

## 2019 PERMIAN PLAYBOOK | TECHNOLOGY



**Solaris' Lobo Ranch water recycling plant came online in July. (Source: Solaris Water Midstream)**

produced. As a consequence of growth, large-scale gathering infrastructure consisting of networks of pipelines, disposal wells and recycling facilities are being permitted, constructed and operated, diminishing the need to truck water. Additional benefits include the aggregation of large volumes of produced water to support recycling and a substantial reduction in the use of freshwater resulting from changes in hydraulic fracturing fluid chemistries, which have relaxed requirements for the treatment of produced water for fracturing.

Solaris Water Midstream has been expanding its infrastructure footprint in the Permian for the past several years. With assets in the Midland and Delaware basins, the company has been recycling in the Midland Basin for more than two years and started water recycling at its Lobo Ranch facility in Eddy County in July. In its first few months of operation, Lobo Ranch recycled up to 80,000 bbl/d of produced water. In New Mexico's Lea County, Solaris Water is mobilizing the Bronco Produced Water Recycling and Blending Center and expects to begin delivering treated water to operators from that facility in late September. The Bronco facility also will

have the capacity to treat in excess of 80,000 bbl/d. Solaris Water has plans to construct additional large-scale recycling and blending facilities in Eddy and Lea counties over the next few years.

"Solaris Water's growing integrated pipeline network in the Delaware Basin runs approximately 350 miles across Eddy and Lea counties in New Mexico serving numerous major customers and further extends into Culberson and Loving counties in Texas," explained Solaris Water's CEO Bill Zartler. "This system consists of interconnected, large-diameter trunk lines that support the bi-directional flow of water and related gathering systems and saltwater disposal [SWD] wells. Today the system extends 40 miles north into New Mexico from the Texas state line with permitted rights of way to extend the network even farther to the north."

To provide perspective, most water trucks carry about 130 bbl. Solaris Water is currently moving 500,000 bbl/d in the Delaware and Midland basins—or the equivalent of over 3,800 trucks. While emerging technologies continue to play a role in the water treatment end of the business, the current focus for many in the industry is

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Bill Zartler

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ramping up operations to meet producers’ current and future needs.

“I think what’s different now is the scale of water systems, the volumes being moved, working with multiple operators at the same time and aggregating their produced water before treatment and recycling,” Zartler said. “The water quality specs for fracking have also changed. While operators have a standard spec, today the level of treatment required to meet this spec has been reduced. Today, the industry is more focused on reducing total suspended solids, iron, H<sub>2</sub>S and bacteria and is not as concerned with dissolved solids. We are no longer looking to clean produced water to almost potable levels. With slickwater fracs and more effective chemistries and friction reducers, operators can effectively use saltier water for fracking, which has dramatically reduced the need for treatment and related costs.”

He continued, “The water business is also a business in transition, from small outfits with a handful of trucks and a couple of disposal wells to a full-fledged midstream service entity. As it evolves, what we see today is either upgrading or consolidation of saltwater disposal companies into companies with large pipeline networks and a focus on gathering systems and multiple SWDs, which requires a larger amount of capital. We’re also seeing producers continue to focus on capital efficiency. Producers made the evolution 25 years ago to divesting their natural gas and crude gathering systems. Water midstream is evolving in the same way. Given the intense focus on not spending cash and the ability for the

upstream industry to raise money, certainly in the public markets, producers are doing what they can to eliminate capital expenditures for services a third party can provide at a fair price. We think we will continue to see producers evaluating the sale of their midstream water assets to raise capital and outsourcing their water needs to proven midstream players that have large integrated water systems in place—systems they continue to expand.”



Solaris’ Lobo Ranch plant recycled up to 80,000 bbl/d of produced water in its first few months of operation. (Source: Solaris Water Midstream)

### Water management

The Permian’s shift to a more sustainable water model is not lost on the management of XRI. The company purchased the water treatment and recycling division of Fountain Quail Energy Services in April and recently completed its Northern Delaware Basin Supersystem with water pipeline infrastructure spanning more than 125 miles throughout the core areas of development activity in New Mexico’s Eddy and Lea counties. The cost of water treatment and recycling technology is now attractive versus the all-in cost of water disposal.