

CASE STUDY- 2020- NORTH SEA

X-it® Whipstock Successfully Performed Side-Track in Challenging Casing in One Run Saving Substantial Rig Time

Challenge

A Major Operator in the North Sea challenged Archer to perform a sidetrack in a 9 7/8" 66,4# Casing with a wall thickness of 0,661".

- Heavy wall casing
- S125 S grade
- Each casing joint had 2x SDH Centralizers installed.

This implied that one and possibly both centralizers had to be milled. No CCL log was performed to verify casing couplings and centralizer positions in relation to the whipstock setting depth. In addition the Operator had never performed a casing exit in 9 7/8" - 66,4#-SM125S in the past, and the industry experience in similar casing grades was lacking.

Casing grade of SM125S
2x SDH Centralizers
9 7/8" Window and 9m rathole
No gauge loss on mills

Solution

9 7/8" 2° X-it® Whipstock with 8 1/2" OD Single Trip Mill and 8 1/2" OD Watermelon Mill spaced out above with 5" flexible joint. 2nd generation mills utilized to ensure optimized milling performance. Optimized window placement to minimize risk to mill more than one centralizer.

Window milled in: 5,75 hours

Result

The milling operation was executed flawlessly with no abnormal milling parameters despite the challenging casing grade and wall thickness. Efficient window milling was achieved requiring 5,75 hours milling time and all 8 1/2" mills came out full gauge. The subsequent 8 1/2" RSS drilling assembly passed through the window and drilled ahead the planned 8 1/2" section. Also the 7" liner was successfully run through the window and landed without issues at target depth (TD).

Total operational time: 11 hours



Picture of Mills out of hole



Single Trip Mill



Watermelon Mill