

Casing Program: (Continued)

(E) 7 5/8" Protection Liner: (Continued)

The 7 5/8" liner is to be inspected using a mechanical optical and magnetic particle inspection--full length plus rabbited to assure passage of a 6 1/2" bit. A WOC time of 24 hours will be observed. Prior to drilling the liner shoe, the liner is to be tested to 4000 psi.

(F) 5" Protection Liner:

The 5" liner is to be set at TD (estimated at 16000') in 6 1/2" hole---the top of the liner is to be hung well above the bottom of the 7 5/8" liner shoe. Liner setting is anticipated as follows:

No. Jts.	Description	Thds Off Length	From	To
---	Distance KDB to liner top	13900	0	13900
---	Burns double slip hanger 7 5/8" X 5" with tie back sleeve	8	13900	13908
52	5" OD 18#/ft N-80 XL casing	2048	13908	15956
---	Float collar	2	15956	15958
1	5" OD 18#/ft N-80 XL casing	40	15958	15998
---	Float shoe (whirler type)	2	15998	16000

Prior to running the liner a caliper survey is to be run to determine the cement volume. After running the liner, the hole is to be circulated and conditioned; then the liner is to be hung. The liner is to be cemented with 200 sacks (estimated) class "H", 20% SSA-C, 20% SSA-1, 1% HALAD-14 (mixed at 15.7 PPG, yield factor 1.61 CF/sack, 6.7 gallons water per sack). After cementing the liner the liner setting tools are to be pulled without any attempt to reverse out excess cement on top of the liner. No centralizers are to be run. The bottom three joints are to be sand blasted. The bottom two joints are to be sealed with HOWCO-weld. API modified thread dope is to be used. The 5" OD liner is to be inspected using a mechanical optical and magnetic particle inspection--full length. A WOC time of 24 hours will be observed before drilling out above and inside the 5" liner. After drilling out inside the 5" liner it is to be tested to 4000 psi.

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