

APPLICATION TO DRILL

ARCH PETROLEUM, INC.  
C. E. LAMUNYON # 78  
UNIT "D" SECTION 28  
T23S-R37E LEA CO. NM

12. TESTING, LOGGING, & COREING PROGRAM:

- A. Open hole logs: Dual Laterolog, SNP, Density, Gamma Ray, Caliper from TD to 1100'. Run Gamma Ray, Neutron from 1100' to surface.
- B. No DST's are planned at this time.
- C. No cores are planned, the use of mud logger is not planned at this time.

13. POTENTIAL HAZARDS:

No abnormal pressures or temperatures are expected. Hydrogen Sulfide gas may be encountered, H<sub>2</sub>S detectors will be in place to detect any presence of unsafe levels of H<sub>2</sub>S. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operations of all equipment that will be used. Estimated BHP 1250 PSI & estimated BHT 125°.

14. ANTICIPATED STARTING DATE AND DURATION OF OPERATION:

Roads and location construction will begin after the BLM approves the APD. Anticipated spud date will be as soon as pad & road construction has been completed. Drilling time for the well is estimated to take 10 days. If production casing is run an additional 12 days will be required to complete well and construct surface facilities.

15. OTHER FACETS OF OPERATION:

After running production casing, cased hole Gamma-Neutron & Collar logs will be run over all possible pay intervals. If commercial production from the Queen pay is indicated it will be perforated and stimulated. Then if necessary the pay will be swab tested and completed as an Oil well.

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9. CEMENTING & SETTING DEPTH:

20"	Conductor	Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
8 5/8"	Surface	Set 1100' of 8 5/8" 32# J-55 ST&C casing. Cement with 900 Sx. of Class "C" cement + 1/4# Flocele/Sx. + 2% CaCl, circulate cement to surface.
5 1/2"	Production	Set 3650' of 5 1/2" 15.5# J-55 ST&C casing. Cement with 1000 Sx. of Class "C" cement + additives estimate top of cement 850'.

10. PRESSURE CONTROL EQUIPMENT:\* Exhibit "E". A Series 900 3000 PSI working pressure B.O.P. consisting of a double ram type preventor with a bag type annular preventor. The B.O.P. unit will be hydraulically operated. Exhibit "E-1". Choke manifold and closing unit. The B.O.P. will be nipples up on 8 5/8" casing and will be operated at least once each 24 hour period while drilling and blind rams will be operated when out of hole on trips. Full opening stabbing valve and upper kelly cock will be utilized. No abnormal pressure or temperature is expected while drilling.

\* If substructure is too low on this rig a control head will be used instead of a B.O.P.

11. PROPOSED MUD CIRCULATING SYSTEM:

Depth	Mud Wt.	Visc.	Fluid Loss	Type Mud System
40-1100'	8.5-8.7	29-36	NC	Fresh water spud mud add add paper to control seepage.
1100-3650'	10.1-10.2	29-38	NC	Brine water using high vis- cosity sweeps to clean hole. Uas soda ash for pH control.

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run DST's, open hole logs, and casing the viscosity and/or water loss may have to be adjusted to meet these needs.