

Well Decommissioning Project Offshore of East Kalimantan



Project Overview

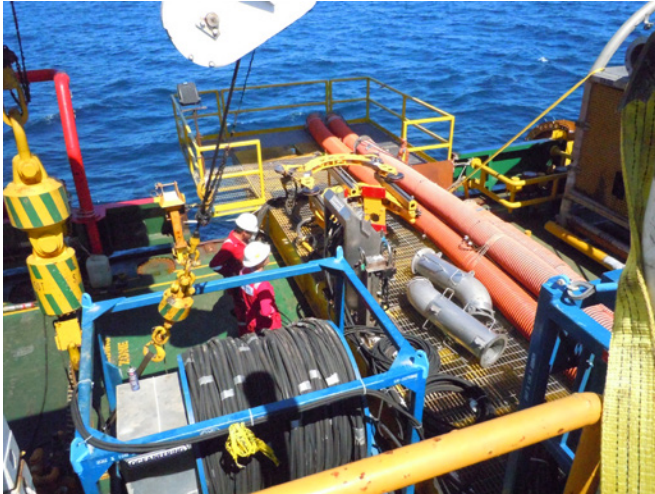
In early 2016, Oceaneering completed a five-well decommissioning project in Kalimantan, Indonesia. The project scope included project management, tooling, and personnel, as well as third-party hot-tapping hardware that was provided as an add-on service to the client. The project's location and the importation of equipment required significant planning, vendor management, and mobilization efforts.

The Oceaneering Solution

The customer wanted a one-stop solution for the entire five-well decommissioning scope. To meet this expectation, Oceaneering outsourced the hot-tapping hardware to a third-party vendor and held numerous technical meetings to ensure that all equipment being used aligned with the project's specific requirements. The project team developed a detailed plan to coordinate the delivery of globally dispersed resources to Singapore ahead of final mobilization to the site.

Execution Plan

The original execution plan included loading equipment onto a multi-service vessel (MSV) and deploying this vessel to another location to collect additional equipment before proceeding to the field. Once at the field, the wellheads were to be flushed, the dredging completed, hot-tapping applications carried out, and the wellheads cut and decommissioned.



An MSV was deployed to the field to complete flushing of the wells. A supply vessel was used to collect equipment from two sites and the MSV returned to port to collect equipment. Once all equipment was on site, the dredging, hot tapping, and cutting of the wells were completed in sequence.

The project required exceptional organization of materials and multiple mobilizations. Original shipments started transit in late November and were loaded onto the MSV at the start of 2016. On January 5, 2016, mobilization to the field allowed the subsequent scope of work to be completed and all project activities were completed on February 11, five weeks later.

Challenges

The project faced multiple challenges. While this initially appeared to be a seemingly straightforward wellhead removal campaign, unforeseen circumstances demanded additional planning and

effort during the project's execution. There was a variance in deck space allocation upon which the original plans had been based and a large amount of unexpected cement was discovered encasing two of the wellheads. Additionally, the free-issued hot-tapping equipment was not familiar to our team of divers.



Oceaneering personnel were quick to devise a safe and modified solution to address the reduced amount of deck space they were provided. The client agreed that equipment previously earmarked as backup equipment did not need to be present on the vessel for the full duration of the project. Instead, the backup equipment was left onshore and was ready for mobilization, if and when required.

A pre-project survey did not reveal the cement encasement around two of the wellheads. The cement was found below the mudline; it was not

detectable by the survey, and was not considered in our scope of work. The project team developed a solution to clear the cement to enable cutting, as the cement prevented the tooling from being installed on the casing. The remotely operated vehicle (ROV) on board was unable to handle jackhammer tooling and could not remove the cement. Divers were deployed, and they attempted to use a small chipping hammer to break the cement, but this proved futile. Our chipping hammer, which had been allocated for the multi-string hot-tapping scope, tried to release the cement, but it was also damaged after a short time.

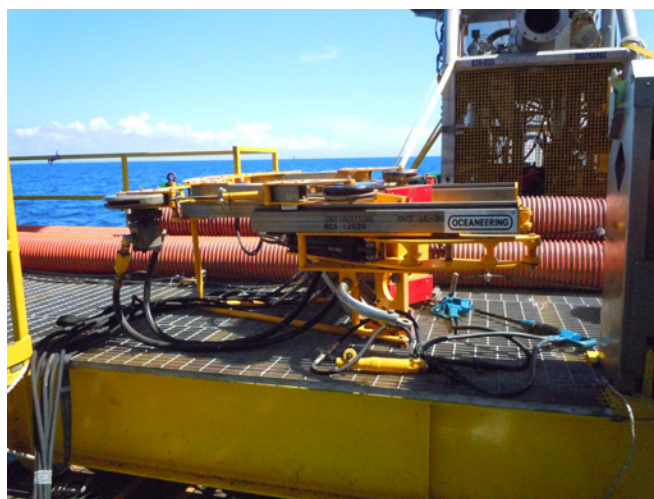


With onboard options exhausted, the client sourced a subsea concrete breaker while analyzing other plausible options. The client was able to use the subsea concrete breaker to remove the concrete.

There was a last-minute request from the diving team from the MSV on the hot-tapping equipment. System integration testing (SIT) was carried out on the equipment to familiarize the diving team with the hot-tapping equipment before the equipment was mobilized, and no concerns were raised.

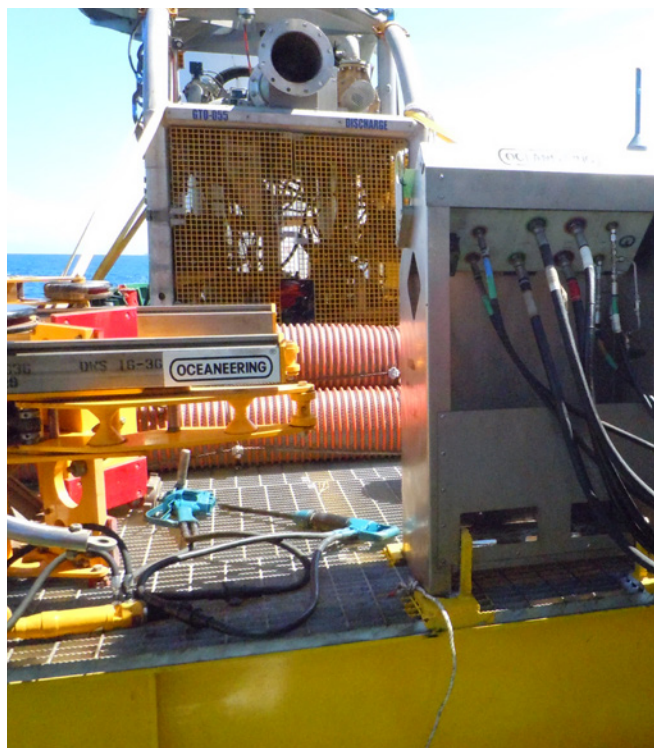
The requirement for having a double block and bleed on the hot-tapping equipment is mandatory before any pressure can be released subsea. Oceaneering immediately looked into the concern with our vendor and quickly came up with a concept that was presented to the client and approved. The equipment was quickly sourced,

tested, and hand-carried to the project site by the technicians. The project schedule suffered no delays and there were no additional costs.



Results

This was the first project where the Oceaneering 12-inch (30.5-cm) dredge was used in Asia. The project was completed without incident, and it demonstrated best practices in identifying solutions to challenges.





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