Scientific Drilling

TEXACO E & P INC.
Field: Vacuum Glorieta West
Site: Lea County, NM
Well: VGWU #61
Wellpath: HH - Job #32D0400113
Survey: 4/5/00-4/8/00

SUR: 660/N & 760/E
A-36 17S-34E

BHL: 457/SO 563/E
P-25-17S-34E

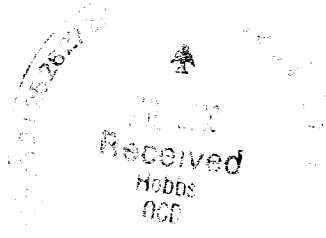
This survey is correct to the best of my knowledge and is supported by actual field data.

David Mody .....Company Representative

Notorized this date 26th of July, 2000.

Deborah Sue Bynum
Notary Signature
County of Midland
State of Texas

DEBORAH S BYNUM
Notary Public, State of Texas
My Commission Expires
05-09-2004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CIENTIFIC DRILLINC
SURVEY REPORT

Company:	TEXACO E & P INC.	**Date:** 7/19/2000	**Time:** 14:31:18	**Page:**	1
Field:	Vacuum Glorieta West	**Co-ordinate(NE) Reference:**	Site: Lea County, NM, True North		
Site:	Lea County, NM	**Vertical (TVD) Reference:**	SITE 0.0 above Mean Sea Level		
Well:	VGWU #61	**Section (VS) Reference:**	Slot (0.0E,0.0N,10.0Azi)		
Wellpath:	Vh - Job #32K0400114	**Survey Calculation Method:**	Minimum Curvature		

Survey: 4/4/00
KSRG 0'-5883'

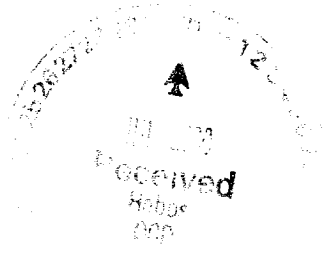
Start Date: 7/19/2000

Company: SDI
Tool: KEEPER

Engineer: Jon Valenzuela

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ClsA deg	ClsD ft
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.0
100.0	0.25	34.50	100.0	0.2	0.1	0.2	0.25	34.50	0.2
200.0	0.29	353.98	200.0	0.6	0.2	0.6	0.19	19.84	0.6
300.0	0.34	0.58	300.0	1.2	0.2	1.2	0.06	9.64	1.2
400.0	0.31	359.62	400.0	1.7	0.2	1.7	0.03	6.55	1.7
500.0	0.32	26.28	500.0	2.2	0.3	2.3	0.15	8.11	2.3
600.0	0.38	18.89	600.0	2.8	0.6	2.9	0.07	11.09	2.9
700.0	0.39	36.25	700.0	3.4	0.9	3.5	0.12	14.19	3.5
800.0	0.26	74.61	800.0	3.7	1.3	3.9	0.25	18.91	3.9
900.0	0.20	182.71	900.0	3.6	1.5	3.8	0.37	22.37	3.9
1000.0	0.38	196.34	1000.0	3.1	1.4	3.3	0.19	23.94	3.4
1100.0	0.56	231.49	1100.0	2.5	0.9	2.6	0.33	20.02	2.7
1200.0	0.64	243.22	1200.0	1.9	0.0	1.9	0.15	0.94	1.9
1300.0	0.59	244.29	1300.0	1.5	-0.9	1.3	0.05	327.75	1.7
1400.0	0.38	237.51	1400.0	1.1	-1.7	0.8	0.22	302.66	2.0
1500.0	0.35	209.32	1500.0	0.6	-2.1	0.3	0.18	286.64	2.2
1600.0	0.36	217.51	1600.0	0.1	-2.4	-0.3	0.05	272.65	2.4
1700.0	0.57	178.14	1700.0	-0.6	-2.6	-1.1	0.37	256.41	2.7
1800.0	0.56	181.21	1800.0	-1.6	-2.6	-2.0	0.03	238.23	3.1
1900.0	0.68	173.74	1900.0	-2.7	-2.6	-3.1	0.14	223.50	3.7
2000.0	0.73	173.51	1999.9	-3.9	-2.4	-4.3	0.05	211.71	4.6
2100.0	0.73	174.23	2099.9	-5.2	-2.3	-5.5	0.01	203.79	5.7
2200.0	0.78	165.50	2199.9	-6.5	-2.1	-6.7	0.13	197.57	6.8
2300.0	0.79	165.94	2299.9	-7.8	-1.7	-8.0	0.01	192.38	8.0
2400.0	0.74	143.98	2399.9	-9.0	-1.2	-9.1	0.30	187.39	9.1
2500.0	0.92	101.58	2499.9	-9.7	0.0	-9.5	0.62	180.00	9.7
2600.0	1.07	83.49	2599.9	-9.7	1.7	-9.3	0.35	170.02	9.9
2700.0	1.19	84.67	2699.9	-9.5	3.7	-8.8	0.12	158.92	10.2
2800.0	1.10	90.44	2799.8	-9.4	5.7	-8.3	0.15	149.03	11.0
2900.0	0.98	90.98	2899.8	-9.5	7.5	-8.0	0.12	141.67	12.1
3000.0	0.55	90.77	2999.8	-9.5	8.8	-7.8	0.43	137.10	13.0
3100.0	0.23	44.47	3099.8	-9.4	9.4	-7.6	0.42	134.73	13.3
3200.0	0.35	322.91	3199.8	-9.0	9.4	-7.2	0.39	133.66	13.0
3300.0	0.44	316.13	3299.8	-8.4	8.9	-6.8	0.10	133.35	12.3
3400.0	0.48	317.43	3399.8	-7.9	8.4	-6.3	0.04	133.11	11.5
3500.0	0.43	317.35	3499.8	-7.3	7.9	-5.8	0.05	132.79	10.7
3600.0	0.31	288.03	3599.8	-6.9	7.3	-5.5	0.22	133.27	10.1
3700.0	0.34	268.38	3699.8	-6.8	6.8	-5.6	0.11	135.20	9.6
3800.0	0.31	258.50	3799.8	-6.9	6.2	-5.7	0.06	137.92	9.3
3900.0	0.31	259.24	3899.8	-7.0	5.7	-5.9	0.00	140.87	9.0
4000.0	0.38	259.02	3999.8	-7.1	5.1	-6.1	0.07	144.34	8.8
4100.0	0.19	257.53	4099.8	-7.2	4.6	-6.3	0.19	147.37	8.6
4200.0	0.08	263.67	4199.8	-7.3	4.4	-6.4	0.11	148.85	8.5
4300.0	0.10	285.86	4299.8	-7.2	4.2	-6.4	0.04	149.68	8.4
4400.0	0.08	310.47	4399.8	-7.2	4.1	-6.4	0.04	150.26	8.3
4500.0	0.22	344.19	4499.8	-6.9	4.0	-6.1	0.16	150.10	8.0
4600.0	0.28	322.25	4599.8	-6.6	3.8	-5.8	0.11	150.00	7.6
4700.0	0.51	320.58	4699.8	-6.0	3.4	-5.4	0.23	150.88	6.9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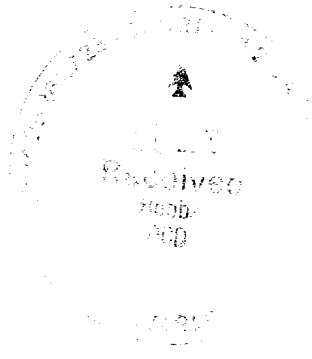
CIENTIFIC DRILLINC
SURVEY REPORT

