

Europe

**CHALLENGE**

A European operator sought an optimal production solution for a high-gas dewater well, which would also provide remote monitoring and optimization.

**SOLUTION**

- Installed below perforations using a shroud to encourage gas separation
- Gas separators, handlers, and low net positive suction head (NPSH) pumps to handle the high gas volume
- Tiger Shark pumps with a wide operating range to handle extremes in water production rates from start-up to later stages
- ACS-15 variable speed drive (VSD) with gas lock mode
- Intelevate cloud-based digital software platform

**RESULT**

- 24/7/365 monitoring and remote optimization managed the changing well behavior for optimal and stable ESP performance and run life while reducing potential hazards and miles driven to the rig site by field personnel
- Gas production rates were achieved with an average production increase of 200-m<sup>3</sup>/h

# Intelevate™ Platform, Tiger Shark® Pumps, ACS-15® Variable Speed Drive Provide Optimal Solution for High-gas Dewater Well

Electric submersible pump (ESP) system solution helps operator dewater gas well

**Overview**

A European operator was challenged to efficiently dewater a well with high gas volumes. Previous attempts using a sucker rod pump were unsuccessful due to high sand volumes. When the well stopped producing, the operator considered abandoning it.

**Challenge**

Electric submersible pump (ESP) systems offered the best solution to bring the well back online, but substantial water volumes would challenge them during startup and significantly lower volumes once gas flow resumed. Additionally, they would have to contend with the possibility of high gas volumes and potentially producing sand that had accumulated at the bottom of the well.

**Solution**

Drawing from the operator's expertise in dewatering gas wells and the extensive experience Summit ESP®- A Halliburton Service brought with ESPs in challenging gassy and sandy environments, a novel pump design emerged. Strategically installed below the perforations and incorporating a shroud, the specialized Tiger Shark® pump ESP system with an exceptionally broad operating range would ensure stability even during fluctuating liquid inflow conditions. Erosion Buster® stage technology and robust tungsten carbide bearings were incorporated to tackle sand production.



A HALLIBURTON SERVICE

### Solution continued

During startup, gas separators, and handlers adeptly managed high water rates while they handled high gas production at later stages. An ACS-15<sup>®</sup> variable speed drive, equipped with gas-lock mode, managed the ESP during periods when taking on high gas volumes.

The Intelevate<sup>™</sup> digital platform provided 24/7/365 cloud-based monitoring to assist in finding stable operating conditions, real-time power consumption tracking and enhancement, performance audits, and remote control of the ESP. Optimization settings were identified for surface gas and water adjustment valves based on real-time, high-resolution data, which allowed rapid data-driven decisions to recover maximum gas production. Team members used an optimization playbook with gas dewatering troubleshooting techniques and an engineering manual with best practices for extending ESP equipment integrity.

### Result

After installing the ESP, gas production increased by an average of 200-m<sup>3</sup>/h; however, higher gas rates were not achieved due to reservoir constraints. All other targets were met, including dewatering volumes, bottom hole wellbore flowing pressure, and stable ESP operation. Due to this success, additional wells are being evaluated for dewatering with ESP to bring back gas production. Additionally, the customer now uses the Intelevate digital platform as a reliable online service for controlling the ESP system remotely and is satisfied with the team's continuous collaboration efforts to optimize operating parameters.



Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.

H014648 05/24 © 2024 Halliburton. All Rights Reserved.