

Permian Basin, Texas

Hydro-Helical[®] gas separator easily tackles extremely high gas producing well

Former gas lift well converted to ESP (electric submersible pump) for dewater following frac interference

CHALLENGE

- Gas lift well experienced frac interference
- Hydrocarbon production declined
- Water production increased

SOLUTION

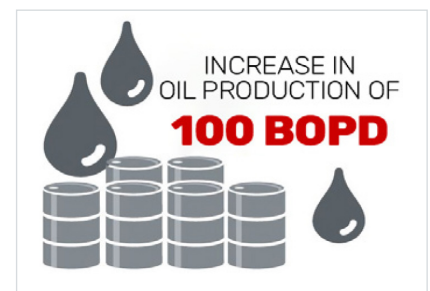
- 538 series Hydro-Helical gas separator uses a stationary helix vortex inducer which enables increased separation efficiency as flow rate increases
- 400 series pump can handle max gas volume of approximately 40%

RESULT

- Stable production despite high gas volumes of around 700 SCF/STB
- Oil production increased approximately 100 BOPD
- Gas production is almost at 3 MMSCFPD
- Customer is pleased with unit performance

Overview

A gas lift well in West Texas, which had previously been a strong gas producer, began to experience frac interference, leading to increased water production and decreased hydrocarbon production.



Challenge

The well would be converted to Summit ESP[®] — A Halliburton Service for dewatering. Still, there was the potential for emulsion and excessive gas volumes, as well as the challenge of optimally producing flow rates through 7in., 29 lb/ft casing.

Solution

Summit ESP experts began their design with a single 538 series Hydro-Helical gas separator which utilizes a stationary helix vortex inducer to create centrifugal separation without a spinning paddle wheel, enabling separation efficiency that increases with flow rate. It was coupled with an upper tandem 513 high-flow vortex gas separator to give additional separation and to handle emulsion concerns. The 400 series pump was utilized because it can handle a max gas volume of almost 40%.

Result

Despite an average GLR (gas-liquid ratio) of around 700 SCF/STB (standard cubic foot per stock tank barrel) – maxing out at just over 1,000 SCF/STB - and an extremely high gas production of almost 3 MMSCFD (million standard cubic feet per day), the unit is running remarkably well. In addition to the return of strong gas production, the customer has seen an increase in oil production of 100 BOPD (barrels of oil per day). No work was performed on the well outside the conversion to ESP, so the customer has been exceedingly pleased with the performance of the Hydro-Helical gas separator.

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