



CASE HISTORY

Drilling and Completions

Casing Annulus Packer + Port Collar

MULTI-STAGE SELECTIVE CEMENTING

Fractured and Low-Permeability Carbonate Reservoir Requires Selective Cementing for Zonal Isolation

Location: China



CHALLENGE: An offshore China exploratory well with multi-layered fractured carbonate reservoir was planned as an open hole completion with zonal isolation required. For long-term isolation, cement was planned as the isolating method rather than free-standing Casing Annulus Packer (CAP).

SOLUTION: The top 3,400 ft of 7 in. casing was cut and retrieved. A Combo Tool was run and used to inflate the lower CAP, open the PC above and circulate a 50 ft cement column into the annulus. The process was repeated for the two additional zones leaving the formations between as undamaged completions. The lower zone was perforated and production-tested. No skin damage was detected as was typical of fully cemented, prior completions. The lower zone was squeeze cemented. The upper two zones were each perforated, tested and plugged completing the exploration test program.

RESULTS AND BENEFIT: Elimination of stimulation required to remove formation damage caused by the cement penetration into the natural fractures resulted in a well cost reduction in excess of \$600,000.



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