

# PROPOSED WELL PLAN OUTLINE

WELL NAME

**HARDY 36 STATE NO. 21**

LOCATION

**SEC 36, T20S, R37E, LEA Co., NEW MEXICO**

Est. GL = 3496'

Est. KB = 3512'

TVD IN 1000'	MD	FORMATION TOPS & TYPE	DRILLING PROBLEMS	TYPE OF FORMATION EVALUATION	HOLE SIZE	CASING SIZE DEPTH	FRAC GRAD	FORMATION PRESSURE GRADIENT	MUD WT TYPE	DAYS
0					17-1/2	13-3/8" J45, K-55 ST&C @ 400'			SPUD	
1		RUSTLER 1295' TOP SALT 1390'	WASHOUTS IN SALT SECTION			670 sq. cft cmt			10 PPG BRINE	
2		BOTTOM SALT 2540' YATES 2700'	LOST CIRCULATION TO 5000' SEEPAGE TO SEVERE		12-1/4			<8.3		
3		SEVEN RIVERS 2960'	ACTIVE WATERFLOOD ZONE			8-5/8" 24# & 32# K-55 ST&C @ 3000'				
4		QUEEN 3450' GRAYBURG 3725' SAN ANDRES 3970'	POSSIBLE DEVIATION TO TD	TWO MAN MUD LOG @ 3500' H2S MONITOR ON AT 4000'		1400 sq. cft cmt			9 PPG CUT BRINE	
5		GLORIETA 5165'	PARTIAL LOSSES POSSIBLE					<8.4		
6		BLINEBRY MKR 5750'							STARCH @ 6300' WL 35cc	
7		TUBB MARKER 6260' DRINKARD 6510' ABO 6855'	HARDY ST. 36-1 HAD LOSSES @ 6357' OF 170 BPH - MUDDER UP		7-7/8					
8		STRAWN 7510'	POSSIBLE SEVERE LOSSES FROM DEVONIAN TO TD							
9		DEVONIAN 8090'								
10		SIMPSON 9735' McKEE SAND 9960'	DEVIATION POSSIBLE @ 9900' SURVEY EVERY 100' AS NECESSARY WASHOUTS IN McKEE SAND					8.7-8.8	REDUCE WL @ 9400' TO 15cc MW @ 8.7-9.0	
11		ELLENBURG LIME 10410' GRANITE WASH 10510'	HARDY ST. 36-1 HAD LOSSES OF 10 BPH @ 10,300' - USED 8.8 MW & CaCO3 TO STOP LOSSES			5-1/2" 17# K-55 & L-80 @ 10,625'				
12		TD @ 10625'		GR-CAL-LDT-CNL GR-DLL-MSFL GR-SON(LS)-DIEL 2000' OF NMR LOG ROTARY SW CORES		2075 sq. cft cmt				
13										
14										
15										
16										

DATE 7/11/95

PREPARED BY: BILLY GOODWIN  
DRILLING ENGINEER

DAMIAN BARRETT  
RESERVOIR ENGINEER

RECEIVED  
JUL 17 1995  
U.S. DEPT. OF JUSTICE  
CRIME