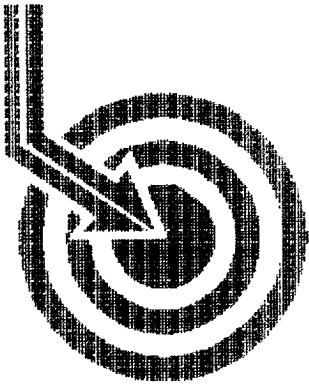




Scientific Drilling



TEXACO E & P INC.

Field: Vacuum Glorieta West

Site: Lea County, NM

Well: VGWU #133

Wellpath: HH - Job #32D0400122

Survey: 4/13/00-4/16/00

30-025-32338

SUR:

B-36-17s-34e

355/s & 1875/E

BHL:

B-1-18s-34e

245/N & 1452/E

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

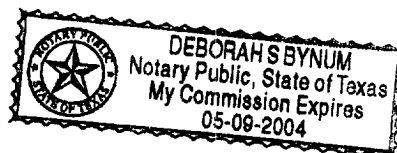
[Signature]

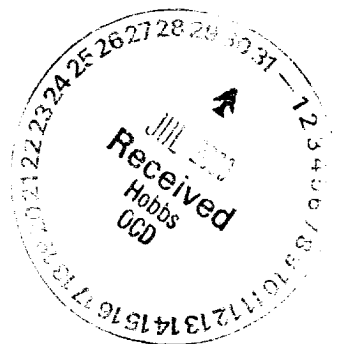
.....Company Representative

Notorized this date 26th of July, 2000.

Deborah Sue Bynum

Notary Signature
County of Midland
State of Texas





SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Vacuum Gorieta West
Site: Lea County, NM
Well: VGWU #133
Wellpath: VH - Job #32K0400121

Date: 7/19/2000 Time: 15:11:53 Page: 1
Co-ordinate(NE) 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,154.0Azi)
Survey Calculation Method: Minimum Curvature

Survey: 4/14/00
KSRG 0'-5750'

