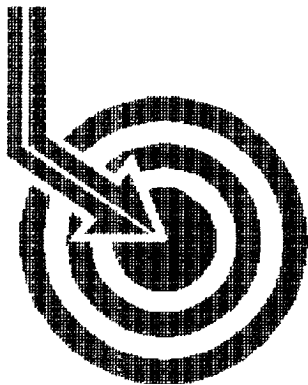




Scientific Drilling



TEXACO E & P INC.

Field: Unknown

Site: Chaves County, NM

Well: Dulce State Com 36 #1

Wellpath: VH - Job #32K0800342

Survey: 8/30/00

F-36-15s-31e

SUR: 1330/14 1980/W

BHL: 1465/N 9 1908/W

3D-005-21160

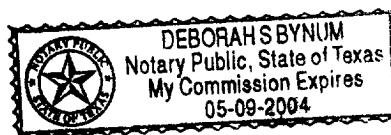
This survey is correct to the best of my knowledge
and is supported by actual field data.

Scott Hoag Company Representative

Notorized this date 8th of November, 2000.

Deborah Sue Bynum

Notary Signature
County of Midland
State of Texas



SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Unknown
Site: Chaves County, NM
Well: Dulce State Cor 36 #1
Wellpath: VH - Job #32K0800342

Date: 9/4/2000 Time: 09:39:37 Page: 1
Co-ordinate(NE) Reference: Site: Chaves 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: 8/30/00
KSRG 0'-12726

Start Date: 9/4/2000

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	0.20	261.68	100.0	0.0	-0.2	0.0	0.20	261.68	0.2
200.0	0.28	130.25	200.0	-0.2	-0.2	-0.2	0.44	217.33	0.3
300.0	0.15	73.40	300.0	-0.3	0.2	-0.3	0.23	155.05	0.4
400.0	0.30	188.27	400.0	-0.6	0.2	-0.6	0.39	156.37	0.6
500.0	1.07	197.83	500.0	-1.7	-0.1	-1.7	0.78	182.79	1.7
600.0	1.84	224.58	600.0	-3.7	-1.5	-3.7	1.01	201.84	4.0
700.0	2.55	241.14	699.9	-5.9	-4.6	-5.9	0.95	217.54	7.5
800.0	2.76	250.66	799.8	-7.8	-8.8	-7.8	0.49	228.35	11.8
900.0	2.62	251.82	899.7	-9.3	-13.2	-9.3	0.15	234.82	16.2
1000.0	2.56	249.68	999.6	-10.8	-17.5	-10.8	0.11	238.28	20.6
1100.0	2.22	252.07	1099.5	-12.2	-21.4	-12.2	0.35	240.38	24.7
1200.0	1.86	258.28	1199.4	-13.1	-24.9	-13.1	0.42	242.19	28.1
1300.0	1.55	252.07	1299.4	-13.9	-27.7	-13.9	0.36	243.45	31.0
1400.0	1.25	230.87	1399.3	-15.0	-29.9	-15.0	0.59	243.39	33.4
1500.0	0.98	228.73	1499.3	-16.2	-31.4	-16.2	0.27	242.66	35.3
1600.0	0.81	223.87	1599.3	-17.3	-32.5	-17.3	0.19	241.98	36.8
