

CASE STUDY- 2021- GERMANY

X-it® Whipstock Successfully Expedites Large-Bore, Dual String Casing Exit in Geothermal well

Challenge

A client in Continental Europe required a clean, full-gauge window and rathole for sidetracking with a 8 ½” directional drilling assembly in a geothermal well. The exit would be through dual strings of 13 ¾” & 18 ¾” casing, at 607 mMD. This was an old well with limited well information, no casing tallies and uncertain cement conditions on the outside of the casing.

Solution

The 13 ¾” X-it® cased hole whipstock mechanical system was run with a 12 ¼” Single Trip Tri-mill spaced out with an additional 12 ¼” Utility Mill configuration. There was no requirement to orient the whipstock prior to setting.

The whipstock assembly was then run, and anchored. The anchor was triggered on top of a cement plug. The single trip mill was released from the whipstock and window milling commenced with a combination of using rig top drive and a downhole mud motor due to limitations of the drilling rig. The window and rathole were successfully milled.

The mills were found to be within acceptable gauge loss tolerance, and in excellent condition when back on surface. The subsequent 8 ½” OD drilling assembly passed the through the window and drilled ahead the planned 8 ½” section.



Result

The X-it® System enabled the client to lock the whipstock assembly against the casing wall during milling, drilling, and completion. Ensuring that the whipstock did not impact operations. A 12 ¼” window was provided at 616 mMD, and the exemplary execution of the dual string-exit solution enabled the client to return to drilling operation and to avoid skidding the rig and re-drilling the well.

This success was a result of teamwork between Archer and 3rd party Fangmann Energy Services.

