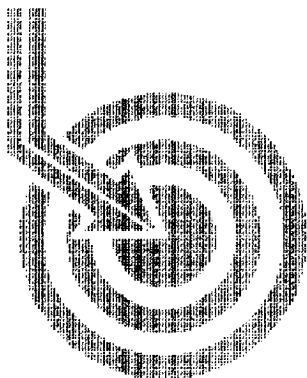




Scientific Drilling



TEXACO E & P INC.

Field: Vacuum Glorieta West

Site: Lea County, NM

Well: VGWU #116

Wellpath: VH/HH - Job #32D1099265/264

Survey: 10/6/99-10/12/99

SUR: 330°N + 560°W

BHL: 428°N + 1078°W

API #: 30-025-20753

Gyro Footage: 0'-5887'

MWD Footage: 5903'-6474'

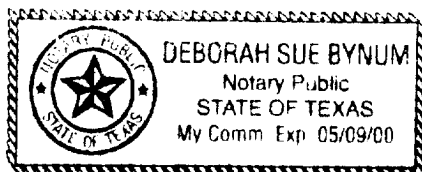
Survey: Sec. 6, T18S, R35E

K.O.P.: 5887'

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

Geoff Noddy Company Representative

Notorized this date 25th of March, 2000.



Deborah Sue Bynum
Midland Co., TX

SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Vacuum Gloria West
Site: Lea County, NM
Well: VGWU #116
Wellpath: VH - Job #32K1099264

Date: 3/24/2000 Time: 10:29:24 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, 0.0Az)
Survey Calculation Method: Minimum Curvature

Survey: 10/6/99
KSRG 0'-5887'

