BaraShield®-663 LCM Cuts Seepage Losses by 75 Percent in Unconventional Well

**LCM SOLUTION SAVES OPERATOR APPROXIMATELY USD 25,700**

**SIERRAS BLANCAS FIELD, NEUQUÉN, ARGENTINA**

**CHALLENGE**

Minimize seepage losses while drilling the Centenario formation, which had incurred:

- Loss rates up to 600 l/hr (3.7 bbl/hr)
- Cumulative NAF loss 20 m³ (125 bbl)

**SOLUTION**

BaraShield®-663 LCM background treatment in active system

**RESULTS**

- Decreased NAF whole mud losses by 75 percent
- Reduced base oil consumption in the intermediate interval by 12 m³ (75 bbl)

**SEEPAGE LOSSES INCREASE FLUID COSTS IN CENTENARIO FORMATION**

The operator needed to reduce seepage losses while drilling the 8-3/4-inch intermediate section containing the Centenario formation. On the offset well, the Centenario formation was encountered at 1,200 meters (3,937 feet) true vertical depth and continued for 1,000 meters (3,280 feet). The loss rate reached 600 l/hour (3.7 bbl/hr) for a cumulative loss of 20 m³ (125 bbl) of a conventional non-aqueous fluid (NAF). The average mud density through this interval was 8.8 lb/gal.

**ENGINEERED LCM BACKGROUND TREATMENT DELIVERS RAPID RESULTS**

The Baroid team proposed using multimodal particulate BaraShield®-663 lost circulation material (LCM) while drilling the Centenario formation. BaraShield-663 LCM works in permeable or impermeable formations, including natural fractures in shale and coal, and can quickly plug fractures up to 500 microns in size. The optimal concentration needed for each application was determined by applying the Baroid Stress-Shield™ engineering method.

The BaraShield-663 LCM background treatment was introduced on the next well. The initial concentration was 10 kg/m³ (3.5 lb/bbl), based on the pore throat size data obtained on the Centenario formation and on experience on similar wells in the Neuquén basin. With this treatment in the 8.8-lb/gal NAF active system, seepage losses decreased by half to 10 m³ (63 bbl).
The BaraShield-663 LCM treatment was repeated on the next well. The total volume lost while drilling the Centenario formation was reduced to 5 m³ (31 bbl).

**TREATMENT CUTS LOSSES BY 75 PERCENT, SAVING MORE THAN USD 25,000**

The preventive BaraShield-663 LCM treatment helped reduce overall losses by approximately 75 percent. Taking into account that the conventional NAF had an 80/20 oil/water ratio, the consumption of base oil was also reduced by 12 m³ (75 bbl) in the 8-3/4-inch intermediate interval.

The estimated total saving for customer was USD 25,700, including the cost of NAF fluid and whole mud saved while drilling two wells.