



Southwestern Drilling Mud Service, Inc.

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Discussion of Recommendations (continued)

Loss of circulation may be encountered in this interval and would require the use of viscous LCM pills. These pills should contain Sea Mud, Paper, Fiber and Cottonseed Hulls.

Some of the offset wells in this area have experienced hole problems (loss of circulation or stuck pipe) that required mudding up. While we do not expect to have to mud up, we should be prepared if necessary. We would recommend that Salt Water Gel and Starch mud be used if mudding up is necessary. The Salt Water Gel would provide the necessary viscosity for hole cleaning while the Starch would provide filtration and wall cake control necessary to prevent differential sticking.

INTERVAL 3500-12,000'

Drill out from 9-5/8" intermediate casing with the existing brine water fluid. Continue circulating the reserve pit and using Jet Jel to maintain solids free fluid. Volume additions to the reserve pit should be fresh water. This will begin cutting the fluid weight. Fluid weight should be 9.0 lb/gal or less by 7000'. This will help prevent loss of circulation in the Bone Springs formation. We recommend that Paper be used to control seepage losses. Continue using Caustic Soda to maintain pH for corrosion inhibition. Also, the use of a liquid sulfite oxygen scavenger would greatly improve the corrosion program.

Possible problems in this interval are loss of circulation and some gas problems. The loss of circulation problems encountered in the offset wells appear to be in the upper Bone Springs formations. Keeping fluid weight below 9.0 lb/gal will greatly reduce the possibility of losses occurring. Should losses occur, we would recommend using viscous pills containing Sea Mud, Paper, Fiber and Cottonseed Hulls.

Gas problems are also possible in this interval in the Lower Bone Springs section and in the Upper Wolfcamp section before setting pipe. When encountered on offset wells, these pressures were controlled by increasing fluid weight with brine. Offset wells that did encounter pressures used 9.0-9.5 lb/gal weight to control the pressures.

If pressures in the Wolfcamp are encountered requiring in excess of 9.5 lb/gal, we would recommend running protective casing at that point.