Nippling up 8-5/8" Casing:

After waiting on cement 4 hours the 8-5/8" casing may be cut off and nippled up. The 11-3/4" casing head should be cut off and removed; a new 8-5/8" SW 5000# WP x 12" 5000# RJT casing head should then be welded in place. After the 8-5/8" welds cool, they should be pressure tested. The 10' 5000# BOP stack (BEPCO Drawing IV) may then be installed.

This BOP stack and choke manifold are to be tested to 5000# before going in hole to drill out. After drilling the DV tool and before drilling the guide shoe the casing & DV tool should be pressure tested to 2000# with the mud pump.

The results of all these pressure tests must be recorded in the daily drilling log.

Production Casing:

A 7-7/8" O. H. will then be drilled to T. D. (13000'). The drilling fluid will be fresh water 8.4-8.9 ppg. from 3450' to 9850' (T/Wolfcamp). A fresh water gel 32-34 vis. low solids, non-dispersed system may be used through the Delaware Mountain Group(3450'-4500') for sample evaluation but after penetrating the Indian Draw, 49er sections the system can be watered back.

At 9850' displace the hole with 10 ppg. brine water. This system can be used from the top of the Wolfcamp to T. D. with variations in viscosity, weight and water loss as hole conditions dictate. A Grant rotating head and SWACO or similar mud gas separator should also be installed at this time.

At the top of the Strawn (11,250') the weight should be increased to 10.3 ppg., viscosity raised to 36 with soda ash, salt gel and barite. The fluid loss should also be lowered to 15 cc or less.

Approximately 100' above the Atoka (11,700') the weight should again be increased to approximately 10.5#/gal and the water loss lowered to 10 cc. (3%KCl should be added at this time.) Maintain the properties for the remainder of the well. Ground paper may be added to the system to control any fluid seepage. Fluid weight can be increased or decreased as warranted.

The 5-1/2" production casing will be a combination string with the following segments:

Segment No.	Grade	Joint	Weight	Top Ft.	Bottom Ft.	Length Ft.
1	S95	L	17.0	10980	13000	2020
2	N80	L	17.0	5920	10980	5060
3	K55	L	17.0	3020	5920	2900
4	N80	L	17.0	0	3020	3020

This casing string should be run with a guide shoe, float collar, reciprocating scratchers and centralizers. The scratchers should be spaced at approximately 10' intervals through the various pay intervals and each collar through these pay sections should also have a centralizer. Several joints of ruff-cote 5-1/2" casing should also be used through these pay zones. The exact spacing on these ruff-cote joints as well as the scratchers etc., must be determined in the field.

The 5-1/2" casing should be cemented in a single stage consisting of approximately 200 sks of Halliburton Light with .3% CFR-2, 5#KCl/sk 13.6 ppg., 1.54 ft^3/sks followed with 900 sks Class "H" with 0.3% CFR-2, .6% Halad 22, 5# KCl/sk 15.8 ppg., 1.20 ft^3/sk. Again, these volumes are only approximations and must be verified in the field. (Calculate cement volume for fill-up to 1000' above Wolfcamp -8500'.)