CASE STUDY

XR Screens Outlast and Outperform TBC Screens

"The cost and performance results of the XR* mesh has made it an easy decision to switch to these screens exclusively."

Chris Wallace, Project Engineer

Well Information

Location	Baku, Azerbaijan
Rig Name	T-105
Rig Type	Platform
Interval, Bit Diameter, in	12¼-in.
Interval Test Length	2,240 ft (683 m)
Instantaneous ROP	59 ft/hr (18 m/hr)
Circulation Rate	1,050 gal/min (3,975 L/min)
Formations	Claystone/Sandstone
Mud Type	NOVATEC* SBM
Mud Density	12.68 lb/gal (1.52 sg)
Scalper Screen Size	10 mesh
Screen Size Tested	230 mesh

The Situation

M-I SWACO was supplying the operator with both XR and TBC screens on Brandt brand VSM 300^ shakers, and a trial was scheduled to determine the better screen for the drilling conditions so that improvements in inventory and logistics could be achieved. The trial was designed to evaluate:

- Cost per hour
- Screen life (hours) relative to screen position
- Conductance (flow capacity)
- Difference in Cut Point – Particle Size Analysis

The Results

XR Screens demonstrated an overall cost reduction of up to 70% over TBC screens:

- Front screen life: XR screens showed extremely low wear rates, and life was six to seven times longer than TBC screens.
- Back Screen life: Testing showed XR screens had 4 and 5.2 times longer life than the TBC.

The dramatic difference in screen life is a result of the XR screen's proprietary design. The use of larger wire diameters increases durability and extends screen life, resulting in fewer required screen changes and reduced overall cost even when compared to screens with significantly lower unit cost.

The Details

Cut Points:

Sample	d10 (microns)	d50 (microns)	d90 (microns)
XR 230	1.09	8.31	46.69
TBC 230	1.13	8.78	47.55

The rig was fitted with four VSM 300 shale shakers. All of the shakers were inspected and maintenance carried out prior to the trial.

The test was performed on shakers two and three, ensuring equal flow passed over the two test shakers. Shaker two was dressed with four 230-mesh XR screens, while shaker three was dressed with four 230-mesh TBC screens. All of the shakers were fitted with 10-mesh scalpers. Each screen was marked, numbered, and its position on the shaker recorded. When one screen needed repair, all eight screens were removed, repaired, and replaced. Special care was taken to install each screen in the same position. This method allowed screen life to be monitored according to position and ensured that each screen experienced the same number of hours of use.

The screen test concluded after 79 hours, when both of the back XR screens were judged to be at 15% wear. In the 79 hours it took for the back XR mesh screen to show 15% wear, five new TBC screens were worn out in the corresponding position. Samples were collected and analyzed for oil on cuttings and particle size distributions.

Questions? We'll be glad to answer them.

If you'd like to know more about XR Mesh screens and how they are performing for our other customers, please call the M-I SWACO office nearest you.

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