

713 954 6113

PHOENIX DRILLING SERVICES

HORIZONTAL SURVEY PROGRAM

MINIMUM CURVATURE CALCULATIONS(SPE-3362)

OPERATOR: TEXACO E & P, INC.				START: 12/18/97	FILE: CURVE1.V
WELL: J.R. PHILLIPS # 13				FINISH: 12/22/97	
LOCATION: LEA COUNTY, NEW MEXICO				INFORMATION PROVIDED BY: TEXACO E	
JOB NO: 173243				HORIZONTAL COORDINATOR: RUBESH.	
DIP1 =	0.00	deg	= 90.00	deg	DATE: 12/23/97
TARGET1 =	5,695	ft TVD			MAG DECLINATION
VS1 =	1,497	ft			GRID 3.35 EAST
DIP2 =	0.00	deg	= 90.00	deg	TIME: 12:40 PM
TARGET2 =	5,695	ft TVD			DIRECTION: 335.65
VS2 =	1,497	ft			

SVY MEASURED #	DEPTH	INCL (DRIFT)	AZIMUTH (DIR)	TRUE		DLS/ 100	CENTER			
				VERTICAL DEPTH	VERTICAL SECTION		ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)	NORTH(+) SOUTH(-)	EAST(+) WEST(-)
TIE	5540	0.9	254.5	5539.1	-45.5	0.8	155.9	3.3	-40.1	21.8
1	5587	5.8	304.4	5586.0	-44.3	19.5	129.0	2.4	-39.3	20.5
2	5582	12.7	304.4	5580.8	-42.2	46.0	114.2	1.2	-38.0	18.5
3	5597	20.0	304.4	5595.2	-38.6	48.7	99.6	-1.0	-35.6	15.0
4	5612	26.9	299.6	5609.0	-33.7	47.7	86.0	-4.4	-32.5	9.9
5	5627	33.5	300.3	5621.9	-27.5	44.1	73.1	-8.8	-28.7	3.4
6	5642	40.0	304.5	5633.9	-20.0	46.4	61.1	-13.6	-23.9	-4.2
7	5657	46.5	309.2	5644.9	-11.0	48.3	50.1	-18.6	-17.7	-12.4
8	5672	52.5	313.0	5654.6	-0.6	44.4	40.4	-23.3	-10.2	-21.0
9	5687	58.7	316.2	5663.1	10.9	44.9	31.9	-27.7	-1.5	-29.8
10	5704	65.3	317.4	5671.0	25.1	39.3	24.0	-32.6	9.4	-40.0
11	5735	74.6	319.0	5681.7	52.9	30.4	13.3	-41.3	31.1	-59.4
12	5766	80.6	318.6	5688.3	81.8	19.4	6.7	-50.0	53.9	-79.3
13	5798	84.9	317.5	5692.4	112.1	13.9	2.6	-59.6	77.5	-100.5
14	5829	84.9	317.6	5695.1	141.4	0.3	-0.1	-69.2	100.3	-121.4
15	5860	87.8	316.9	5697.1	170.8	9.6	-2.1	-79.0	123.0	-142.4
16	5892	90.5	316.4	5697.6	201.0	8.6	-2.6	-89.4	146.3	-164.3
17	5923	90.7	316.7	5697.2	230.3	1.2	-2.2	-99.6	168.8	-185.7
18	5955	88.0	316.7	5697.6	260.6	8.4	-2.6	-110.0	192.1	-207.6
19	5986	87.4	316.6	5698.8	289.9	2.0	-3.8	-120.0	214.6	-228.9
20	6018	85.7	314.2	5700.8	319.8	9.2	-5.8	-131.1	237.3	-251.3
21	6050	87.8	313.0	5702.6	349.4	7.0	-7.6	-143.1	259.4	-274.4
22	6082	89.1	313.0	5703.6	379.0	4.7	-8.6	-155.4	281.2	-297.8
23	6113	89.8	313.0	5703.9	407.6	2.3	-8.9	-167.3	302.3	-320.5
24	6145	92.7	315.8	5703.2	437.4	12.6	-8.2	-178.9	324.7	-343.3
25	6177	95.4	317.5	5700.9	467.6	10.0	-5.9	-189.3	347.9	-365.3
26	6208	97.3	320.6	5697.5	497.1	11.7	-2.5	-198.1	371.2	-385.4
27	6239	97.8	325.4	5693.4	527.0	15.4	1.6	-204.9	395.7	-403.9
28	6271	92.8	328.5	5690.4	558.5	18.4	4.6	-209.7	422.4	-421.3
29	6303	93.9	330.8	5688.6	590.3	8.0	6.4	-213.0	450.0	-437.4
30	6335	91.5	331.2	5687.1	622.2	7.6	7.9	-215.6	477.9	-452.9
31	6366	88.2	330.7	5687.1	653.0	10.8	7.9	-218.1	505.0	-468.0
32	6398	87.7	332.6	5686.3	684.9	6.1	6.7	-220.4	533.2	-483.2
33	6430	87.3	333.5	5689.7	716.9	3.1	5.3	-221.8	561.7	-497.7
34	6461	88.4	333.1	5690.8	747.8	3.8	4.2	-223.1	589.3	-511.6
35	6493	89.4	332.9	5691.5	779.8	3.2	3.5	-224.6	617.8	-526.1