



The Heidelberg Development is located in the southern Green Canyon block of the Gulf of Mexico. The field includes two drill centers tied back to a truss Spar via 8-inch flowlines and Steel Catenary Risers. The processed oil and gas is then exported via two 16-inch export lines.

Subsea 7 was contracted to install the subsea infrastructure tying the trees back to the spar as well as the export flowlines. The scope included the fabrication and installation of the flowlines and Steel Catenary Risers (SCRs), design, fabrication and installation of Pipeline End Manifold (PLEM) and Pipeline End Terminal (PLET) structures.

Following the pipeline installation, Subsea 7 fabricated and installed nine hold back piles, followed by two umbilical control systems and the jumper tie-ins.

The workscope utilised the Port Isabel Spoolbase for pipeline fabrication and the *Seven Borealis*, *Siem Stingray*, *Skandi Neptune*, *Grant Candies* and *Normand Oceanic* for installation.

Anadarko Heidelberg Project

Project

Heidelberg

Client

Anadarko Petroleum Corporation

Location

Gulf of Mexico USA

Water depth

1,600m

Project Type

SURF

Date Awarded

June 2013

Date Completed

September 2015

Vessels/Spoolbase Utilised

Port Isabel
Seven Borealis
Siem Stingray
Skandi Neptune
Grant Candies
Normand Oceanic

Overview

The Heidelberg Project team was managed from the Houston office, with support from the Paris office for *Seven Borealis* operations and the pipeline production. Welding qualifications and structure fabrication subcontracts were performed in Houston. In depths of over 1,600m, the scope included the installation of:

- 4 x 8" Production SCRs (Total Length 22km)
- 2 x 16" Export SCRs (Total Length over 17km)
- 2 x Umbilicals
- 9 x Hold Back Suction Piles
- 3 x Manifolds
- 7 x Rigid Jumpers
- Steel tube flying leads
- Electrical flying leads

Fabrication scope included;

- 4 x 8" Production PLEMs
- 2 x 16" Export PLETs
- 1 x Export Manifold
- 9 x Hold Back Piles and Link Assemblies
- 7 x Pipeline Sleepers
- 13 x Rigid Jumpers
- 9 x Suction Piles

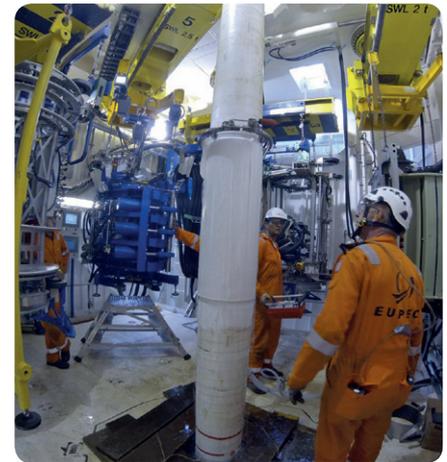
Heidelberg production is via 15K horizontal trees, tied back via 8-inch, 1.41-inch wall X70 pipeline. The welding procedures included the additional challenge of meeting mild sour service. The pipeline fabrication was performed at Port Isabel Spoolbase, drawing on Subsea 7's expertise from the Pipeline Production Team to deliver the final product.

Subsea 7 elected to J-Lay all of the rigid product from the *Seven Borealis* J-Lay Tower. The J-Lay tower handled 65 Tonne PLETs during the offshore campaign. The pipelay was successfully completed in Q1 2015.

To meet the high temperature demands of the production, Subsea 7 implemented an Injection Moulded Polypropylene (IMPP) field joint coating system, developed for the *Seven Borealis* J-Lay tower. A new work station was also constructed to contain the equipment.

Global collaboration between Subsea 7 offices with specific expertise related to the project allowed the highly specified product to be delivered in the short time frame between contract award and offshore mobilisation.

Subsea 7 completed the field development post spar installation with two dynamic umbilicals installations from 11.4m reels and associated well hookups (rigid jumpers and flying leads). This allowed the Heidelberg Development to achieve first oil in January 2016, four months ahead of schedule.



Injection Moulded Polypropylene Coating Operations



16-inch Oil Export PLET



Rigid jumper installation



Port Isabel Workstation