



/ Expro Excellence Meters

Expro's non-intrusive sonar meters measurement production and gas lift rates simultaneously in order to allow gas lift to be optimised for maximum production



Objectives

- A client in the Middle East has been producing oil from its field since the 1930s, however production has declined significantly over the past 15 years. An initiative was undertaken to revive the field and Expro were part of the team
- The first step was to undertake an appraisal of the asset and its subsurface condition, which would then be used to create a field development plan
- Surveillance data was required to provide a baseline survey of well injection and production rates, however conventional trailer-mounted test packages were not feasible due to the existing wellhead infrastructure, timing, logistics, HSE exposure and cost

Expro Excellence

- Expro was contracted to measure the production rates from the 10 highest priority wells in the field, and also measure lift gas injection rates for the gas lifted wells
- Use of Expro's SonarTest™ service, which utilised a PassiveSONAR™ flow meter clamped onto the existing wellhead pipework, upstream of the production choke, to measure the velocity of the production from the well
- On the gas lifted wells the ActiveSONAR™ flow meter was clamped onto the lift gas flow line
- Production and gas lift rates were collected over several hours for each well, which each well being tested in one daytime shift

- The sonar data, along with wellhead pressure/temperature and watercut (by sampling), was collected and then post-processed by Expro using the Total Production Surveillance Software™ (TPS1000) – a multi-phase interpretation model which leverages client-provided wellbore compositional data, sonar and other surface readings to infer oil, gas and water production rates at standard conditions

Value to client

- Production rates and injection rates were analysed and compared. The data showed lift gas injection rates were up to 5 times the optimised rate, consequently limiting the production from the wells
- Expro data provided the client's reservoir engineers with valuable surveillance information which was used to improve their knowledge of the field and the field development plan
- Almost immediately, the surveillance results were used to develop actions to increase well production rates
- In the second campaign, the client varied the gas injection rates for some wells and analysed the resulting production rates optimising gas lift efficiency and increase immediate production

Key deliverables

- Non-intrusive design
- Real-time measurement
- No process shut down
- Multi-phase surveillance
- Cost-effective
- Accurate

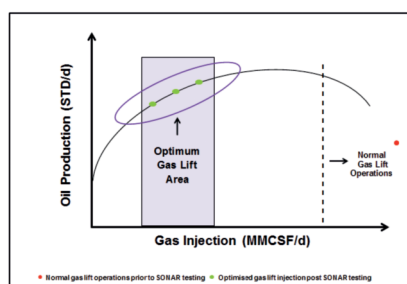


Figure 1: Gas Lift Optimisation Curve

Contact

For further information please contact:

meters@exprogroup.com

or call +1 (203) 3030 5695

www.exprogroup.com/meters

