

Opening the floodgates for ‘produced water’

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A new state law on reuse of wastewater from oil and gas operations is expected to spark major investment by companies that should help reduce the use of fresh water in their operations. This large pond is part of Solaris Water Midstream water recycling operations in the Permian Basin of southeastern New Mexico and West Texas. The treated wastewater is reused in fracturing operations. (Courtesy of Solaris Midstream)

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Marvin Nash is gushing with enthusiasm about the prospect of irrigating New Mexico’s arid lands with oil and gas wastewater.

His Wyoming-based startup, Encore Green Environmental, is pursuing a pilot project to clean up effluent waste from booming industry operations in southeastern New Mexico and then spray it over desert areas to increase vegetation for ranching and erosion control.

His company already has one pilot project under way at a Wyoming ranch near Cheyenne. In early April, Nash submitted permit applications with the New Mexico Environment and Energy, Minerals and Natural Resources departments to become the first company here to reuse oil-and-gas effluent, known as produced water, outside of industry operations.

“Regulators must review our application to figure out what’s next,” Nash said. “There’s a big learning curve, because no one has done this until now. But we want to be the first pioneers to start this process in New Mexico.”

Nash waited until Gov. Michelle Lujan Grisham signed House Bill 546 into law before submitting his applications. The bill, known as the Produced Water Act, will take effect in July, potentially opening the floodgates for the first time for produced water to be recycled for use beyond New Mexico’s oil fields.



Pieces of a pipeline about to be installed sit next to an earthmover in the Delaware Basin near Jal. (Roberto E. Rosales/Albuquerque Journal)

Supporters say the new law marks a revolutionary step forward for the industry, and for New Mexico as a whole, possibly generating more than 40 billion gallons of new water resources annually for the state. House Speaker Brian Egolf, D-Santa Fe, called it “breathtaking,” and one of the “greatest environmental accomplishments” to come out of the state Legislature.

But others are highly wary about the potential risks of moving too fast, including environmentalists and state officials charged with writing new rules and regulations to oversee implementation of the law. Some environmental groups outright oppose it.

The state Water Quality Control Commission still must establish standards and procedures for moving forward, including an open, public rule-making process where everyone can weigh in, Environment Secretary James Kenney said.

“It will take some time before we would issue any permits, because we first need to develop a process to protect water quality with scientific data,” Kenney said.

It’s unclear how long that may take.

“People have legitimate concerns about using produced water and how it’s treated. We need to hear from them about their concerns through a public process,” Kenney said.

Everyone, including industry, supports careful scientific review of the potential risks and safety measures needed before reusing wastewater for things like agriculture or other industrial purposes, much less considering it for recycling into fresh water systems.



These large valves are part of Midstream’s recycling system in New Mexico and Texas that reduces costs and reduces reliance on brackish and fresh water. The company has a long-term contract for water services in a 369,000-acre area of Lea County. (Courtesy of Solaris Midstream)

That’s because it’s some of the dirtiest water managed by any industry, often 10 times more saline than seawater. It’s generally laced with myriad metals and other elements that seep into it underground, including naturally occurring radioactivity. And oil and gas operators often add scores of chemicals to it during operations, particularly for hydraulic fracturing of wells.

Between five and seven barrels of wastewater comes up from wells with every barrel of oil. And with production now booming in the Permian, the amount of accumulated

wastewater is astronomical, reaching more than 1 billion barrels in New Mexico in 2018, according to the Energy, Minerals and Natural Resources Department.

That totals about 40 billion gallons, or more than Albuquerque uses every year.

“If we’re breaking oil production records now in the Permian, it means we’re also breaking records in produced water,” said Bill Brancard, general counsel with Energy, Minerals and Natural Resources.

Many producers have begun reusing wastewater in their own operations, thanks to advances in water treatment and recycling technologies. Recycled wastewater, for example, now accounts for about 40 percent of the water that Houston-based Marathon Oil uses in its New Mexico operations, said Corporate Water Management Advisor Kerry Harpole.

“Technology advancements have made it economical to treat at least a portion of the water instead of sending it down hole,” Harpole said.

