MATURE FIELDS

CASE STUDY

Collaborative Integrated Services Solution Saves Time and Cost on Major North Sea P&A Project

UK TEAM COMPLETES 13 WELL P&A PROJECT $36M UNDER BUDGET AND 126 DAYS AHEAD OF SCHEDULE

UK CONTINENTAL SHELF

CHALLENGES

- Execute safe and efficient P&A of 13 platform wells
- Reduce P&A costs through optimization in personnel–limited POB on board during decommissioning operations
- Adapt to challenges of unknown well conditions

SOLUTION

- Halliburton Project Management to act as lead P&A contractor, managing all Halliburton subcontractor and third-party services
- Conduct offline simultaneous intervention operations to establish well access and injectivity parameters, and complete plug and lubricate or well suspension operations
- Maximize utilization of multi-skilled and cross-trained crews to execute all services
- Provide innovative solution that allowed offline simultaneous intervention operations to be completed on 13-well platform

RESULTS

- Completed project without any lost-time incidents
- Delivered 13-well P&A project 126 days ahead of schedule, saving approximately USD 36 million

OVERVIEW

SAVED
126 DAYS
AND APPROXIMATELY
USD 36 MILLON

Halliburton recently completed a complex plug and abandonment (P&A) project in a mature field located in the area of the UK Continental Shelf (UKCS). After deeming the field no longer economically viable to produce, production was stopped on January 9, 2015.

In January 2017, Halliburton was awarded a contract as lead contractor to provide all P&A services for 13 platform wells.

The well P&A scope was split into three distinct phases. Phase 1, comprising a 13-well platform, was conducted offline where possible, and consisted of performing wireline intervention and fluid pumping operations to confirm well access and injectivity parameters, setting and testing cement retaining bridge plugs for reservoir isolation barriers, displacing wellbore to kill-weight brine, cutting completion tubulars, and installing retrievable suspension barriers for subsequent X-mass tree removal. Phase 2 consisted of all operations required to allow the installation and testing of all reservoir and overburden cement barriers, along with the removal of all required tubulars and control lines. Phase 3 consisted of the removal of multi-string conductor casings and wellheads. This phased approach minimized equipment rental costs, and allowed equipment and personnel levels to be optimized for each phase.

OPTIMIZE AND ADAPT TO SAVE COST

P & A operations can be unpredictable and costly. The operator had no operating income from the asset, so cost efficiencies were imperative. The selection and deployment method for the downhole tools in this P&A campaign had significant impact on overall P&A costs. The ability to carry out the investigation, plugging, and lubricate operations of Phase 1 in preparation for the X-mass tree removal resulted in project cost savings of USD 11.6 million.

INNOVATIVE SOLUTION, MULTI-SKILLED CREW EXPERIENCE AND EFFECTIVE PROJECT MANAGEMENT DELIVERS RESULTS

Halliburton provided services from its numerous product service lines (PSLs), subcontractors, and third parties to safely and efficiently complete the P&A of 13 platform wells.

Multi-skilled crews were able to carry out all required services, resulting in significant efficiency, time, and cost improvements. Together with the customer, HPM team evaluated the potential well programs and the timing associated with each stage of operation execution. A specific KPI scheme was agreed to be implemented including a challenging target for execution timing.

Capturing lessons learned and opportunities for improvement, and leveraging experience from previous projects, helped foster an ethos of on continuous improvement.

Tailored cross-trained crews delivered the following services:

- Slickline, electric line, digital slickline, tubing-conveyed perforating (TCP), and well integrity testing
- Wellbore cleanup, fluids engineering, and disposal well management
- Cementing, fluid pumping, pressure testing, and deployment of service tools
- Retrievable bridge plugs, and remote open close technology (ROCT)

Contributing to the overall success of the project were innovative new technologies and processes, including:

- The first-ever deployment in Europe of the Halliburton RELAY™ digital slickline system increased efficiency by reducing the number of slickline runs required.
- Innovative and purpose-built handling equipment allowed the deployment of intervention equipment for offline simultaneous intervention operations without access to a crane.
- A casing cut-and-test procedure was developed to prove annular isolation, thus removing the requirement to section mill if the test was successful, and providing potential savings of four days.

PROJECT TEAM DELIVERS RESULTS 126 DAYS AHEAD OF SCHEDULE

Appointing Halliburton as the lead contractor to coordinate and manage this project vastly simplified the customer's supply chain management process and allowed the client's team to streamline its processes and to increase operational efficiencies. The Halliburton team's ability to work closely with the client and to tailor crews and equipment packages in order to meet the specific and evolving requirements of the project and to implement new technologies were major contributing factors to the project's overall success. The project was delivered without any lost-time incidents, and was completed 126 days ahead of schedule, saving the operator approximately USD 36 million.

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