

LCP 2000[®] Reduced Losses Over 95% Compared to Conventional Lost Circulation Materials in Fractured Zones in Indonesia

Asia

CHALLENGE:

- ▶ Severe losses in the 8 ½-in. interval
- ▶ Rate of losses in the first loss zone reached 120 barrels per hour (BPH) in a 9.6 lb/gal SBM
- ▶ Nine previous conventional 50 barrel 50 lb/bbl lost circulation pills were ineffective

SOLUTION:

- ▶ Three LCP 2000 pills were pumped with background CaCO₃ to reduce the losses to 2 BPH

RESULT:

- ▶ 97% reduction of the lost rate
- ▶ Allowed the operator to drill through the troublesome intervals and reach planned well depth



OVERVIEW

An operator drilling in Indonesia experienced severe losses in the 8 ½-in. interval. The losses began at 8,000-ft. about 2,000-ft. below the 9 5/8-in. casing shoe. The rate of losses in the first loss zone reached 120 barrels per hour (BPH) in a 9.6 lb/gal synthetic-based mud (SBM).

SOLUTION

Three conventional 50 barrel 50 lb/bbl lost circulation pills were pumped and spotted at 8,062-ft., 8,230-ft., 8,352-ft., which reduced losses to 30-80 BPH. The losses quickly increased to 120 BPH at 8,514-ft. and three additional pills were pumped. These pills reduced losses, but logging-while-drilling (LWD) logs indicated a possible fracture at 9,295-ft. would accelerate the loss rate. Three additional pills were pumped (bringing the total to nine pills thus far of conventional LCMs (nutplug, calcium carbonate); however, losses were still occurring.

With the ongoing losses, the operator required a more robust solution to reduce lost circulation and selected LCP 2000 to plug the fractures and drill to section total depth (TD) past the fractured zones at 12,250-ft. Three LCP 2000 pills were pumped with background CaCO₃ and the losses were reduced to 2 BPH.

RESULT

LCP 2000 reduced the loss rate over 97%. With conventional LCM, 8,825 bbls of SBM were lost to the formation. With LCP 2000, a total of 185 bbls of SBM were lost. However, according to a post well analysis, the losses occurring while LCP 2000 was used were coming from the previous loss zones, higher up in the formation. The overall reduction in losses allowed the operator to drill through the troublesome intervals and reach planned well depth.