

Enlarging Borehole for Splitter-Well Technique Offshore the UK

54-in wellbore allows large conductor pipe and two casing strings in one platform slot

CHALLENGE

Run 46-in-diameter conductor to achieve splitter-well technique on space-constrained platform.

SOLUTION

Use Schlumberger drilling-type underreamer (DTU) to build a 54-in wellbore.

RESULTS

Successfully drilled 54-in wellbore. Set 46-in conductor pipe and split platform slot with two casing strings.

After an in-depth study, the team chose to apply the 54-in Schlumberger DTU, which features a three arm design that allows the pilot hole size to be increased up to 75%.



Large borehole needed for splitter wells

Working offshore the UK, an operator began a fieldwide enhanced oil recovery (EOR) project to maximize recovered hydrocarbons. The project required more boreholes to be drilled from the platform, but platform space constraints limited the number of new slots that could be constructed. The operator wanted to implement an innovative splitter-wells technique, which allows two wells to be drilled from one platform slot. By sharing wellhead technology, two wells were to target a bottomhole location approximately 2½ mi southwest of the drilling production platform. Achieving this feat, however, meant setting a large, 46-in-diameter conductor into an even larger wellbore.

Borehole enlargement technology applied to build a 54-in wellbore

To facilitate efficiently building a large wellbore, the operator consulted Schlumberger borehole enlargement experts. After an in-depth study, the team chose to apply the 54-in Schlumberger DTU, which features a three-arm design that allows the pilot hole size to be increased up to 75%. The three retractable cutting arms are opened and held in position by continuous hydraulic pressure.

For the UK splitter-well project, the 54-in Schlumberger DTU was run using a 26-in pilot hole held at 3° inclined tangent from the platform.

Splitter wells drilled from one platform slot

A 54-in wellbore was successfully drilled in three stages for this project. The operator easily set the 46-in conductor pipe in the slot—and then split the slot with two 18⅝-in casing strings using conductor-sharing wellhead equipment. The Schlumberger DTU enlarged this borehole to 54-in, resulting in the project's first splitter wells.



The Schlumberger DTU, with three retractable cutting arms.