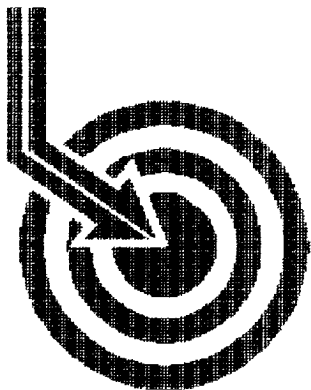




Scientific Drilling



TEXACO E & P INC.

Field: Vacuum Glorieta West

Site: Lea County, NM

Well: VGWU #99

Wellpath: VH/HH - Job #32K0299027 & 28

Survey: 2/11/99-2/17/99

API #: 30-025-29919

Gyro Footage: 0'-5770'

MWD Footage: 5793'-6674'

Survey: Sec. 36, T17S, R34E

K.O.P.: 5770'

SUR: 990/s & 990/w

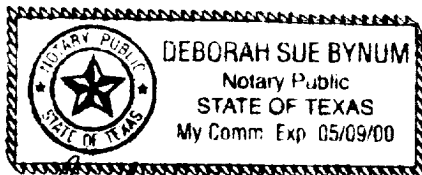
BAL: 987/s & 189/w

m-36-17s-34e

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

Deborah Neady.....Company Representative

Notorized this date 25th of March, 2000.



Deborah Sue Bynum
Midland Co., Tex

SCIENTIFIC DRILLING

SURVEY REPORT

Company: TEXACO E & P INC.
Field: Vacuum Gloria West
Site: Lea County, NM
Well: VGWU #99
Wellpath: VH/HH - Job #32K0299027 &

Date: 3/8/2000 **Time:** 14:34:05 **Page:** 1
Co-ordinate(N/E) Reference: Site: Lea County, NM, True North
Vertical (TVD) Reference: SITE 0.0 above Mean Sea Level
Section (VS) Reference: Slot (0.0E, 0.0N, 0.0Az)
Survey Calculation Method: Minimum Curvature

Survey: 2/11/99-2/17/99
 KSRG 0'-5770' & MWD 5793'-6391'

