



EARTHWORKS

November 12, 2019

New Mexico Environment Department
1190 St. Francis Drive, Suite N4050
Santa Fe, New Mexico 87505

Dear NMED Cabinet Secretary James Kenney & staff:

I represent Earthworks, a nonprofit dedicated to protecting communities from the impacts of oil and gas operations nationwide. Our evidence-based approach includes documentation of the industry's waste streams, which has wrecked havoc on the environment and public resources in Pennsylvania, where I am from, and from where I will share cautionary research on produced water practices.

But first, I'd like to call attention to the fact that this rulemaking presents New Mexico with a golden opportunity – a chance to enact a layer of protections above and beyond what has been enacted anywhere else. If you do this right, you could become the first state in the nation to properly manage produced water, which oil and gas wells will produce for decades after we transition away from fossil fuels.

But what would proper wastewater management look like?

As we all know, the oil and gas industry is exempt from federal hazardous waste law – the Resource Conservation and Recovery Act (RCRA) – despite the fact that various oil and gas waste streams exhibit the physical characteristics of hazardous waste – ignitability, toxicity, corrosivity, and reactivity. The RCRA exemption, alongside the Halliburton Loophole that to this day, against all common sense and scientific evidence, allows the industry to keep poisonous additives a secret, is the first road block to effective produced water management.

You can't change federal law, but you are in a unique position to protect New Mexico despite it. Earthworks hopes you will use this opportunity to do the following:

- **Require the full disclosure of all additives used in oil and gas operations.** It is absolutely impossible and disingenuous to say you're safely managing this industry's waste if you don't know what's in it.
- **Prohibit the use of untreated and treated produced water outside the oil field.** The oil and gas industry has routinely proven incapable of stopping methane emissions, acknowledging its global warming impacts, and preventing water, air and land pollution. There is no way to ensure this industry and its partners will properly manage and police themselves during the testing, transport, and use of produced water. Furthermore, even when treated, produced water contains toxins and carcinogens like radium-226 and lead-210 that, even when released into the environment in small amounts, accumulate and radiate areas over time, as evidenced by the radioactive riverbeds in Pennsylvania where treated produced water has been discharged to rivers (see below).
- **Require comprehensive testing of produced water for all additives (which you require to be disclosed) and naturally-occurring materials prior to leaving the well-site; require the same for all effluent and residuals from wastewater treatment processes prior to transport or disposal.** This must include the most stringent methods and detections limits for radio isotopes.

Dedicated to protecting communities and the environment from the adverse impacts of mineral and energy development while promoting sustainable solutions.

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In a recent Journal article, Dr. Jeri Sullivan Graham said, “We need to make sure science carries the day” when dealing with produced water. But industry’s funding of the NMED/NMSU research around produced water treatability begs the question: *what kind of science will carry this rulemaking?* What methodologies will be used? Will there be a 21-day hold on samples tested for radio isotopes? How will the challenges inherent in testing for radioactive materials, due to the interference of salts, be mitigated? How many samples will be tested, and what detection limits will be used?

The public is right to distrust the places this industry puts its money, but NMED can build trust in this process by creating a transparent research database that releases all data to the public in real time. Creating a Science Advisory Board made up of the nation’s leading independent scientists studying oil and gas wastewater would help, too.

Finally, here are some toxic mistakes permitted in Pennsylvania that should be avoided:

1. **Discharge of treated produced water has created radioactive riverbeds.** A January 2018 study by Duke University found accumulations of cancer-causing radium up to 650 times higher in river sediments where treated oil and gas wastewater is discharged.¹ Again, this is caused by treated produced water lawfully discharged from an industry that promised us there was nothing to worry about. The practice continues today, despite scientists’ conclusions that “disposal to the environment must be stopped.”²
2. **Discharge of produced water – aka brine – to the environment laces land and water with radium, which has a half-life of 1,600 years.** A May 2018 study by Penn State University revealed that “[t]he spreading of brine from oil and gas drilling can threaten environmental and public health by leaching into the surface or ground water...modifying soil chemistry, and migrating in air and dust.” Their study “indicated high levels of radium resulting from such spreading.”³

Earthworks hopes to engage as a stakeholder throughout the rulemaking process to create a ‘best in the nation’ policy for managing produced water in New Mexico. Thank you for soliciting public input prior to the formal comment period.

Sincerely,

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Research & Policy Analyst

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¹ [“Sources of Radium Accumulation in Stream Sediments Near Disposal Sites in Pennsylvania: Implications for Disposal of Conventional Oil and Gas Wastewater.”](#) N. Lauer, N. Warner, A. Vengosh, Environmental Science and Technology, Jan 4, 2018, DOI: 10.1021/acs.est.7b04952

² See footnote #1

³ [“The Pennsylvania Department of Environmental Protection’s Beneficial Reuse Program for...Road Spreading Halted Pending Revised Processes.”](#) Lara B. Fowler, Penn State Law/Penn State Institutes of Energy and the Environment, June 5, 2018.