Midstream companies have also ramped up recycling to supply operators. Houston-based Solaris Water Midstream recently began service operations in Lea and Eddy counties to recycle produced water using hundreds of miles of pipelines in its new Pecos Star System. The network moves wastewater from industry sites to treatment centers and then back again for drilling and fracking operations. Marathon is one of Solaris’ customers.

Smaller companies are also getting into the game.



Gregg Fulfer, a longtime oilman who owns Fulfer Oil and Cattle Co. in Jal, stand next to his operation to deliver treated water to producers in this photo from last year. He says about 20 percent of his revenue now comes from selling recycled water. (Roberto E. Rosales/Albuquerque Journal)

Gregg Fulfer, a Republican state senator from Jal and owner of the Fulfer Oil and Cattle Co., has set up his own operation to deliver treated water to producers. About 20 percent of his revenue now comes from selling recycled water.

“Water reuse is having a huge impact,” Fulfer said. “All the major players are going in that direction.”

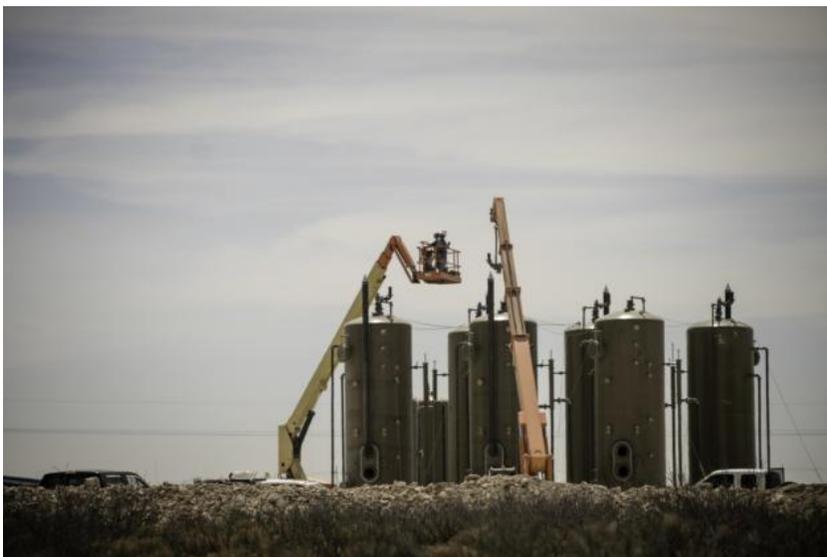
Still, most produced water is injected underground, in part because operators have been waiting for clear regulations about ownership and management of wastewater before investing heavily in treatment and reuse.

The new state law provides that clarity, guaranteeing ownership rights for companies to recycle, reuse and sell produced water. It also establishes jurisdictional authority among regulators. It puts the state Oil Conservation Division in charge of reuse in oil and gas operations, while authorizing the state Water Quality Control Commission to adopt rules and standards for reuse outside of industry, which the Environment Department would then oversee.

The new law could generate an industry rush to recycle a lot more produced water, both for reuse in their own operations, and for activities outside of oil and gas, said Ryan Flynn, executive director of the New Mexico Oil and Gas Association.

“The law defines control, ownership and liability. That gives clarity to unleash a new source of water,” Flynn said. “... It’s a huge opportunity and a magnet for new investment by businesses and individuals. We could see billions of dollars flow into water resources.”

The law earned broad bipartisan support among state officials, but it was largely an industry-driven initiative. For state officials, it paves the way to turn a waste product into a valuable commodity while guaranteeing that it’s first treated to state standards, Kenney said.



Workers install tanks and other infrastructure that separates oil and water near Jal in 2018. (Roberto E. Rosales/Albuquerque Journal)

The legislation has support from some environmental groups, particularly the Environmental Defense Fund, but with caveats. That includes detailed, scientific research before allowing treated water to flow outside of industry, with proactive

intervention by the Environment Department to protect public health, said Nichole Saunders, senior attorney with EDF's energy program.

Others outright oppose the law.

Some environmentalists protested during legislative debate, chanting against it as legislators voted on the bill. They're particularly concerned that highly-contaminated, industrial wastewater will find its way into the state's fresh water resources, said Rebecca Sobel, Wild Earth Guardians' senior climate and energy campaigner.