

PHOENIX DRILLING SERVICES

HORIZONTAL SURVEY PROGRAM

MINIMUM CURVATURE CALCULATIONS(SPE-3362)

OPERATOR: TEXACO E & P, INC. WELL: NORTH VACUUM ABO UNIT # 31 LOCATION: LEA COUNTY, NEW MEXICO JOB NO: 173188						START: 8/20/97 FILE: CURVE1.V FINISH: 8/20/97 INFORMATION PROVIDED BY: TEXACO E HORIZONTAL COORDINATOR: RUBESH, I DATE: 8/30/97 MAG DECLINATION 9.11 EAST TIME: 7:45 PM DIRECTION: 224.80				
DIP1 = 7.35 deg = 97.35 deg TARGET1 = 8,768 ft TVD VS1 = 1,317 ft										
DIP2 = -9.85 deg = 80.15 deg TARGET2 = 8,771 ft TVD VS2 = 1,431 ft										
SVY MEASURED		INCL (DRIFT)	TRUE		DLS/ 100	CENTER				
#	DEPTH		AZIMUTH (DIR)	VERTICAL DEPTH		VERTICAL SECTION	ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)	NORTH(+) SOUTH(-)	EAST(+) WEST(-)
50	10065 ✓	97.5	226.3	8770.7	1304.7	4.3	-0.9	10.3	-918.5	-926.7
51	10097 ✓	93.5	227.6 ✓	8767.7	1336.5	13.1	-1.9	11.5	-940.2	-949.9
52	10129 ✓	88.3	227.7 ✓	8767.2	1368.4	16.3	-5.6	13.1	-961.8	-973.6
53	10160	86.1	228.1 ✓	8768.7	1399.4	7.2	-11.1	14.8	-982.5	-996.5
54	10191	84.0	228.1 ✓	8771.4	1430.2	6.8	-17.7	16.6	-1003.1	-1019.5
55	10222	82.6	227.0 ✓	8774.9	1461.0	5.2	1.5	18.0	-1023.9	-1042.2
BIT	10262	81.0	227.0 ✓	8780.8	1500.5	4.5	2.7	19.6	-1050.9	-1071.2

To : Scott
To : Mark
From : Kirby