MOLEAER
ADVANCING NANOBUBBLE TECHNOLOGY

LARGE INDEPENDENT OIL COMPANY IN TEXAS REDUCES OPERATING COSTS WHILE MAINTAINING FRAC WATER STORAGE QUALITY WITH MOLEAER'S TECHNOLOGY

Client Case Study: Independent Oil Company in Texas

Location:	Application:	Pit Size:	Unit:	Installation:	Results:
Permian Basin, Texas	Frac water storage aeration	500,000 bbl	Titan Mobile Unit	May 2023	• Maintained target ORP levels • Eliminated the need for chemical oxidation treatments • Reduced operating costs

Traditional Treatment Processes for Frac Water Ponds Expensive & Not Effective

In the Permian Basin in Texas, hundred-degree days during the summer can reck havoc on frac water storage ponds, causing significant issues with water quality. Many water operators struggle to keep their frac water storage ponds from going sour, negative oxidation-reduction potential (ORP), which can trigger hydrogen sulfide formation and other operational and health, safety and environment (HSE) challenges.

Treatment processes such as chemical oxidants are often used to boost ORP and oxidize ferrous and sulfide contaminants in frac pond water. These treatments, an additional operational cost, are often applied on a spot basis and require multiple treatments and consistent analysis to keep up water quality during the summer months. Bottom-fed aeration systems are also commonly used with the hopes to increase oxygen levels by promoting circulation; however, they require installation at the time of construction and provide more mixing value than dissolved oxygen transfer.

Moleaer's technology, known for high gas transfer efficiency and easy installation, offers a mobile and flexible solution to sour frac ponds. Operators can temporarily deploy the treatment on an as needed basis, to help eliminate the need for chemicals and save money on costs.

Moleaer's Solution Significantly Improves Water Quality, Helping to Reduce Chemical Treatments in Texas Frac Water Pond

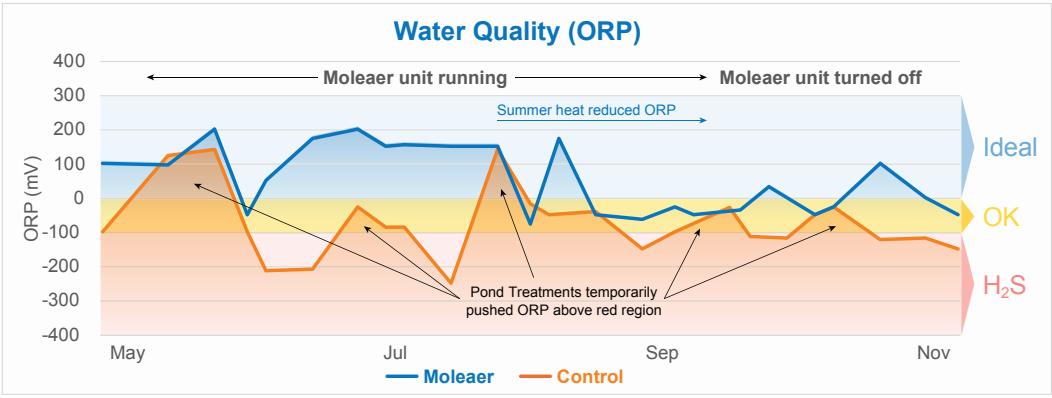
In May 2023, a large independent oil company in the Permian Basin in Midland, Texas implemented Moleaer's technology on its 500,000 bbl pit. The trailer was oriented along the top of the berm, recirculating water through the trailer and injecting air nanobubbles. The company used an adjacent 500,000 bbl pit as a control throughout the summer.

The oxidation-reduction potential (ORP), used as an indicator of water quality, in the pit treated with Moleaer's technology was higher throughout the testing period, maintaining levels within 'OK' or 'Ideal' ranges the entire time.

By adding Moleaer's solution, the company eliminated any need for chemical treatments in the pit. Meanwhile, the control pit required five chemical treatments, which only temporarily improved the ORP levels but failed to sustain them. The control pit showed higher ORP levels right after a chemical treatment with readings in the 'H2S' formation range for most of the season. H2S stands for hydrogen sulfide, a colorless, flammable, highly toxic gas formed in the absence of oxygen.

The customer determined that the utilization of Moleaer's technology reduced their operating costs while helping them maintain frac water quality within their desired specifications. As a result, they have moved forward with several Moleaer mobile systems in 2024 to be deployed across multiple water assets.

Moleaer's solution is a more efficient, cost-effective, headache-free frac pond water treatment than traditional options, helping oil companies combat sour pond conditions while saving on costs.



Learn more about nanobubbles in EOR, oil-water separation and sour water treatment:
www.moleaer.com/industries/oil-and-gas