

### Solids Control Equipment

The available solids control equipment for this hole section was as used previously, with the exception that 200 mesh screens were placed on the mud cleaners below 9000 ft to retrieve Barite with the higher mud weight in use. Use of the high volume centrifuge was also reduced to save Barite.

In combination with good solids control equipment and dilution with premix, excessively high solids were not a problem. The total low gravity solids content of the mud was below 50 ppb and averaged around 40 ppb or less. No controlled drilling was necessary. The formations drilled were not highly dispersive.

### Mud Properties

For this section a Freshwater/Bentonite/Polymer mud was used. With increasing depth and temperature, the use of starch was curtailed and replaced by PAC-R and PAC-L due to their greater temperature tolerance. Additions of Lignite and Lignosulphonate were also made to help control rheology and HT-HP filtrate.

Below 6500 ft, the Bentonite content of the mud was raised to 20-25 ppb and to 25-30 ppb by total depth to assist in HT-HP control and mud stability.

The mud weight was increased, as mentioned previously, in accordance with background/trip gas indications, reaching 9.8 ppg by total depth, although in retrospect, R.F.T. data indicates normal pressure throughout this interval.

Below 9000 ft, carbonate contamination from CO<sub>2</sub> was indicated. It was not possible to reduce high gel strengths and yield point with chemical treatment in the form of Lignite/Lignosulphonate additions. Fluid loss measurements were erratic and flowline viscosities were high and in excess of 3 times the suction viscosity.

P1/P2 alkalinities also indicate a carbonate/bicarbonate problem. After pilot testing, 1 ppb lime was added successfully to the system to counteract the problem. Following a initial viscosity hump during the lime additions, properties returned to normal. Further carbonate contamination occurred at 10,060 ft and at T.D. these problems were corrected with lime as above.

Apart from the carbonate/bicarbonate contamination, the mud proved easy to maintain and provided the desired properties both good hole cleaning, and relatively good hole stability despite long periods of waiting on weather.