Start Date: 11/9/1999

Company: S.D.I.
Tool: KEEPER

Engineer: Kyle Shoup

SURVEY

MD ft	Incl deg	Azin deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	Cls 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	0.46	292.47	100.0	0.2	-0.4	0.2	0.46	292.47	0.4
200.0	0.34	279.17	200.0	0.4	-1.0	0.4	0.15	288.89	1.1
300.0	0.24	262.01	300.0	0.4	-1.5	0.4	0.13	283.63	1.6
400.0	0.28	250.98	400.0	0.3	-2.0	0.3	0.06	277.61	2.0
500.0	0.33	252.44	500.0	0.1	-2.5	0.1	0.05	272.24	2.5
600.0	0.31	249.12	600.0	-0.1	-3.0	-0.1	0.03	268.36	3.0
700.0	0.27	240.79	700.0	-0.3	-3.5	-0.3	0.06	265.09	3.5
800.0	0.26	239.48	800.0	-0.5	-3.9	-0.5	0.01	262.22	3.9
900.0	0.33	249.81	900.0	-0.7	-4.3	-0.7	0.09	260.27	4.4
1000.0	0.33	250.69	1000.0	-0.9	-4.9	-0.9	0.01	259.12	5.0
1100.0	0.29	256.17	1100.0	-1.1	-5.4	-1.1	0.05	258.54	5.5
1200.0	0.28	257.63	1200.0	-1.2	-5.9	-1.2	0.01	258.40	6.0
1300.0	0.31	256.22	1300.0	-1.3	-6.4	-1.3	0.03	258.28	6.5
1400.0	0.31	255.67	1400.0	-1.5	-6.9	-1.5	0.00	258.10	7.1
1500.0	0.42	249.48	1500.0	-1.6	-7.5	-1.6	0.12	257.61	7.7
1600.0	0.49	242.02	1600.0	-2.0	-8.2	-2.0	0.09	256.48	8.5
1700.0	0.48	237.34	1700.0	-2.4	-9.0	-2.4	0.04	254.97	9.3
1800.0	0.49	218.39	1800.0	-3.0	-9.6	-3.0	0.16	252.79	10.0
1900.0	0.46	191.20	1900.0	-3.7	-9.9	-3.7	0.23	249.57	10.6
2000.0	0.45	172.30	2000.0	-4.5	-9.9	-4.5	0.15	245.76	10.9
2100.0	0.59	122.80	2100.0	-5.1	-9.5	-5.1	0.45	241.45	10.8
2200.0	0.92	106.40	2199.9	-5.7	-8.3	-5.7	0.39	235.61	10.0
2300.0	1.14	98.28	2299.9	-6.0	-6.5	-6.0	0.26	227.20	8.9
2400.0	1.30	89.53	2399.9	-6.2	-4.4	-6.2	0.25	215.46	7.6
2500.0	1.49	81.65	2499.9	-6.0	-2.0	-6.0	0.27	198.24	6.3
2600.0	1.50	81.57	2599.8	-5.6	0.6	-5.6	0.01	173.68	5.6
2700.0	1.71	76.98	2699.8	-5.0	3.4	-5.0	0.25	146.31	6.1
2800.0	1.62	75.37	2799.8	-4.4	6.2	-4.4	0.10	125.14	7.6
2900.0	1.60	74.25	2899.7	-3.6	8.9	-3.6	0.04	112.13	9.6
3000.0	1.25	79.85	2999.7	-3.0	11.3	-3.0	0.38	105.08	11.7
3100.0	0.79	92.16	3099.7	-2.9	13.1	-2.9	0.51	102.43	13.4
3200.0	0.43	110.46	3199.7	-3.0	14.1	-3.0	0.40	102.15	14.4
3300.0	0.35	137.49	3299.7	-3.4	14.7	-3.4	0.20	103.03	15.1
3400.0	0.31	176.04	3399.7	-3.9	14.9	-3.9	0.22	104.63	15.4
3500.0	0.23	220.26	3499.7	-4.3	14.8	-4.3	0.22	106.26	15.4
3600.0	0.34	246.33	3599.7	-4.6	14.4	-4.6	0.17	107.68	15.1
3700.0	0.48	269.38	3699.7	-4.7	13.7	-4.7	0.21	108.97	14.5
3800.0	0.75	278.42	3799.7	-4.6	12.6	-4.6	0.29	110.08	13.5
3900.0	0.89	279.52	3899.6	-4.4	11.2	-4.4	0.14	111.39	12.0
4000.0	0.91	280.80	3999.6	-4.1	9.7	-4.1	0.03	113.05	10.5
4100.0	0.83	273.45	4099.6	-3.9	8.2	-3.9	0.14	115.66	9.1
4200.0	0.82	274.19	4199.6	-3.8	6.7	-3.8	0.01	119.62	7.7
4300.0	0.74	276.62	4299.6	-3.7	5.4	-3.7	0.09	124.54	6.5
4400.0	0.55	282.72	4399.6	-3.5	4.3	-3.5	0.20	129.52	5.5
4500.0	0.45	298.83	4499.6	-3.2	3.5	-3.2	0.17	133.03	4.7
4600.0	0.54	329.39	4599.6	-2.6	2.9	-2.6	0.27	132.49	3.9
4700.0	0.54	329.60	4699.6	-1.8	2.4	-1.8	0.00	127.23	3.0

SCIENTIFIC DRILLING

SURVEY REPORT

Company: TEXACO E & P INC Field: Vacuum Glorale West Site: Lea County, NM Well: VGWU #116 Wellpath: VH Job #32K1060264	Date: 3/24/2008 Geographic: NAD 83 Vertical: TVD Section: (VS) 100 ft Survey Calculation Method:	Time: 10:29:24 Sig: Lea County NM True North SITE: 0.0 above Mean Sea Level Sgt: (0.0E 0.0N 0.0Az) Minimum Curvature	Page: 2
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SURVEY