Company:	TEXACO E & P INC.	**Date:** 7/19/2000	**Time:** 14:31:18	**Page:**	2
Field:	Vacuum Glorieta West	**Co-ordinate(NE) Reference:**	Site: Lea County, NM, True North		
Site:	Lea County, NM	**Vertical (TVD) Reference:**	SITE 0.0 above Mean Sea Level		
Well:	VGWU #61	**Section (VS) Reference:**	Slot (0.0E,0.0N,10.0Azi)		
Wellpath:	Vh - Job #32K0400114	**Survey Calculation Method:**	Minimum Curvature		

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ClsA deg	ClsD ft
4800.0	0.60	330.84	4799.8	-5.2	2.8	-4.7	0.13	151.65	5.9
4900.0	0.85	349.15	4899.8	-4.0	2.4	-3.6	0.34	149.03	4.7
5000.0	0.90	340.28	4999.8	-2.6	2.0	-2.2	0.14	141.87	3.3
5100.0	0.96	331.59	5099.8	-1.1	1.4	-0.8	0.15	129.01	1.8
5200.0	0.89	348.19	5199.7	0.4	0.8	0.5	0.28	63.77	0.9
5300.0	0.70	356.05	5299.7	1.8	0.6	1.8	0.22	18.82	1.9
5400.0	0.69	11.75	5399.7	3.0	0.7	3.0	0.19	12.96	3.0
5500.0	0.77	11.99	5499.7	4.2	0.9	4.3	0.08	12.64	4.3
5600.0	0.81	28.99	5599.7	5.5	1.4	5.7	0.24	14.57	5.7
5700.0	0.42	84.49	5699.7	6.1	2.1	6.4	0.67	19.16	6.5
5800.0	0.40	70.18	5799.7	6.3	2.8	6.7	0.10	24.19	6.9
5883.0	0.51	67.87	5882.7	6.5	3.4	7.0	0.13	27.79	7.4



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SURVEY REPORT

Company:	TEXACO E & P INC.	**Date:** 7/19/2000	**Time:** 14:53:21	**Page:**	1
Field:	Vacuum Glorieta West	**Co-ordinate(NE) Reference:**	Site: Lea County, NM, True North		
Site:	Lea County, NM	**Vertical (TVD) Reference:**	SITE 0.0 above Mean Sea Level		
Well:	VGWU #61	**Section (VS) Reference:**	Slot (0.0E,0.0N,10.0Azi)		
Wellpath:	HH - Job #32D0400113	**Survey Calculation Method:**	Minimum Curvature		

Survey: 4/5/00-4/8/00
MWD 5883'-7098'

