

A Customized PullMaster System with Large Scale Deflection Spear applied in a North Sea Conductor Recovery Operation

The Wellbore Integrity Solutions (WIS) PullMaster System was re-configured and deployed to generate high separation forces between 20 inch and 30 inch strings.

CHALLENGE

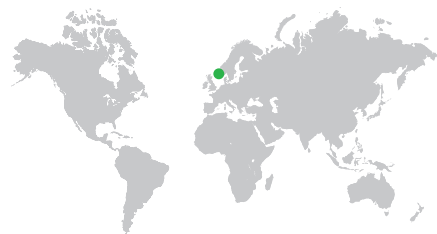
In an abandonment project, the 20 inch x 30 inch casings were stuck together. Conventional methods to pull the 20 inch x 30 inch together could not be used due to integrity and condition concerns with the original 30 inch conductor connectors used. A rapid solution was required within 3 weeks of initial inquiry.

SOLUTION

WIS proposed an engineered solution, that included the PullMaster system, a 20 inch large scale deflection spear with a custom fabricated C-Plate and billet stabilizer. This system provided a load rating of > 1.2 million lbs. Several design reviews and rigorous risk assessments ensured a flawless job execution.

RESULTS

- The customized solution was delivered quickly to the customer, on time.
- The system functioned as planned.
- During operation, over 700,000 lbf was applied to the casings in separation attempts.
- This solution has now been incorporated into other best practices when similar scenarios are encountered.



A unique engineering solution, including a PullMaster, Spear and a C-Plate to improve operational efficiency.

A customer in the North Sea required a custom solution for a conductor recovery operation, where the 20 inch and 30 inch casing strings were stuck together. Concerns over the integrity and condition of the original 30 inch conductor connectors also prevented standard practices from being used in this case. The local WIS team worked closely with the customer to provide a solution in a short time-frame.

The WIS PullMaster platform offered an ideal Jacking unit between the 20 inch and 30 inch casings when mounted on a C-plate, as it provided the required pull force in attempts to separate the two casing strings. The C-Plate was designed to act as a landing point on the 30 inch casing and thereby ensured that a high pull force could be applied between the two stuck casings. Incorporating the large scale deflection spear in the BHA provided the flexibility to space-out as required.

WIS provides a rapid response.

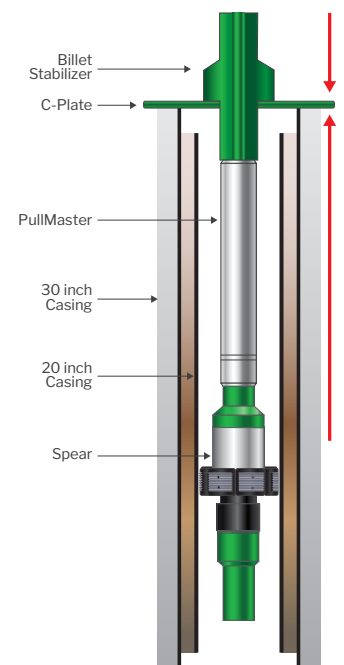
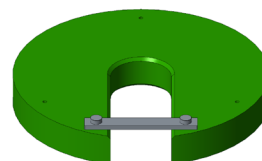
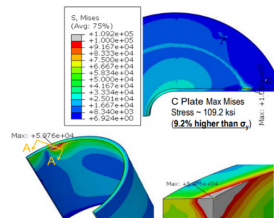
The ability to respond promptly for our customer was demonstrated on this project. In a matter of a few weeks from the initial customer inquiry, a working solution was provided.

The solution development required close collaboration between the customer, the local WIS operational team and WIS Engineering. Design engineering, inclusive of finite element analysis, was conducted. The BHA configuration was optimized and rigorous operational Risk Assessments ensured a flawless job execution.

(top left) FEA Analysis on complete setup of operation

(bottom left) C-Plate

(right) BHA illustration. Arrows represent the forces acting on the BHA components



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