



## CASE HISTORY

Unconventional Resources

CAP - Port Collar

### SELECTIVE COMPLETION

Vertical Well Requires Zonal Isolation Without Cementing

Location: Qatar



**CHALLENGE:** A 1,000 ft thick, low permeability carbonate gas reservoir offshore Qatar was completed in 7 distinct intervals using cement inflated Casing Annulus Packers (CAP) as zonal isolation on the 7 in. liner.

**SOLUTION:** The 7 in. liner was run with CAPs and Port Collars (PC) positioned to isolate 7 distinct intervals in the 8-½ in. open hole. MTM seal PC were positioned between each CAP with Polished Bores (PBR) above each PC. All 7 CAPs were inflated with a special cement slurry on a single trip. A 3-½ in. tubing test string was run with a PC shifting tool, seal assemblies and drill stem testing tool string. The lower PC was located with the seal assembly positioned in the PBR above, and the annulus tested. Hydrostatic was reduced to below BHP inside the test tubing. The PC was opened by slacking off weight and flow was then initiated through the PC from the isolated interval. Multiple flow tests were conducted and build-up pressure recorded with downhole shut in. A total of 9 tests were conducted on the 7 zones with 2 zones to determine if stimulation would increase productivity from an undamaged interval.

**RESULTS AND BENEFIT:** Elimination of cement from the completion resulted in minimized formation damage and high natural flow rates. The change in procedure for the completion resulted in an estimated cost savings in excess of \$3,000,000 and enhanced operations from an HSE standpoint.



*Casing Annulus  
Packers*