

## IX. CORES AND DRILL STEM TESTS:

- A. Cores - None proposed.
- B. Possibly four drill stem tests to be run in Wolfcamp, Strawn and possibly (2) in the Morrow. All tests are to be run with tandem packers, safety joint, hydraulic jars, and bumper sub. One quart samples of fluid recovered are to be taken: one at top, middle and bottom of fluid column. A portion of the bottom sample is to be submitted to Logging Company for determination of  $R_w$  prior to logging.

## X. LOGS:

- A. Mud Logging Unit from 7700' to T.D.

B.	<u>Type</u>	<u>Depth Interval</u>	<u>Footage Logged</u>
	Dual Laterlog, Micro SFL	3,500'-11,000'	7,500'
	Compensated Neutron Formation	430'-11,000'	10,570'
	Density - Gamma Ray Caliper	8,000'-11,000'	3,000'
	Dip Meter		

## XI. CASING PROGRAM

- A. Surface: 11-3/4" OD, H-40, 42#, Range 3 ST&C new casing to be set at 430' and cemented with 400 sacks of Class "C" cement with 1/4# Flocel and 2% CaCl. If necessary fill from top with redi mix to meet State requirements if cement does not circulate. Casing attachments: Guide shoe, and one centralizer on shoe joint. Howco weld shoe and first collar, and tack weld top of shoe and bottom of first collar. WOC Time. 18 hours. Install casing flange and pressure test casing and BOP's to 600#. Note: On all cementing jobs (surface, intermediate and long string) catch 1 sample of each type cement used and water used for mixing. Save samples for analysis in case cement does not set properly.
- B. Intermediate: 8-5/8" OD K-55 32#, Range 3 ST&C new casing to be set at 3,000' with 700 sacks of Class "H" cement with 5# salt, 10# sand, 1/2 of 1% CFR-2 and 1/4# Flocel per sack. Casing attachments: Float shoe with insert float in first collar from bottom, 6 centralizers approximately 160' apart from 3,000' to 2,500' across Grayburg and San Andres zones. Howco weld and tack weld shoe and first collar. Hang weight of casing, as indicated on rig weight indicator at end of cement job on slips prior to cutting off casing. Reciprocate casing while cementing. Install casing spool. Nipple up BOP and test to 1000#. BOP's to be tested by independent testing company (Yellow Jacket) to the BOP's rated working pressure of 5000 psig prior to drilling into Wolfcamp Formation. Be sure casing valve below BOP is open so casing is not pressured above its burst pressure during yellow jacket test.
- C. Production String (Based on T.D. 11,000')

0'- 150'	20#	N-80	LT&C
150'- 2,650'	17#	N-80	LT&C
2,650'- 3,700'	17#	K-55	LT&C
3,700'- 5,850'	15.5#	K-55	LT&C
5,850'- 7,950'	17#	K-55	LT&C
7,950'-11,000'	17#	N-80	LT&C

If casing is run shallower, casing design will be changed to effect savings accordingly.

Cementing production string will be with sufficient Class "H" cement to cover all zones of interest based on log calculations. Casing attachments Float shoe and float collar between 1st. and 2nd. joint, centralizers in sufficient quantity to assure a good cement job over zones of interest. Howco weld float shoe, float collar, and tack bottom of first collar. Hang weight of casing, as indicated by rig weight indicator at end of cement job, on slips prior to cutting off casing. Reciprocate pipe while cementing.

- XII. SAFETY PROGRAM: The safety program will conform to the attached notice from the United States Geological Survey. In addition, the accumulator pressure is to be noted by the driller on the tour sheet at some time during each tour.

