

Case Study: A Steam Assisted Gravity Drainage Field Demonstration using the **R200-800** downhole pump

CUSTOMER CHALLENGES

In steam-assisted gravity drainage (SAGD) operations, managing the efficient extraction of heavy oil with artificial lift becomes increasingly challenging due to the presence of gas interference. Electrical submersible pumps (ESPs) commonly used in these applications often struggle with handling the multiphase flow consisting of liquid hydrocarbons, water, gas, and steam. This gas interference can significantly impair the performance of ESPs, leading to reduced efficiency, shutdowns, and increased operational costs.

TECHNOLOGY SOLUTION

The solution for this customer was the **Rotoliptic R200** pump. The **Rotoliptic** pumps' ability to efficiently manage and transport fluids was of interest for this customer's broader field operations due to its ability to minimize the adverse effects of gas interference and eliminate gas locking in future applications where there may be free gas present at the pump inlet.

The **R200** was selected as an ideal pump for the harsh-fluid environments found in SAGD operations, including temperature and viscosity fluctuations and water cut variations. The ability of the **R200** to handle these complex fluid dynamics whilst maintaining the desired subcool enhances production stability and extends the operational life of the well, overcoming the limitations faced by other artificial lift systems.

The **Rotoliptic** pumps demonstrate the ability to handle all multiphase conditions at the inlet, efficiently moving and discharging liquid and gas to the surface.

FIELD RESULTS

The **R200** was operated in the SAGD application and successfully maintained the desired drawdown and consistent liquid production rates, despite the challenging well conditions.

This field deployment further validated the **Rotoliptic** gas handling test bench results, and demonstrated the ability of the **R200** to handle complex fluid dynamics and enhance production stability.

TECH REPORT

LOCATION
ALBERTA, CANADA

FLUID TYPE
80% WATER CUT

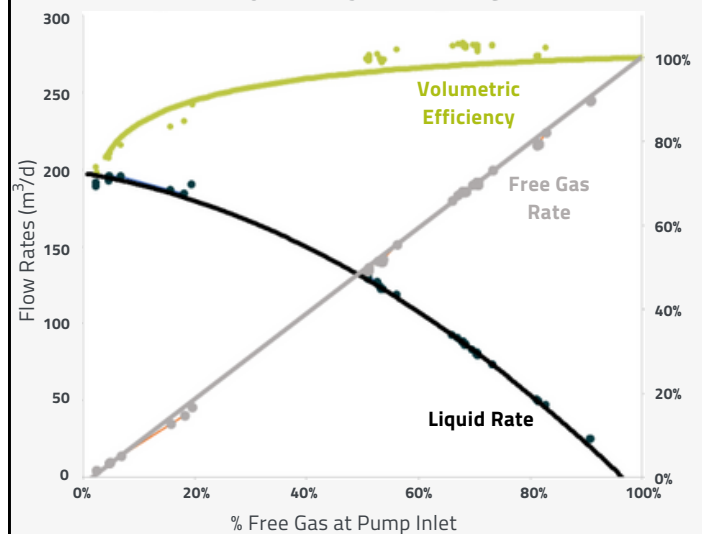
WELL TYPE
SAGD

DOWNHOLE TEMPERATURE
150°C/302°F

PUMP DEPTH
400M / 1312FT

PRODUCT
R200-800

TEST BENCH DATA MULTIPHASE HANDLING



WELL DATA

