



EFFICIENT TOP-UP OF FAILED PRIMARY CEMENT JOB, FOLLOWING OUR SYSTEM DIAGNOSTICS

CLIENT:

NORTH SEA OPERATOR

PRODUCT:

CEMENT TOP-UP SYSTEM

Aquaterra Energy were contracted by a North Sea Operator to supply and run a conductor Cement Top-Up System to help ensure cement integrity to the required cement level during their drilling program, offshore Denmark.



CASE STUDY/ CEMENT TOP-UP SYSTEM

BACKGROUND The main focus of the requirement was to ensure that the system downhole components could be installed and run from the jack-up rig to mudline, by passing through the several 32" ID guides in the platform jacket. A total distance of approx. 115m from the install area had to be covered to ensure that cement could be pumped into the annulus.

SOLUTION Aquaterra Energy visited the rig whilst it was in dry dock to establish how best to install and run the system. From this visit it was clear the hose spooler should be sited on the weather deck and the install of the downhole hard pipe also be carried out from this point. From a safety perspective, this would ensure that personnel were kept on the rig floor and would also provide an ideal routing for the hoses back to the cement pump house, for top-up operations.

We delivered a system for a series of wells that were being drilled by the client, each time successfully topping-up cement after the system diagnostics had proved the primary cement job had not reached the required point of fixity.

The key issue surrounding the cement top up was the radial restriction created between the 26" conductor and the 32" ID guides that is ran through. With approximately a 75mm radial gap available between the conductor and guide, during the design phase it was deemed that a downhole system height profile of circa 50mm was adequate, which ultimately proved correct after several successful operations for our client.

In addition, we provided two offshore personnel for each operation and received high praise for the efficient installation that took place, whilst working online and further more whilst running in hole, as we ensured minimum disruption to the client's running procedure.

The system was provided as part of our Aquaterra Express services - offshore off the shelf tools and equipment for immediate lease.



RESULTS The diagnostic checks carried out using Aquaterra Energy's cement top up system provided the facility to quickly confirm where the top of cement lay. In this case whilst circulating seawater through Aquaterra Energy's top up system, the operator was able to prove that the top of cement lay below the required level, which was likely through initial cement losses to the formation. Once this was established, cement was promptly circulated to top up the casing/formation annular gap until returns were seen at mudline via the ROV. The system quickly gave 100% confidence to our client that the conductor was structurally supported and had been installed as per the requirement of the analysis.