluded from the definition of hazardous can be considered hazardous if mixing with other substances gives it hazardous characteristics. This is consistent with USEPA's 2002 warning to oil and gas operators that waste mixtures "might become a non-exempt waste and require management under RCRA Subtitle C regulation."²¹

Currently, however, **NYSDEC does not appear to enforce Part 371.1(d) by requiring landfills to conduct chemical testing of mixtures that contain excluded oil and gas wastes to determine if**

¹⁷ Dusty Horwitt, TOXIC SECRETS: COMPANIES EXPLOIT WEAK US CHEMICAL RULES TO HIDE FRACKING RISKS (Partnership for Policy Integrity 2016).

¹⁸ USEPA, ASSESSMENT OF THE POTENTIAL IMPACTS OF HYDRAULIC FRACTURING FOR OIL AND GAS ON DRINKING WATER RESOURCES, at 9-35. 2015.

¹⁹ *Id.* at 9-34.

²⁰ STAFF OF H. COMM. ON ENERGY AND COMMERCE, 112TH CONG., CHEMICALS USED IN HYDRAULIC FRACTURING COMMERCE (2011) (Committee Minority Staff Report).

²¹ USEPA, EXEMPTION OF OIL AND GAS EXPLORATION AND PRODUCTION WASTES FROM FEDERAL HAZARDOUS WASTE REGULATIONS (2002).

they are hazardous. Instead, oil and gas wastes solidified or downblended with other products in order to meet “solid” thresholds for disposal at landfills are left untested for toxic or radioactive contaminants. According to Argonne National Laboratory, the effectiveness of solidification is limited and various factors can result in the leaching of contaminants into the environment from mixtures.²²

Finally, **realities in oil and gas fields nationwide indicate that E&P wastes can have the hazardous characteristic of ignitability.** For example:

- In January 2003, a Texas collection pit of oil and gas waste ignited when hydrocarbon vapors interacted with sediments and water in the pit.²³
- In May 2006, a natural gas condensate tank and pit in Colorado caught fire and burned for five hours.²⁴

In April 2010, a wastewater impoundment in Pennsylvania ignited reportedly shooting flames 100 feet in the air.²⁵

2. Modifications to the Part 360 Series Do Not Resolve Hazards Associated with Oil and Gas Waste Disposal

There were numerous improvements made to the Part 360 solid waste management regulatory series a couple years ago; however, both due to a lack of implementation of certain portions (such as waste tracking) and the very nature of drilling operations, these changes do not address the hazards associated with oil and gas waste disposal.

As discussed in the earlier section, it is common industry practice to blend wastes together. Because of this practice, wastes NYSDEC has prohibited from disposal in New York have been able to be disposed in New York’s landfills. NYSDEC sought to avoid this through use of a new tracking form created during the Part 360 rulemaking process; however, NYSDEC has yet to receive any waste tracking forms. Despite this, oil and gas waste from Pennsylvania has continued to come to New

²² Argonne National Laboratory Drilling Waste Information System, Fact Sheet - Solidification and Stabilization, <http://web.ead.anl.gov/dwm/techdesc/solid/index.cfm> (last visited Sept. 12, 2016).

²³ US Dep’t of Labor, Occupational Safety and Health Admin., Potential Flammability Hazard Associated with Bulk Transportation of Oilfield Exploration and Production (E&P) Waste Liquids, SHIB 03-24-2008. It is possible also that this incident shows that E&P waste meets the RCRA standard for reactivity.

²⁴ Earthworks Oil & Gas Accountability Project, Spring/Summer 2006 Report (2006), *available at* <https://www.earthworksaction.org/files/publications/OGARspringsummer2006.pdf>.

²⁵ Janice Crompton, *Residents Reported Gas Odors Before Explosion*, PITTSBURGH POST-GAZETTE (Apr. 1, 2010), *available at* <http://www.post-gazette.com/local/washington/2010/04/01/Residents-reported-gas-odors-before-explosion/stories/201004010317>.

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Additionally, NYSDEC modified Part 360 to require landfills that accept oil and gas waste to operate radiation detectors and report detections within 24-hours to the department. However, recent studies indicate that these detectors are not always adept at detecting the accurate amount of radioactive material in oil and gas waste. The radiation detectors at the entrances of landfills do not detect how much radioactive material is actually in oil and gas waste. Moreover, in 2012, researchers found that tests used and approved by agencies like EPA “can significantly underestimate the total radioactivity of wastewater that is stored in closed containers, such as tanks.”²⁶

Because of these inefficiencies, leachate at landfills accepting this waste has been detected with elevated levels of radium-226 and -228. Wastewater treatment plants where landfill leachate is sent do not monitor for radium, and most are not equipped to treat for radium or many other constituents frequently found in oil and gas wastes.

In Pennsylvania, landfill leachate has become a problem for waterbodies receiving wastewater from wastewater treatment facilities that have been accepting landfill leachate. From an investigation conducted by *Public Herald*:

“Guy Kruppa [that sewage authority superintendent who led the charge at Belle Vernon] provided Public Herald with his independent test results that detected 8 pCi/L (Picocuries per liter) of radium (Ra) 226 and 228 in one sample of their discharge. The leachate straight from the landfill tested at 50 pCi/L. The maximum contaminant level (MCL) for radium in drinking water is 5 pCi/L.”²⁷

New York should investigate the landfill leachate going to wastewater treatment facilities in the state immediately to ensure excess radium is not ending up in waterways.

Closure of the hazardous waste loophole would be the only way to require rigorous testing and

²⁶ Nelson, A., et al., Understanding the Radioactive Ingrowth and Decay of Naturally Occurring Radioactive Materials in the Environment: An Analysis of Produced Fluids from the Marcellus Shale. Environmental Health Perspectives. July 1, 2015.

²⁷ Joshua B. Pribanic and Talia Wiener, “Pennsylvania is Discharging Radioactive Fracking Waste Into Rivers As Landfill Leachate, Impacting The Chesapeake Bay & Ohio River Watersheds,” Public Herald, August 7, 2019.

reporting of oil and gas waste prior to disposal.

Thank you for your time and attention. We look forward to continuing to work with NYSDEC to achieve strong, binding requirements for the management of oil and gas wastes—and in so doing, to better protect the environment and health for the benefit of all New Yorkers.

Sincerely,

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