

Innovative gas separation technology outperforms competition in the Permian

Hydro-Helical® 400 series gas separator helps eliminate emulsion and increases production from 30 BOPD to 150+ BOPD

CHALLENGE

- Mitigate severe emulsion and high gas content
- Reduce downtime

SOLUTION

- Install the Hydro-Helical gas separator and ESP pump
- Perform water analysis to test for signs of emulsion

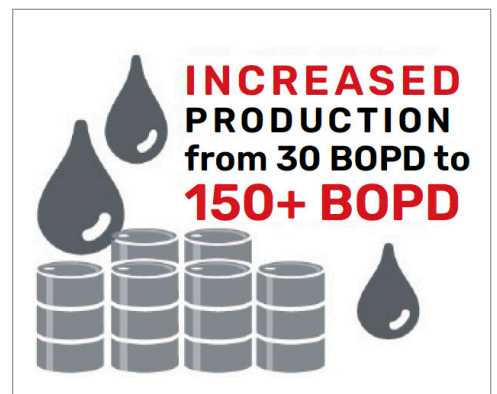
RESULT

- Increased productivity from 30 BOPD to 150+ BOPD
- Eliminated the need for emulsion treatment
- Saved operator money with longer run times
- Demonstrated superior performance over the competition

Overview

An operator in the Permian region was having trouble with a 100-BOPD producing asset, experiencing four failed runs in a 210-day period using electric submersible pumps (ESP) supplied by a series of various vendors—a quest to “save money” gone wrong. It turned out to be not only an ESP issue that cost the operator up to USD 500K in unnecessary well expenditures, but also the use of a traditional tandem

high flow vortex gas separator that was not up to the job, causing production to drop as low as 30 BOPD. In cost-conscious times, companies are hesitant to try new technology; however, a different solution was needed to revitalize the problem well to prevent additional expense and productivity loss.



Challenge

The biggest concern was the presence of severe emulsion/foaming and high gas 484 MCF, as well as overheating of the pump and motor, causing excessive downtime due to repeated short runs, pulls, and failures of the legacy ESP/gas separator in place. Summit ESP® reached out to the operator to introduce the new Hydro-Helical 400 series gas separator, with a presentation of before and after well performance data where the new technology had been implemented. Data comparisons were also reviewed in multiple scenarios to demonstrate the consistent, superior results of the Hydro-Helical gas separator over tandem high flow vortex gas separators.

Solution

The operator decided to move forward with the Hydro Helical gas separator in conjunction with a Summit ESP unit, realizing the higher initial investment would bring better results. The staging and technology within the Hydro-Helical gas separator provides a dual action of compressing and separating gas, which is the ideal solution for a severely emulsive well with moderate-to-high gas issues. In these conditions, it was decided to take a slow, conservative start-up approach to ensure pump stabilization. Overall, the installation with the Hydro-Helical gas separator went smoothly under the watch of Summit ESP technicians.

Result

The well production numbers are exceeding past performance expectations—in the 150 to 181 BOPD range—following implementation of the Summit ESP unit with the Hydro-Helical gas separator. On a given day, example oil/gas/water ratios are 153/325 MCF/1,158. And follow-up water analysis has shown no signs of emulsion, enabling an end to chemical treatment for controlling that issue. After this successful venture, the customer applied the same solution to two additional wells and is achieving 100+ BOPD per well.

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