CASE STUDY

North Sea

Precision Sidetrack Execution in 10” Casing Using the TrackMaster Select™ System

Wellbore Integrity Solutions (WIS) delivered a high quality, in gauge window through a challenging casing grade and highly abrasive chalk formation in a single trip

A major North Sea operator engaged the WIS UK team to deliver a controlled sidetrack from 10” OD, 73.9 lb/ft VM140CY high-yield casing following multiple unsuccessful sidetrack attempts by incumbent vendors. The mechanical properties of the casing and the formation profile made it clear that the TrackMaster Select™ system with hybrid lead mill was the optimal solution.

The TrackMaster Select hybrid mill is specifically engineered for environments where casing strength and formation variability demand both durability and cutting efficiency. The mill design incorporates opposing PDC and tungsten carbide insert (TCI) structures, delivering a balanced cutting response and extended life.

For this application, the client challenged WIS with a specific setting zone for the whipstock, with a fish from a previous run in the well, spaced one foot below the setting depth of the anchor. This was the last available area for sidetracking below the minimum reservoir abandonment depth. Failure to initiate the sidetrack at this depth would have meant the only remaining solution would be to sidetrack the well shallow. This would have involved abandoning the well, cutting and pulling 2x casing strings and re-drilling these sections to reach the same depth – operations which had not been planned or budgeted for and therefore would not have been in a position to execute at that time.

The team first ran a drift assembly to check for restrictions or hazards. The DPS packer was chosen with its ability to be hydraulically set, ensuring a reliable seal below the window and controlled whipstock setting. After confirming the tri-mill was within gauge tolerance, the operator deployed the drilling BHA, which passed cleanly through the window and started drilling without needing a secondary dress run, proving the window’s precision and quality.

The operation was completed safely and efficiently. The TrackMaster Select system delivered a high-quality, first-run window exit in challenging conditions. The operator achieved an in-gauge 8-1/2” sidetrack window and rathole, allowing the drilling program to advance.

CHALLENGE

- Develop and execute a sidetrack for slot recovery in high-strength casing after all competitor solutions failed
- Operate in a near-vertical wellbore with a 3° inclination at a depth of 13,995 ft
- Complete the casing exit in a single trip using 10” 73.9 lb/ft VM140CY-grade casing

SOLUTION

- Deployed a 9-5/8” TrackMaster Select whipstock, engineered to match the size and weight requirements of the 10” casing
- Used a hybrid mill head equipped with TCI and PDC inserts to improve durability while milling VM140CY casing and chalk formation
- Maintained continuous monitoring of parameters to ensure accurate and controlled milling of the window

RESULT

- Successfully created a 16-foot window and a 20-foot rathole in one trip utilizing the 8-1/2” hybrid mill
- RSS BHA passed through the window smoothly without any issues
- Both the window and rathole remained within gauge throughout the operation

WIS-MKT-309