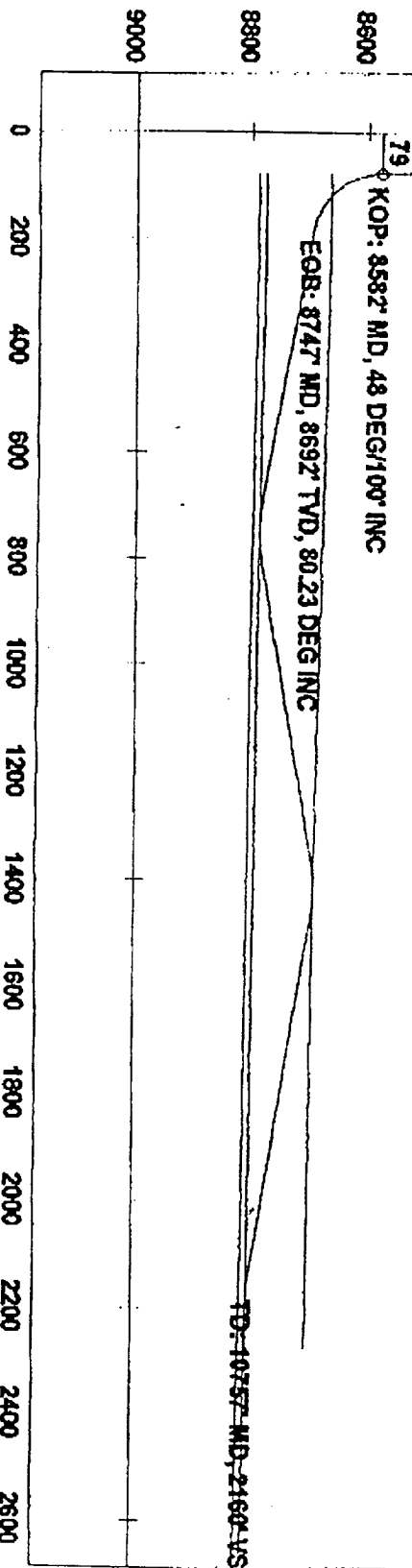


Company: TEXACO E & P INC.
 Lease/Well: NVAWU #27H
 Location: LEA COUNTY, NEW MEXICO
 Declination: 9.11 DEG EAST
 File name: C:\WINSERVER\NVAWU#27.SVY
 Date/Time: Friday, March 14, 1997

COPY

CRITICAL POINTS					
NO	INC	MD	YDK	YTD	E-W
KOP: 8582'	MD, 48 DEG/100'	INC			
8582.00	1.00	228.81	8576.15	-151.54	39.73
EOB: 8747'	MD, 8692'	YTD, 80.23 DEG INC			
8747.06	80.23	228.8	8691.70	-216.79	-34.83
TD: 10757'	MD, 2160'	VS			
10757.00	81.20	228.61	8799.22	-1529.67	

IF ROP AND TORQUE ARE SATISFACTORY CONTINUE TO BASE. TARGET AT 2160' VS. THE ASSAL TARGET MUST BE MET REGARDLESS OF TOTAL VERTICAL SECTION. TD CALL TO BE MADE BY KIRBY LOGGERS.



3/14/97 POSSIBLE TD

VERTICAL SECTION (Ft) @ 224.81°



Job Number:
Company: TEXACO E & P, INC.
Lease/Well: NVAWU #27H
Location: LEA COUNTY, NEW MEXICO
Rig Name:

State/Country:
Declination: 9.11 DEG EAST
Grid:
File name: C:\WINSERVE\NVAWU#27.SVY
Date/Time: 14-Mar-97 / 10:40
Curve Name: 3/14/97 POSSIBLE TD

Phoenix Drilling Services, Inc.

WINSERVE SURVEY CALCULATIONS
Minimum Curvature Method
Vertical Section Plane 224.81

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Subsea TVD FT	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
5575.00	1.50	156.50	5573.00	1515.00	-40.80	70.10	-20.46	81.11	120.20	.00
5607.00	1.80	152.80	5604.99	1546.99	-41.63	70.50	-20.15	81.87	120.56	1.00
5794.00	1.60	152.80	5791.90	1733.90	-46.56	73.05	-18.45	86.63	122.51	.11
5980.00	1.60	153.30	5977.83	1919.83	-51.18	75.41	-16.84	91.14	124.16	.01
6166.00	1.80	154.70	6163.75	2105.75	-66.14	77.83	-15.02	95.96	125.80	.11
6353.00	1.80	154.70	6350.66	2292.66	-61.45	80.34	-13.02	101.15	127.41	.00
6539.00	1.60	151.10	6536.58	2478.58	-66.37	82.84	-11.30	106.15	128.70	.12
6726.00	1.80	153.30	6723.49	2665.49	-71.28	85.42	-9.64	111.25	129.84	.11
6912.00	1.40	153.90	6909.42	2851.42	-75.93	87.74	-7.97	116.03	130.87	.22
6974.00	1.40	153.30	6971.40	2913.40	-77.28	88.41	-7.48	117.43	131.16	.02
7067.00	2.10	175.10	7064.36	3006.36	-80.00	89.06	-6.02	119.72	131.93	1.03
7128.00	3.00	190.50	7125.30	3067.30	-82.68	88.87	-3.98	121.38	132.93	1.84
7250.00	4.40	205.30	7247.04	3189.04	-90.05	86.29	3.07	124.72	136.22	1.38
7309.00	4.80	205.30	7305.85	3247.85	-94.33	84.27	7.53	126.48	138.22	.68
7371.00	5.10	210.90	7367.62	3309.62	-99.04	81.74	12.65	128.41	140.46	.92

