

2018-Q3 Well Cementation and Wellhead Removal Campaign (Rig Chase)

Oceaneering successfully completes Phase 2 of its plug and abandonment and multi-client well severance campaign in the North Sea

Project Overview

Oceaneering was contracted by two major North Sea operators to plan and execute an eight-well plug and abandonment (P&A) and well severance campaign in the Norwegian and Danish sectors of the North Sea during Q3 2018.

The project comprised of a total of eight subsea wells and the scope of work was broken down as follows:

Scope of work	Wells
Well Severance only	6
Well cementation (environmental plug) & subsequent severance	1
Well Inspection, testing and TA Cap removal (completed during Phase 1* Operations)	1

* For more information on the successful Phase 1 operations, please refer to the '2018-Q3 Well Plug and Abandonment Campaign' case study.

Due to the wide range of equipment required for the different scopes of work, the campaign was divided into two distinct phases, thus reducing cost for the operators without

compromising operational effectiveness, efficiency or safety. The project's second phase focused on well cementation, well severance, wellhead recovery, debris clearance and seabed clearance surveys for seven wells offshore Denmark and Norway.



The Oceaneering Solution

Beyond the normal scope of supply, Oceaneering provided a unique solution to set an environmental cement plug in one of the wells. To prevent cement slumping inside the well, it is normal practice to set a retainer inside the wellbore (typically a mechanical plugging device such as a bridge plug) at the lowest elevation the cement plug will be set. However, this method can be both complex to run and expensive due to the one-time use of the component, additional equipment requirements and need for additional personnel offshore.

To avoid such issues, Oceaneering's team of decommissioning specialists deployed an existing cement support tool (CST) in a new manner. The CST was placed inside a deployment stinger that was crossed over to a deployment hose. The assembly was run down to setting depth and the team pumped water down the hose and into the stinger, which in turn pumped out the CST tool, allowing it to open and set at the required depth. The tool was simple to run from the dynamically positioned vessel, required no additional equipment or personnel offshore, and was effective in operation, allowing the environmental cement plug to be set in the well.

The second phase was successfully completed without incident in early October 2018, with all project HSE, operational and KPI objectives achieved. Oceaneering accomplished the work without the use of divers, guide wires or explosives, maintaining its 100% success rate for severing wellheads.

Scope of Supply

- » Integrated project team and services (single point of contact)
- » Well data review
- » Well-specific work programs
- » Identifying correct running tools, physically latching tools onto client's equipment
- » Vessel Charter (*Olympic Zeus*) and Magnum® work class ROV
- » Project management of operator, vessel, QHSE, emergency response teams
- » Hazard Identification and Risk Assessment (HIRA)
- » Offshore project management
- » P&A tooling (cement support tooling and cementing spread)
- » Wellhead severance tooling (Oceaneering® Abrasive Water Jet Cutting suite of tools)
- » Net guard structure recovery
- » Seabed clearance and survey
- » Wellhead disposal
- » End of well reporting



Key Performance Indicators (KPIs):

No harm to people (zero LTIs)	0
No high potential incidents (zero HiPos)	0
No harm to the environment (zero spills)	0
No falling objects	0

Operational Metrics (Phase-2):

Quayside (mob, port call, demob)	2,9 days
Transit	4,5 days
On Location	5,2 days
NPT	0.2 days

Well Severance Summary List

Well Location	Water Depth	Well Category	Cut Depth (BML)	Wellhead System	Casing Program at Cut Depth
Norway	276 ft / 84 m	SS 0-0-1 (Cat 1)	12.8 ft / 3.9 m	SG-6, H4	30 in x 20 in x 13- $\frac{1}{2}$ in x 9- $\frac{1}{2}$ in
Norway	276 ft / 84 m	SS 0-0-1 (Cat 1)	7.6 ft / 2.3 m	SG-6, H4	30 in x 20 in x 13- $\frac{1}{2}$ in x 9- $\frac{1}{2}$ in
Norway	276 ft / 84 m	SS 0-0-1 (Cat 1)	12.8 ft / 3.9 m	SG-6, H4	30 in x 18- $\frac{1}{2}$ in x 9- $\frac{1}{2}$ in
Denmark	130 ft / 40 m	SS 0-1-1 (Cat 2.1)	14.8 ft / 4.5 m	MS-15	30 in x 20 in x 13- $\frac{1}{2}$ in
Denmark	216 ft / 66 m	SS 0-0-1 (Cat 1)	14.8 ft / 4.5 m	SG-1, H4	30 in x 20 in x 13- $\frac{1}{2}$ in x 9- $\frac{1}{2}$ in x 7 in
Denmark	146 ft / 45 m	SS 0-0-1 (Cat 1)	9.5 ft / 2.9 m	DJ MLS	36 in (conductor only)
Denmark	146 ft / 45 m	SS 0-0-1 (Cat 1)	4.9 ft / 1.5 m	DJ MLS	36 in (conductor only)



© 2019 Oceaneering International, Inc. All rights reserved.



oceaneering.com