

TRACTOR CONVEYANCE

Technical limit intervention success in Peninsular Malaysia's deepest well

Country: Malaysia
Client: Petronas Carigali Sdn Bhd (PCSB)
Year: 2019
Technologies: **PowerTrac 318**

MAKING INTERVENTION
SMARTER

Multiple run extended reach tractor conveyance success in Peninsula Malaysia's deepest well enables impressive production increase and defines best practice guidelines for future operations.

- 13 tractor runs, total 50km tractoring
- Total 74m new zone interval accessed and perforated
- Production increase from 2 MMscfd to 16 MMscfd

CHALLENGE

The client had drilled and completed an extended reach well back in 2012. During the drilling phase, an attempt to add additional perforations was unsuccessful due to tractor failures in the technically challenging, hostile well environment. The well total depth was 6681m, with a bottom hole temperature of 300F and a deviation of 82 degrees (ERD ratio 2.72). Furthermore, the well had 10% CO₂, 28ppm H₂S and 6.4milligram/cc of mercury. The scope of the intervention to be carried out was to tractor convey perforation guns to target depth to access new production intervals, in turn increasing the production from the well in support of the field sustainability. There had been no intervention done on the well since its completion, adding to the high risk and uncertainty of the operation.



SOLUTION

The use of coiled tubing was not considered an option due to possible coil buckling at these well depths and concern over not being able to provide the depth accuracy required. Instead, the Altus Intervention **PowerTrac 318** tractor was selected to convey the perforation guns to depth. Tractor tool preparation was of paramount importance, which included pre-job heat testing and the use of Gazguard seals. Seamless collaboration and integration among the client and all the service company representatives involved was also critical before and during the operations, with lessons learned from other operations applied. Back-up **PowerTrac** Tractors and additional e-line conveyed mechanical tools were also prepared and mobilized, namely the **PrecisionCollector 350** for contingency cleanout had the tractor conveyance in the well been hindered by well debris.



The operations team: client and service company representatives

RESULTS

The **PowerTrac** 318 tractor was used throughout the operation providing a total tractoring distance of 50 kilometers over two multi-run campaigns, tractoring at times as long as 12 hours due to the extent of the lateral reach of the deviated well section. This enabled the perforation of new zones totaling 74 meters, which resulted in an impressive production increase from the well from 2 MMscfd to 16 MMscfd.

“The team successfully completed a technically challenging job. They demonstrated seamless collaborations and were pushing their technical limits, to complete an additional perforating job and to support ACPE (Accelerated Production Enhancement) plan by Well Intervention & Services for Resak gas sustainability”.

M Shamsuri Mahussin, Well Intervention Engineer, PCSB

The well profile (ERD ratio 2.72)

