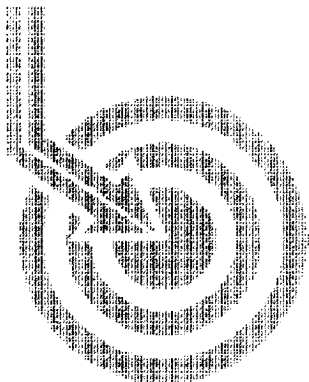




Scientific Drilling



TEXACO E & P INC.

Field: Central Vacuum

Site: Lea County, NM

Well: CVU #167

Wellpath: VH/HH - Job #32D1199301/299

Survey: 11/3/99-11/8/99

SUR: 2000/N & 2630/E

BAL: 1961/N & 1513/E

API #: 30-025-33711

Gyro Footage: 0'-4240'

MWD Footage: 4244'-5497'

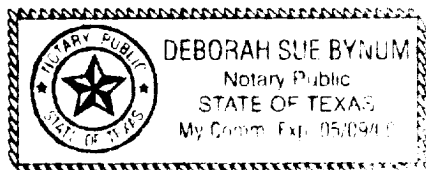
Survey: Sec. 36, T17S, R34E

K.O.P.: 4240'

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

Joseph Needy.....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: Central Vacuum
Site: Lea County, NM
Well: CVU #167
Wellpath: VH - Job #32K1199299

Date: 3/24/2000 Time: 12:59:38 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,0.0Azi)
Survey Calculation Method: Minimum Curvature

Survey: 11/2/99
KSRG 0'-4240'

Start Date: 11/3/1999

Company: S.D.I.
Tool: KEEPER

Engineer: Gary DeSapin

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ClA deg	ClD ft
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.0
100.0	0.65	127.99	100.0	-0.3	0.4	-0.3	0.65	127.99	0.6
200.0	0.61	128.14	200.0	-1.0	1.3	-1.0	0.04	128.04	1.7
300.0	0.44	143.08	300.0	-1.7	2.0	-1.7	0.22	130.28	2.6
400.0	0.36	193.03	400.0	-2.3	2.1	-2.3	0.35	137.00	3.1
500.0	0.37	194.15	500.0	-2.9	2.0	-2.9	0.01	145.74	3.5
600.0	0.35	188.49	600.0	-3.5	1.8	-3.5	0.04	152.23	4.0
700.0	0.34	184.07	700.0	-4.1	1.8	-4.1	0.03	156.55	4.5
800.0	0.19	259.41	800.0	-4.4	1.6	-4.4	0.34	160.18	4.7
900.0	0.38	263.95	900.0	-4.5	1.1	-4.5	0.19	166.20	4.6
1000.0	0.54	260.74	1000.0	-4.6	0.3	-4.6	0.16	176.15	4.6
1100.0	0.83	256.42	1100.0	-4.9	-0.9	-4.9	0.29	190.03	4.9
1200.0	1.02	252.59	1200.0	-5.3	-2.4	-5.3	0.20	204.50	5.8
1300.0	1.04	254.11	1299.9	-5.8	-4.1	-5.8	0.03	215.45	7.1
