

Our projects

# Shell / Perdido

The world's deepest Spar production and drilling facility  
Alaminos Canyon, U.S. Gulf of Mexico



**Technip**

*take it further.*



Technip's yard in Pori, Finland

In the high-risk ultra deepwater environment, success depends on two key components: technology and teamwork. Shell and Technip have applied innovative technologies and worked in concert as a team to achieve project success and set several world records for the Perdido regional host.

## Scope of work

- Engineering, Procurement and Construction (EPC) of a truss Spar hull and mooring system
- Global design analysis of the steel catenary risers, top tension risers and umbilicals
- Engineering, fabrication and installation of a flowline and riser with a combined total length of 13.2 km (8.24 miles)
- Engineering and fabrication of 52 km (32 miles) of electro-hydraulic control umbilicals



Shell selected Technip to provide Engineering, Procurement and Construction (EPC) of the Perdido Spar hull and mooring system. Shell's choice of Technip as its EPC partner is based on a design competition coupled with their long term working relationship and Technip's extensive experience in Spar development.

**The Perdido Regional Host is the 14<sup>th</sup> Spar delivered by Technip.**

## Spar at record ultra deepwater depth

Moored in close to 2,450 m (8,000 ft) of water, the Perdido Spar is the deepest Spar production and drilling facility in the world and the first with Direct Vertical Access (DVA), which will reduce drilling costs, simplify workovers, and facilitate access to subsea equipment. The Spar has a robust design that will help the facility weather extreme hurricanes. Technip's responsibilities encompassed Spar hull and mooring system design and fabrication, loading out onto a transportation vessel, transportation, and quayside delivery at a Gulf of Mexico yard ready for installation.

Technip's operations and engineering center in Houston, Texas performed the overall project management and the global engineering design. The detailed hull design and fabrication was carried out by Technip's yard in Pori, Finland as well as the design and procurement of the mooring system. The 6-inch service flowline was welded at the Group's spoolbase in Mobile, Alabama. The offshore 6-inch service flowline installation was performed using the Deep Blue, Technip's deepwater pipelay vessel.

## Umbilicals



Technip Umbilical Systems provided the engineering and manufacture of a total of 4 dynamic umbilicals, 3 static umbilicals and 2 steel tube flying leads with associated topside and subsea hardware. Technip set another industry record for the umbilicals: the Perdido ITOB umbilical is the deepest umbilical at 2,946 m (9,666 ft). The total umbilical length was approximately 51,729 m (169,723 ft).

## Perdido sets world records in ultra-deep water

- Deepest production Spar in the world at 2,382 m (7,817 ft)
- Deepest reeled flowline installation at a water depth of 2,961 m (9,714 ft)
- Deepest reeled steel catenary riser installation at a water depth of 2,469 m (8,100 ft)



## Duco received Shell safety award

The Perdido umbilical project completed installation on June 15, 2009. The completion marked the achievement of “goal zero”, which required the project to be injury and incident free. The award is a proud achievement for Technip and DUCO.



Technip used its high-technology Deep Blue vessel to lay pipelines and risers for the Shell Perdido project

## Characteristics

- Spar hull:
- Length: 170 m (555 ft)
- Diameter: 39 m (118 ft)
- Weight: 19,000 mt
- Topsides maximum operating weight with full drilling capabilities: 16,800 mt
- Delivered in 2008

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## Technology driving opportunity

Shell Perdido's success is a testimony to the leadership of both Shell and Technip in turning high risk challenges into safe and high-reward opportunities in the ultra deepwater market.

The Shell Perdido project is a great milestone for Technip towards achieving its goal to become a reference company for HSE, on-time delivery and new technology.

### HSE performance

The Perdido project delivered the best safety performance to-date, for a Spar delivered from Pori, with no LTT's in over 2.5 million man-hours worked.

Technip is proud of its leadership role in moving this key investment from concept to reality