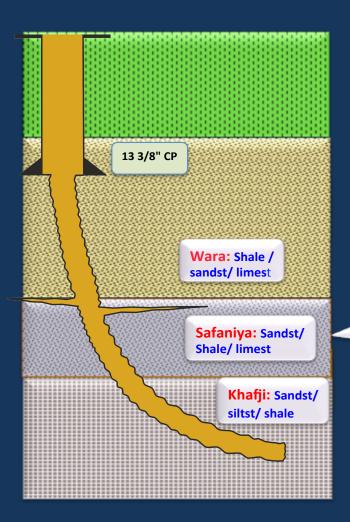


CASE HISTORY

No. 1612



FRACSEAL ELIMINATES ALL PREDICTED HOLE PROBLEMS - Offshore Saudi Arabia



The Challenge

Hole problems anticipated in the 12½" hole sections are partial/severe losses and sloughing shale. Partial/Severe loss is potential in WARA (5374') and SAFANIYA (5740') formations, while the interval of KHAFJI between 6,134 ft -6,670 ft is an unconsolidated sand section. Shale along the entire 12½" hole section is fluid sensitive. Shale sloughing and/or swelling can arise at any time along this section. Interval for losses between 5,374 ft - 5,915 ft (541 ft footage).

The Action

The 12¼" hole was drilled using OBM of 81 PCF (10.8+ ppg). Initially **3 ppb FRACSEAL** was maintained in the active OBM. Drilling at 5100 ft (200 ft above predicted 1st loss zone to encounter) **FRACSEAL concentration was increased from 3 ppb to 10 ppb**. While drilling the expected interval for losses between 5,374 ft - 5,915 ft, **added 2 sacks per hour of FRACSEAL** to replenish portion screen out with drilled cuttings. **FRACSEAL of 9 ppb** was retained in active OBM from 6,670 ft till 8,068 ft (9%"csg point).

The Result

Not even one predicted hole problems encountered. It was a smooth drilling operation. The hole was slick and in good shape. **Wara, Safaniya were protected, Khafji was stabilized** from possibly partial losses and differential sticking. **Caving and sloughing shale was not observed throughout drilling**.



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