

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: 173166						START: <u>8/20/97</u> FILE: CURVE1.V FINISH: <u>9/2/97</u> INFORMATION PROVIDED BY: TEXACO E HORIZONTAL COORDINATOR: RUBESH, I				
DIP1 = 7.35 deg = 97.35 deg TARGET1 = 8,768 ft TVD VS1 = 1,317 ft						DATE: <u>9/2/97</u> MAG DECLINATION 9.11 EAST TIME: 6:43 AM DIRECTION 224.80				
DIP2 = -9.85 deg = 80.15 deg TARGET2 = 8,771 ft TVD VS2 = 1,431 ft										
SVY #	MEASURED DEPTH	INCL (DRIFT)	TRUE		VERTICAL SECTION	DLS/ 100	CENTER			
			AZIMUTH (DIR)	VERTICAL DEPTH			ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)	NORTH(+) SOUTH(-)	EAST(+) WEST(-)
66	10571	81.1	223.2	8835.8	1804.4	5.4	-0.8	15.5	-1269.5	-1282.4
67	10603	81.4	222.7	8840.6	1836.1	1.8	-0.3	14.4	-1292.6	-1304.0
68	10635	81.1	222.8	8845.5	1867.7	1.0	0.2	13.3	-1315.9	-1325.5
69	10666	80.5	222.9	8850.4	1898.2	2.0	0.5	12.3	-1338.3	-1346.3
70	10698	80.3	223.1	8855.8	1929.8	0.9	0.5	11.3	-1361.4	-1367.8
71	10729	79.8	223.6	8861.1	1960.3	2.3	0.3	10.5	-1383.6	-1388.8
TD	10780	79.8	223.6	8870.2	2010.5	0.0	-0.1	9.5	-1419.9	-1423.4