Application for Permit to Drill Federal "Q" No. 1 February 19, 1981

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7. Estimated tops of important geologic markers:

Bone Springs	4030 '
Dean Sand	6650 '
Wolfcamp	6975 '
Cisco	7575 '
Canyon	8075 '
Strawn	8345 '
Atoka	8975 '
Bend Lime	9185 '
Morrow Clastics	9350 '
Chester	9810 '
Mississippian Lime	10110'
ſ.D.	10160'

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

Α.	Primary Objective:	Cisco Dolomite	75 7 5'

- B. Secondary Objective: Morrow 9350' Strawn 8345'
- 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# K-55 ST&C new casing Production: 5-1/2" OD 17# N-80 LT&C new casing

- 10. Casing setting depth and cementing program:
 - A. 13-3/8" OD surface set at 50'. Set with rat hole machine and fill annulus to surface with Redi Mix cement.
 - B. 8-5/8" OD intermediate set at 2500'. Circulate cement with 250 sacks Halco Thick-Set with 10# Gilsonite, 1/2# Flocele/sack and 2% CaCl followed by 800 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 10160'. Cement with 900 sacks Class "H" with 0.6% CFR-2 and 5# KCl/sack. Anticipated top of cement 6500'.