

# TuffTRAC Tractor Pushes Stuck Plug to Save USD 300,000 in High-H<sub>2</sub>S and -CO<sub>2</sub> Well

Plug tracted 799 m in extreme sour environment to avoid intervention on coiled tubing, Malaysia

## CHALLENGE

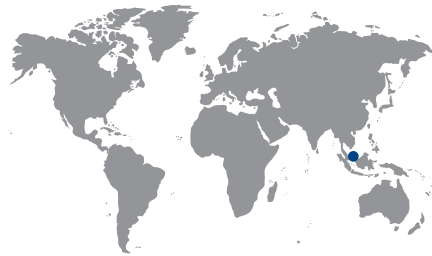
Push a plug stuck in a well with an extreme sour environment: 45-ppm H<sub>2</sub>S and 45% CO<sub>2</sub>.

## SOLUTION

Deploy the TuffTRAC\* cased hole services tractor, using the tool planner to model the necessary force and configure the tractor appropriately.

## RESULTS

Returned the well to production by moving the plug along the inclined well with the TuffTRAC tractor to avoid the time and cost of mobilizing a coiled tubing rig for intervention.



## Stuck plug in hostile conditions

When a third-party plug became stuck at the tubing-retrievable safety valve at 167 m in a Talisman Malaysia Limited offshore well, it was released to be pushed down on braided line. However, the plug could be pushed only to 2,754 m, where the well's inclination prevented further movement on the braided line. Talisman needed a way to continue moving the plug to the intended plugback depth, but the well's dry gas environment was daunting: 45-ppm H<sub>2</sub>S and 45% CO<sub>2</sub>.

## Robust tracting for efficient conveyance

The force and distance requirements to move the plug were modeled with a tool planner to determine the optimal configuration of the modular TuffTRAC cased hole services tractor incorporating three drive sections. Although the TuffTRAC tractor provides reverse tracting and traction control capability in highly deviated wells, it has low power requirements and does not have to be stopped to cool down, even in dry gas wells.

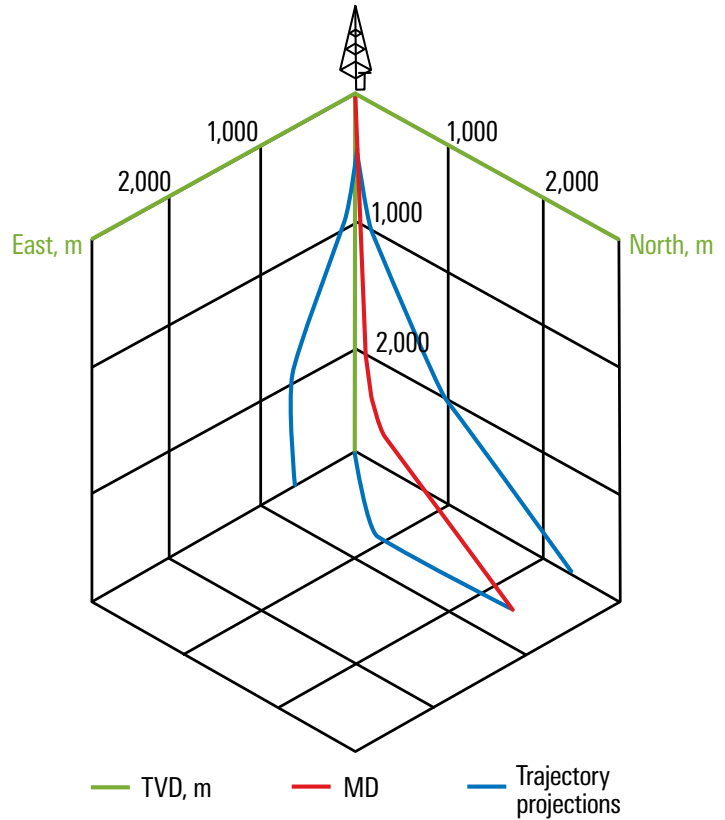
To confirm the low sensitivity of the TuffTRAC tractor to the sour environment, a Schlumberger engineering advisor was consulted. In conjunction with the Schlumberger Houston Conveyance & Surface Equipment Center, a maintenance plan was devised to mitigate any exposure issues that could affect tractor performance.



*The bidirectional, high-speed TuffTRAC tractor uses traction control to continuously monitor and adjust the radial force applied by the tractor arms.*

### Plug tractored and production resumed

The TuffTRAC tractor was rigged in and run to the plug at 2,754 m. The tractor was then engaged and began to push the plug to the required plugback depth. The initial tractoring speed of 1,800 ft/h was soon increased to 2,100 ft/h for the remainder of the descent to 3,553 m. Because the TuffTRAC tractor was able to move and install the plug where it belonged in the high-H<sub>2</sub>S and -CO<sub>2</sub> well, Talisman saved USD 300,000 by not having to deploy a coiled tubing rig to conduct an intervention.



*The TuffTRAC tractor easily moved the plug along 799 m in the inclined lower section of the well, where braided line could not push.*

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