1700.0	0.78	227.51	1699.3	-18.3	-33.5	-18.3	0.06	241.40	38.1
1800.0	0.74	233.92	1799.3	-19.1	-34.5	-19.1	0.09	241.04	39.4
1900.0	0.74	251.06	1899.3	-19.7	-35.6	-19.7	0.22	241.08	40.7
2000.0	0.91	259.04	1999.3	-20.1	-37.0	-20.1	0.20	241.57	42.1
2100.0	0.83	266.81	2099.3	-20.2	-38.5	-20.2	0.14	242.29	43.5
2200.0	0.83	290.16	2199.3	-20.0	-39.9	-20.0	0.34	243.36	44.7
2300.0	0.67	284.93	2299.2	-19.6	-41.2	-19.6	0.17	244.51	45.6
2400.0	0.52	299.91	2399.2	-19.3	-42.1	-19.3	0.21	245.44	46.3
2500.0	0.14	31.99	2499.2	-18.9	-42.5	-18.9	0.54	245.98	46.5
2600.0	0.35	6.71	2599.2	-18.5	-42.4	-18.5	0.23	246.39	46.2
2700.0	0.31	313.42	2699.2	-18.0	-42.5	-18.0	0.30	247.03	46.2
2800.0	0.11	321.50	2799.2	-17.8	-42.8	-17.8	0.20	247.45	46.3
2900.0	0.17	331.73	2899.2	-17.6	-42.9	-17.6	0.06	247.74	46.4
3000.0	0.16	274.99	2999.2	-17.4	-43.1	-17.4	0.16	248.01	46.5
3100.0	0.23	255.02	3099.2	-17.5	-43.5	-17.5	0.10	248.11	46.8
3200.0	0.24	219.08	3199.2	-17.7	-43.8	-17.7	0.15	248.02	47.2
3300.0	0.31	231.99	3299.2	-18.0	-44.1	-18.0	0.09	247.81	47.7
3400.0	0.65	224.60	3399.2	-18.6	-44.7	-18.6	0.34	247.46	48.4
3500.0	0.76	236.91	3499.2	-19.3	-45.7	-19.3	0.19	247.06	49.6
3600.0	0.85	231.83	3599.2	-20.2	-46.8	-20.2	0.11	246.71	51.0
3700.0	0.85	225.76	3699.2	-21.1	-48.0	-21.1	0.09	246.21	52.4
3800.0	0.81	221.78	3799.2	-22.2	-49.0	-22.2	0.07	245.62	53.7
3900.0	0.54	214.42	3899.2	-23.1	-49.7	-23.1	0.28	245.07	54.8
4000.0	0.44	219.71	3999.2	-23.8	-50.2	-23.8	0.11	244.65	55.6
4100.0	0.38	248.07	4099.2	-24.2	-50.8	-24.2	0.21	244.51	56.2
4200.0	0.48	262.34	4199.2	-24.4	-51.5	-24.4	0.15	244.66	57.0
4300.0	0.58	255.54	4299.2	-24.6	-52.4	-24.6	0.12	244.88	57.9
4400.0	0.66	241.99	4399.2	-25.0	-53.4	-25.0	0.17	244.94	58.9
4500.0	0.66	237.19	4499.2	-25.5	-54.4	-25.5	0.06	244.84	60.1
4600.0	0.52	235.64	4599.1	-26.1	-55.2	-26.1	0.14	244.70	61.1
4700.0	0.43	251.69	4699.1	-26.5	-56.0	-26.5	0.16	244.68	61.9

SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Unknown
Site: Chaves County, NM
Well: Dulce State Com 36 #1
Wellpath: VH - Job #32K0800342

Date: 9/4/2000 Time: 09:39:37 Page: 2
Co-ordinate(NE) Reference: Site: Chaves 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	0.53	266.01	4799.1	-26.6	-56.8	-26.6	0.16	244.87	62.7
4900.0	0.86	257.60	4899.1	-26.8	-58.0	-26.8	0.34	245.17	63.9
5000.0	1.09	251.55	4999.1	-27.3	-59.6	-27.3	0.25	245.40	65.6
5100.0	1.13	249.93	5099.1	-27.9	-61.4	-27.9	0.05	245.55	67.5
5200.0	1.13	247.73	5199.1	-28.6	-63.3	-28.6	0.04	245.65	69.5
5300.0	1.15	245.84	5299.1	-29.4	-65.1	-29.4	0.04	245.68	71.5
5400.0	1.19	242.63	5399.0	-30.3	-66.9	-30.3	0.08	245.64	73.5
5500.0	1.21	243.87	5499.0	-31.3	-68.8	-31.3	0.03	245.57	75.6
5600.0	1.21	245.82	5599.0	-32.2	-70.7	-32.2	0.04	245.55	77.7
5700.0	1.23	244.47	5699.0	-33.0	-72.7	-33.0	0.04	245.54	79.8
5800.0	1.24	247.66	5799.0	-33.9	-74.6	-33.9	0.07	245.56	82.0
5900.0	1.26	247.52	5898.9	-34.8	-76.6	-34.8	0.02	245.61	84.2
6000.0	1.31	247.60	5998.9	-35.6	-78.7	-35.6	0.05	245.66	86.4
6100.0	1.32	254.71	6098.9	-36.4	-80.9	-36.4	0.16	245.80	88.7
6200.0	1.31	253.83	6198.8	-37.0	-83.1	-37.0	0.02	246.01	90.9
6300.0	1.30	252.98	6298.8	-37.6	-85.3	-37.6	0.02	246.19	93.2
6400.0	1.31	253.49	6398.8	-38.3	-87.5	-38.3	0.02	246.36	95.5
6500.0	1.34	256.47	6498.8	-38.9	-89.7	-38.9	0.08	246.56	97.8
6600.0	1.31	253.69	6598.7	-39.5	-91.9	-39.5	0.07	246.76	100.0
6700.0	1.34	253.00	6698.7	-40.1	-94.1	-40.1	0.03	246.91	102.3
6800.0	1.27	255.29	6798.7	-40.8	-96.3	-40.8	0.09	247.07	104.6
6900.0	1.32	253.79	6898.7	-41.4	-98.5	-41.4	0.06	247.22	106.8
7000.0	1.25	253.78	6998.6	-42.0	-100.7	-42.0	0.07	247.36	109.1
7100.0	1.21	252.53	7098.6	-42.6	-102.7	-42.6	0.05	247.47	111.2
7200.0	1.13	251.63	7198.6	-43.2	-104.7	-43.2	0.08	247.55	113.2
7300.0	1.01	252.41	7298.6	-43.8	-106.4	-43.8	0.12	247.63	115.1
7400.0	0.89	245.64	7398.6	-44.4	-108.0	-44.4	0.16	247.65	116.8
7500.0	0.84	236.49	7498.6	-45.1	-109.3	-45.1	0.15	247.57	118.3
7600.0	0.77	217.04	7598.5	-46.1	-110.3	-46.1	0.28	247.34	119.5
7700.0	0.84	195.64	7698.5	-47.3	-110.9	-47.3	0.31	246.90	120.6
7800.0	0.99	176.18	7798.5	-48.9	-111.1	-48.9	0.34	246.25	121.3
7900.0	1.00	169.80	7898.5	-50.6	-110.8	-50.6	0.11	245.46	121.9
8000.0	1.07	159.08	7998.5	-52.3	-110.4	-52.3	0.21	244.63	122.1
8100.0	1.13	155.96	8098.5	-54.1	-109.6	-54.1	0.08	243.73	122.2
8200.0	1.19	151.43	8198.5	-55.9	-108.7	-55.9	0.11	242.78	122.3
8300.0	1.21	150.72	8298.4	-57.7	-107.7	-57.7	0.02	241.80	122.2
8400.0	1.33	151.77	8398.4	-59.7	-106.6	-59.7	0.12	240.76	122.2
8500.0	1.73	143.35	8498.4	-61.9	-105.2	-61.9	0.46	239.52	122.1
8600.0	1.97	143.31	8598.3	-64.5	-103.3	-64.5	0.24	238.01	121.8
8700.0	2.01	142.52	8698.3	-67.3	-101.2	-67.3	0.05	236.38	121.5
8800.0	2.20	140.15	8798.2	-70.1	-98.9	-70.1	0.21	234.65	121.2
8900.0	2.11	137.95	8898.1	-73.0	-96.4	-73.0	0.12	232.87	120.9
9000.0	1.95	136.59	8998.1	-75.6	-94.0	-75.6	0.17	231.20	120.6
9100.0	1.89	138.69	9098.0	-78.1	-91.8	-78.1	0.09	229.61	120.5
9200.0	1.92	139.09	9197.9	-80.6	-89.6	-80.6	0.03	228.03	120.5
9300.0	1.95	144.86	9297.9	-83.2	-87.5	-83.2	0.20	226.43	120.8
9400.0	1.83	141.88	9397.8	-85.9	-85.5	-85.9	0.16	224.88	121.2
9500.0	1.63	143.49	9497.8	-88.3	-83.7	-88.3	0.21	223.48	121.6
9600.0	1.58	139.16	9597.7	-90.5	-81.9	-90.5	0.13	222.17	122.1
9700.0	1.42	140.58	9697.7	-92.5	-80.3	-92.5	0.16	220.96	122.4
9800.0	1.28	137.62	9797.7	-94.2	-78.7	-94.2	0.16	219.87	122.8
9900.0	1.32	129.64	9897.7	-95.8	-77.1	-95.8	0.19	218.82	123.0

