

## WOODSIDE ENERGY ENFIELD ENE 01

### 'Far Stream' – Gravel Pack Operations

ICON Engineering was contracted by Woodside Energy Limited (WEL) to undertake the engineering design, detailing and installation of sea-fastenings to Schlumberger equipment on the Far Stream Anchor Handling Tug Supply Vessel. This work was required as part of WEL gravel packing operations on the Enfield Development on the North West Shelf, and was the first gravel pack conducted from a work vessel in Australian waters.



Gravel Pack Spread in Operation

As part of the scope, ICON was also required to design and detail two hang-off platforms which were installed on the port and starboard sides of the Nanhai VI drilling rig to receive a Coflexip hose from the Far Stream.



Load Testing

Flexline Hang-off Anchorage

#### Key features of the project included

- ▶ Detailed design, drafting, fabrication and installation of sea-fastenings to 15 items of gravel packing equipment.
- ▶ Liaison with Marine Warranty Surveyor for design approval and sign-off of 'Statement of Fact' upon completion of installation of sea-fastening, prior to sailaway.

- ▶ Detailed design, drafting, fabrication and installation of two Coflexip hang-off platforms on the Nanhai VI. These platforms were load tested upon completion of installation.
- ▶ Detailed design, drafting, fabrication and load testing of lift and land out collars for transferring the Coflexip hose from the AHTS to the rig offshore.



Deck Layout on 'Far Stream'

#### Project Management

ICON worked closely with Schlumberger and Woodside to determine the final layout of the equipment on the Far Stream Deck to suit operations offshore. Activities included management of interfaces between WEL, Schlumberger and Farstad, and management of third party verification by Noble Denton and Bureau Veritas.

#### Engineering

ICON was responsible for the detailed design of the sea-fastening, rig Coflexip hang-off platforms and lift and land out collars for the Coflexip hose. The capacity of the 10t Coflexip reeler mounted on the aft end of the AHTS was also verified and deck strength checks on the Nanhai VI were performed.

#### Procurement

ICON sourced, procured and managed the logistics and fabrication of the sea-fastening items for the project. An ICON construction team was mobilised to the Nanhai VI to install and load test the Coflexip hang-off platform, whilst a separate team was mobilised to on-shore Karratha to prepare the AHTSV, install and secure the Schlumberger equipment prior to sailaway.

ICON was also responsible for removing the sea-fastening and gravel packing equipment from the Far Stream upon completion of operations.