

HDC Mk II™

The Solution to Differentially Stuck Pipe

Case History

June 2023

Operator: Major Operator in Thailand
Location: Offshore Thailand
Application: Differentially Stuck BHA in 6-1/8" Reservoir Section Mud System

The Problem:

A kick was encountered while MPD drilling at 3709 mMD at a 54.11° angle. The drilling fluid was an SBM with an 80/20 OWR and HTHP fluid loss of 2.0 cc. Drilling was halted while the well was stabilized, and the mud weight increased from 1.77 SG to 1.87 SG. While increasing the mud weight the pipe became differentially stuck. Over the next four days the well was stabilized, the string was jarred, maximum torque applied, applying the full string weight down with no success.

Stuck pipe is the largest cause of NPT in drilling worldwide.

The Solution:

After 4 days of stabilizing the well, 18.9 bbls of neat **HDC Mk II™** was spotted around the BHA to dissolve the mud cake to equalize pressures and free the pipe.

The Result:

The drill string was worked to free the BHA with torque and jarring operations for an hour. Within one hour the torque decreased and the 4" drill string could be rotated with the BHA free. The **HDC Mk II™** was circulated out of hole, mud conditioned and hole circulated clean, while continuously rotating and reciprocating the drill string.

The IADC rule of thumb is that if you do not have a chemical solution on board and haven't used it within 24 hours, the odds of freeing the pipe are less than 10%. After 4 days of being stuck, **HDC Mk II™** freed the pipe in one hour.

Benefits of Using HDC Mk II™

Current pipe release agents (PRA) are all designed to work in just water-based fluids, not SBM/OBM's. Chelants or chelating agents are emerging technology in the oil industry. The off-the-shelf chelants are very slow and of a low capacity to be reliably effective. **HDC Mk II™** was developed over 4 years to improve on both of those limitations. **HDC Mk II™** is a mix of chelating agents with catalysts and reaction accelerators over 10 times faster and 4-6 times the capacity of off-the-shelf chelating agents. **HDC Mk II™** dissolves **BARITE**, **calcium carbonate** and **sulphate scales** (magnesium, strontium, calcium, and barium sulphate) and some drilling fluid additives,

HDC Mk II™ is the only pipe release agent (PRA) designed to work in SBM/OBM's



**After 6 hours soaking at 90°C, the SBM filter cake is 96% dissolved.
Also works in WBM**