

Integrated abandonment solution saved 3 days, cut costs

An operator working in the North Sea was abandoning one of their suspended wells, which required removing annuli well fluids and placing a final surface cement plug across all annuli prior to cutting and removing the wellhead.

After being contacted for a cost-effective solution to perform these plug and abandonment operations, Baker Hughes, a GE company (BHGE), proposed the **wellhead abandonment straddle packer (WASP) system**, followed by an abrasive cutting tool to complete the operation from a light well intervention vessel (LWIV). This would provide the operator with large financial savings compared to a rig-based solution.

Collaborative success

This BHGE solution required an integrated approach, pulling team members from multiple disciplines including wellbore intervention, tubing-conveyed perforating, and cementing. BHGE project managers lead the operation, working closely with the LWIV and wellhead cutting third-party vendors to provide an integrated solution. Early customer engagement and

planning was crucial to the success of the operation. BHGE collaborated with all parties to improve efficiency and reduce risks by limiting operational time at the well location.

After the well was prepared for entry, the operator ran a scraper and dummy perforating gun assembly to confirm the packer setting depths were clear of debris and the lower perforating guns could reach the targeted depth.

The WASP system was then run downhole and integrity tested prior to the guns being fired into the A-annulus. Once circulation had been established, the annulus fluids were circulated to the vessel until clean, and the lower guns were dropped downhole. A balanced cement plug of 800 ft (267 m) was pumped into both the A-annulus and primary casing to provide a secure barrier, blocking fluids from traveling up the wellbore.

The WASP system was retrieved to surface and abrasive cutting equipment was deployed to the seabed to perform the wellhead cutting operation. After a cut was confirmed, the vessel heave-compensated crane removed the wellhead

Challenges

- Insufficient well history
- No recent interventions on the well
- Multiple services and providers required on a tight project timeline

Results

- Delivered an integrated well abandonment solution that adhered to UK oil and gas guidelines
- Completed the operation 3 days ahead of the 8-day schedule
- Saved time with the WASP single-trip system
- Saved 30% on daily rates by using an LWIV instead of a rig
- Reduced footprint and costs by sharing equipment across vendor teams

to surface and the LWIV returned to quay to demobilize equipment.

By delivering a fully-integrated solution, BHGE helped the operator complete all required operations within 5 days, which was 3 days ahead of schedule. The operator also gained 30% savings in daily rates by utilizing an LWIV instead of a rig.



The WASP system on the deck of the LWIV prior to running downhole

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