CASE STUDY
Reference no. CS.PB.UKWA.

PERFORATION & BALLISTICS

Successful Deployment of Perforation Gun Conveyed via Real-time Coil

Country: UK
Year: 2018
Technologies: **RtC ● SelectFire Plug/ Punch ● Radial Bond Tool – Cement Bond Logging ● 3 3/8" CONNEX Perforating Guns**

ALTUS Intervention

MAKING INTERVENTION SMARTER

CHALLENGE

The client was experiencing issues with a water injection well in the North Sea and required an integrated service to allow reduction a in POB whilst achieving all job objectives. The scope included tubing punches, plugs, remedial cement operations, cement bond logging and 400meters of re-perforation to improve water injection.

All operations were to be conveyed via Altus Intervention's real-time coiled tubing to minimise the number of perforation runs, provide accurate depth correlation and deliver real-time communications during logging and perforating runs.

SOLUTION

Altus Intervention mobilized their equipment with an experienced multi-disciplined crew who were able to utilize their skills across both e-line logging, perforating and coiled tubing operations.

A select fire plug/punch system utilising the Dynaslot large hole punch system and a plug set on an E4 setting tool saved the client an additional run by having a select fire toolstring. This allowed the plug to be set accurately on depth, and then picked up to fire the Dynaslot punch. The client chose the Dynaslot punch due to the large 360°flow area it provides for the remedial cement operation.
A Radial Bond Tool (RBT) run on the RtC then logged the subsequent cement job, allowing for real-time interpretation of the results. 400m of re-perforation was then completed in 4 runs of RtC.

Highlights from the job included:

- Plug/Punch operation completed on RtC in a single run
- Successful RtC cement job completed
- Cement evaluation (RBT) successfully run on RtC
- 150bbls of cement pumped through RtC coiled tubing
- Cementing carried out using three different techniques
- 400m perforating completed over four runs, maximum 140m in a single run
- A combined total of 22 RtC runs completed successfully
- 15% HCl reservoir stimulation treatment placed using coiled tubing
- Three composite plugs set and milled

For further information, please contact:
www.altusintervention.com/expert

RESULTS

The first single run plug/punch was completed on RtC, combining what is normally a two-run operation into a single run. 400m of new perforations successfully completed in four runs with the longest single run at 140m. All runs were correlated using CCL and GR/CCL, with logs verified prior to firing. The RBT contingency was run to log over cement.

Data was delivered in real-time and was analysed prior to the toolstring coming back to surface. All perforation runs completed successfully.

The project was completed to schedule and on budget, with no accidents or incidents and has successfully increased injectivity.