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Subsea TVD FT	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
7433.00	5.60	221.40	7429.35	3371.35	-103.67	78.33	18.35	129.93	142.93	1.77
7503.00	6.00	227.10	7499.00	3441.00	-108.72	73.39	25.41	131.17	145.98	1.00
7658.00	5.60	227.10	7653.20	3595.20	-119.39	61.91	41.06	134.48	152.59	.26
7830.00	3.50	218.10	7824.65	3766.65	-129.23	52.52	54.67	139.50	157.88	1.29
8124.00	2.00	207.00	8118.31	4060.31	-140.87	44.66	68.46	147.77	162.41	.54
8558.00	1.00	199.50	8552.15	4494.15	-151.18	39.95	79.10	156.37	165.20	.23
KOP: 8582' MD, 48 DEG/100' INC										
8582.00	1.00	228.81	8576.15	4518.15	-151.52	39.73	79.50	156.64	165.31	2.11
8592.00	5.80	228.80	8586.13	4528.13	-151.91	39.28	80.09	156.91	165.50	48.00
8602.00	10.60	228.80	8596.02	4538.02	-152.85	38.21	81.51	157.55	165.97	48.00
8612.00	15.40	228.80	8605.77	4547.77	-154.33	36.52	83.75	158.59	166.69	48.00
8622.00	20.20	228.80	8615.28	4557.28	-158.34	34.22	86.80	160.04	167.65	48.00
8632.00	25.00	228.80	8624.51	4566.51	-158.87	31.33	90.63	161.93	168.85	48.00
8642.00	29.80	228.80	8633.39	4575.39	-161.90	27.86	95.22	164.28	170.23	48.00
8652.00	34.60	228.80	8641.85	4583.85	-165.41	23.86	100.54	167.12	171.79	48.00
8662.00	39.40	228.80	8649.83	4591.83	-169.37	19.33	106.54	170.47	173.49	48.00
8672.00	44.20	228.80	8657.29	4599.29	-173.76	14.32	113.19	174.35	175.29	48.00
8682.00	49.00	228.80	8664.15	4606.15	-178.55	8.85	120.43	178.77	177.16	48.00
8692.00	53.80	228.80	8670.39	4612.39	-183.69	2.97	128.23	183.72	179.07	48.00
8702.00	58.60	228.80	8675.95	4617.95	-189.17	-3.28	136.51	189.19	180.99	48.00
8712.00	63.40	228.80	8680.80	4622.80	-194.92	-9.86	145.24	195.17	182.90	48.00
8722.00	68.20	228.80	8684.90	4626.90	-200.93	-16.72	154.33	201.63	184.76	48.00
8732.00	73.00	228.80	8688.22	4630.22	-207.14	-23.82	163.74	208.51	186.56	48.00
8742.00	77.80	228.80	8690.74	4632.74	-213.51	-31.09	173.39	215.77	188.29	48.00
EOB: 8747' MD, 8692' TVD, 80.23 DEG INC										
8747.06	80.23	228.80	8691.70	4633.70	-216.79	-34.83	178.35	219.57	189.13	48.00
8847.06	80.23	228.80	8708.67	4650.67	-281.70	-108.99	276.66	302.05	201.15	.00
8947.06	80.23	228.80	8725.84	4667.84	-346.61	-183.14	374.97	392.02	207.85	.00
9047.06	80.23	228.80	8742.81	4684.81	-411.52	-257.29	473.28	485.33	212.01	.00
9147.06	80.23	228.80	8759.58	4701.58	-476.43	-331.44	571.59	580.38	214.83	.00
9247.06	80.23	228.80	8776.55	4718.55	-541.34	-405.60	669.90	676.43	216.84	.00

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Subsea TVD FT	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
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BUILD @ 15.0 DEG/100'

