

UNION OIL COMPANY OF CALIFORNIA

DISTRICT OFFICE - MIDLAND, TEXAS

DRILLING PROGRAM

Field: Hat Mesa

Location: 1980' FNL & 1980' FEL, Section 9, T-21-S, R-32-E, Lea County, New Mexico

Well Name: HALFWAY FEDERAL WELL NO. 1

Estimated Total Depth: 14,400'

Drilling Data: Geolograph from surface to TD w/10' drilling time 10,000' to TD.

Samples: Ten foot from 3000' to TD.

Estimated Formation Tops:

Yates	3470'	Morrow	13520'
Bone Spring	8650'	Middle Morrow	13900'
Wolfcamp	11600'	Lower Morrow	14230'
Atoka	13000'		

Logs: Compensated Neutron, Formation Density w/Gamma Ray from TD to 5200' w/Gamma Ray to surface. Dual Laterolog from TD to 5200'.

DSTs: (1) Middle Morrow 13900-14400'

Cores: None

Deviation: Five degrees maximum w/rate of change not to exceed one degree per 100'.

Casing & Mud Program:

Depth	Size Hole	Casing	Cement	W.O.C.	Mud		
					Wt.	Vis.	W.L.
0'-500'	17-1/2"	13-3/8"	*500 sxs	18 hrs	As needed to spud		
500'-3400'	12-1/4"	-	-	-	10 PPG Brine		
3400'-5200'	12-1/4"	9-5/8"	**1800 sxs	24 hrs	9.5 PPG	34	<10 7% Oil
5200'-13000'	8-1/2"	-	-	-	Cut Brine		
13000'-TD	8-1/2"	5-1/2"	***1575 sxs	6 hrs	10.2	32-35 <10	

Rig to be released after nipping up 5-1/2" casing.

*500 sxs Class "C" w/2% CaCl₂, 1/4 lb flocele. Cmt calc to circ.

**1600 sxs Howco Light or equivalent w/10 lbs salt, 1/4 lb flocele, 5 lbs gilsonite per sx, followed by 200 sxs Class "C" neat. Cmt calc to circ.

***1st Stage: 900 sxs Howco Light or equivalent w/0.6% Halad 9, 5 lbs salt, 1/4 lb flocele followed by 300 sxs Class "H" w/0.6% Halad 9 & 6 lbs salt.

2nd Stage: 625 sxs Howco Light w/5 lbs salt & 1/4 lb flocele & 0.4% Halad 9.

NOTE: Changes in the above program will be at the direction of a qualified Union Oil Company of California representative and should be clearly indicated on the program posted at the rig.

J. R. Hughes
District Drilling Superintendent