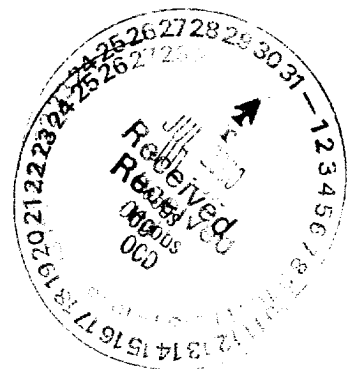
Start Date: 6/8/2000

Company: SDI
Tool: KEEPER

Engineer: Gary DeSpain

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	0.49	88.15	100.0	0.0	0.4	0.2	0.49	88.15	0.4
200.0	0.51	81.40	200.0	0.1	1.3	0.5	0.06	85.84	1.3
300.0	0.50	82.28	300.0	0.2	2.2	0.8	0.01	84.22	2.2
400.0	0.49	91.23	400.0	0.3	3.0	1.1	0.08	84.93	3.0
500.0	0.45	108.92	500.0	0.1	3.8	1.6	0.15	88.02	3.8
600.0	0.42	120.98	600.0	-0.2	4.5	2.1	0.10	92.33	4.5
700.0	0.39	121.93	700.0	-0.6	5.1	2.7	0.03	96.16	5.1
800.0	0.29	147.14	800.0	-0.9	5.5	3.3	0.18	99.68	5.6
900.0	0.33	217.92	900.0	-1.4	5.5	3.7	0.36	104.13	5.7
1000.0	0.36	239.68	1000.0	-1.8	5.1	3.8	0.13	109.31	5.4
1100.0	0.31	245.21	1100.0	-2.0	4.5	3.8	0.06	114.24	5.0
1200.0	0.11	271.28	1200.0	-2.2	4.2	3.8	0.22	117.18	4.7
1300.0	0.05	6.77	1300.0	-2.1	4.1	3.7	0.13	117.19	4.6
1400.0	0.12	72.43	1400.0	-2.0	4.2	3.7	0.11	115.79	4.7
1500.0	0.20	74.02	1500.0	-2.0	4.5	3.7	0.08	113.58	4.9
1600.0	0.19	69.83	1600.0	-1.8	4.8	3.8	0.02	111.06	5.1
1700.0	0.33	35.49	1700.0	-1.6	5.1	3.6	0.20	106.90	5.4
1800.0	0.56	25.12	1800.0	-0.9	5.5	3.2	0.24	99.09	5.6
1900.0	0.69	26.28	1900.0	0.1	6.0	2.5	0.13	89.02	6.0
2000.0	0.81	34.00	2000.0	1.2	6.6	1.8	0.16	79.51	6.7
2100.0	1.01	39.47	2099.9	2.5	7.6	1.1	0.22	71.80	8.0
2200.0	1.25	42.94	2199.9	4.0	8.9	0.3	0.25	65.92	9.7
2300.0	1.39	44.18	2299.9	5.6	10.5	-0.5	0.14	61.71	11.9
2400.0	1.52	43.00	2399.9	7.5	12.2	-1.4	0.13	58.54	14.3
2500.0	1.85	42.47	2499.8	9.6	14.2	-2.4	0.33	55.87	17.2
2600.0	1.88	42.42	2599.8	12.0	16.4	-3.6	0.03	53.74	20.4
2700.0	1.95	42.57	2699.7	14.5	18.7	-4.9	0.07	52.16	23.7
2800.0	1.91	43.10	2799.7	17.0	21.0	-6.1	0.04	51.00	27.0
2900.0	1.92	42.99	2899.6	19.4	23.2	-7.3	0.01	50.13	30.3
3000.0	1.78	42.50	2999.5	21.8	25.4	-8.4	0.14	49.42	33.5
3100.0	1.59	43.37	3099.5	23.9	27.4	-9.5	0.19	48.90	36.4
3200.0	1.46	41.14	3199.5	25.9	29.2	-10.5	0.14	48.45	39.1
3300.0	1.27	36.40	3299.4	27.8	30.7	-11.5	0.22	47.90	41.4
3400.0	1.10	31.21	3399.4	29.5	31.9	-12.5	0.20	47.25	43.4
3500.0	1.05	29.23	3499.4	31.1	32.8	-13.6	0.06	46.55	45.2
3600.0	0.97	24.17	3599.4	32.7	33.6	-14.6	0.12	45.83	46.9
3700.0	0.82	23.56	3699.4	34.1	34.3	-15.6	0.15	45.13	48.3
3800.0	0.67	27.37	3799.4	35.3	34.8	-16.4	0.16	44.62	49.6
3900.0	0.54	28.80	3899.4	36.2	35.3	-17.1	0.13	44.28	50.6
4000.0	0.59	24.29	3999.3	37.1	35.7	-17.7	0.07	43.95	51.5
4100.0	0.54	13.83	4099.3	38.0	36.1	-18.4	0.11	43.50	52.4
4200.0	0.49	6.08	4199.3	38.9	36.2	-19.1	0.09	42.97	53.2
4300.0	0.51	1.42	4299.3	39.8	36.3	-19.8	0.05	42.38	53.8
4400.0	0.48	356.16	4399.3	40.6	36.3	-20.6	0.05	41.75	54.5
4500.0	0.37	315.80	4499.3	41.3	36.0	-21.3	0.31	41.10	54.8
4600.0	0.42	285.02	4599.3	41.6	35.4	-21.9	0.22	40.42	54.6
4700.0	0.58	275.67	4699.3	41.7	34.6	-22.4	0.18	39.63	54.2



SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Vacuum Glorieta West
Site: Lea County, NM
Well: VGWU #133
Wellpath: VH - Job #32K0400121