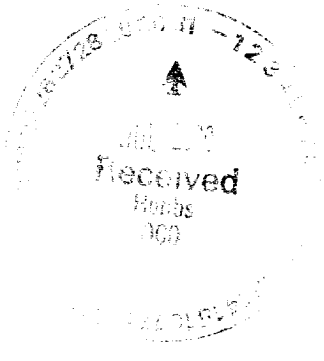
Start Date: 7/19/2000

Company: SDI w/Ryan
Tool: MWD

Engineer: L. Coetzee

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ClsA deg	ClsD ft
5883.0	0.51	67.87	5882.7	6.5	3.4	7.0	0.00	27.79	7.4
5945.0	21.10	1.50	5943.3	17.9	4.0	18.3	33.71	12.57	18.4
5955.0	26.20	1.00	5952.4	21.9	4.1	22.3	51.04	10.54	22.3
5965.0	31.40	1.20	5961.2	26.7	4.2	27.1	52.01	8.87	27.1
5975.0	36.30	3.30	5969.5	32.3	4.4	32.6	50.37	7.76	32.6
5985.0	40.60	6.80	5977.3	38.5	5.0	38.8	48.18	7.34	38.8
5995.0	44.60	11.00	5984.7	45.2	6.0	45.5	49.06	7.58	45.6
6005.0	48.60	14.70	5991.6	52.3	7.6	52.8	48.18	8.31	52.8
6015.0	53.20	17.30	5997.9	59.7	9.8	60.5	50.22	9.30	60.5
6025.0	58.00	18.90	6003.5	67.5	12.3	68.7	49.78	10.36	68.7
6061.0	74.20	21.00	6018.1	98.4	23.6	101.0	45.31	13.47	101.2
6093.0	80.30	19.50	6025.1	127.6	34.4	131.7	19.60	15.07	132.2
6125.0	85.90	18.20	6029.0	157.7	44.6	163.0	17.96	15.80	163.9
6156.0	90.80	16.30	6029.9	187.3	53.8	193.8	16.95	16.03	194.8
6187.0	89.80	11.20	6029.7	217.4	61.2	224.7	16.76	15.72	225.8
6219.0	89.70	9.40	6029.8	248.9	66.9	256.7	5.63	15.05	257.7
6250.0	90.10	9.80	6029.9	279.4	72.1	287.7	1.82	14.46	288.6
6282.0	90.50	8.70	6029.7	311.0	77.2	319.7	3.66	13.94	320.4
6313.0	90.40	5.70	6029.5	341.8	81.1	350.6	9.68	13.35	351.2
6345.0	90.80	5.00	6029.1	373.6	84.1	382.5	2.52	12.68	383.0
6377.0	88.50	5.20	6029.3	405.5	86.9	414.4	7.21	12.10	414.7
6408.0	88.10	3.80	6030.3	436.4	89.4	445.3	4.69	11.57	445.4
6440.0	88.20	2.60	6031.3	468.3	91.1	477.0	3.76	11.01	477.1
6472.0	87.80	6.30	6032.4	500.2	93.6	508.8	11.62	10.60	508.9
6503.0	87.10	4.50	6033.8	531.0	96.5	539.7	6.22	10.30	539.7
6533.0	88.60	6.60	6034.9	560.9	99.4	569.6	8.60	10.05	569.6
6566.0	90.00	8.20	6035.3	593.6	103.7	602.6	6.44	9.91	602.6
6598.0	90.20	11.40	6035.3	625.1	109.1	634.6	10.02	9.90	634.6
6629.0	89.70	12.20	6035.3	655.4	115.5	665.5	3.04	9.99	665.5
6661.0	89.20	11.40	6035.6	686.8	122.0	697.5	2.95	10.07	697.5
6693.0	88.90	12.60	6036.1	718.1	128.7	729.5	3.86	10.16	729.5
6725.0	88.90	11.70	6036.7	749.3	135.4	761.5	2.81	10.24	761.5
6756.0	90.10	9.60	6037.0	779.8	141.1	792.5	7.80	10.26	792.5
6788.0	89.30	8.90	6037.2	811.4	146.3	824.5	3.32	10.22	824.5
6819.0	90.70	9.80	6037.2	842.0	151.3	855.5	5.37	10.19	855.5
6851.0	91.30	10.10	6036.6	873.5	156.8	887.5	2.10	10.18	887.5
6883.0	90.80	9.10	6036.0	905.0	162.2	919.4	3.49	10.16	919.4
6914.0	90.00	7.70	6035.8	935.7	166.7	950.4	5.20	10.10	950.4
6946.0	90.20	8.00	6035.8	967.4	171.1	982.4	1.13	10.03	982.4
6978.0	90.90	10.00	6035.5	999.0	176.1	1014.4	6.62	10.00	1014.4
7009.0	91.60	10.00	6034.8	1029.5	181.5	1045.4	2.26	10.00	1045.4
7040.0	92.70	10.50	6033.6	1060.0	187.0	1076.4	3.90	10.00	1076.4
7098.0	92.70	10.50	6030.9	1117.0	197.5	1134.3	0.00	10.03	1134.3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