9261.07	80.23	228.80	8778.92	4720.92	-550.43	-415.98	683.67	689.94	217.08	.00
9271.07	81.73	228.80	8780.49	4722.49	-556.94	-423.41	693.52	699.61	217.24	15.00
9281.07	83.23	228.81	8781.80	4723.80	-563.47	-430.87	703.41	709.33	217.40	15.00
9291.07	84.73	228.81	8782.85	4724.85	-570.02	-438.35	713.33	719.08	217.56	15.00
9301.07	86.23	228.81	8783.64	4725.64	-576.58	-445.85	723.27	728.86	217.71	15.00
9311.07	87.73	228.81	8784.16	4726.16	-583.16	-453.37	733.24	738.66	217.86	15.00
9321.07	89.23	228.81	8784.43	4726.43	-589.74	-460.89	743.21	748.48	218.01	15.00

TARGET 1

9326.19	90.00	228.81	8784.46	4726.46	-593.12	-464.75	748.32	753.51	218.08	15.00
9336.19	91.50	228.81	8784.33	4726.33	-599.70	-472.27	758.29	763.34	218.22	15.00
9346.19	93.00	228.81	8783.94	4725.94	-606.28	-479.79	768.26	773.16	218.36	15.00
9356.19	94.50	228.81	8783.28	4725.28	-612.85	-487.30	778.22	782.98	218.48	15.00
9366.19	96.00	228.81	8782.37	4724.37	-619.41	-494.80	788.15	792.77	218.62	15.00

9376.19	97.50	228.81	8781.19	4723.19	-625.95	-502.27	798.06	802.55	218.74	15.00
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Hold @ 98.9

9385.85	98.95	228.81	8779.81	4721.81	-632.25	-509.47	807.60	811.97	218.86	15.00
9485.85	98.95	228.81	8764.26	4706.26	-697.30	-583.80	906.14	909.43	219.94	.00
9585.85	98.95	228.81	8748.70	4690.70	-762.36	-658.14	1004.68	1007.14	220.80	.00
9685.85	98.95	228.81	8733.15	4675.15	-827.41	-732.48	1103.22	1105.05	221.52	.00
9785.85	98.95	228.81	8717.59	4659.59	-892.47	-806.81	1201.77	1203.10	222.11	.00

9885.85	98.95	228.81	8702.03	4644.03	-957.52	-881.15	1300.31	1301.26	222.62	.00
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Drop @ 15.0 98.95°

9943.68	98.95	228.81	8693.04	4635.04	-995.14	-924.14	1357.29	1358.06	222.88	.00
9943.76	98.94	228.81	8693.03	4635.03	-995.19	-924.20	1357.37	1358.14	222.88	15.00
9953.34	97.50	228.81	8691.66	4633.66	-1001.43	-931.33	1366.83	1367.57	222.92	15.00
9963.34	96.00	228.81	8690.48	4632.48	-1007.97	-938.80	1376.74	1377.45	222.97	15.00
9973.34	94.50	228.81	8689.57	4631.57	-1014.53	-946.30	1386.67	1387.36	223.01	15.00
9983.34	93.00	228.81	8688.91	4630.91	-1021.10	-953.81	1396.62	1397.28	223.05	15.00
9993.34	91.50	228.81	8688.52	4630.52	-1027.68	-961.33	1406.59	1407.23	223.09	15.00

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Subsea TVD FT	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	CLOSURE Direction Deg	Dogleg Severity Deg/100
TARGET 2										
10003.34	90.00	228.81	8686.39	4630.39	-1034.27	-968.85	1416.57	1417.17	223.13	15.00
10013.34	88.50	228.81	8688.52	4630.52	-1040.85	-976.38	1426.54	1427.12	223.17	15.00
10023.34	87.00	228.81	8688.91	4630.91	-1047.43	-983.89	1436.51	1437.07	223.21	15.00
10033.34	85.50	228.81	8689.57	4631.57	-1054.01	-991.40	1446.46	1447.00	223.25	15.00
10043.34	84.00	228.81	8690.48	4632.48	-1060.56	-998.90	1456.40	1456.91	223.28	15.00
10053.34	82.50	228.81	8691.66	4633.86	-1067.10	-1006.37	1466.30	1466.80	223.32	15.00
HOLD 81.2 DEG INC										
10062.01	81.20	228.81	8692.89	4634.89	-1072.76	-1012.83	1474.86	1475.34	223.35	15.00
10162.01	81.20	228.81	8708.19	4650.19	-1137.84	-1087.20	1573.45	1573.74	223.70	.00
10262.01	81.20	228.81	8723.49	4665.49	-1202.92	-1161.56	1672.03	1672.20	224.00	.00
10362.01	81.20	228.81	8738.79	4680.79	-1268.00	-1235.93	1770.81	1770.69	224.27	.00
10462.01	81.20	228.81	8754.09	4696.09	-1333.08	-1310.30	1869.19	1869.22	224.51	.00
10562.01	81.20	228.81	8769.38	4711.38	-1398.16	-1384.66	1967.77	1967.78	224.72	.00
10662.01	81.20	228.81	8784.68	4726.68	-1463.24	-1459.03	2066.35	2066.38	224.92	.00
TD: 10757' MD, 2160' VS										
10757.00	81.20	228.81	8799.22	4741.22	-1525.06	-1529.67	2160.00	2160.02	225.09	.00