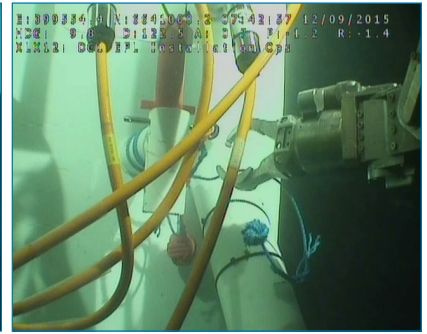
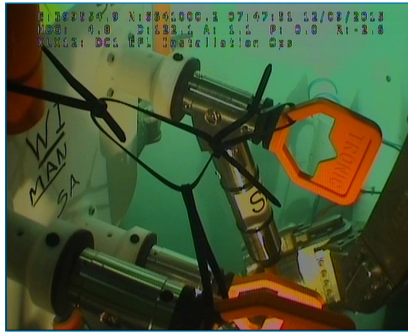
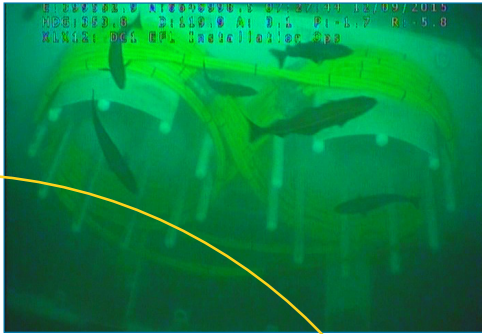


CASE STUDY

Enquest Kraken Project - Hydraulic and Electrical Flying Lead Solutions



Background

Kraken is a large heavy oil accumulation in the UK North Sea, located in the East Shetland basin.

One of the largest current development projects in the UK North Sea, Kraken has an anticipated production life of up to 25 years and first oil is targeted in 2017.

It is a phased FPSO development, with a total of 14 horizontal producers and 11 horizontal water injectors. Kraken South is being developed first via four drill centres tied back to the FPSO.

Customer Requirement

The operator, Enquest, approached Hydrasun with a request for the manufacture and supply of hydraulic flying leads (HFL's) and electrical flying leads (EFL's) for the Kraken South development. The specific application called for the HFL's and EFL's once installed and deployed to seabed, to be protected by rock dumping.

The initial customer defined requirement was for separate hydraulic bundles and electrical jumper bundles with each bundle protected by a spiral guard outer covering.

Subsequently, the customer further requested the integration of HFL and EFL bundles onto a subsea deployment frame.

Hydrasun Solution

Hydrasun reviewed Enquest's requirements and advised that the initial proposal was not recommended due to the potential for the integrity of the hydraulic and electrical cables being compromised during the rock-dumping operation.

Hydrasun's proposed solution was to provide a fully encapsulated hydraulic umbilical and individually encapsulated electrical cables which were then bundled together. This option provided 360° protection over the entire length of the individual cores on each of the jumpers, providing a superior solution for the application in question.

At a glance...

Customers

Enquest, Aker Solutions, Technip

Location

Kraken field – UK North Sea

Customer Requirement

Robust Hydraulic and Electrical jumper bundle solutions, where technical integrity would not be compromised following rock-dumping operations subsea.

Hydrasun Solution

Design, manufacture and supply of application specific hydraulic umbilical and individually encapsulated electrical cables all integrated onto a subsea deployment frame.

Benefits

- Single source integrated turnkey solution
- Short delivery lead time
- Flexibility of manufacturing
- Project management
- Reduced costs

Continues overleaf...

CASE STUDY

Enquest Kraken Project - Hydraulic and Electrical Flying Lead Solutions

The Result

Hydrasun project managed, manufactured and supplied 4 x 6-way hydraulic umbilicals (varying lengths) helically cabled and fully encapsulated in a flame-retardant polyurethane outer sheath, integrated on to Subsea Components cobra heads at both ends. Finished assemblies were flushed and tested as per customer requirements.

In addition Hydrasun undertook the encapsulation, cabling and termination services on 4 x 70m long Tronic electrical cables.

The HFL's & EFL's were then subsequently integrated onto a subsea deployment frame in line with the customers request.

As the finished products for this project were required for deployment, by a Technip vessel, on a relatively short lead time, Hydrasun efficiently interfaced with the project and engineering teams within all parties concerned to successfully deliver the solutions in line with the required schedule.

Hydrasun provided a product and service solution tailored to the customers needs, with a real focus on lead time reduction and the minimisation of overall project costs, highlighting their flexibility and capability in providing a first class turnkey solution.



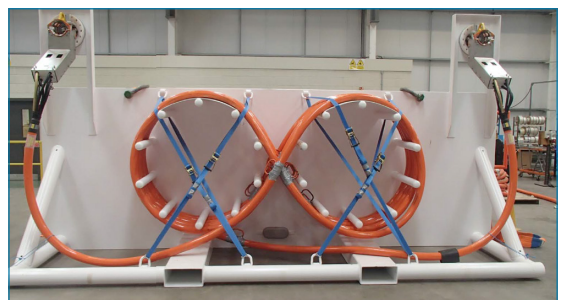
Hydraulic Umbilical



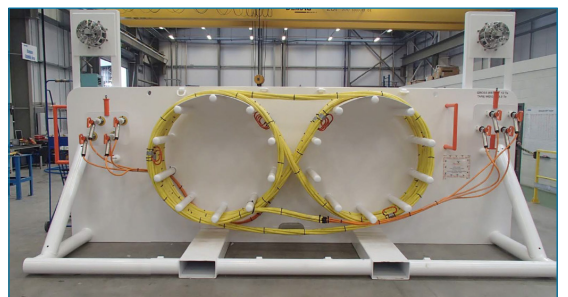
Tronic Cables



Deployment Frame



Hydraulic Umbilical on Deployment Frame



Bundled Electrical Leads on Deployment Frame