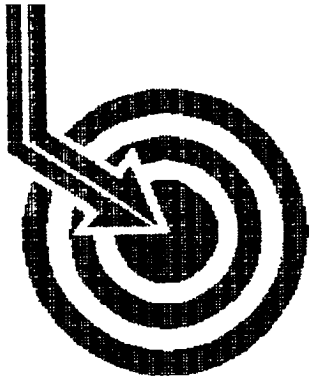




Scientific Drilling



TEXACO E & P INC.

Field: Justin Tubb Drinkard

Site: Lea County, NM

Well: CC Fristoe "A" NCT-1 #13

Wellpath: HH - Job #32D1100478

Survey: 11/24/00-11/28/00

30-025-34053

E - 35 - 24s - 37e

SUR: 1400/N & 330/W

BHL: 2293/N & 965/W

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

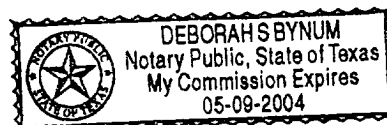
Justin Tubb Drinkard

.....Company Representative

Notorized this date 17th of January, 2000.

Deborah Sue Bynum

Notary Signature
County of Midland
State of Texas



SCIENTIFIC DRILLING

SURVEY REPORT

Company: TEXACO E & P INC.
Field: Justin Tubb Drinkard
Site: Lea County, NM
Well: CC Frisoe "A" NCT-1 #13
Wellpath: VH - Job #32K1100477

Date: 1/17/2001
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,144.5Az)
Survey Calculation Method: Minimum Curvature

Page: 1

Survey: 11/22/00
 KSRG 0'-6041'

Start Date: 1/17/2001

Company: SDI
Tool: KEEPER

Engineer: Kyle Shoup

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	0.21	331.44	100.0	0.2	-0.1	-0.2	0.21	331.44	0.2
200.0	0.24	334.14	200.0	0.5	-0.3	-0.6	0.03	332.42	0.6
300.0	0.21	356.50	300.0	0.9	-0.4	-0.9	0.09	337.29	1.0
400.0	0.04	47.97	400.0	1.1	-0.4	-1.1	0.19	341.96	1.1
500.0	0.53	81.76	500.0	1.2	0.1	-0.9	0.50	6.26	1.2
600.0	0.48	61.17	600.0	1.4	1.0	-0.6	0.19	33.41	1.7
700.0	0.49	77.56	700.0	1.7	1.7	-0.4	0.14	44.97	2.5
800.0	0.62	92.10	800.0	1.8	2.7	0.1	0.19	56.10	3.2
900.0	0.69	68.46	900.0	2.0	3.8	0.6	0.28	62.07	4.3
1000.0	0.65	64.89	1000.0	2.5	4.9	0.8	0.06	63.06	5.5
1100.0	0.93	63.56	1100.0	3.1	6.1	1.0	0.28	63.27	6.8
1200.0	0.75	63.66	1200.0	3.7	7.4	1.3	0.18	63.33	8.3
1300.0	0.85	71.00	1299.9	4.3	8.7	1.6	0.14	63.94	9.7
1400.0	0.76	69.96	1399.9	4.7	10.0	2.0	0.09	64.77	11.1
1500.0	0.97	57.79	1499.9	5.4	11.4	2.2	0.28	64.57	12.6
1600.0	1.11	63.55	1599.9	6.3	13.0	2.4	0.17	64.11	14.4
1700.0	1.07	63.46	1699.9	7.1	14.7	2.7	0.04	64.04	16.3
1800.0	1.16	58.87	1799.9	8.1	16.4	2.9	0.13	63.72	18.2
1900.0	1.08	63.82	1899.8	9.0	18.1	3.2	0.13	63.48	20.2
2000.0	1.45	62.23	1999.8	10.0	20.0	3.5	0.37	63.43	22.4
2100.0	1.78	57.45	2099.8	11.4	22.5	3.7	0.36	63.00	25.2
2200.0	2.23	64.81	2199.7	13.1	25.5	4.2	0.52	62.82	28.7
2300.0	2.37	63.89	2299.6	14.9	29.2	4.8	0.14	63.01	32.7
2400.0	2.48	63.01	2399.6	16.7	32.9	5.5	0.12	63.06	37.0
2500.0	2.71	71.35	2499.4	18.5	37.1	6.5	0.44	63.53	41.5
2600.0	2.86	72.85	2599.3	20.0	41.7	8.0	0.17	64.43	46.3
2700.0	2.99	75.92	2699.2	21.3	46.6	9.7	0.20	65.41	51.3
2800.0	3.15	76.86	2799.1	22.6	51.9	11.7	0.17	66.45	56.6
2900.0	3.14	77.36	2898.9	23.8	57.2	13.8	0.03	67.39	62.0
3000.0	3.08	77.44	2998.8	25.0	62.5	15.9	0.06	68.19	67.3
3100.0	2.97	83.65	3098.6	25.9	67.7	18.2	0.35	69.08	72.5
3200.0	2.84	82.53	3198.5	26.5	72.7	20.7	0.14	69.99	77.4
3300.0	2.59	89.69	3298.4	26.8	77.4	23.1	0.42	70.90	82.0
3400.0	2.40	88.58	3398.3	26.9	81.8	25.6	0.20	71.80	86.1
3500.0	2.17	94.95	3498.2	26.8	85.8	28.0	0.34	72.66	89.9
3600.0	2.18	96.81	3598.1	26.4	89.5	30.5	0.07	73.58	93.4
3700.0	2.40	96.05	3698.1	25.9	93.5	33.2	0.22	74.50	97.0
3800.0	2.38	101.12	3798.0	25.3	97.6	36.1	0.21	75.46	100.9
3900.0	2.58	104.60	3897.9	24.4	101.9	39.3	0.25	76.55	104.7
4000.0	2.34	107.71	3997.8	23.2	106.0	42.7	0.27	77.67	108.5
4100.0	2.57	105.41	4097.7	21.9	110.1	46.1	0.25	78.72	112.2
4200.0	2.50	107.69	4197.6	20.7	114.3	49.5	0.12	79.74	116.2
4300.0	2.40	109.63	4297.5	19.3	118.4	53.0	0.13	80.73	119.9
4400.0	2.31	108.13	4397.4	18.0	122.3	56.3	0.11	81.63	123.6
4500.0	2.06	103.17	4497.3	17.0	125.9	59.3	0.31	82.33	127.1
4600.0	2.08	97.17	4597.3	16.3	129.5	61.9	0.22	82.82	130.5
4700.0	2.05	103.97	4697.2	15.7	133.0	64.5	0.25	83.28	133.9

SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Justin Tubb Drinkard
Site: Lea County, NM
Well: CC Frisloe "A" NCT-1 #13
Wellpath: VH - Job #32K1100477

Date: 1/17/2001 Time: 13:09:10 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,144.5Azi)
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	1.96	104.14	4797.1	14.8	136.4	67.2	0.09	83.80	137.2
4900.0	2.00	104.16	4897.1	14.0	139.8	69.8	0.04	84.29	140.4
5000.0	2.02	104.93	4997.0	13.1	143.1	72.5	0.03	84.78	143.7
5100.0	1.70	106.57	5097.0	12.2	146.3	75.0	0.32	85.23	146.8
5200.0	1.53	114.71	5196.9	11.2	148.9	77.3	0.29	85.69	149.3
5300.0	1.51	114.63	5296.9	10.1	151.3	79.6	0.02	86.17	151.7
5400.0	1.75	114.00	5396.9	8.9	153.9	82.1	0.24	86.67	154.2
5500.0	1.54	115.02	5496.8	7.8	156.5	84.6	0.21	87.16	156.7
5600.0	1.77	108.42	5596.8	6.7	159.2	87.0	0.30	87.59	159.3
5700.0	1.70	105.16	5696.7	5.8	162.1	89.4	0.12	87.94	162.2
5800.0	1.90	107.93	5796.7	4.9	165.1	91.9	0.22	88.29	165.2
5900.0	1.67	100.16	5896.8	4.2	168.1	94.2	0.33	88.58	168.2
6000.0	1.90	100.26	5996.6	3.6	171.2	96.5	0.23	88.79	171.2
6041.0	2.19	99.17	6037.6	3.4	172.6	97.5	0.71	88.88	172.7

SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Justin Tubb Drinkard
Site: Lea County, NM
Well: CC Frisloe "A" NCT-1 #13
Wellpath: HH - Job #32D1100478

Date: 1/17/2001
Co-ordinate(NE) Reference:
Vertical (TVD) Reference:
Section (VS) Reference:
Survey Calculation Method:

Time: 13:34:01
Site: Lea County, NM, True North
SITE 0.0 above Mean Sea Level
Slot (0.0E,0.0N,144.5Azi)
Minimum Curvature

Page: 1

Survey: 11/24/00-11/28/00
S/T 6027-7144'

Start Date: 1/17/2001

Company: SDI
Tool: S/T

Engineer: William 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
6000.0	1.90	100.26	5996.6	3.6	171.2	96.5	0.00	88.79	171.2
6027.0	1.90	100.26	6023.6	3.5	172.1	97.1	0.00	88.85	172.1
6096.0	29.12	155.50	6089.5	-12.3	180.3	114.8	40.69	93.92	180.7
6128.0	41.96	150.70	6115.5	-28.8	188.8	133.1	41.03	98.68	191.0
6142.0	47.93	149.91	6125.4	-37.4	193.7	143.0	42.83	100.93	197.3
6159.0	55.10	149.00	6136.0	-48.9	200.5	156.2	42.38	103.70	206.4
6169.0	59.30	148.00	6141.4	-56.0	204.9	164.6	42.83	105.30	212.4
6179.0	61.70	149.50	6146.3	-63.5	209.4	173.3	27.32	106.86	218.8
6189.0	63.70	149.60	6150.9	-71.1	213.9	182.1	20.02	108.40	225.4
6199.0	65.60	149.80	6155.2	-78.9	218.5	191.1	19.09	109.87	232.3
6209.0	67.50	149.40	6159.2	-86.8	223.1	200.3	19.35	111.27	239.4
6223.0	69.50	151.50	6164.3	-98.2	229.5	213.2	19.97	113.16	249.6
6254.0	72.90	149.70	6174.3	-123.7	243.9	242.4	12.27	116.90	273.5
6286.0	72.70	150.40	6183.8	-150.2	259.2	272.8	2.18	120.10	299.6
6317.0	73.50	152.30	6192.8	-176.3	273.4	302.3	6.41	122.81	325.3
6348.0	74.50	154.40	6201.3	-202.9	286.8	331.7	7.27	125.28	351.3
6380.0	74.42	152.46	6209.9	-230.5	300.6	362.2	5.85	127.48	378.7
6411.0	74.15	154.55	6218.3	-257.2	313.9	391.6	6.55	129.33	405.8
6443.0	74.11	153.69	6227.0	-284.9	327.3	422.0	2.59	131.03	433.9
6476.0	73.41	154.42	6236.3	-313.3	341.2	453.2	3.00	132.57	463.2
6506.0	72.74	156.04	6245.0	-339.4	353.2	481.4	5.63	133.86	489.8
6538.0	73.17	155.57	6254.4	-367.3	365.7	511.4	1.94	135.12	518.3
6569.0	74.72	154.77	6262.9	-394.3	378.2	540.7	5.58	136.19	546.4
6600.0	79.12	152.32	6270.0	-421.4	391.7	570.5	16.15	137.09	575.3
6632.0	83.58	151.59	6274.8	-449.3	406.6	601.9	14.12	137.86	605.9
6664.0	88.87	152.05	6276.9	-477.4	421.6	633.5	16.59	138.55	637.0
6695.0	94.10	150.05	6276.1	-504.5	436.6	664.3	18.06	139.13	667.2
6727.0	99.75	148.77	6272.2	-531.9	452.8	695.9	18.10	139.59	698.5
6758.0	104.33	148.91	6265.8	-557.8	468.5	726.2	14.78	139.97	728.4
6790.0	105.09	151.40	6257.6	-584.6	483.9	757.0	7.89	140.39	758.9
6821.0	104.64	150.41	6249.7	-610.8	498.4	786.7	3.41	140.78	788.4
6853.0	104.62	153.05	6241.6	-638.1	513.1	817.4	7.98	141.20	818.8
6885.0	104.32	154.74	6233.6	-665.9	526.7	848.0	5.20	141.66	849.1
6948.0	103.11	154.90	6218.7	-721.3	552.8	908.2	1.94	142.53	908.8
6979.0	102.92	152.79	6211.7	-748.4	566.1	938.0	6.66	142.90	938.4
7010.0	103.29	154.33	6204.6	-775.4	579.5	967.8	4.98	143.23	968.1
7041.0	104.37	157.57	6197.2	-802.9	591.8	997.3	10.73	143.61	997.5
7072.0	104.62	154.58	6189.5	-830.4	604.0	1026.7	9.37	143.97	1026.8
7103.0	104.80	152.80	6181.6	-857.2	617.3	1056.3	5.58	144.24	1056.3
7144.0	104.80	152.80	6171.1	-892.5	635.4	1095.6	0.00	144.55	1095.6



Scientific
Drilling

TEXACO E & P INC.

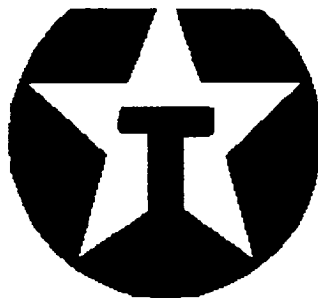
Field: Justin Tubb Drinkard

Site: Lea County, NM

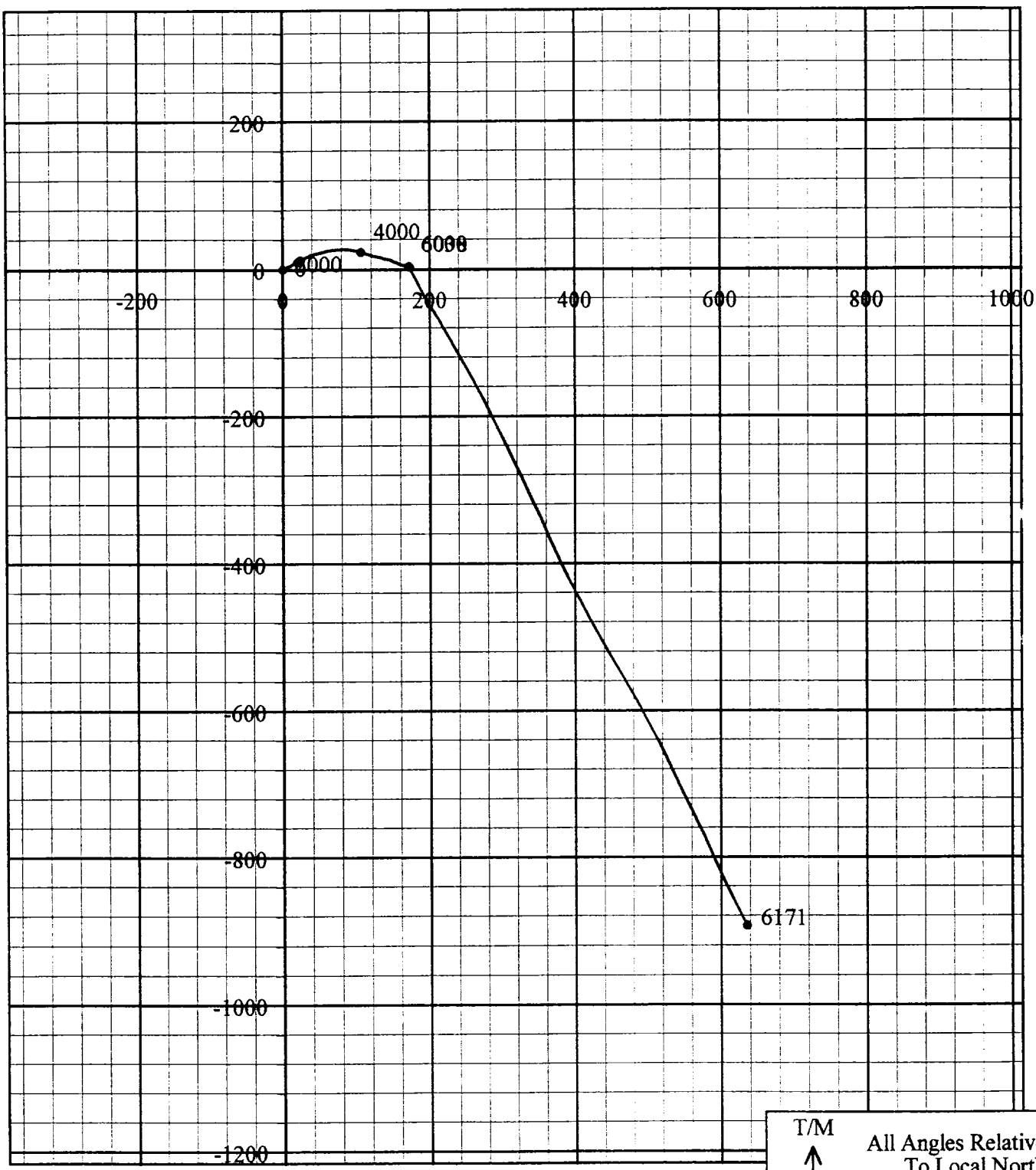
Well: CC Fristoe "A" NCT-1 #13

Wellpath: HH - Job #32D1100478

Survey: 11/24/00-11/28/00



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



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

T/M
↑
All Angles Relative
To Local North

⊕
True North: 0.00
Magnetic North: 0.00