

Canada



Hydro-Helical® Slugger HT Overcomes Gas Slugging, Enhances Production

Water vapor increased 12% on steam assisted gravity drainage well (SAGD) well

CHALLENGE

- High-temperature applications lead to faster wear of components and frequent equipment replacement
- High viscosity fluid increased operation complexity

SOLUTION

- Summit ESP triple Slugger pump System for SAGD systems
- Hydro-Helical Slugger HT designed for high-temperature applications
- Distance between gas separator discharge and rotating intake minimizes gas recirculation

RESULT

- Stable production with longer run times
- 12% increment in water vapor for enhanced hydrocarbon production

Overview

An operator faced difficulties producing a SAGD well, where steam injection is used to reduce the viscosity of heavy crude for production.

Challenge

An operator faced difficulties producing a SAGD well where steam due to the complexity of SAGD operations, the current electric submersible pump (ESP) system, which included a gas avoider, gas handler, and production pump, could not overcome flow rate limitations and unstable operations. Frequent gas slugging and extreme operating temperatures led to system overload, short runtimes, and increased operating costs for the customer.

Solution

Summit ESP®, A Halliburton Service, installed a new triple-play slugger pump system composed of one Hydro-Helical gas separator, a slugger pump, and a rotating intake. Drawing the fluid in from the bottom of the wellbore, the intake delivers it to the enhanced pump and a gas separator built with exceptionally high-flow fluid movers. The elongation of the space between the intake and exit ports more efficiently handles the gas by creating internal and external liquid reservoirs, ensuring a continuous flow of liquid to the pump and cooler equipment operating temperatures.



CASE STUDY

Result

The Hydro-Helical® Slugger HT pump design mitigated gas locking and enhanced system efficiency for longer, more stable production. The system also produced an increase of 12% in water vapor in eight weeks, leading to lower viscosity of the produced bitumen, which could then flow easily to the production well for extraction. The improvement of the system allowed the customer to save on downtime and increase return on investment.

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