CLEAN WATER ACTION

December 10, 2018

Energy, Mineral, and Natural Resources Dept.
c/o OFS/MOU
1220 S St. Francis Drive
Santa Fe, NM 87501

Submitted via email: renewablewater@state.nm.us

Re: Oil and Natural Gas Produced Water Governance in the State of New Mexico – Draft White Paper

Clean Water Action appreciates the opportunity to comment on the joint draft white paper, *Oil and Natural Gas Produced Water Governance in the State of New Mexico,* developed by EPA and the State of New Mexico. Clean Water Action is a national organization working in fifteen states on a wide range of health and environmental challenges, with a particular focus on drinking water issues and on oil and gas activities.

More formal coordination between Region VI EPA and New Mexico regulatory agencies is a positive development. The white paper offers a legal and regulatory roadmap of several avenues for oil and gas wastewater management. This is important progress and may clear up confusion for operators in New Mexico. We commend EPA and the state for the work thus far and offer the following comments for improvement in the final version.

Final White Paper Must Include Review by Incoming Administration

The white paper is in its first round of public review and as such should not be finalized prematurely without the incoming administration's chance for review. Any potential reforms enacted as a result of this effort will likely be implemented by a new set of top decision-makers and future iterations must include insight and analysis from the new leadership.

Data and Knowledge Gaps Must Be Identified Upfront

The white paper should more clearly identify and feature key data gaps that complicate the various scenarios outlined within. While the paper acknowledges gaps in understanding of produced water chemistry, analytical methods, and treatment, these aspects are core to each regulatory framework. In order to more honestly and clearly describe produced water management options, the white paper must thoroughly include these uncertainties in each scenario and outline the progress needed to fill these gaps. Moreover, "permitting-by-rule" as envisioned in the paper (p. 31) would necessitate significant advances in expertise if appropriate at all.

New Mexico State Land Office Excluded from Discussions – Why?

The State Land Office (SLO) was excluded from the consultation process. In light of recent activity by the SLO, the exclusion is notable.

EPA highlights the agency's importance in the footnotes, "the SLO is responsible for administering nine million acres of surface and 13 million acres of subsurface estate for the beneficiaries of the state land trust, which includes schools, universities, hospitals and other important public institutions."

Correspondence between the SLO Commissioner and the New Mexico Office of the State Engineer indicate that livestock water wells on state land were re-appropriated for commercial water sales to oil and gas companies, outside of any existing authority. State Land Commissioner wrote to the State Engineer explaining, "Several landowners along the Black River have reported to my staff that they regularly observe the river being dried up by subsurface diversions and nearby groundwater pumping to sell for bulk water use in hydraulic fracturing."[1]

The SLO recently filed a lawsuit against the State Engineer for failing to protect the state's groundwater.[2] According to the lawsuit, the State Engineer misappropriated "415 million gallons of water since 2010 by issuing multiple permits in one year to the same applicants," and that this is water which, "was never intended to go to fracking."[3]

Across the border in Texas, companies drilled wells into the Pecos Valley Aquifer and sold it back to oil and gas operators in Eddy County in New Mexico without any restrictions from state officials. Essentially taking water from the shared aquifer and selling it back to fracking operations.[4]

Given these developments, the final version of the paper should include recommendations from the State Land Office on how to best manage water resources within its authority in light the intensification of water usage by the oil and gas industry and increased oil production forecasts for the Permian Basin.[5]

Furthermore, we are concerned that other critical stakeholders have not been included in this process. This includes downstream users of impacted water bodies. This paper should not be finalized without

---

[1] Letter from Aubrey Dunn, Commissioner, Office of State Land Office to State level . "RE: Endangered Species Issues in Black River."

[2] State of New Mexico, County of Santa Fe, First Judicial Court. "Petition for Alternative and Peremptory Writs of Mandamus." June 21, 2018. https://www.courthousenews.com/wp-content/uploads/2018/06/NM.Water_.pdf

[3] Boyd, Dan. "Land Commissioner sues NM top water official." *Albuquerque Journal.* June 22, 2018. https://www.abqjournal.com/1187999/land-commissioner-sues-nm-state-engineer-over-water-permits.html

[4] Weiser, Matt. "Oil Boom Southern New Mexico Ignites Water Feud With Texas." *Water Deeply.* July 16, 2018. https://www.newsdeeply.com/water/articles/2018/07/16/oil-boom-in-southern-new-mexico-ignites-groundwater-feud-with-texas

[5] The intensification of the water footprint of hydraulic fracturing. Andrew J. Kondash, Nancy E. Lauer, Aver Vengosh. *Science Advances.* 15 Aug 2018 : EAAR5982. http://advances.sciencemag.org/content/4/8/eaar5982. U.S. Geological Survey. "USGS Announces Largest Continuous Oil Assessment in Texas and New Mexico." November 28, 2018. https://www.usgs.gov/news/usgs-announces-largest-continuous-oil-assessment-texas-and-new-mexico?utm_source=news&utm_medium=email&utm_campaign=de-basin-2018.

input from the drinking water utility sector and those responsible for water management in New Mexico. The recreation industry and other business interests should also have meaningful input.

