

CASE HISTORY

Gas/Water Isolation: Gas Migration



Zonal Isolation in Soft Formation to Prevent Gas Migration

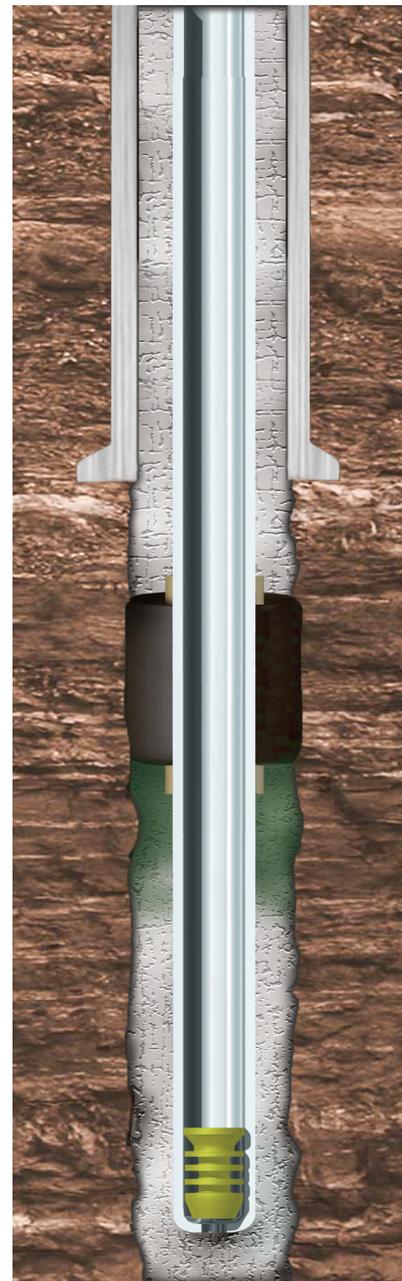
LONGCAP Casing Annulus Packer with Deadbolt™

Location: Gulf of Thailand

CHALLENGE: In a campaign for drilling new offshore wells, the client was concerned about gas migration through shallow 12 ¼ in. open hole section to surface after single stage cement displacement. The formation was soft and prone to losses and expected to be washed out to maximum 16 in. hole size. In such well conditions, one challenge was setting the LONGCAP in soft formation with a low inflation pressure. Another challenge was the risk of loss of casing integrity if the Casing Annulus Packer over expanded. The client had experienced problems with a number of TAM competitors in previous years due to either packers bursting or fracturing the formation or failing to stop gas migration.

SOLUTION: A 9 ⅝ in. LONGCAP with 10 ft seal length was run as part of the 9 ⅝ in. casing string in 12 ¼ in. open hole. The LONGCAP Valve Assembly came with the Deadbolt™ feature as a back-up to the conventional Safelok™ to achieve full assurance for casing integrity. The single stage cement was displaced and the LONGCAP successfully inflated on cement plug bump. The inflation pressure was controlled by the Safelok™ system to prevent fracturing the formation and the Deadbolt™ valve was functioned for additional casing integrity security.

RESULTS AND BENEFIT: Five 9 ⅝ in. LONGCAPs were run in five different wells with 100% success rate. The inflation pressures of the LONGCAPs were adjustable and selected low enough to make an effective seal line against formation while not fracturing it. No gas migration was observed at surface six weeks after completion of jobs and casing integrity was achieved in all wells.




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