Application for Permit to Drill Government "AM" No. 1 October 10, 1980

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7. Estimated tops of important geologic markers:

Queen	2020'
Grayburg	2375'
San Andres	2850'
1st Bone Springs (SS)	6725'
2nd Bone Springs (SS)	7565'
3rd Bone Springs (SS)	8450 <b>'</b>
Wolfcamp (Ls)	8825 <b>'</b>
Canyon (Ls)	9750'
Strawn (Ls)	10225'
Atoka (Ls)	10750 <b>'</b>
Morrow (SS)	11075 <b>'</b>
Morrow A (Sand)	11250'
Chester	11380'
TD	11450'

8. Estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered:

Α.	Primary Objective:	Morrow A (SS)	11,250'
в.	Secondary Objective:	Atoka (Ls) Wolfcamp (Ls)	10,750' 8,825'

9. The proposed casing program is as follows:

Surface:	13-3/8" OD 48# H-40 ST&C new casing
Intermediate:	8-5/8" OD 24# & 32# K-55 ST&C new casing
Production:	5-1/2" OD 17# & 20# N-80 LT&C new casing

## 10. Casing setting depth and cementing program:

- A. 13-3/8" OD surface set at 300'. Circulate cement with 300 sacks Class "C" with 2% CaCl.
- B. 8-5/8" OD intermediate set at 3000'. Circulate cement with 250 sacks Halco Thick-Set with 10# Gilsonite, 1/2# Flocele/sack and 2% CaCl followed by 1100 sacks Halco Lite with 5# Gilsonite and 1/4# Flocele/sack followed by 300 sacks Class "C" with 2% CaCl. If cement does not circulate, determine top of cement by temperature survey then finish cementing to the surface through 1" in the annulus using Class "C" with 2-4% CaCl.
- C. 5-1/2" OD production string set at 11,450'. Cement with 1050 sacks Class "H" with 0.6% CFR-2 and 5# KCl/sack. Anticipated top of cement 8250'.