Renewable Water PR Campaign

We have significant concern around the use of the term "renewable water." Creating a new category of water appears to be motivated by the desire to use a term seen at "positive" in order to build support for the use of produced water outside the oil field. However, it does not appear to be based on any technical difference from other re-uses of produced water. At best, this term is meaningless, but at worst it is misleading and inaccurate. Produced water is inherently *not* renewable, as groundwater that is present in oil producing zones is rarely recharged via natural processes. Furthermore its use would require significant treatment and associated energy use and the need to dispose of byproducts. In fact formation water is available only as a bi-product from producing inherently unrenewable and finite fossil fuel reserves. *Renewable water* sounds like a marketing campaign built around other two year old EPA terms like "back-to-basics" and "energy dominance." These are terms with no basis in the technical literature, but are often utilized for political purposes.

As an organization with a focus on drinking water, we are also concerned about blurring the public's understanding of public water systems, private wells, and drinking water issues. Public water systems are already working through immense challenges to effectively communicate risks to drinking water sources, increasing infrastructure costs including treatment, operations, and maintenance, and the need to be resilient to impacts of climate change. It is risky to embrace new quasi official terminology un-tethered from any real meaning in the water sector.

Public Concerns vs. Industry Concerns

The white paper outlines a myriad of legal ways the industry can manage and dispose of its waste if it chooses to navigate the regulatory process. The only limits are operational costs, not regulations. Most company business plans related to water usage and disposal are flawed when faced with the reality of water availability and costs of dealing with the 5x amount of often toxic wastewater created during extraction. This is why the industry is requesting changes to the regulatory framework instead of operating from inside the limits of the natural system they inhabit.

Industry's actual motives were telegraphed in the marketing materials for the recent "*New Mexico Produced Water Conference: Policy, Regulations and Economics to Support Total Resource Recovery"* in November 2018. Conference organizers explained: "The oil and gas industry in New Mexico is currently facing two major challenges associated with water management that threaten to limit future oil and gas activity in the state: acquiring fresh water for drilling and development of new wells: and management of produced water."[6]

The problem for industry is not the forecasts for prolonged and intense droughts in New Mexico, or the rate of population growth and associated drinking water needs, but instead the potential for curtailed access to fresh water needed to support "total resource recovery." New Mexico residents' lived

[6]Kimberling, Christine. Email invite to "New Mexico Produced Water Conference: Policy, Regulations and Economics to Support Total Resource Recovery."

experience with water scarcity is different than that of an oil and gas company, yet the two are conflated in the white paper. What is best for the public, in some cases, will not be what is best for an industry which depends on limitless water access for endless expansion.

How acute are water availability concerns?

Analysis by CERES and the World Resource Institute (WRI) reported that a majority of wells in New Mexico are drilled in high or extremely high water stress regions. Extremely high water stress, as defined by WRI, means "over 80 percent of available surface and groundwater is already allocated for municipal, industrial and agricultural uses."[7]

Overlaying U.S. Drought Monitor reports and New Mexico oil and gas plays is troubling in the context of water availability. Right now 95 percent of New Mexico is in drought. The recent National Climate Assessment regional report on the Southwest describes in detail the impacts that shifting precipitations patterns will have on the state. A water constrained future is coming. At the same time, oil production in New Mexico soared by 30 percent last year.[8] As a result of evolving production techniques the state is now the third largest oil producer in the US. Over 600 wells are added each year to a massive inventory of over 26,000. But coaxing oil to the surface in some fracking operations requires an incredible 34 million gallons of water per well.[9]

Water use in the Permian Basin, which New Mexico shares with Texas, has already risen from more than 5 billion gallons in 2011 to almost 30 billion in 2016. IHS Markit, an international energy research firm, predicts water demand "will double by the end of this year, to 60 billion gallons, and more than triple by 2020, to almost 100 billion."[10]

According to the *New York Times,* parts of the Rio Grande River are running dry and spring runoff this year was one sixth of the average.[11] This creates a complicated situation for businesses and communities that depend on the river and could exacerbate tensions between larger water users in the state – namely agriculture and oil and gas.