1400.0	1.09	251.59	1399.9	-6.4	-5.9	-6.4	0.07	222.91	8.7
1500.0	1.16	254.98	1499.9	-6.9	-7.8	-6.9	0.10	228.39	10.4
1600.0	1.03	253.84	1599.9	-7.4	-9.6	-7.4	0.13	232.34	12.2
1700.0	0.91	252.82	1699.9	-7.9	-11.3	-7.9	0.12	234.87	13.8
1800.0	0.70	252.94	1799.9	-8.3	-12.6	-8.3	0.21	236.52	15.1
1900.0	0.31	267.27	1899.9	-8.5	-13.4	-8.5	0.41	237.64	15.9
2000.0	0.16	310.65	1999.9	-8.4	-13.8	-8.4	0.22	238.58	16.2
2100.0	0.10	15.45	2099.9	-8.3	-13.9	-8.3	0.15	239.27	16.2
2200.0	0.15	56.52	2199.9	-8.1	-13.8	-8.1	0.10	239.50	16.0
2300.0	0.18	53.75	2299.9	-7.9	-13.5	-7.9	0.03	239.59	15.7
2400.0	0.26	42.85	2399.9	-7.7	-13.3	-7.7	0.09	239.89	15.3
2500.0	0.76	43.30	2499.8	-7.0	-12.6	-7.0	0.50	240.90	14.5
2600.0	1.36	47.78	2599.8	-5.8	-11.3	-5.8	0.61	243.03	12.7
2700.0	1.66	48.60	2699.8	-4.0	-9.4	-4.0	0.30	246.82	10.2
2800.0	1.56	44.86	2799.8	-2.1	-7.3	-2.1	0.15	254.09	7.6
2900.0	1.27	36.39	2899.7	-0.2	-5.7	-0.2	0.36	267.74	5.7
3000.0	0.88	28.85	2999.7	1.3	-4.7	1.3	0.41	286.05	4.8
3100.0	0.77	20.17	3099.7	2.6	-4.1	2.6	0.17	303.09	4.8
3200.0	0.88	15.80	3199.7	4.0	-3.6	4.0	0.13	317.98	5.4
3300.0	0.95	14.64	3299.7	5.6	-3.2	5.6	0.07	330.08	6.4
3400.0	1.07	9.43	3399.7	7.3	-2.8	7.3	0.15	338.72	7.8
3500.0	1.11	10.21	3499.6	9.2	-2.5	9.2	0.04	344.66	9.5
3600.0	1.15	8.92	3599.6	11.1	-2.2	11.1	0.05	348.87	11.3
3700.0	1.17	7.93	3699.6	13.1	-1.9	13.1	0.03	351.81	13.2
3800.0	1.33	3.42	3799.6	15.3	-1.7	15.3	0.19	353.74	15.4
3900.0	1.39	357.49	3899.5	17.6	-1.7	17.6	0.15	354.62	17.7
4000.0	1.38	358.63	3999.5	20.1	-1.7	20.1	0.03	355.04	20.1
4100.0	1.35	2.30	4099.5	22.4	-1.7	22.4	0.09	355.61	22.5
4200.0	1.22	3.00	4199.5	24.7	-1.6	24.7	0.13	356.24	24.7
4240.0	1.30	0.54	4239.5	25.6	-1.6	25.6	0.24	356.43	25.6

SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.

Field: Central Vacuum

Site: Lea County, NM

Well: CVU #167

Wellpath: VH/HH - Job #32D1199301/2

Date: 3/24/2000

Time: 13:03:42

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: 11/3/99-11/8/99

KSRG 0'-4240'/MWD 4244'-5497'

Start Date: 1/19/2000

Company: SDI/Ryan

Tool: MWD

Engineer: DeSpain/Bergeron

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ClsA deg	ClsD ft
4240.0	1.30	0.54	4239.5	25.6	-1.6	25.6	0.00	356.42	25.6
4244.0	1.30	0.50	4243.5	25.7	-1.6	25.6	0.02	356.44	25.7
4305.0	23.30	74.80	4302.8	29.6	10.2	29.6	37.67	19.03	31.3
4315.0	26.70	74.10	4311.9	30.7	14.3	30.7	34.13	24.92	33.9
4325.0	30.30	74.10	4320.6	32.0	18.9	32.0	36.00	30.49	37.2
4335.0	34.00	74.50	4329.1	33.5	24.0	33.4	37.06	35.62	41.2
4345.0	37.50	74.50	4337.2	35.0	29.6	35.0	35.00	40.21	45.9
4355.0	41.30	74.50	4345.0	36.7	35.7	36.7	38.00	44.21	51.2
4365.0	45.20	74.50	4352.2	38.6	42.3	38.5	39.00	47.67	57.3
4375.0	48.90	74.80	4359.0	40.5	49.4	40.5	37.07	50.65	63.9
4385.0	52.80	75.20	4365.4	42.5	56.9	42.5	39.12	53.23	71.0
4395.0	56.50	75.50	4371.1	44.6	64.8	44.5	37.08	55.47	78.6
4403.0	59.20	76.20	4375.4	46.2	71.3	46.2	34.55	57.06	85.0
4431.0	68.40	80.40	4387.8	51.3	95.9	51.2	35.50	61.87	108.8
4442.0	71.20	81.80	4391.6	52.9	106.1	52.8	28.12	63.51	118.6
4462.0	73.50	85.40	4397.6	55.0	125.0	54.9	20.65	66.26	136.6
4494.0	77.50	89.90	4405.6	56.3	156.0	56.2	18.48	70.17	165.8
4526.0	77.20	91.00	4412.6	56.0	187.2	56.0	3.48	73.34	195.4
4557.0	76.70	90.30	4419.6	55.7	217.4	55.6	2.73	75.64	224.4
4589.0	77.20	90.60	4426.9	55.4	248.6	55.4	1.81	77.43	254.7
4621.0	79.10	92.80	4433.4	54.5	279.9	54.4	8.97	78.98	285.1
4652.0	79.10	92.40	4439.3	53.1	310.3	53.1	1.27	80.29	314.8
4684.0	77.00	93.40	4445.9	51.5	341.6	51.5	7.24	81.42	345.4
4716.0	77.40	93.40	4453.0	49.7	372.7	49.6	1.25	82.41	376.0
4748.0	77.70	94.20	4459.9	47.6	403.9	47.6	2.62	83.28	406.7
4780.0	78.00	94.20	4466.7	45.3	435.1	45.3	0.94	84.05	437.4
4811.0	80.70	92.10	4472.4	43.6	465.5	43.6	10.96	84.64	467.5
4843.0	84.70	91.00	4476.4	42.8	497.2	42.7	12.96	85.08	499.1
4874.0	87.30	90.60	4478.6	42.4	528.1	42.3	8.49	85.42	529.8
4905.0	87.80	90.60	4479.9	42.0	559.1	42.0	1.61	85.70	560.7
4937.0	88.03	90.60	4481.1	41.7	591.1	41.6	0.72	85.97	592.6
4968.0	88.60	90.30	4482.0	41.4	622.1	41.4	2.08	86.19	623.4
4999.0	91.40	89.90	4482.0	41.4	653.1	41.3	9.12	86.37	654.4
5030.0	95.10	90.30	4480.3	41.3	684.0	41.3	12.00	86.54	685.3
5062.0	98.50	90.30	4476.5	41.2	715.8	41.1	10.62	86.71	717.0
5094.0	102.70	89.60	4470.6	41.2	747.2	41.2	13.30	86.84	748.4
5125.0	107.00	88.90	4462.6	41.6	777.2	41.5	14.04	86.94	778.3
5157.0	111.10	88.90	4452.2	42.2	807.4	42.1	12.81	87.01	808.5
5188.0	114.10	89.20	4440.3	42.6	836.0	42.6	9.72	87.08	837.1
5220.0	114.30	89.20	4427.2	43.1	865.2	43.0	0.62	87.15	866.3
5252.0	114.70	89.60	4413.9	43.4	894.3	43.3	1.69	87.22	895.4
5283.0	114.80	88.20	4400.9	43.9	922.5	43.9	4.11	87.28	923.5
5315.0	114.80	88.50	4387.5	44.7	951.5	44.7	0.85	87.31	952.6
5347.0	114.50	90.60	4374.1	45.0	980.6	44.9	6.04	87.37	981.6
5378.0	114.90	91.70	4361.2	44.4	1008.8	44.4	3.47	87.48	1009.7
5410.0	114.60	92.80	4347.8	43.3	1037.8	43.2	3.26	87.61	1038.7
5442.0	114.10	93.10	4334.6	41.8	1066.9	41.7	1.78	87.76	1067.7
5458.0	114.20	93.40	4328.1	40.9	1081.5	40.9	1.82	87.83	1082.3

SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
 Field: Central Vacuum
 Site: Lea County, NM
 Well: CVU #187
 Wellpath: VHHH - Job #32D1199301/2

Date: 3/24/2000 Time: 13:03:42 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: Skt (0.0E, 0.0N, 0.0Azi)
 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
5497.0	114.20	93.40	4312.1	38.8	1117.0	38.8	0.00	88.01	1117.7



**Scientific
Drilling**

TEXACO E & P INC
Field: Central Vacuum
Site: Lea County, NM
Well: CVU #167
Wellpath: VH/HH - Job #32D1199301/299
Survey: 11/3/99-11/8/99