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	V.S. ft	DLS g/100ft	CMA deg	CMD ft
4800.0	0.61	318.58	4799.6	-1.0	1.8	-1.0	0.13	119.34	2.1
4900.0	0.76	312.95	4899.6	-0.2	1.0	-0.2	0.16	99.58	1.0
5000.0	0.88	316.41	4999.6	0.8	0.0	0.8	0.13	356.73	0.8
5100.0	0.89	314.77	5099.6	1.9	-1.1	1.9	0.03	329.90	2.3
5200.0	0.51	307.81	5199.5	2.8	-2.0	2.8	0.39	323.71	3.4
5300.0	0.52	309.75	5299.5	3.3	-2.7	3.3	0.02	320.63	4.3
5400.0	0.70	315.35	5399.5	4.1	-3.5	4.1	0.19	319.12	5.4
5500.0	0.91	308.30	5499.5	5.0	-4.6	5.0	0.23	317.51	6.8
5600.0	1.17	318.03	5599.5	6.2	-5.9	6.2	0.31	316.72	8.6
5700.0	1.20	324.91	5699.5	7.8	-7.2	7.8	0.15	317.65	10.6
5800.0	1.20	321.91	5799.5	9.5	-8.4	9.5	0.06	318.60	12.7
5887.0	1.22	347.25	5886.4	11.2	-9.2	11.2	0.61	320.57	14.4

SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Vacuum Gorieta West
Site: Lea County, NM
Well: VGWU #116
Wellpath: VHHH - Job #32D1099265/2

Date: 3/24/2000 Time: 11:58:41 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: Sict (0.0E, 0.0N, 0.0Az)
Survey Calculation Method: Minimum Curvature

Survey: 10/6/99-10/12/99
KSRG 0'-5887'/S/T 5903'-6474'

Start Date: 11/15/1999

Company: S.D.I.
Tool: KEEPER

Engineer: Valenzuela/Lamb

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ClsA deg	ClsD ft
5887.0	1.22	347.25	5886.4	11.2	-9.2	11.2	0.00	320.60	14.5
5903.0	1.22	347.25	5902.4	11.5	-9.3	11.5	0.00	321.19	14.8
5945.0	18.70	115.80	5943.7	9.0	-3.3	9.0	46.39	340.15	9.6
5955.0	24.20	116.10	5953.0	7.4	0.0	7.4	55.01	0.25	7.4
5965.0	30.00	117.20	5961.9	5.4	4.1	5.3	58.21	37.38	6.8
5975.0	36.70	116.00	5970.2	2.9	9.0	2.9	67.32	72.10	9.5
5985.0	43.80	113.20	5977.9	0.2	14.9	0.2	73.25	89.10	14.9
5995.0	50.70	110.50	5984.6	-2.5	21.7	-2.5	71.78	96.54	21.8
6008.0	59.70	107.30	5992.1	-5.9	31.8	-6.0	72.11	100.56	32.3
6039.0	80.00	101.40	6002.7	-13.0	59.9	-13.1	67.84	102.26	61.2
6068.0	85.60	100.10	6006.3	-18.4	88.1	-18.4	19.82	101.77	90.0
6100.0	88.00	100.10	6008.1	-24.0	119.6	-24.0	7.50	101.34	121.9
6131.0	87.90	99.40	6009.2	-29.2	150.1	-29.3	2.28	101.01	152.9
6162.0	88.30	100.10	6010.2	-34.5	180.6	-34.5	2.60	100.80	183.9
6194.0	87.90	100.70	6011.3	-40.2	212.1	-40.3	2.25	100.74	215.9
6225.0	87.70	101.10	6012.5	-46.1	242.5	-46.1	1.44	100.76	246.8
6256.0	88.80	101.20	6013.4	-52.1	272.9	-52.1	3.56	100.80	277.8
6287.0	88.40	102.80	6014.2	-58.5	303.2	-58.6	5.32	100.92	308.8
6319.0	88.10	102.30	6015.2	-65.5	334.4	-65.5	1.82	101.08	340.8
6380.0	87.80	102.50	6017.4	-78.6	394.0	-78.6	0.59	101.28	401.7
6412.0	88.50	102.40	6018.4	-85.5	425.2	-85.5	2.21	101.36	433.7
6443.0	89.00	102.00	6019.1	-92.0	455.5	-92.1	2.07	101.42	464.7
6474.0	88.10	101.10	6019.9	-98.2	485.9	-98.3	4.11	101.43	495.7