Start Date: 3/8/2000

Company: SDI & DMI
Tool: KEEPER

Engineer: DeSpain & Holland

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ChA deg	ChD ft
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.0
100.0	0.17	135.35	100.0	-0.1	0.1	-0.1	0.17	135.35	0.1
200.0	0.12	123.52	200.0	-0.3	0.3	-0.3	0.06	132.27	0.4
300.0	0.14	137.39	300.0	-0.4	0.5	-0.4	0.04	131.81	0.6
400.0	0.18	129.49	400.0	-0.6	0.7	-0.6	0.05	132.16	0.9
500.0	0.20	126.05	500.0	-0.8	0.9	-0.8	0.02	130.96	1.2
600.0	0.23	116.78	600.0	-1.0	1.3	-1.0	0.05	128.67	1.6
700.0	0.26	119.58	700.0	-1.2	1.6	-1.2	0.03	126.48	2.0
800.0	0.27	116.66	800.0	-1.4	2.0	-1.4	0.02	124.93	2.5
900.0	0.29	127.24	900.0	-1.7	2.4	-1.7	0.06	124.47	3.0
1000.0	0.33	133.68	1000.0	-2.0	2.9	-2.0	0.05	125.42	3.5
1100.0	0.31	136.85	1100.0	-2.4	3.3	-2.4	0.03	126.76	4.1
1200.0	0.29	157.14	1200.0	-2.9	3.5	-2.9	0.11	128.97	4.5
1300.0	0.22	157.19	1300.0	-3.3	3.7	-3.3	0.07	131.41	4.9
1400.0	0.29	162.56	1400.0	-3.7	3.9	-3.7	0.07	133.71	5.3
1500.0	0.32	176.88	1500.0	-4.2	3.9	-4.2	0.08	136.82	5.8
1600.0	0.31	176.46	1600.0	-4.8	4.0	-4.8	0.01	140.08	6.2
1700.0	0.32	176.89	1700.0	-5.3	4.0	-5.3	0.01	142.90	6.7
1800.0	0.31	167.70	1800.0	-5.8	4.1	-5.8	0.05	145.07	7.1
1900.0	0.30	161.86	1900.0	-6.4	4.2	-6.4	0.03	146.42	7.6
2000.0	0.29	156.05	2000.0	-6.8	4.4	-6.8	0.03	147.20	8.1
2100.0	0.27	143.60	2100.0	-7.3	4.7	-7.3	0.06	147.36	8.6
2200.0	0.26	134.96	2200.0	-7.6	5.0	-7.6	0.04	146.96	9.1
2300.0	0.25	88.35	2300.0	-7.8	5.3	-7.8	0.20	145.54	9.4
2400.0	0.40	68.88	2400.0	-7.6	5.9	-7.6	0.18	142.43	9.6
2500.0	0.87	55.42	2500.0	-7.1	6.8	-7.1	0.49	136.05	9.8
2600.0	1.03	56.63	2600.0	-6.2	8.2	-6.2	0.16	126.88	10.3
2700.0	1.05	55.35	2699.9	-5.1	9.7	-5.1	0.03	117.90	11.0
2800.0	1.07	55.65	2799.9	-4.1	11.2	-4.1	0.02	110.02	12.0
2900.0	0.87	59.80	2899.9	-3.2	12.7	-3.2	0.21	104.11	13.1
3000.0	0.62	61.96	2999.9	-2.5	13.8	-2.5	0.25	100.46	14.0
3100.0	0.53	74.14	3099.9	-2.2	14.7	-2.2	0.15	98.37	14.9
3200.0	0.37	88.16	3199.9	-2.0	15.5	-2.0	0.19	97.46	15.6
3300.0	0.33	111.92	3299.9	-2.1	16.1	-2.1	0.15	97.53	16.2
3400.0	0.40	91.29	3399.9	-2.2	16.7	-2.2	0.15	97.65	16.8
3500.0	0.32	90.52	3499.9	-2.3	17.3	-2.3	0.08	97.41	17.5
3600.0	0.33	90.58	3599.9	-2.3	17.9	-2.3	0.01	97.19	18.0
3700.0	0.28	90.64	3699.9	-2.3	18.4	-2.3	0.05	97.00	18.6
3800.0	0.27	85.91	3799.9	-2.2	18.9	-2.2	0.02	96.79	19.0
3900.0	0.33	79.08	3899.9	-2.2	19.4	-2.2	0.07	96.40	19.5
4000.0	0.33	83.19	3999.9	-2.1	20.0	-2.1	0.02	95.97	20.1
4100.0	0.32	76.56	4099.9	-2.0	20.5	-2.0	0.04	95.53	20.6
4200.0	0.25	66.81	4199.9	-1.8	21.0	-1.8	0.08	95.00	21.1
4300.0	0.24	73.73	4299.9	-1.7	21.4	-1.7	0.03	94.52	21.5
4400.0	0.23	82.46	4399.9	-1.6	21.8	-1.6	0.04	94.22	21.9
4500.0	0.11	111.20	4499.9	-1.6	22.1	-1.6	0.14	94.19	22.2
4600.0	0.31	155.59	4599.9	-1.9	22.3	-1.9	0.24	94.87	22.4
4700.0	0.72	198.27	4699.9	-2.7	22.2	-2.7	0.54	97.03	22.4

SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Vacuum Glorieta West
Site: Lea County, NM
Well: VGWU #99
Wellpath: VH/HH- Job #32K0299027 &

Date: 3/8/2000 Time: 14:34:05 Page: 2
Co-ordinate(N/E) Reference: Site: Lea County, NM, True North
Vertical (TVD) Reference: SITE 0.0 above Mean Sea Level
Section (VS) Reference: Slot (0.0E,0.0N,0.0Az)
Survey Calculation Method: Minimum Curvature

