

Case Study – Qatar

Delivering Precision Low-Side Exits: Single-Run Success in 9-5/8" Cased-Hole Sidetracking

TrackMaster Select™ enables a full-gauge 8-1/2" low-side exit in one run, supporting a complex offshore development strategy in Qatar

As part of a complex offshore field development strategy in Qatar, the operator required a low-side sidetrack to drill a directional lateral to target depth. This presented a significant technical challenge due to the need to initiate the sidetrack within 9-5/8", 47 ppf, L-80 grade casing at a well inclination of 38 degrees.

The operator engaged Wellbore Integrity Solutions to design and execute a reliable low-side cased-hole exit. The engineering team conducted a comprehensive feasibility assessment and selected the 9-5/8" TrackMaster Select cased-hole whipstock system to meet the operational requirements.

Advanced modeling using proprietary WhipSim® software enabled detailed analysis of well geometry and casing design. This simulation determined the optimal full-gauge window length and incorporated enhanced whipstock features to mitigate operational risks—most notably, eliminating the risk of intersecting casing collars while milling within the 9-5/8" casing string.

The 9-5/8" TrackMaster Select system, paired with an 8-1/2" integral tri-mill, successfully delivered a 14-ft low-side exit window in a single milling run over 9 hours. The assembly then drilled a 20-ft sidetrack into formation in an additional 5 hours, demonstrating both efficiency and precision. Post-milling inspection confirmed that the tri-mill dull condition was within acceptable gauge loss limits.

The subsequent rotary steerable system passed smoothly through the milled window and continued drilling the sidetrack section without requiring any additional cased hole window elongation runs. This eliminated non-productive time and reduced overall operational complexity. The successful execution of this single-run, full-gauge low-side exit enabled the operator to achieve its challenging sidetrack objectives efficiently and confidently, supporting the broader offshore development strategy.

CHALLENGE

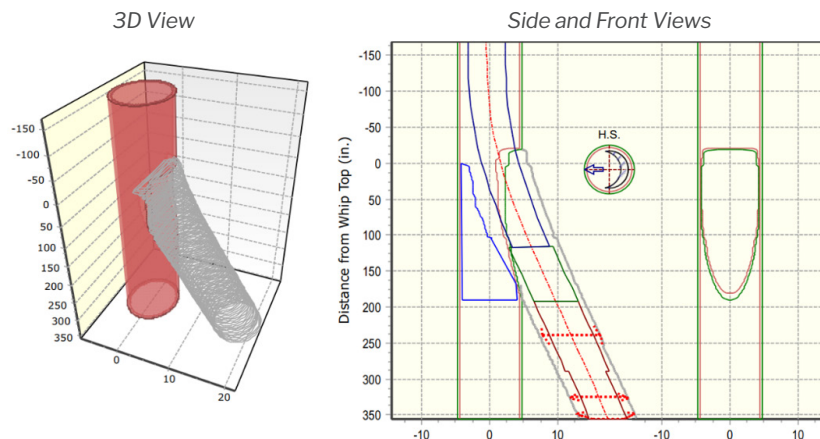
- Execute a cased hole low-side sidetrack in 9-5/8", 47 ppf, L-80 casing at 38° inclination
- Enable directional drilling of a lateral within a complex offshore field development

SOLUTION

- Deployed 9-5/8" TrackMaster Select™ cased-hole whipstock system
- Utilized WhipSim® modeling to optimize window length and placement
- Integrated enhanced whipstock features to mitigate casing collar intersection risk
- Executed single-run milling using 8-1/2" integral tri-mill

RESULT

- Successfully milled 14-ft full-gauge low-side exit window in 9 hours (single run)
- Drilled 20-ft sidetrack into formation in 5 hours
- Achieved minimal tool wear with acceptable mill dull grades
- Enabled smooth passage of RSS with no additional window elongation required



WhipSim® analysis for low side exit sidetrack operations.