

Reaching Deeper, Producing More

Innovative Braided-Line Deployment Delivers Cost-Effective Breakthrough in Gas-Lift Technology

Objectives

- Achieve approximately 150 BOPD additional oil beyond existing output. The well was producing but with a high water cut of approximately 80%, limiting effective oil output.
- Deepen the injection point to enhance unloading efficiency and reservoir drawdown. The existing gas-lift system had a shallow orifice at 1,949 ft (594 m) measured depth derrick floor (MDDF), mainly due to the sidetrack trajectory which restricted further depth.
- Navigate a restricted well path that previously limited gas-lift depth.

Our Approach

- Conducted a gas-lift simulation to identify the optimum injection depth. The results indicated 3,129 ft (954 m) MDDF as the most effective point to improve unloading and increase oil production.
- Proposed a new deployment method using braided line, making it the first deep, gas-lift (DGL) installation executed with this conveyance. Based on simulation depth, the DGL system was engineered as a pipe-based assembly requiring 37 sections of R2 pipes to deliver the injection point to the target depth.
- Carried out a feasibility study to validate the capability of deploying the pipe-based assembly via a 7/32-in. braided line which included:
 - Modelling software to evaluate drag, tension, wire stretch, and the ability to reach 3,129 ft (954 m) MDDF with 37 R2 pipes
 - Surface integration test (SIT) to verify the makeup sequence, spacing out accuracy, and connection integrity for the full pipe string
 - Sliding test to ensure smooth passage through well restriction and the build section without excessive friction
- Deployed the DGL assembly via braided line and the point of injection was installed at 3,129 ft (954 m) MDDF with no operational issues, validating the deployment method and achieving the planned installation.

Value to Customer

- Added approximately 150 BOPD in confirmed oil production.
- Deepened injection to 3,129 ft (954 m) MDDF, improving unloading and stabilizing flow.
- Used braided line to deploy the 37-pipe DGL assembly, reducing intervention cost while ensuring safe, efficient installation.
- Demonstrated braided-line deployment as a viable, economical method for future deep, gas-lift applications.



The ISO 14310 V0-qualified WidePak deep gas-lift system runs through the tubing, easily passing ID restrictions, and is set, successfully bridging off large extrusion gaps and sealing against high pressures at high temperatures.

LOCATION

Malaysia

WELL TYPE

Gas-lift oil producer

PRODUCTS/SERVICES

- Thru-tubing services
- WidePak™ deep gas-lift system
- WellFlo® software

