

Well-by-well optimization of gas lift wells

Introduction

Three gas lift wells in Indonesia were selected for application of the LiftPro* artificial lift optimization service following a rigorous examination program that identified production inefficiencies.

Key to the examination process were the PhaseTester* portable well testing unit and Vx* multiphase testing technology. The multiphase flowmeter provided artificial lift engineers with real-time flow and well-test data with minimal interference to well operations. PhaseTester equipment also allowed multi-rate tests to be recorded with real-time response to a variable injection rate.

The three wells were producing a combined 4,800 BOPD with continuous gas lift. Objectives for the LiftPro service were to

- improve stability
- increase production
- make more efficient use of gas lift resources
- show fast results.

Challenge

Previous conventional well tests were unsuccessful because of lags in response time and inconsistent results following changes in the operation of the wells.

Solution

The LiftPro service was chosen to diagnose the downhole gas lift equipment operation and production performance at varied surface settings.

Results

The overall production gain resulting from the LiftPro optimization service was 385 BOPD. Additionally, at the operating points determined by the service to be optimum, water production from the three wells fell by 157 B/D.

A 20% reduction in the gas-injection rate was possible once problems that had been identified in the wells by the LiftPro service were corrected, and a revenue increase of USD 179,000/month was realized through optimized operation of the three gas lifted wells.

Case study: Indonesia

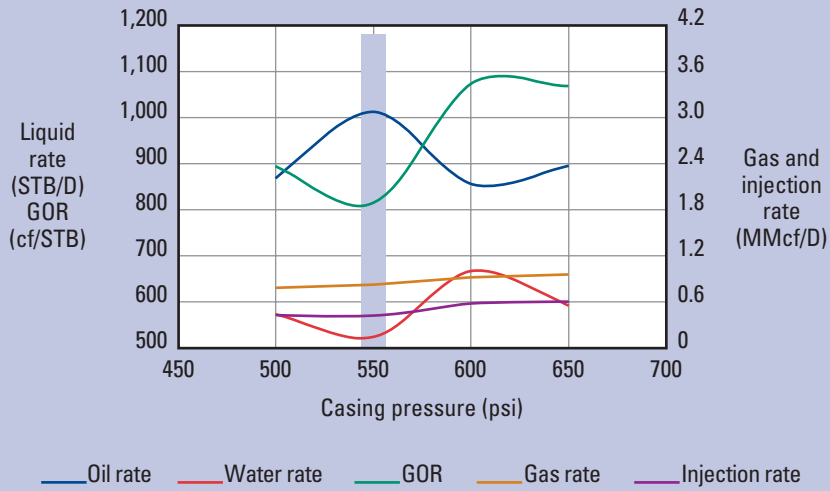
Highlights

- Immediate 385-B/D increase in oil production
- Water-production decrease of 157 B/D
- Injection gas reduction of 20%
- Overall revenue gain of \$179,000/month

Flow measurements from the PhaseTester unit, made using Vx multiphase well testing technology, monitor gas lift performance.



Through the LiftPro service, it was determined that the optimum operating point for this well is at a casing pressure of approximately 550 psi.



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