



## Dopeless® technology improves operations in the jungle of Ecuador

The Shushufindi Consortium chose TenarisHydril Blue® connections with Dopeless® technology to achieve operational benefits while protecting the environment.

### Summary

The Shushufindi-Aguarico field is located 100 kilometers from the city of Coca, in the Amazon Rainforest of Ecuador. This mature field is operated under a specific services contract scheme, with funding for secondary and enhanced recovery provided by the Shushufindi Consortium, formed by Schlumberger and Tecpetrol.

Between December 2013 and April 2015, workover operations were conducted in four wells using TenarisHydril Blue® connections with Dopeless® technology. Tenaris's dope-free solution minimized the environmental impact, ensured operational advantages and offered HSE benefits.

### Challenges

#### Care for the environment and improved operations

The government of Ecuador is promoting the sustainable development of the country, and the oil and gas industry is in the core of these actions. For that reason, local authorities ask the operators present in the country to incorporate environmentally friendly technologies, especially when they work in the fields located in the Amazon Rainforest of Ecuador, an area with high ecological sensitivity. In this context, the Shushufindi Consortium decided to look for a technology that would minimize the discharge of waste that pollute the environment.

In addition, the consortium required a solution that would offer operational improvements and also reduce running times by using a connection able to decrease the number of rejects and re-makeups during the running.

These benefits were particularly important given the remote location of the field.

### PROJECT PROFILE

#### Operator

Shushufindi Consortium, formed by Schlumberger and Tecpetrol

#### Wells

44D; 247D; 20D; 139D

#### Products highlighted

- TenarisHydril Blue®
- Dopeless® technology

#### Location

Shushufindi-Aguarico field, Amazon Rainforest, Ecuador

#### Services highlighted

- Technical Consulting Services
- Field Services

#### Type of well

Directional



- ▲ TenarisHydril Blue® connections with Dopeless® technology promoted operational improvements and provide environmental benefits in the Ecuadorian jungle.

## Solutions

### Benefits of Dopeless® technology

The Shushufindi Consortium chose Dopeless® technology for its operations in the Shushufindi-Aguarico field. Dopeless® technology is a dry, multifunctional coating applied in a fully automatic and controlled process at Tenaris mills worldwide. This process ensures that the exact amount of lubricant is applied to each connection.

By eliminating the use of storage and running compounds, Dopeless® technology promotes safety and prevents the discharge of pollutants generated when the threads are cleaned and compounds are applied at the rig site. Thus, this dope-free solution reduces the environmental impact.

Dopeless® technology significantly minimizes running times and increases the reliability of the running, by considerably reducing the risk of re-makeups and rejects.

### More than ten years of reliability

The TenarisHydril Blue® connection, a threaded-and-coupled connection with torque shoulder and metal-to-metal seal, resists the most complex operating conditions in the world. It has a compression efficiency of 100% and an excellent over-torque capacity. This technology has the versatility required to be run in multiple applications.

This premium connection has been extensively proven around the world for more than ten years. It has been tested under the ISO 13679 CAL IV protocol and continues to be tested under the next test protocol of the API RP 5C5 standard.

### Experts in the field

Tenaris's field services team works alongside customers to promote safety and efficiency in their operations. Our specialists work at the rig site to help customers follow the best practices and get the best performance out of Tenaris products.

## Results

### In defense of the environment

In the four wells undergoing workover activities, 3 1/2" 9.20# L80Cr1 TenarisHydril Blue® Dopeless® connections were run.

In total 1,676 connections were made-up without rejects. The joints were run in singles, doubles and triples, with installation services provided by different service companies that run tubular products, and in different weather conditions. Dopeless® technology improved running times by an average of 23% in all the wells, compared to standard connections.

In addition, the need for re-makeups was significantly reduced. Dopeless® connections only required 6 re-makeups while standard connections needed 29 re-make-ups (0.4% vs. 3.7% of all the joints that were made-up, respectively).

Outstanding results were observed in the 139D well. After a year of uninterrupted service since the production tubing was run, a routine workover intervention was conducted, after which the same tubing was run without re-makeups or rejects. This situation was also observed in two other wells of the field after four and six months of continuous operations.

The Shushufindi Consortium managed to minimize the environmental impact of its operations by using Tenaris's dope-free solution, which eliminates the need to use water to clean the connections and prevents the generation of hazardous waste such as protectors contaminated with storage dope. This feature significantly simplifies pipe handling operations, promoting safety during the operation.

Tenaris's field services team assisted the Shushufindi Consortium during the operations in order to get the most out of Tenaris products. These highly trained and certified specialists conducted various activities before and during the running of the products, including inspections, training, sharing of procedures and practices recommended by Tenaris.

With this successful experience, the Shushufindi Consortium could verify the various operational and environmental advantages offered by the combination of TenarisHydril Blue® connections with Dopeless® technology. This combination has already been established as a standard in the company's well completion designs.



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