Date: 7/19/2000 **Time:** 15:11:53 **Page:** 2
Co-ordinate(NE) 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,154.0Azi)
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	0.75	269.84	4799.3	41.8	33.4	-22.9	0.18	38.64	53.5
4900.0	1.10	266.28	4899.3	41.7	31.8	-23.6	0.35	37.31	52.5
5000.0	1.37	265.37	4999.3	41.6	29.7	-24.4	0.27	35.50	51.1
5100.0	1.44	268.14	5099.3	41.4	27.2	-25.3	0.10	33.29	49.6
5200.0	1.55	270.79	5199.2	41.4	24.6	-26.4	0.13	30.71	48.2
5300.0	1.57	270.23	5299.2	41.4	21.9	-27.7	0.03	27.83	46.9
5400.0	1.66	270.11	5399.1	41.4	19.1	-28.9	0.09	24.70	45.6
5500.0	1.66	269.52	5499.1	41.4	16.2	-30.2	0.02	21.31	44.5
5600.0	1.59	270.64	5599.1	41.4	13.3	-31.4	0.08	17.83	43.5
5700.0	1.71	272.31	5699.0	41.5	10.5	-32.7	0.13	14.13	42.8
5750.0	1.80	270.81	5749.0	41.6	8.9	-33.4	0.20	12.11	42.5



SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Vacuum Giorieta West
Site: Lea County, NM
Well: VGWU #133
Wellpath: HH - Job #32D0400122

Date: 7/19/2000 **Time:** 15:09:43 **Page:** 1
Co-ordinate(NE) 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,154.0Azi)
Survey Calculation Method: Minimum Curvature

Survey: 4/13/00-4/16/00
 MWD 5768'-6435'

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
5700.0	1.71	272.31	5699.0	41.5	10.5	0.0	0.00	14.13	42.8
5768.0	1.80	270.81	5767.0	41.6	8.4	-33.7	0.15	11.38	42.4
5818.0	17.10	151.10	5816.3	35.1	11.2	-26.7	36.12	17.64	36.8
5850.0	29.50	145.10	5845.6	24.5	18.0	-14.1	39.41	36.29	30.4
5880.0	41.70	148.10	5870.0	9.9	27.5	3.2	41.07	70.23	29.2
5890.0	45.50	149.40	5877.2	4.0	31.1	10.0	39.04	82.68	31.3
5900.0	49.30	150.60	5884.0	-2.4	34.8	17.4	39.01	93.92	34.8
5912.0	53.80	151.80	5891.4	-10.6	39.3	26.8	38.31	105.13	40.7
5942.0	64.60	157.10	5906.8	-33.8	50.3	52.5	39.05	123.93	60.6
5957.0	68.00	157.30	5912.8	-46.5	55.6	66.2	22.70	129.90	72.5
5973.0	70.30	157.10	5918.5	-60.3	61.4	81.1	14.42	134.47	86.1
6004.0	74.80	156.00	5927.8	-87.4	73.2	110.7	14.91	140.06	114.0
6036.0	79.50	155.30	5934.9	-115.8	86.1	141.8	14.84	143.39	144.3
6068.0	84.40	155.30	5939.4	-144.6	99.3	173.5	15.31	145.52	175.4
6100.0	88.90	155.50	5941.3	-173.6	112.6	205.4	14.08	147.04	206.9
6132.0	89.50	155.50	5941.7	-202.8	125.9	237.4	1.87	148.17	238.6
6163.0	89.00	155.00	5942.1	-230.9	138.8	268.4	2.28	148.98	269.4
6195.0	89.10	154.80	5942.6	-259.9	152.4	300.4	0.70	149.61	301.3
6227.0	89.30	154.10	5943.1	-288.8	166.2	332.4	2.27	150.08	333.2
6259.0	89.60	154.60	5943.4	-317.6	180.1	364.4	1.82	150.45	365.1
6290.0	90.00	156.70	5943.5	-345.8	192.8	395.4	6.90	150.86	396.0
6321.0	89.80	156.40	5943.6	-374.3	205.2	426.3	1.16	151.27	426.8
6353.0	87.10	155.50	5944.4	-403.5	218.2	458.3	8.89	151.60	458.7
6385.0	87.10	154.80	5946.0	-432.5	231.6	490.3	2.18	151.83	490.6
6435.0	88.30	156.10	5948.0	-477.9	252.4	540.2	3.54	152.16	540.5

