Energy companies use recycled water in effort to reduce costs, earthquakes

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A Bosque Systems LLC Dionix mobile unit cleans water from oil operations, reducing the need for freshw sources and for disposing water deep undergound. [

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Tumbling oil and natural gas prices over the past 18 months have led energy producers to slash drilling budgets and focus on costs, forcing oil-field services companies to find new ways to save their customers money.

Bosque Systems LLC's latest effort is designed to make hydraulic fracturing less expensive by customizing the fracking chemicals for the specific

characteristics of each well.

Just two years ago, larger services companies would handle all or most of the fracking process. An increased focus on slashing costs, however, has led operators to look for ways to save money on each step of the process, said Peter Pappas, Bosque's vice president of business development.

"When things were going great, they didn't look at unbundling the process, but now everybody's looking so closely at the costs" Pappas said. "This process was born out of conversations with those companies and the other businesses we have"

The company's Opti-Fluids program is designed to save up to 30 percent on the chemicals costs by connecting producers directly with the chemical manufacturers.

Bosque also is working with producers in the state's Scoop and Stack plays to clean and use both flowback and produced water in the fracking process.

Companies typically use freshwater mixed with sand and chemicals through the fracturing process to shatter dense rock and allow oil and natural gas to flow the surface. That water flows back to the surface and can be collected, cleaned and reused.

For more than five years, Bosque also has been cleaning produced water for use in fracking in Oklahoma. Also known as fossil water, produced water is the remnant of ancient oceans. Recovered along with oil and natural gas, produced water typically contains many times the salt content of seawater and often includes other chemicals and metals.

Cleaning and using produced water has become less expensive over the past few years as fracking companies have adapted their processes, allowing them to use water that is not been fully cleaned, Pappas said.

"Today, in many cases, we don't take as much out of the water as we used to" he said. "We meet a specific target from the operators. It's not as far on the spectrum as it was in the past "

In Oklahoma, produced water usually is returned deep below ground through wastewater disposal wells. But that process has fallen under intense scrutiny over the past few years as researcher and regulators have blamed some saltwater disposal wells for the state's ongoing earthquake activity.

Gov. Mary Fallin last month created the Water for 2060 Produced Water Working Group, which is tasked with finding ways to use more produced water and reduce the amount of water poured into disposal wells.

"Since the governor announced the formation of the working group, we've had a vast number of folks send us information about their processes and technology" said J.D. Strong, director of the Oklahoma Water Resources Board and chairman of the working group. "There's no question that if you have enough money, you can utilize technology to treat water to meet any need. Typically the biggest limitation is the cost to do it "

The working group is focused on reducing the regulatory and other costs while encouraging and incentivizing companies to look at ways to use the produced water.