



X-Prima™ Squeeze Cures Persistent Losses While Drilling Surface Interval in Algeria

A preferred engineered solution was utilized to resolve the costly and potentially serious problem of severe, persistent losses.

CHALLENGE	SOLUTION	RESULT
<ul style="list-style-type: none"> Eliminate severe losses while drilling surface interval 	<ul style="list-style-type: none"> Newpark's proprietary X-Prima™ high fluid loss squeeze 	<ul style="list-style-type: none"> Severe or total losses were successfully mitigated

OVERVIEW

While drilling the surface hole in an unconsolidated calcareous formation in Algeria, a total loss of returns was experienced at 584 ft (178 m).

CHALLENGE

Standard remediation efforts by the operator did not yield the required results. The use of cement plugs was attempted five times, but efforts to circulate failed on all tries. The fluid loss rates ranged from 50 to 75 bbl/hr (2.2 to 3.3 L/s) on each occasion.



SOLUTION

The decision was made on-site to spot X-Prima slurry in the open hole to control the persistent and unsustainable losses. A 220-bbl (35 m³) slurry with 105 lbm/bbl (300 kg/m³) X-Prima lost circulation material (LCM) was mixed.

The drillstring was run open-ended to the bottom at 781 ft (238 m). Subsequently, 30 m³ (189 bbl) of slurry was pumped at 11 L/s (4 bbl/min) and displaced with 3.3 m³ (20.8 bbl) of spud mud.

This volume of slurry was, by calculation, sufficient to fill 304 ft (93 m) of the 26" wellbore to 477 ft (145 m), 90 ft (27 m) below the conductor. The pipe was pulled to 374 ft (114 m) and the hole was



circulated with full return at pump rates of 9 to 16 bbl/min (24 to 42 L/s), affecting a dynamic ECD squeeze of 70 to 100 psi (480 to 690 kPa).

The pipe was pulled again, and the bit was run to the bottom. The pumps were turned on at 396 gal/min (25 L/s) and then increased to 792 gal/min (50 L/s) with sustained circulation. The 26" interval was then drilled to total depth (TD) at 876 ft (267 m) with the partial losses mitigated by sweeps of conventional LCM.

RESULTS

The X-Prima squeeze proved highly effective and was successful in resolving the severe and persistent losses.

The ability to successfully remediate the losses allowed the operator to continue drilling the well.

As a result, X-Prima squeeze has continued to be preferred over conventional cement squeezes to remediate fluid losses.