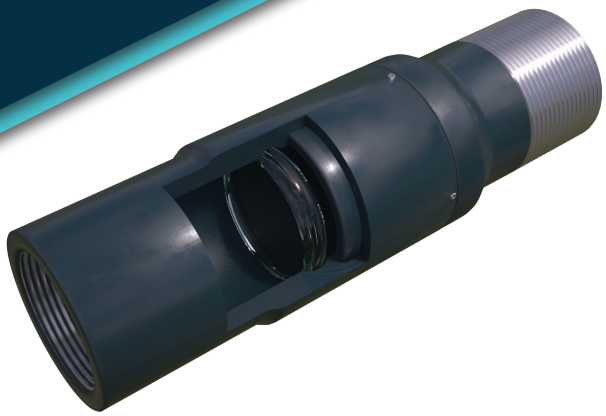
FET | Davis-Lynch

Case Study



Cleanbore™

This case study is proudly presented by FET | Davis-Lynch and its Australasian Distributor General Petroleum Oil Tools.

GENERAL PETROLEUM OIL TOOLS

Summary

WELL STATISTICS

- Beetaloo Basin, Northern Territory Australia
- 4-1/2" 13.5ppf Production Casing run to 4460m MD, 1684m TVD, 2632m lateral section
- 2618m of casing was floated from the casing shoe to the CleanBore™ Buoyancy Sub
- Mud weight was 11.6ppg

IMPROVEMENTS

- Positive casing slack-off hookload at TD was 63,000 lbs
- CleanBore sheared at 3400psi surface pressure, within 2% of predicted pressure
- Casing Run to TD in 43.75 hours
- Casing successfully cemented and floats held
- Longest lateral section in Beetaloo Basin by more than 700m

Background

Carpentaria is an onshore shale gas field located in the Beetaloo Basin, approximately 180km south-east of Katherine in the Northern Territory, Australia. The Beetaloo is gaining global recognition as an important and emerging shale gas frontier. The Beetaloo Basin is thought to contain recoverable shale dry gas volumes of over 100 Tcf, with liquids upside.

Imperial Oil & Gas Pty Limited (a wholly-owned subsidiary of Empire Energy) is the holder of one of the largest acreage positions (>28M acres) in this highly prospective Basin. Exploration and appraisal field activities are managed on behalf of Imperial Oil & Gas by inGauge Energy, a Well Engineering and Project Management firm based in Brisbane, Australia.

Problem

Developing this basin is difficult as the area is remote and drilling costs are high. Achieving longer laterals will improve production on a per well basis and result in lower development costs. Imperial's second well in the basin, Carpentaria-2H achieved the planned production casing length of 3,150m, however, hook-load indicated the string was in buckling mode with instances of casing "lock-up" near landing depth.

A key objective of Imperial's third well, Carpentaria-3H, was to extend the well TD to 4500m MD. This aim if achieved, would exceed by a significant margin, any of the previous offset wells drilled in the Beetaloo and was a key objective for the well. Based on the high TAD recorded during casing installation at Carpentaria 2H, it was concluded, for the Carpentaria 3H well, the longer production casing length would require either rotation or to be floated to successfully reach the planned well TD.

Solution

Casing flotation with the Davis Lynch CleanBore™ Buoyancy Sub was chosen over rotating the casing as the best solution due to the solutions simplicity, and reduced overall risk.

Results

The production casing was successfully run to the well TD of 4460mMD, with positive hookload and no indication of buckling throughout the run. Actual slack-off hook-loads closely followed predicted TAD data throughout the run. Once casing was on bottom the bouyancy sub was converted and casing successfully cemented. The well was drilled and completed on time and under budget.