In light of prolific water use by the oil industry, forecasts for historic increases in oil production, and the total water usage by New Mexico residents, what realistic impact can "streamlining" environmental protections have on water availability? What is the actual quantifiable plan for industry produced water in the state's future? Is this the most efficient and cheapest approach to addressing complicated and multilayered water concerns?

---

[7] Freyman, Monika. "Hydraulic Fracturing and Water Stress: Water Demand by the Numbers." CERES. February 2014. https://www.ceres.org/news-center/press-releases/new-data-water-use-hydraulic-fracturing-key-risk-water-stressed-regions

[8] Schnieder, Keith. "Here's why New Mexico's oil boom is raising a lot of questions about water." *LA Times.* March 25, 2018. https://www.latimes.com/nation/la-na-new-mexico-permian-basin-20180325-story.html

[9] *Ibid.*

[10] Hunn, Dave. "Fracking Water Related issues Draw Attention in West Texas." *Houston Chronicle.* August 4, 2017. https://www.timesrecordnews.com/story/news/2017/08/04/fracking-related-water-issues-draw-attention-west-texas/539232001/

[11] Fountain, Henry. "In the warming west, the Rio Grande is drying up." *The New York Times.* May 24, 2018. https://www.nytimes.com/interactive/2018/05/24/climate/dry-rio-grande.html

Normalize Commonsense Limits to Industry Water Use

The Permian Basin is on track to produce more oil than most OPEC nations within the next five years.[12] This level of production is unprecedented and has geopolitical implications. It also comes with very real consequences at the local level that cannot be ignored. While overall water usage by the oil industry in New Mexico is often compared to other sectors at the state or national level, all water availability impacts are inherently local. CERES analysis of fracking and water use found that in the top 10 oil and gas counties, fracking water use rose to over 100 percent of the annual domestic water use for each county.[13]

In light of persistent drought conditions and shifting precipitation trends, EPA should work with New Mexico state agencies to develop new strategies to mitigate evolving water challenges. These policies should go beyond the industry's preferred route of loosening environmental protections in order to improve the extraction economics. Instead regulatory agencies should develop policies to bring oil and gas water usage back in line with disposal capacity and ecological limits. If companies have trouble with existing legal authorities and disposal options utilized for decades – that is an operations problem that should be solved in the boardroom, not by EPA.

It is past time to officially acknowledge that the mere existence of hydrocarbons does not demand they be extracted as quickly as possible, ad infinitum, regardless of water limits. In order to adequately protect public health and the environment, as is EPA's mission, the Agency must sidestep the default response to industry requests for help with a flawed business plan.

Start this process by including a section in the white paper on regulatory authorities to limit oil industry water use in times of drought and develop a long term strategy to bring oil production back in line with water reality. The following recommendations for transparency and data collection will go a long way in assessing future avenues for reform:

- Collect and disclose total water volumes used in each state shale play, from where water is being sourced, including projected future water needs, the security of sourcing options.
- Collect and disclose the percentage of water use in each region from non-freshwater sources, including a breakdown of present use and future use from recycling, brackish supplies and other non-potable water use, building on the water management schematic included in the white paper.
- Require operators disclose the percentage of revenues and future growth forecasts in regions with high water stress or areas with drought and groundwater challenges.[14]

---

[12] Blum, Jordan."Permian will outpace all OPEC nations except Saudis." *Houston Chronicle.* June 14, 2018. https://www.houstonchronicle.com/business/energy/article/Permian-will-outpace-all-OPEC-nations-except-12995744.php

[13] Freyman, Monika. "Hydraulic Fracturing and Water Stress: Water Demand by the Numbers." CERES. February 2014. https://www.ceres.org/news-center/press-releases/new-data-water-use-hydraulic-fracturing-key-risk-water-stressed-regions

[14] Adapted from above CERES report designed as a "Shareholder, Lender & Operator Guide to Water Sourcing."

Conclusion

Clean Water Action appreciates the opportunity to comment and we look forward to participating in future rounds of public consultation. We hope our comments are clear that agencies must embark on the long journey to closing data gaps and reducing uncertainly around what is actually contained in the billions of barrels of wastewater the oil and gas industry generates each year. Further, we believe it is reasonable to request that an analysis of oil and gas industry water acquisition and use be formally included in EPA and New Mexico's efforts to link the industry with solving water availability issues.

Respectfully submitted,

John Noël
National Oil & Gas Program Director
Clean Water Action
jnoel@cleanwater.org