Rotoliptic

ANY VISCOSITY ANY TEMPERATURE ANY PHASE

Rotoliptic Pump Excels in Maintaining Performance in SAGD Wells

CUSTOMER CHALLENGES

In SAGD operations, managing the efficient extraction of heavy oil becomes increasingly challenging due to the presence of gas interference. Traditional Electric Submersible Pumps (ESPs), commonly used in these scenarios, often struggle with handling the multiphase flow consisting of liquid hydrocarbons, water, and gas. This gas interference can significantly impair the performance of ESPs, leading to reduced efficiency, frequent shutdowns, and increased operational costs.

TECHNOLOGY SOLUTION

The all-metal positive displacement design of the Rotoliptic pump efficiently manages and transports multiphase fluids in applications where free gas is present at the pump inlet, ensuring consistent performance by minimizing the adverse effects of gas interference or gas locking. This robust design makes the pump ideal for harsh-fluid environments, including temperature fluctuations, viscosity changes, and water cut variations. The pump's ability to handle complex fluid dynamics enhances production stability and extends the operational life of the well, overcoming the limitations faced by conventional artificial lift systems.

FIELD RESULTS

The test bench data in Figure 1 demonstrates Rotoliptic pumps' ability to handle large amounts of free gas with no effects on the liquid production performance of the pump. Figure 2 shows that the pump successfully maintained the desired drawdown and consistent liquid production rates in a SAGD well. This deployment further validated Rotoliptic's excellent gas handling, with field results consistent with bench tests. These results demonstrate the pump's capability to handle complex fluid dynamics and enhance production stability.

TECH REPORT

LOCATION
ALBERTA

FLUID TYPE
80% WATER CUT

WELL TYPE
SAGD

DOWNHOLE TEMPERATURE
150C

PUMP DEPTH
400M

PRODUCT
R200-800

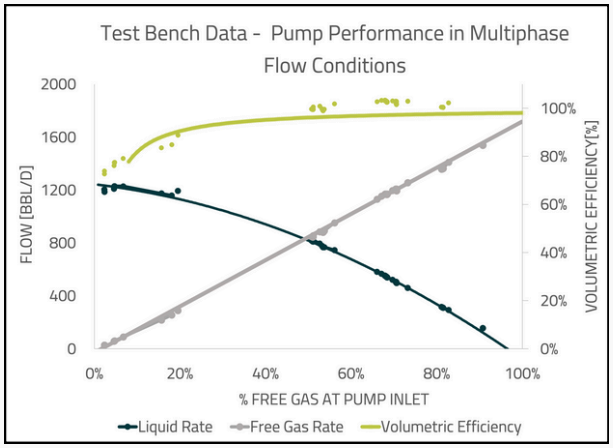

Figure 1: The pump demonstrated the capability to handle all multiphase conditions at the pump inlet, efficiently moving and discharging fluid and gas to the surface.

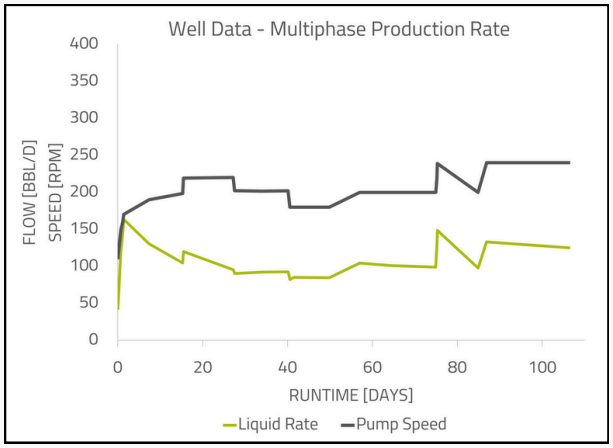

Figure 2: The Rotoliptic pump successfully ran and maintained flow rates despite the challenging flow conditions present in this SAGD well. [Well update from 2024/04/29]