

APPLICATION FOR DRILLING  
MESA PETROLEUM CO.  
ANTELOPE FEDERAL #1  
1980' FNL & 1980' FWL  
SEC 22, T18S, R23E  
LEASE: NM-10889  
JANUARY 29, 1980

In conjunction with permitting subject well for drilling in Section 22, Township 18 South, Range 23 East, Eddy County, New Mexico, Mesa Petroleum Co. submits the following:

1. The geologic surface formation.
2. The estimated tops of geologic markers are as follows:

San Andres	410'
Glorietta	1490'
Yeso	1590'
Tubb	2875'
Abo	3480'
Wolfcamp	4690'

3. The depth at which water, oil, or gas are expected is:

Water	410' - 500'
Water	700' - 1200'
Gas	4570'
Gas	4700'

4. Casing and Blowout Preventer Program:

Surface: 200' of 13-3/8" 48#, H40, ST&C, new casing cemented with 400 sx Class "H" with 1/4# flocele and 2% CaCl or sufficient volume to circulate cement to surface. Will install 12" API 3000 psi WP bradenhead and nipple up 10" API 3000 WP ram type BOPs to drill 12-1/4" intermediate hole.

Intermediate: 1700' of 8-5/8" 24#, K55, ST&C, new casing cemented with 200 sx thick-set plus 825 sx LW with 5# gilsonite, 1/4# flocele and 2% CaCl followed by 375 sx Class "C" with 2% CaCl or sufficient volume to circulate cement to bottom of surface casing. Will nipple up 12" API 3000 WP x 10" API 3000 WP casinghead spool and install 10" API 3000 psi WP BOP stack (consisting of 1 pipe ram, 1 blind ram, 1 bag type BOP) to drill 7-7/8" production hole.

Production: 4900' of 5-1/2" 17#, K55, LTC new casing cemented with sufficient volume (estimated 350 sx) to cover all pay. Cement will be 50/50 Poz plus additives.

Choke, kill, and fill lines are indicated on Exhibit I. BOPs will be tested with rig pumps prior to drilling below 8-5/8" casing shoe. BOPs will be worked once each day, with blind rams worked only on trips.

5. Circulating Medium and Control Equipment:

- 0 - 200' Spud with fresh water gel flocculated with lime and pretreated with 6-8 lb/bbl cottenseed hulls, 2-4 lb/bbl fiber, and 2 lb/bbl paper for possible severe loss circulation zone 100-200'. If necessary to drill without returns, or if full returns cannot be established, at casing point mix 150 bbls viscous mud treated with LCM as above and spot on bottom before coming out of hole to run casing.
- 200 - 1700' Drill out with fresh water through a controlled section of the reserve pit. Add paper for seepage control or to sweep hole, as needed. At casing point, sweep hole with 150 + bbls viscous mud with 6-8 lb/bbl LCM before coming out of the hole to run casing.
- 1700 - 4900' Drill out with fresh water through a controlled section of the reserve pit. Use paper, sea mud, and salt water gel slugs to sweep the hole and control seepage, as necessary. To control corrosion maintain pH 8.5 to 9.5 with caustic soda and use corrosion chemicals from 1900' to total depth. A possibility of lost circulation exists at 4000'.

A full opening safety valve, to fit the drill string in use, will be kept on the rig floor at all times. Kelly cock, safety valve, choke and kill lines will be tested at same time that BOP tests are run.

- 6. There is no coring program planned for this well. The logging program will consist of Gamma Ray and Neutron-Density-Caliper and Dual Induction logs from surface casing to total depth.
- 7. Maximum anticipated bottom hole pressure is 1500 psi at approximately 4500 based on nearby well data. Mud weight required to offset this pressure is 6.4 ppg. Maximum bottom hole temperature should approach 110°F. No sour gas is expected.
- 8. Anticipated starting date is March 1, 1980, with completion of drilling operations on March 30, 1980. Completion operations (perforating and stimulation) will immediately follow the drilling operations.