



# TenarisHydril Wedge Series 500™ Dopeless® connections prove excellent performance in extreme HP/HT offshore well in Egypt

TenarisHydril Wedge 523™, 521™ and 513™ Dopeless® connections provided operational and environmental advantages in the deepest offshore well in the Mediterranean Sea.

## Summary

An important UK oil company decided to drill an extreme HP/HT exploratory well, which is now the deepest offshore vertical well in the region, in an offshore field located in the Mediterranean Sea of Egypt.

Tenaris's local team worked side-by-side the customer from the design stage to the actual drilling, providing an integral package of products and services. The robust TenarisHydril Wedge Series 500™ connections were able to meet the difficulties posed by this HP/HT well, while Dopeless® technology helped overcome space and time constraints and minimized the impact on the environment.

## Challenges

### Demanding Well Conditions

Deep HP/HT exploratory wells present numerous operational difficulties, such as the requirements involved in using long casing strings and the high pressures and temperatures encountered downhole. With a total depth of about 7,500 meters, an estimated bottom hole pressure of 20,000 psi and 210 °C temperature at total depth, the drilling of this well was a challenging endeavor.

Therefore, this project required non-standard casing diameters with field proven connections able to withstand the anticipated tensile and compressive loads together with high internal and external pressures, while keeping flush and semi-flush designs for improved clearances downhole.

### Time constraints and reduced space

Because of the several operational challenges that were expected to arise, a nine-month frame was assigned to the drilling phase and the operator wanted to find reliable technologies that could save time and reduce costs. Besides, the pipe racking area at the jack-up platform was not big enough to accommodate the total number of joints required for such long casing strings. Therefore, it was decided to rack the pipes on a supply boat and move them directly to the rig floor for running.

## PROJECT PROFILE

### Location

Offshore Egypt

### Services provided

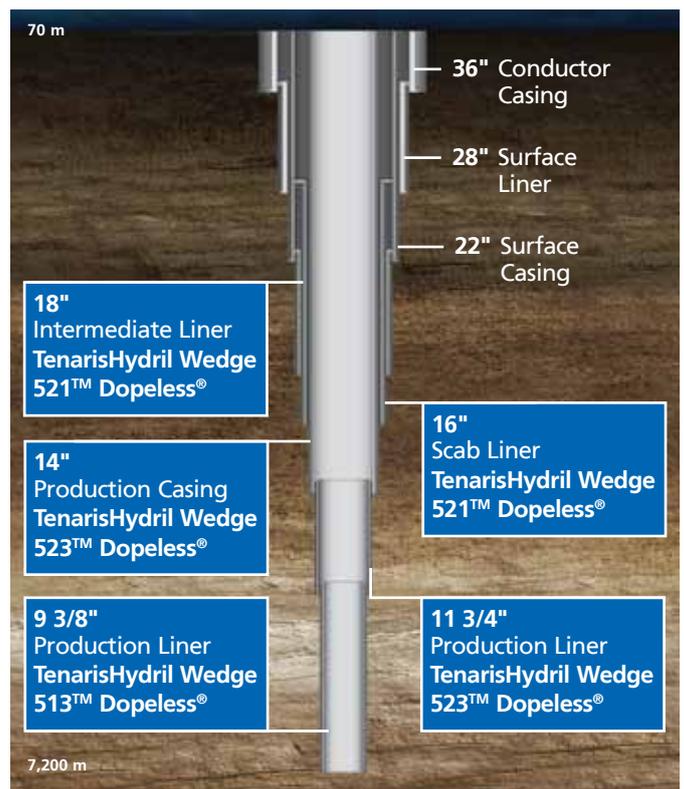
- Field services
- Technical assistance
- Onsite training
- Accessories supply

### Well

Exploratory, HP/HT Gas

### Products highlighted

TenarisHydril Wedge 521™, 523™, 513™ Dopeless® connections



In this context, the additional operational steps that are required when connections do not come with Dopeless® technology, such as removing the storage compound and applying the running dope, would have implied further delays. Furthermore the risks would have been increased, considering the limited space and its consequent handling difficulties.

## Commitment to the environment

Protecting the environment is in the core of this customer's way of working. Standard operations use thread compounds that are removed and applied manually at the rig site, with the consequent spillover of chemicals containing high mass fractions of heavy metals. The company was willing to implement a solution that could minimize the discharge of these hazardous materials.

## Solutions

### Choosing the right connection

Tenaris showed the operator the solid field records of TenarisHydril Wedge Series 500™ connections, which prove their exceptional performance in worldwide operations. In addition, several make-and-break tests were performed to reassure the oil and gas company that these connections were robust enough to handle the extreme conditions of the HP/HT well.

With their flush and semi flush designs, TenarisHydril Wedge 523™, 521™ and 513™ connections offer superior torque and torsional strength together with more than 80% compression efficiency, exceptional for flush and semiflush connections, while maintaining sealability and 100% pipe body rating for internal and external pressures.

### Experienced, efficient and environmental

Dopeless® technology was chosen for several reasons. This dry, multifunctional coating is applied to TenaryHydril premium connections in a fully automatic process at Tenaris mills. This ensures the exact amount of lubricant on each thread, reducing make-up problems. In addition, Dopeless® connections arrive rig

ready, minimizing the time and space needed for pre-running operations. By making thread compounds obsolete, this solution lessens the environmental impact meeting zero discharge policies.

## Two companies for one goal

Tenaris's local team worked side-by-side the customer from the design stage to the actual drilling of the well. The experts provided technical assistance in the well design and in the development of solutions tailor-made for this specific well. In addition, Tenaris field service team supported the operation onsite. They assisted with the running, provided onsite training, visual inspection services at both yard and rig locations, as well as coordination with local licensees and accessories supply.

## Results

### A unique package of products and services

The Wedge Series 500™ Dopeless® connections were the right answer for this well. The operator reached the target depth for each one of the strings. Tenaris local technical assistance for the well design and field services onsite helped ensure smooth drilling operations with faster running and zero rejects or remake-ups.

Dopeless® technology helped the operator better manage the limited space at the rig site. As the pipes arrived rig ready they were loaded directly to the rig floor, eliminating the need to take them to the pipe racking area for pre-running preparation and reducing time, with a consequent savings of more than 10% of the total pipe cost. In addition, the dope-free coating met the company's zero-discharge commitment reducing the environmental footprint of the project.

The impressive benefits provided by Dopeless® technology in this operation show why this solution is becoming standard procedure in the region. The outstanding results obtained in this project strengthened the ties between Tenaris and its customer, promoting the long-lasting business collaboration between the two companies.



For contact information, please visit our site:  
[www.tenaris.com](http://www.tenaris.com)