



Dopeless® technology elevates operational performance in Canada

Canadian rig trial demonstrates functional, economic and environmental benefits.

Summary

Extreme environment requires superior technology.

The region near Conklin, Alberta, Canada, is a development area for thermal steam-assisted gravity drainage (SAGD) wells. Recently, a major Canadian operator elected to field test TenarisHydril Blue® Thermal Liner with Dopeless® technology on SAGD wells drilled from one of its well pads. This marked the first use of the technology in a hostile Canadian environment and provided a valuable opportunity for the operator to analyze the benefits of Dopeless® technology for potential application under extreme cold weather conditions.

Challenge

Operational efficiency

In SAGD projects, where up to 18 wells are drilled from a single surface location, a “batch drilling” approach is often utilized, resulting in repetitive drilling of the same well section (e.g. Surface, Intermediate, Horizontal Liner), 8 or 9 in a row. In an effort to improve efficiencies and reduce drilling times and costs, operators seek to streamline processes, reduce cycle-times of repeated operations, and eliminate unnecessary steps in the process flow. Furthermore, in a cold-weather environment, all manual activities such as casing running and preparation take longer to perform and encounter a higher frequency of delays.

Removing the thread protectors, cleaning off the storage compound and then re-applying thread compound in challenging winter conditions can lead to improper connection makeup and pipe damage. Freshly applied running compound, which often freezes instantly in these conditions, can hinder the makeup of the connection and result in thread galling.

PROJECT PROFILE

Location

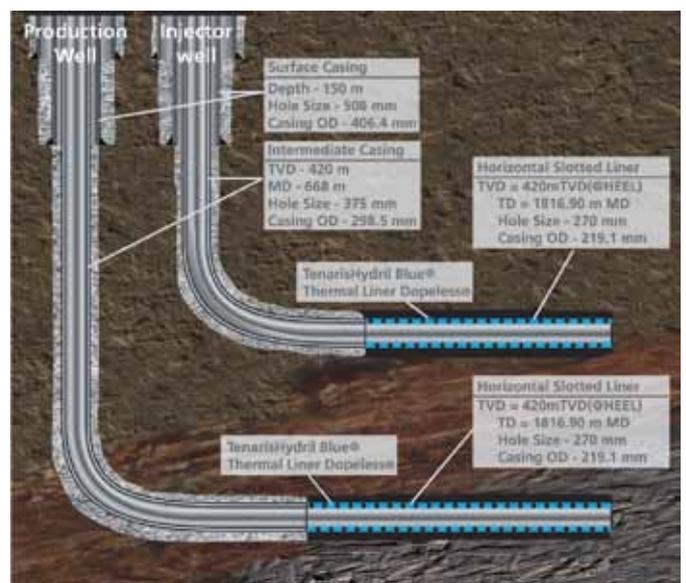
Conklin, Alberta, Canada

Well Type

Steam-Assisted Gravity Drainage (SAGD) wells

Products Highlighted

TenarisHydril Blue® Thermal Liner Dopeless®



▲ Well schematic of a SAGD Application



TenarisHydril Blue® Thermal Liner

Personnel risks

The use of traditional thread compounds requires more personnel on the rig floor to remove the end protectors, clean the storage compound, and then re-apply thread compound. Risk factors increase substantially in Arctic environments where sub-zero temperatures, snow and ice complicate rig operations.

Environmental endangerment

Most conventional pipe thread compounds contain one or more hazardous substances that, if discharged or not disposed of properly, can endanger the environment. Numerous regions, including Arctic exploration areas, have adopted and strictly enforced “zero discharge” policies that regulate the use of hazardous materials in sensitive tundra areas and wildlife preserves.

Solution

Dopeless® technology applied in horizontal sections.

The pad of the Canadian operator consisted of 12 wells (half of them being steam injection wells while the rest were bitumen collection wells) all of which used TenarisHydril Blue® Thermal Liner (TSH BTL) connections with Dopeless® technology in the horizontal (slotted) liner section.

Dopeless® technology is a completely dry, dope-free coating applied at the mill in the final stages of connection manufacturing. This integrated and automated process provides operational reliability and increased efficiency by eliminating standard preparation activities that would typically be conducted in the field.

The preparation and installation of all casing strings was monitored and analyzed carefully. To facilitate the desired evaluation of the potential cost savings and efficiency gains achievable using Dopeless® technology on a typical Canadian SAGD drilling operation, data from other 3 identical SAGD wells that were being drilled nearby and were cased using TSH BTL connections made up with regular running compound was contrasted.

Results

Faster cycle times for casing running

Typically, the application of thread compound to each connection on the rig floor increases the overall makeup time for a string. In this evaluation, the standard cycle time (SCT) for makeup of Dopeless® connections was 10% faster than the SCT for the standard doped ones.

Lower cost of running preparation

Because the Dopeless® technology is applied at the mill, connections arrive rig-ready at the well site thereby avoiding the expense associated with cleaning and applying thread compound. By virtually eliminating cleaning activities from the process, preparation costs were reduced by nearly 90%.

Reduced health, safety and environmental risks

Since Dopeless® technology is dry, slippery surfaces caused by running compound were eliminated from rig floors, lowering the risk potential for personnel accidents and minimizing the risks associated with the possible discharge of hazardous fluids in both well site and preparation operations — even the thread protectors are clean, making protector recycling simpler and more cost-effective. Less pipe handling results in reduced operational risks and faster, safer installation.

On-site assistance

Tenaris’s team of field service specialists provided their local expertise and specific knowledge of Canadian SAGD operations to the customer, performing product and pre-running inspection, as well as running assistance. This value-added service helped to maximize product performance and reduce risk.

It is interesting to note that temperatures during this experience ranged from 5°C to 20°C which provided optimum running conditions. However, it is expected that during the peak winter drilling season, when temperatures range from -35°C to 0°C, the benefits of Dopeless® connections would increase significantly.



For contact information, please visit our site:
www.tenaris.com