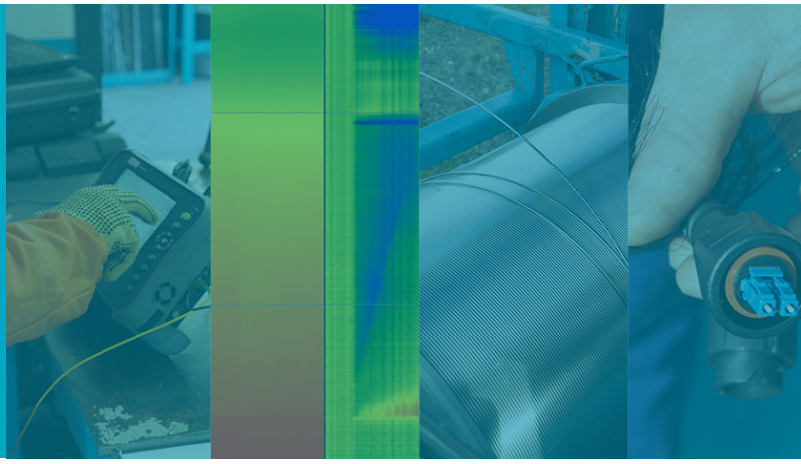
Expro Excellence

Distributed Fiber Optic Sensing (DFOS) Slickline deployed to gather data in HPHT gas well

Well Intervention and Integrity



Objectives and background

- A customer in the North Sea was unable to gather Production Logging Tool (PLT) data from an HPHT high gas rate field since the start of production over 3 years ago. They approached Expro to deploy their DFOS solution
- Due to debris in the well obstructing conventional flow profiling methods, this prevented the customer allocating volumes to the different layers in the reservoir, inhibiting reservoir simulation modelling and reservoir management through uncertain history matching and production profile prediction. It also prevented the customer from determining perforation efficiency for well optimization

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- Through DFOS deployment, Expro were able to acquire Distributed Acoustic Sensing (DAS) and Distributed Temperature Sensing (DTS) data in this high temperature well under multi-rate flowing conditions
- With data acquisition from the stationary slickline cable itself, Expro were able to mitigate the tool-lift and wellbore debris risks which prevented conventional PLT strings from being utilized

Value to the client

- The operator was able to obtain the first ever Production Profile from this field under multi-rate flowing conditions
- Through near real-time data evaluation onshore the operator was able to monitor well stability through the different production stages adjusting the workscope during the operation
- As a result of monitoring the entire wellbore during the survey, the operator had the added benefit of gathering data concerning the overburden geology and behavior of the completion above the reservoir during startup and production
- The multi-rate testing allowed the operator to observe the changes in behavior of the reservoir during shut-in, and two additional production flow rates which highlighted the significant contribution changes over different parts of the perforated interval. Lower flow rate conventional PLT data would have given a false impression of the different reservoir layer contributions
- By using Expro's proprietary Qikview software, the Expro DAC analyst was able to pull in multiple datasets including but not limited to; DAS, DTS, Completion items, Lithologies, Openhole data and point sensor memory temperature, pressure, CCL and GCR
- The system provided a more efficient and compact rig up lowering the environmental impact. By avoiding the requirement for a complex tool-string rig up, risk to personnel was also lowered

New technology

Digitalization

Environment

Contact

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