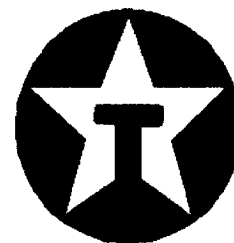
Survey

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	0.87	197.24	4799.9	-4.1	21.8	-4.1	0.15	100.56	22.2
4900.0	1.09	211.59	4899.8	-5.6	21.1	-5.6	0.33	104.88	21.8
5000.0	2.07	209.70	4999.8	-8.0	19.7	-8.0	0.98	112.07	21.2
5100.0	1.92	216.64	5099.7	-10.9	17.8	-10.9	0.28	121.48	20.9
5200.0	1.81	223.68	5199.7	-13.4	15.7	-13.4	0.25	130.44	20.6
5300.0	1.69	226.20	5299.6	-15.5	13.5	-15.5	0.14	138.94	20.6
5400.0	1.56	224.24	5399.6	-17.5	11.5	-17.5	0.14	146.69	21.0
5500.0	1.17	224.30	5499.6	-19.2	9.9	-19.2	0.39	152.86	21.6
5600.0	0.47	223.33	5599.6	-20.3	8.9	-20.3	0.70	156.37	22.1
5700.0	0.41	218.81	5699.6	-20.8	8.4	-20.8	0.07	158.15	22.5
5770.0	0.38	206.98	5769.6	-21.2	8.1	-21.2	0.12	159.14	22.7
5793.0	6.80	268.30	5792.5	-21.4	6.7	-21.4	28.81	162.58	22.4
5822.0	15.30	265.50	5820.9	-21.7	1.2	-21.7	29.36	176.94	21.7
5854.0	26.40	262.00	5850.8	-23.0	-10.1	-23.0	34.89	203.74	25.2
5886.0	38.20	262.20	5877.8	-25.4	-27.0	-25.4	36.88	226.81	37.1
5918.0	54.50	267.50	5899.8	-27.3	-50.0	-27.3	52.29	241.37	57.0
5933.0	65.00	269.70	5907.4	-27.6	-63.0	-27.6	71.13	246.32	68.7
5948.0	76.30	270.60	5912.3	-27.6	-77.1	-27.6	75.54	250.32	81.9
5979.0	86.90	276.90	5916.9	-25.5	-107.6	-25.5	39.65	256.65	110.6
6011.0	86.90	277.60	5918.6	-21.5	-139.3	-21.5	2.18	261.22	141.0
6043.0	87.30	277.40	5920.2	-17.3	-171.0	-17.3	1.40	264.21	171.9
6074.0	88.50	274.90	5921.3	-14.0	-201.8	-14.0	8.94	266.03	202.3
6106.0	87.60	272.80	5922.4	-11.9	-233.7	-11.9	7.14	267.09	234.0
6138.0	87.80	272.50	5923.7	-10.4	-265.6	-10.4	1.13	267.76	265.9
6170.0	86.60	271.70	5925.3	-9.2	-297.6	-9.2	4.51	268.23	297.7
6201.0	85.80	271.50	5927.3	-8.4	-328.5	-8.4	2.66	268.54	328.6
6236.0	86.60	271.50	5929.7	-7.4	-363.4	-7.4	2.29	268.83	363.5
6264.0	86.90	271.40	5931.2	-6.7	-391.4	-6.7	1.13	269.01	391.4
6296.0	87.50	271.20	5932.8	-6.0	-423.3	-6.0	1.98	269.19	423.4
6327.0	89.30	270.90	5933.7	-5.4	-454.3	-5.4	5.89	269.31	454.3
6359.0	89.80	270.80	5933.9	-5.0	-486.3	-5.0	1.59	269.41	486.3
6391.0	90.60	270.60	5933.8	-4.6	-518.3	-4.6	2.58	269.49	518.3
6423.0	91.10	270.50	5933.3	-4.3	-550.3	-4.3	1.59	269.56	550.3
6454.0	91.60	270.70	5932.6	-3.9	-581.3	-3.9	1.74	269.61	581.3
6486.0	89.70	270.80	5932.2	-3.5	-613.3	-3.5	5.95	269.67	613.3
6518.0	90.00	270.60	5932.3	-3.1	-645.3	-3.1	1.13	269.72	645.3
6549.0	88.50	270.10	5932.7	-2.9	-676.3	-2.9	5.10	269.75	676.3
6580.0	86.90	270.00	5934.0	-2.9	-707.2	-2.9	5.17	269.76	707.2
6611.0	87.20	269.90	5935.6	-2.9	-738.2	-2.9	1.02	269.77	738.2
6643.0	87.70	269.90	5937.0	-3.0	-770.2	-3.0	1.56	269.78	770.2
6674.0	88.40	269.90	5938.0	-3.1	-801.1	-3.1	2.26	269.78	801.2

