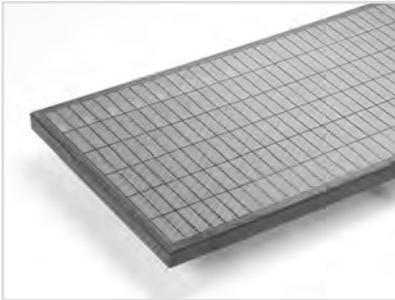


Angola: DURAFLO screens prove worth as viable replacements for Axiom screens



THE PROBLEM

While drilling a deepwater well offshore Angola, the operator experienced problems that required extensive drilling fluid cleanup operations prior to running completion screens.

THE SITUATION

The operator required an alternate screen system that would accommodate clean up while improving logistics, lead time, delivery to the rig, and assure readily available inventory and support.

THE SOLUTION

After a head-to-head comparison of the M-I SWACO DURAFLO screens against the OEM screens, the flow rates were observed as being equal or extremely close at about 60 to 75 gpm per shaker and the discarded solids likewise were very similar.

The Situation

A major oil company, while drilling a deepwater well off Angola, West Africa with a floating rig, experienced persistent problems in their 8 ½-in. sections that resulted in an unacceptably prolonged time to clean up drilling fluid prior to running completion screens. The oil producer was drilled to 4,312 m MD/3,148 m TVD (14,147/10,328 ft) in 1,340 m (4,396 ft) of water, using a 3.23 sg (10.6 lb/gal) VERSACLEAN* drilling fluid system. The rig utilized four Axiom shakers, which were dressed with TBC-type double mesh square screens. The operator requested alternate screen technology that would facilitate clean up while improving logistics, lead time, delivery to the rig and assure readily available inventory and support.

The Solution

A field trial, which the operator would run independently, was designed to compare the performance of the M-I SWACO DURAFLO* composite screens with the OEM prototype three layer screens. The local M-I SWACO service center and the proximity of the inventory warehouse played a large part in the operator's decision to conduct a head-to-head test of the two screens. During the test, equivalent API-mesh screens were run on the middle and lower decks of the two 'control' Axiom shakers.

The DURAFLO composite screens are engineered with a polymer frame and steel reinforcing structure as well as a gasket made of a softer material that is co-molded onto the leading edge of the frame. This design provides a soft but durable seal between the shaker and the screens and between the screens themselves, thereby helping to eliminate bypass at the metal-to-metal contact of the screens the industry has used previously. Aside from the reduced time for mud clean-up and improved sealing of DURAFLO screens as a replacement for the existing Axiom OEM screens, it also delivers significant weight advantages. The total weight of the DURAFLO screens was reduced from the 349 kg of the screen/tray system of the Axiom OEM screen to 124 screens. M-I SWACO was confident the lower number of screens and associated weight would increase the G-force, thus improving shaker performance.

For the test, the OEM screen trays of one of the Axiom shakers were removed and redressed with API 325 DURAFLO XR mesh replacement screens on the middle deck with API 270 mesh screens installed on the bottom deck. The second Axiom shaker was dressed with the existing Axiom OEM triple-layered screens of the same API designated size. Both shakers were run in parallel configuration.

The Results

During the test, the operator reported no issues with the time or effort required to remove the trays of the Axiom shakers and replace the Axiom OEM screens with the DURAFLO composite screens. The DURAFLO screens were shown to meet or exceed API equivalent-sized OEM screens in handling capacity as well as solids-control removal efficiency.

The flow rates were observed as being equal or extremely close at about 60 to 75 gpm per shaker and the discarded solids likewise were very similar. As the operator ran the test, no analytical data was made available insofar as clean-up efficiency was concerned. Nevertheless, more extensive tests are scheduled, including a full motion analysis by an M-I SWACO Vibratory Systems Analysis Technician (VSAT*). The analysis is designed to ensure the Axiom Shakers are running at peak performance to further validate the high-efficiency of the DURAFLO screens as feasible replacements for use on Axiom shakers.



This information is supplied solely for informational purposes and M-I SWACO makes no guarantees or warranties, either expressed or implied, with respect to the accuracy and use of this data. All product warranties and guarantees shall be governed by the Standard Terms of Sale. Nothing in this document is legal advice or is a substitute for competent legal advice.

P.O. Box 42842
Houston, Texas 77242-2842
www.miswaco.slb.com
Email: questions@miswaco.slb.com