

BHP Petroleum Buffalo Field Development

Installation of Wellhead Platform, Timor Sea, Northern Australia

ICON Engineering was engaged to install the Buffalo Field wellhead platform which is in 30m of water in the Timor Sea north of Darwin Australia. Platform installation took place in May/June 1999.

The Buffalo Field Development consists of an unmanned wellhead platform which produces to an adjacent FPSO.

The platform is unusual in that the jacket and topsides are integrated into a tripod structure which is designed to be lifted in a single lift with a jackup rig. The total lift weight was approximately 350 tonnes.

The structure was loaded out and transported from Adelaide in South Australia to site in the vertical position. The total tow duration was 21 days.

The barge was initially towed to Darwin where the mooring and installation equipment was added just prior to departure for the field.

The work scope commenced with input at the conceptual design stage where ICON worked with the designers to ensure that the facilities could be easily installed with a jackup rig.



Mooring the transportation barge at site

ICON managed the installation planning and worked alongside the BHP project team and drilling department to execute the installation.

Key features of the project include:

- Transport of a fully integrated structure in one piece.
- The use of mechanically connected 30" piles. The piles were drilled and grouted.
- Removable pile guide chutes extending right to the top of the structure. These allow easy and reliable access to the pile tops for drilling and insertion of the piles.
- Provision of a simple low cost telemetry system to gather barge motion information during the tow to site.



View of the jackup rig Ron Tappmeyer with structure after the lift from the transportation barge

- This was displayed on the bridge of the tow vessel and allowed the skipper to steer a course which would ensure that barge motions were acceptable.
- Installation without the use of divers

Hookup and Commissioning

Hookup and commissioning of the platform is minimal as all systems except those directly interfaced with the wells are fully precommissioned onshore. ICON Engineering was engaged to undertake the hookup and commissioning of the Buffalo platform.

Project Management Assistance

ICON assisted with the preparation of the installation contracts for the FPSO and infield pipelines and interfaced directly with BHPP's drilling department on issues relating to the use of the jackup rig Ron Tappmeyer for the installation work.