

ROCKBLOCK® 3 Success in West Texas

North America

CHALLENGE:

- ▶ Total lost circulation, wellbore ballooning and poor cement jobs experienced in the intermediate section
- ▶ At TD, days of NPT were experienced

SOLUTION:

- ▶ An 80-bbl pill consisting of 50 lb/bbl ROCKBLOCK 3 LCM was mixed and spotted across the Brushy Canyon formation

RESULT:

- ▶ Successfully POOH with no wellbore ballooning
- ▶ No further mud caps or kill mud had to be pumped
- ▶ No visible increase in pressure as the sweep entered or exited the directional tools used to pump the pill
- ▶ Successful casing and cementing operations with near full returns



CHALLENGE

Operators face many challenges drilling the 8 3/4-in intermediate interval through the fragile Delaware and Bone Springs formations. From total lost circulation to wellbore ballooning and poor cement jobs, wellbore instability is common throughout the intermediate section. At total depth (TD), operators can experience days of non-productive time (NPT) battling wellbore instability issues, some of which have been induced by drilling as well as lost circulation of drilling fluid into the formation. In order to complete this interval without wellbore instability, "mud caps" or "kill mud" pills are built and spotted to control wellbore ballooning while trying to successfully run casing. In addition to NPT while drilling, wellbore instability problems can be detrimental to the integrity of the cementing operations. Operators may be required to perform two-stage cement jobs or remedial top jobs to achieve the desired top of cement (TOC).

SOLUTION

An operator drilled with a 9.2 lb/gal brine-based drilling fluid, utilizing salt gel and starch sweeps for hole cleaning. In this open hole section, the operator experienced seepage losses while drilling to 10,140-ft. Once at TD, the operator performed a wiper trip, and once back on bottom, pumped two 40-bbl gel/starch sweeps for hole cleaning. The drilling fluids company mixed an 80-bbl pill consisting of 50 lb/bbl ROCKBLOCK 3 LCM and spotted the pill across the Brushy Canyon formation. A 25-bbl pill of 13.5ppg "kill mud" was also pumped prior to pulling out of the hole (POOH).

RESULT

The operator successfully POOH without experiencing wellbore ballooning. No further mud caps or kill mud had to be pumped to control the well. The 80 bbls of 50lb/bbl ROCKBLOCK 3 LCM pill was pumped through the directional tools with no visible increase in pressure as the sweep entered or exited the tools. The pressure averaged 1,850 to 2,000 psi throughout the entire circulation. Casing was successfully ran and cemented on bottom with near full returns throughout the entire cement job.

Working with the drilling fluids provider and operator, ROCKBLOCK 3 LCM was properly used to cover both the Brushy Canyon formation at 5,457-ft true vertical depth (TVD) and the Bone Springs series of formations from 6,837-9,627-ft. TVD.