Application for Permit to Drill Government "AD" No. /S

February 1, 1977

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7. Estimated tops of important geologic markers:

Bone Springs	5120
Dean	8540
Wolfcamp	8840
Canyon	9080
Strawn	10220
Atoka .	10840
Morrow	11120
Chester	11730
TD	11780

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

Α.	Primary objective (top)	Morrow SS	11120
Β.	Secondary objectives (top)	Wolfcamp Canyon Strawn Atoka	8840 9080 10220 10840

9. The proposed casing program is as follows:

Surface:	13-3/8" OD 48# H40 ST&C new casing
Intermediate:	8-5/8" OD 24# and 32# K55 ST&C new casing
Production:	5-1/2" OD 17# and 20# N80 LT&C new casing

- 10. Casing setting depth and cementing program:
 - A. 13-3/8" OD surface casing set at 600'. Cement with 300 sacks Class C, 4% gel, 12# Gilsonite and 1/4# Flocele/ sack with 2% CaCl followed by 200 sacks Class C with 2% CaCl.
 - B. 8-5/8" OD intermediate casing set at 3000'. Cement with 300 sacks Halliburton Thick Set Class C with 10# Gilsonite and 1/2# Flocele per sack and 3% CaCl followed by 800 sacks Halliburton Lite with 5# Gilsonite and 1/4# Flocele per sack followed by 200 sacks Class C with 2% CaCl.
 - C. 5-1/2" OD production casing set at 11,780'. Cement with 720 sacks Class H with 0.6 CFR-2 and 5# KCL per sack. Bring cement back to 8200'.