

INTEGRATED SERVICES

RtC performs over 500,000 running feet on one well with no NPT

Country: UK
Year: 2023

Technologies: **RtC** ● Reverse circulation cleanout ● Forward circulation cleanout ● Perforation ● Plug setting ● Plug milling ● Straddle setting ● Formation evaluation ● Live Link

MAKING INTERVENTION
SMARTER

- Real-time data transferred onshore via Live Link from offshore coiled tubing unit and RtC BHA
- POB optimised with multi-disciplinary coiled tubing and logging crew
- Well brought into production post-intervention operations
- Exceptional cross-departmental teamwork delivered a flawless operation

CHALLENGE

A North Sea Operator required intervention support during proppant fracture operations for a newly drilled well. The intervention work scope required perforation, zonal isolation and cleanout to enable the implementation of the multi-zone well stimulation project.

SOLUTION

With extensive in-house expertise in RtC and logging operations, Altus Intervention was ideally placed to assist with the completion of a fracture stimulation programme for the new well.

Altus Intervention mobilised an RtC spread combining logging and coiled tubing capabilities, with an experienced multi-disciplinary crew who were able to utilise their skills across logging and coiled tubing operations. This included a trained mechanic who was responsible for both operating and maintaining the equipment.

The initial zone was perforated using an SRO correlated hydraulically activated pump through gun system. Following the proppant frac operations on a specific zone, RtC was used to clean out each subsequent zone using a forward circulating pump through gun system. With the next zone uncovered, the guns were SRO correlated and hydraulically fired.

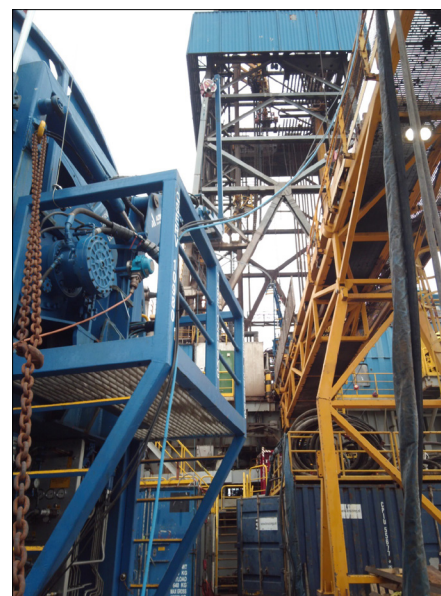
During frac operations, zonal isolation was achieved using electrically set composite plugs. When significant volumes of proppant were left in hole post frac operations, RtC was configured to perform a reverse circulation cleanout, thus providing an efficient cleanout to the next zone.

Following operations on all the required zones, RtC was used to remove any remaining proppant and composite plugs left in hole, thus opening all zones to production. Finally, an RtC gas lift using live downhole pressure and temperature data to optimise lifting procedures, brought the well online.

To assist with production optimisation, a formation evaluation was then performed using an SRO PLT string on the RtC system. This allowed the identification of sub-optimal zones and provided direction for remedial operations.

Remedial operations included an electrically activated re-perforation and subsequent straddling of discrete zones. This enabled well production to be honed and with a final gas lift performed, concluded RtC operations on site.

All operations were live streamed via Live Link, giving the onshore engineering team unparalleled access to live operations.



RESULTS

All operations were successfully completed in a safe and efficient manner:

- RtC completed 34 runs in hole performing over 500,000 running feet with no NPT.
- Perforation operations added 6 new zones to the well.
- Cleanout operations removed 50Te of proppant from the wellbore along with five composite plugs:
 - 35Te whilst reverse circulating
 - 15Te whilst forward circulating
- The gas lift through the RtC brought the well into production.
- The RtC combined with the intelligent LiveLink allowed for vital well data to be captured and maximised the capability and efficiency of each run.

Key to the success of this project was the exceptional teamwork of everyone involved, both offshore and onshore. Their expert knowledge, understanding and design of the project, coupled with their commitment, delivered a flawless operation.