

PETROLEUM DEVELOPMENT CORPORATION

Gulf-McKay Federal #1  
660' FSL & 1980' FWL  
Section 34-18S-R32E  
Lea County, New Mexico

MUD PROGRAM

- 0-375 Gel and lime spud mud. No problems anticipated.
- 400-4,200 Brine water. Treat for lost circulation in Seven Rivers by bringing viscosity to 34 sec. with gel and visquick; add hulls and fiber. Add two sacks per tour of paper, hulls and fiber. If complete returns are lost, drill with fresh water with no circulation. Before pulling drill pipe prior to running casing, if lost circulation has occurred, pump in 300 barrels of viscous mud (70-80 sec.) to flush out any cuttings that may be below the loss zone.
- 4,200-10,500 Drill with fresh water and detergent using lime for pH control (or sodium bichromate for corrosion protection). If a commercially productive zone is indicated, water loss will be reduced to below 20 cc.
- 10,500-TD Drill with 9.4-9.6# cut brine, viscosity 31 sec. Water loss control: below 20 cc., if potential pay zones have been encountered previously. Prior to penetrating the Morrow pay zones, water loss will be reduced to 6-8 cc.
- Before drilling the Wolfcamp formation, flow-line flow sensor, pit volume totalizers, mud gas separator and pump stroke counter will be installed.