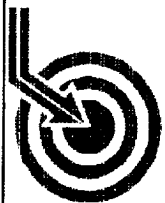
SCIENTIFIC DRILLING SURVEY REPORT

Company: TEXACO E & P INC.
Field: Unknown
Site: Chaves County, NM
Well: Dulce State Corn 38 #1
Wellpath: VH - Job #32K0800342

Date: 9/4/2000 Time: 09:39:37 Page: 3
Co-ordinate(NE) Reference: Site: Chaves 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

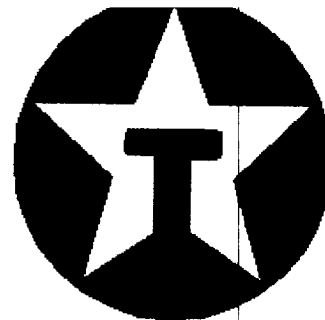
SURVEY

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS d/100ft	ClsA deg	ClsD ft
10000.0	1.30	129.27	9997.6	-97.3	-75.3	-97.3	0.02	217.75	123.0
10100.0	1.32	129.38	10097.6	-98.7	-73.5	-98.7	0.02	216.69	123.1
10200.0	1.14	134.96	10197.6	-100.1	-72.0	-100.1	0.22	215.70	123.3
10300.0	1.17	139.46	10297.6	-101.6	-70.6	-101.6	0.10	214.78	123.7
10400.0	1.17	128.44	10397.5	-103.0	-69.1	-103.0	0.22	213.86	124.1
10500.0	1.21	123.22	10497.5	-104.2	-67.4	-104.2	0.12	212.90	124.2
10600.0	1.03	111.15	10597.5	-105.1	-65.7	-105.1	0.30	212.01	124.0
10700.0	0.98	105.22	10697.5	-105.7	-64.1	-105.7	0.12	211.22	123.6
10800.0	0.76	139.65	10797.5	-106.4	-62.8	-106.4	0.56	210.55	123.6
10900.0	0.65	154.72	10897.5	-107.4	-62.1	-107.4	0.21	210.04	124.1
11000.0	0.69	180.22	10997.5	-108.6	-61.9	-108.6	0.30	209.69	125.0
11100.0	1.08	203.80	11097.4	-110.0	-62.3	-110.0	0.53	209.51	126.4
11200.0	1.54	211.41	11197.4	-112.0	-63.4	-112.0	0.49	209.49	128.7
11300.0	1.72	215.22	11297.4	-114.4	-64.9	-114.4	0.21	209.57	131.5
11400.0	1.61	208.73	11397.3	-116.9	-66.5	-116.9	0.22	209.63	134.4
11500.0	1.50	209.79	11497.3	-119.2	-67.8	-119.2	0.11	209.62	137.2
11600.0	1.38	211.60	11597.3	-121.4	-69.1	-121.4	0.13	209.64	139.7
11700.0	1.43	200.51	11697.2	-123.6	-70.1	-123.6	0.28	209.57	142.1
11800.0	1.56	199.96	11797.2	-126.0	-71.0	-126.0	0.13	209.41	144.7
11900.0	1.42	208.00	11897.2	-128.4	-72.1	-128.4	0.25	209.31	147.3
12000.0	1.18	211.84	11997.1	-130.4	-73.2	-130.4	0.26	209.31	149.5
12100.0	0.44	222.75	12097.1	-131.5	-74.0	-131.5	0.75	209.37	150.9
12200.0	0.28	275.86	12197.1	-131.8	-74.5	-131.8	0.35	209.48	151.4
12300.0	0.30	60.60	12297.1	-131.6	-74.5	-131.6	0.55	209.52	151.3
12400.0	0.42	98.54	12397.1	-131.6	-73.9	-131.6	0.26	209.34	150.9
12500.0	0.75	144.48	12497.1	-132.1	-73.2	-132.1	0.55	208.98	151.1
12600.0	0.93	156.68	12597.1	-133.4	-72.5	-133.4	0.25	208.52	151.8
12700.0	0.51	126.94	12697.1	-134.4	-71.8	-134.4	0.55	208.11	152.4
12726.0	0.29	180.19	12723.1	-134.6	-71.7	-134.6	1.57	208.06	152.5

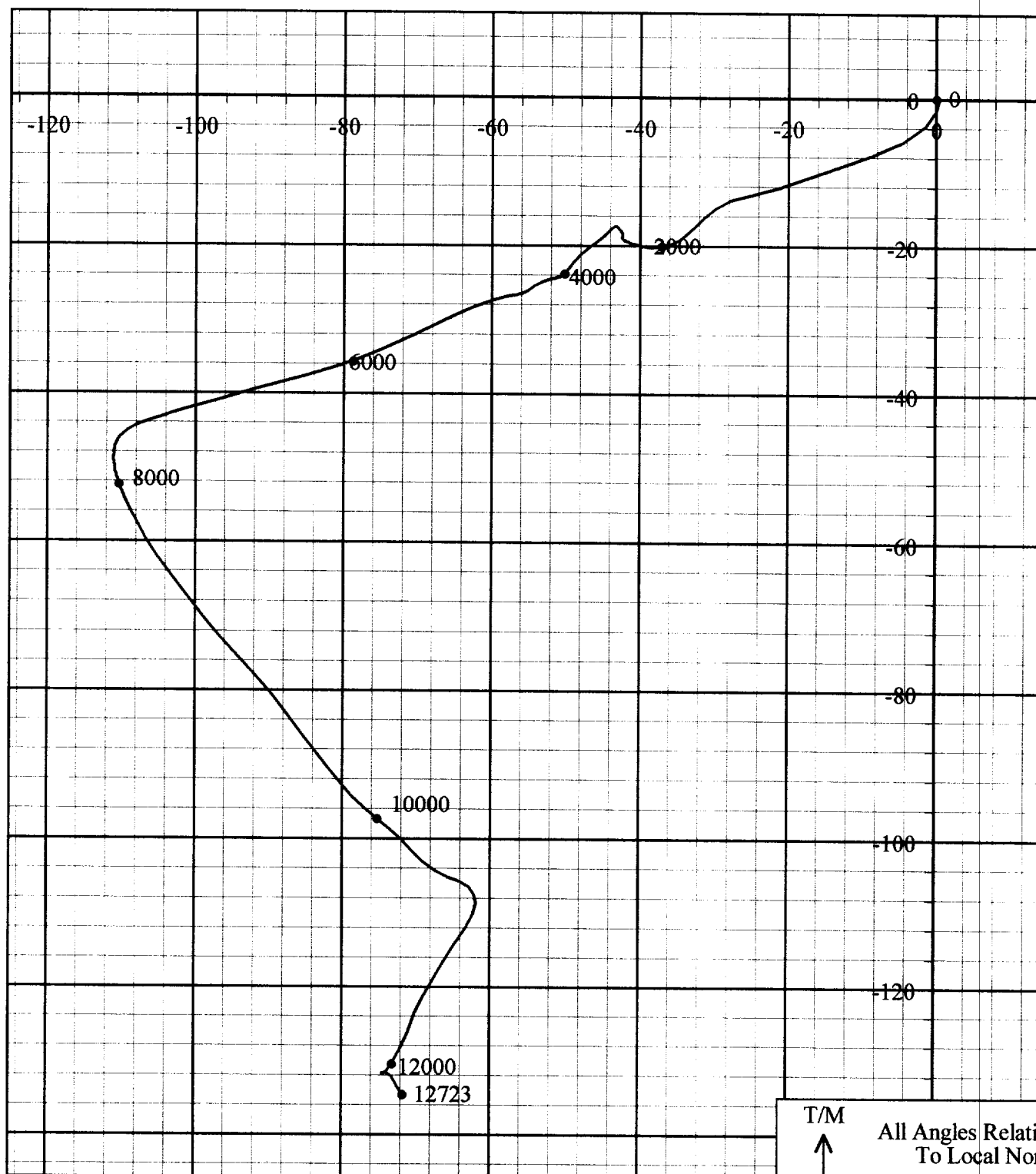


Scientific
Drilling

TEXACO E & P INC.
Field: Unknown
Site: Chaves County, NM
Well: Dulce State Com 36 #1
Wellpath: VH - Job #32K0800342
Survey: 8/30/00



South(-)/North(+) [20ft/in]



West(-)/East(+) [20ft/in]

T/M



All Angles Relative
To Local North



True North: 0.00
Magnetic North: 0.00