

Casing Program: (Continued)

(C) Salt Protection Casing:

13 3/8" OD casing is to be set in 17 1/2" hole at approximately 3800'. Casing setting is anticipated as follows:

No. Jts.	Description	Thds Off Length	From	To
---	Rotary correction	33	0	33
11	13 3/8" OD 54.5#/ft K-55 ST&C csg.	417	33	450
18	13 3/8" OD 48#/ft H-40 ST&C csg	700	450	1150
22	13 3/8" OD 54.5#/ft K-55 ST&C csg.	850	1150	2000
23	13 3/8" OD 61#/ft K-55 ST&C csg.	900	2000	2900
22	13 3/8" OD 68#/ft K-55 ST&C csg.	858	2900	3758
---	Float collar	2	3758	3760
1	13 3/8" OD 68#/ft K-55 ST&C csg.	38	3760	3798
---	Float shoe	2	3798	3800

Positive centralizers are to be used, one set on each of the bottom three joints. The casing shoe must be equipped with lateral exits for cement, as it is intended that part of the weight of the casing string be rested on bottom. API modified thread lubricant is to be used on the threads. The bottom three joints are to be sand blasted to remove mill scale and lacquer. The couplings on the bottom three joints are to be welded. A caliper survey is to be run to assist in calculating cement volumes. If a loss of circulation occurs while drilling below the 20" OD casing to the 13 3/8" OD casing point; consideration will be given to cementing in two stages.

13 3/8" OD casing is to be cemented with an estimated 1350 sacks "Halliburton light" with 18# salt per sack and 1/4# Flocele per sack (mixed at 12.6 PPG, yield factor 2.1 CF/sack, 11.0 gallons water per sack) followed by 300 sacks class "C" (mixed at 14.8 PPG, yield factor 1.32 CF/sack, 6.3 gallons water per sack). Cement is to be circulated to the surface. A WOC time of 24 hours will be observed. Pressure test to 1000 psi for 30 minutes.

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(D) Protection Casing:

9 5/8" OD casing is to be set in 12 1/4" hole at approximately 11,000' (Upper Wolfcamp). Casing setting is anticipated as follows: