PHOENIX DRILLING SERVICES
HORIZONTAL SURVEY PROGRAM

OPERATOR: TEXACO E & P INC.
WELL: J.R. PHILLIPS #9
LOCATION: LEA COUNTY, NEW MEXICO
JOB NO: 173026

START: 03/05/97
FINISH: 03/11/97
INFORMATION PROVIDED BY: TEXACO
HORIZONTAL COORDINATOR: MADDUX,

DIP1 = 0.00 deg
TARGET1 = 5,696 ft
VS1 = 0 ft

DATE: 03/11/97
TIME: 18:19:16
MAG DEC 9.02 EAS
TERM I1 = 90.00 deg
TERM I2 = 90.00 deg

SIDETRACK #1

DIP2 = 0.00 deg
TARGET2 = 5,696 ft
VS2 = 100 ft

MINIMUM CURVATURE CALCULATIONS(SP

DIRECTION 193.80 (GRID)

SVY #	MEASURED DEPTH	INC	AZIMUTH	TRUE VERTICAL DEPTH	VERTICAL SECTION	DLS/ 100	CENTER ABOVE(+) BELOW(-)	RIIGHT+) LEFT(-)	NORTH(−) SOUTH(−)	EAST(+) WEST(-)
39	6234	89.1	195.3	5697.0	621.1	2	-1	-27	-610	-122
40	6266	89.6	194.4	5697.4	653.1	3	-1	-26	-640	-131
41	6298	90.3	194.5	5697.4	685.1	2	-1	-26	-671	-139
42	6327	90.8	194.3	5697.1	714.1	2	-1	-25	-700	-146
43	6359	90.0	194.7	5696.9	746.1	3	-1	-25	-731	-154
44	6391	89.3	193.5	5697.1	778.1	4	-1	-25	-762	-162
45	6422	88.4	194.4	5697.7	809.1	4	-2	-25	-792	-169
46	6454	89.2	196.6	5698.4	841.1	7	-2	-24	-822	-178
47	6485	89.2	197.7	5698.8	872.0	4	-3	-22	-852	-187
48	6516	89.7	197.4	5699.1	903.0	2	-3	-20	-882	-196
49	6548	88.0	196.4	5699.8	934.9	6	-4	-18	-912	-205
50	6580	88.1	196.6	5700.9	966.9	1	-5	-17	-943	-214
51	6612	87.2	197.1	5702.2	998.8	3	-6	-15	-974	-224
52	6643	86.9	197.1	5703.8	1029.7	1	-8	-13	-1003	-233
53	6675	87.3	196.3	5705.4	1061.6	3	-9	-12	-1034	-242
54	6707	87.2	196.2	5706.9	1093.5	0	-11	-10	-1064	-251
55	6738	88.2	196.8	5708.2	1124.5	4	-12	-9	-1094	-260
56	6770	89.3	198.2	5708.9	1156.4	6	-13	-7	-1125	-269
57	6801	90.9	196.7	5708.8	1187.3	7	-13	-5	-1154	-279
58	6833	92.6	197.3	5707.8	1219.3	6	-12	-3	-1185	-288
59	6865	91.7	196.4	5706.6	1251.2	4	-11	-1	-1215	-297
60	6895	91.4	197.0	5705.8	1281.2	2	-10	0	-1244	-306
61	6927	89.2	195.8	5705.7	1313.1	8	-10	2	-1275	-315
62	6959	89.0	194.0	5706.2	1345.1	6	-10	2	-1306	-323
PROJ	6980	89.0	194.0	5706.5	1366.1	0	-11	2	-1326	-328

SURVEY NO 0 IS A TIE IN TO A FINDER GYRO RUN BY SCIENTIFIC DRILLING INC. ON 14-FEB-1997—JOB NO 32K0297056
SURVEYS 1 THRU 62 ARE FROM AN ALL ANGLE STEERING TOOL RUN BY BLACK WARRIOR WIRE LINE SERVICES
SURVEY NO. 63 IS A PROJECTION TO TOTAL DEPTH
FROM THE SURFACE LOCATION THE BOTTOM HOLE LOCATION IS AS FOLLOWS
A DISTANCE 0F 1366.1 FT——A TRUE VERTICAL DEPTH OF 5706.5 FEET——AND A TRUE AZIMUTH OF 194 DEGREES