

Case Study: Set Plug to Stim Reservoir Zone with Acid

Challenge

On the Norwegian Continental Shelf, a major operator had requirement for a plug to isolate the 4 lowermost zones. The operator was planning to frack a new zone to enhance production. Hydrochloric acid with a 15% concentration was to be used to fracture the target reservoir at a fracture pressure of 10,500psi. Due to the high restriction included in the completion design the plug was required to pass this to reach the desired setting depth.

Solution

A 360-500 HPHT plug was chosen, the design of this plug allowed the plug to comfortably access the liner, passing the small restriction within the wellbore. Once at the required setting depth the Electronic Setting Tool (EST) was initiated from surface to set the ISO 14310 VO qualified Retrieval Bridge Plug. Hydrochloric Acid was then pumped down on top of the plug and across the open area of the reservoir where the fracture was required. After a successful frack operation wireline recovered the HPHT bridge plug back to surface.

Date:

March 2018

Region/Field:

North Sea

Key Capabilities:

- High pressure
- High Temperature
- Acid resistant
- Small OD

Value Created

By using the 360-500 HPHT Retrieval Bridge Plug the new zone within the well could successfully be fractured at a frack pressure that caused a 10,500psi differential across the set barrier. Only by using the 360-500 HPHT, deployed on wireline could this be done successfully and posing no risks to the zones beneath. The operator had now doubled the production from the well, rewarding them with a big prize after a relatively simple and low-cost wireline operation.

