



## Helping simplify the development of Korchagin field

The use of Dopeless® technology lets Lukoil bypass a series of pipe preparation and running tasks at its freezing Caspian operations.

### Summary

#### The future of the North Caspian Sea

In 2010, the Yuri Korchagin field became the first of six major deposits owned by Lukoil –Russia's second-largest oil and gas company– in the Caspian to be brought online. The offshore field is being developed through approximately 30 radially placed horizontal wells, drilled to depths exceeding 5 km.

The complexity of the project is such that it demanded 15 years and over \$1.3 billion to launch the field. Working in close collaboration with Tenaris, the company has been able to count on premium connection technology and services to meet its exceptional operational and environmental targets.

### Challenges

#### Dealing with frozen compounds

For several months during winter, when temperatures plummet to -30°C, the northern part of the Caspian Sea fully freezes. The extreme cold posed distinct challenges to conventional pipe preparation and running activities, particularly those involving the use of connection lubricants and storage compounds. Used to protect and efficiently assemble conventional pipe connections, these compounds frequently freeze. Whenever that happens, something simple like removing a thread protector can be a daunting task.

#### Keeping the environment intact

Lukoil has been closely monitoring its environmental footprint in the North Caspian since it began exploring the area in the mid-1990s. The first oil company to set up a zero-discharge program in the region, Lukoil has protocols in place to ensure that no waste is released to the sea. For operations involving tubular products, this means that if chemical compounds were accidentally spilt, they must be thoroughly recovered, put in closed containers and transported to shore for disposal.

### PROJECT PROFILE

#### Operator

Lukoil

#### Location

North Caspian Sea  
(Russian Shelf)

#### Field

Yuri Korchagin (offshore)

#### Type of well

Horizontal

#### Products highlighted

- 13 3/8" casing with TenarisHydril Blue™ Dopeless® connections
- 9 5/8" casing and 7" liner with TenarisHydril Wedge 563™ Dopeless® connections

#### Services provided

- Field inspection
- Running assistance



▲ Dopeless® technology is a fully engineered solution, applied at the mill in a completely controlled industrial process.

## Overcoming extreme loads

The rig on top of the LSP-1 fixed offshore platform is equipped to drill wells up to 7400 m deep. The exceptionally long horizontal section of each well required a premium connection capable of withstanding extreme bending, compression and torque loads generated as a consequence of the horizontal casing and production liner being pushed and rotated while installing and cementing.

### Solution

## Simplified operations

All intermediate casing, production casing and liners strings of the initial Korchagin wells were made up with Dopeless® premium connections. Underlying this decision was the fact that Dopeless® technology would not only remove all frozen dope-related issues but also greatly simplify compliance with Lukoil's zero-discharge scheme.

Dopeless® connections arrive at the rig site with the right amount of a dry-based lubricant applied during pipe manufacturing. By uniformly covering the pin and box members of pipes, this multifunctional coating fully eliminates the need for storage and running compounds. This produces an important simplification of pipe handling operations.

## Maximum resistance

Run in the long, horizontal section of these wells, both the 9 5/8" casing and 7" liner were made up with pipes featuring TenarisHydril Wedge 563™ Dopeless® connections. Thanks to a unique dovetailed-wedge thread design that creates the largest possible contact surface area at make-up, this product stands out for its superior compression and exceptionally large yield torque – exactly what was required in this application.

## Peace of mind in the Caspian

A team of Tenaris Field Service specialists was present throughout the running of the TenarisHydril products, providing Lukoil with expert running assistance. This level of personalized after-sales services offered by Tenaris is highly valued by customers.

Through their deep understanding of Tenaris's products, as well as their familiarity with the peculiarities of local oil and gas exploration and production, our Field Service specialists stand ready to assist operators with expert guidance and make sure running jobs are performed as smoothly as possible.



▲ TenarisHydril Blue™ Dopeless® and TenarisHydril Wedge 563™ Dopeless® connections helped simplifying the developing of the Yuri Korchagin field.

### Results

## Just the beginning

The high torque capacity of the TenarisHydril Wedge 563™ made it possible to push, rotate and cement the horizontal casing strings and production liners to TD as planned.

Using Dopeless® technology, Lukoil was able to entirely remove the steps designed to clean and dry all connections and thread protectors during pipe preparations, as well as the step to apply thread compound during running. This led to faster installations and reduced chances of accidents.

Dopeless® technology proved it can also bring significant advantages to operators looking to implement or comply with stringent zero-discharge policies in a sensitive offshore environment. For Lukoil at Korchagin field, the experience has been so positive that the company is switching to an all-Dopeless® technology approach for future wells.



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