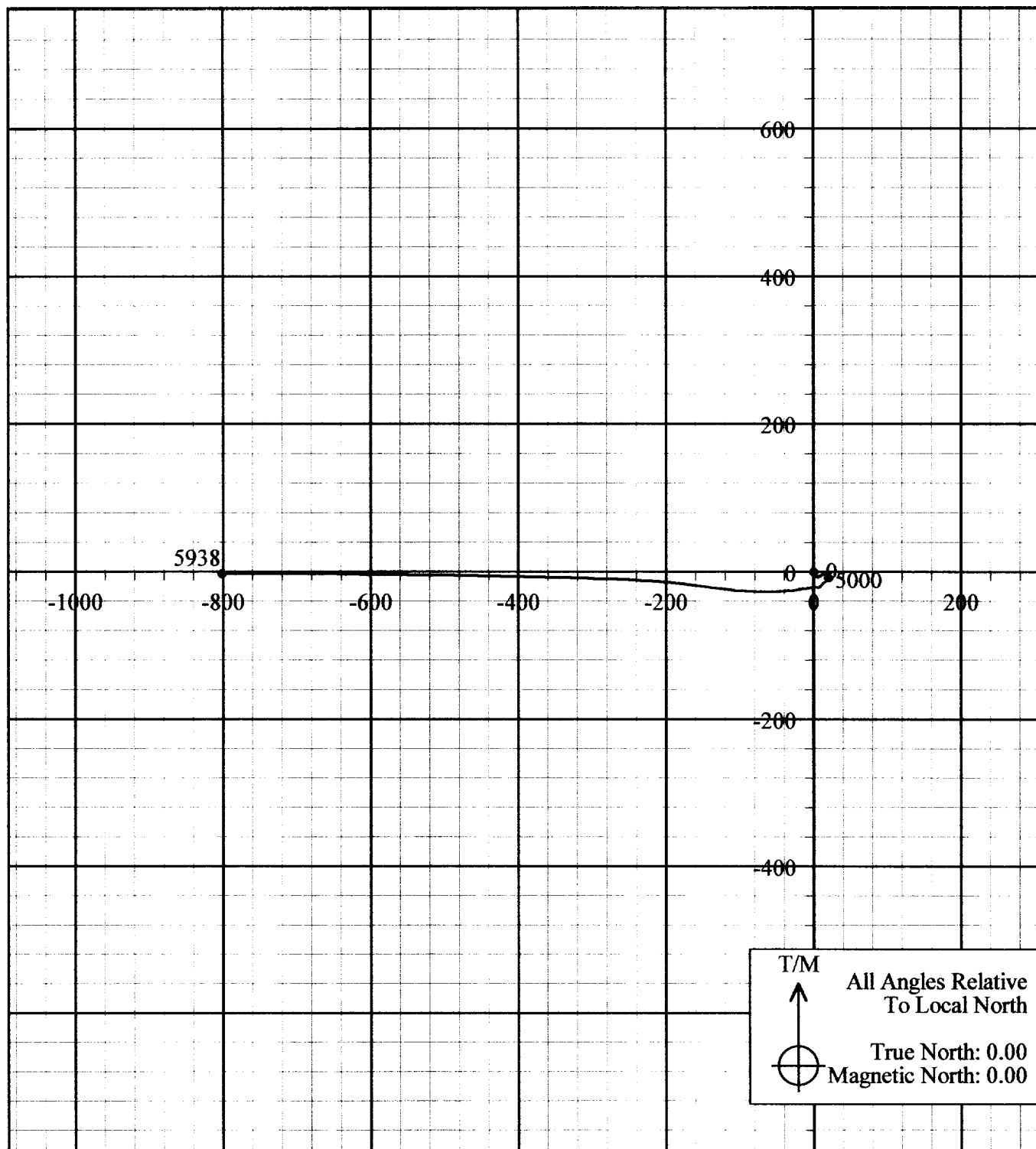


**Scientific
Drilling**

TEXACO E & P INC
Field: Vacuum Glorieta West
Site: Lea County, NM
Well: VGWU #99
Wellpath: VH/HH - Job #32K0299027 & 28
Survey: 2/11/99-2/17/99



South(-)/North(+) [200ft/in]



West(-)/East(+) [200ft/in]