

REPORT OF SUBSURFACE DIRECTIONAL SURVEY

Ap: 30-025-32188
Area MARATHON OIL COMPANY
~~WARREN~~ STATE AC2 NO. 24
LEA COUNTY, NEW MEXICO
Sec 6-18-35

BAKER HUGHES INTEQ
2105 MARKET STREET
MIDLAND, TEXAS
915-694-9517

MARATHON OIL COMPANY

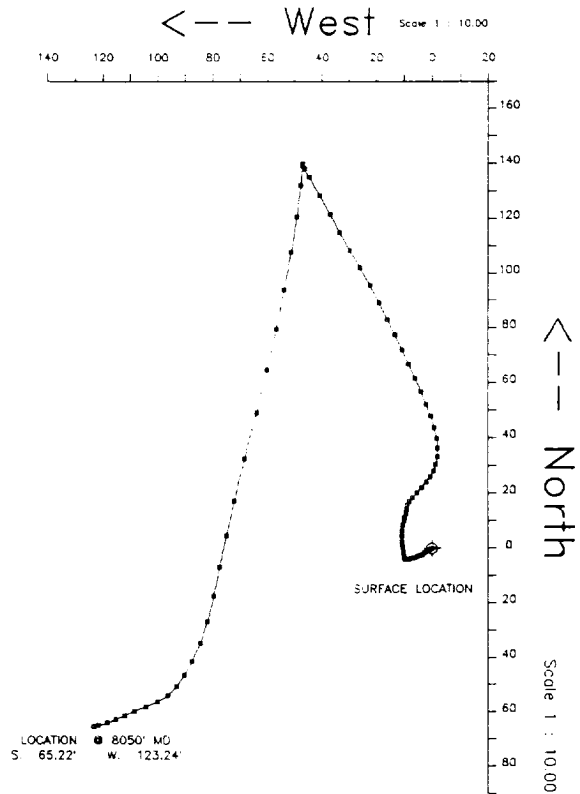
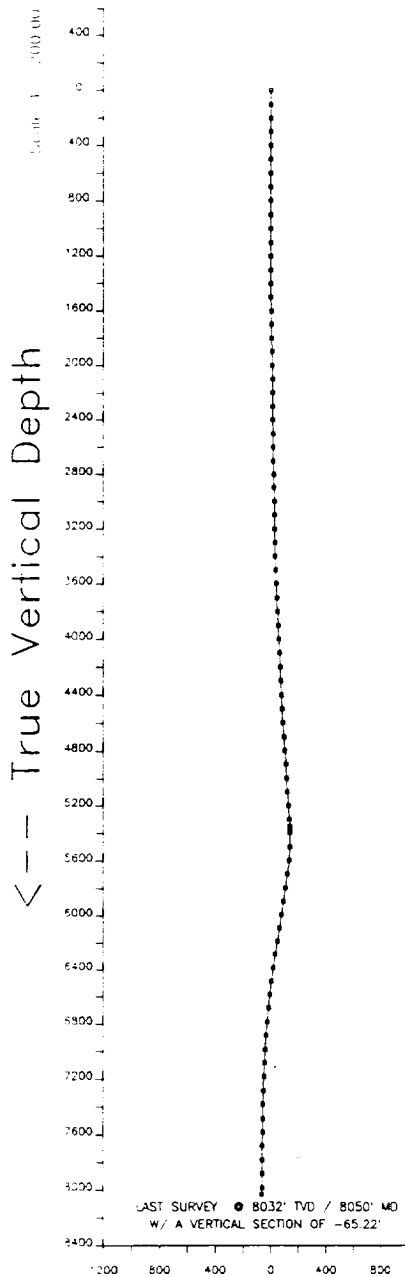
Structure : WARREN STATE AC2 #24

Well : #24

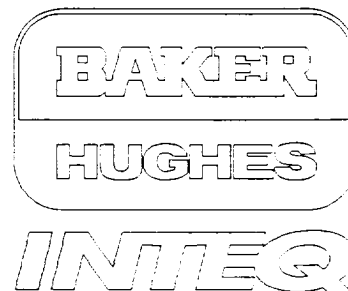
Field : WARREN

Location : LEA COUNTY, NEW MEXICO

GYRO SURVEY RUN 10/13/93



MAGNETIC DECLINATION
8 DEGREES EAST



Vertical Section on 0.00 azimuth with reference 0.00 N, 0.00 E from structure

MARATHON OIL COMPANY
WARREN STATE AC2 #24

#24
slot #1
WARREN
LEA COUNTY, NEW MEXICO

S U R V E Y L I S T I N G

by
Baker Hughes INTEQ

Your ref :
Our ref : svy224
License :

Date printed : 13-Oct-93
Date created : 13-Oct-93
Last revised : 13-Oct-93

Field is centred on 0.000,0.000,0.00000,N
Structure is centred on 0.000,0.000,0.00000,N

Slot location is n0 0 0.000,w4 29 18.843
Slot Grid coordinates are N 0.000, E 0.000
Slot local coordinates are 0.00 N 0.00 E
Reference North is Grid North

MARATHON OIL COMPANY
WARREN STATE AC2 #24,#24
WARREN, LEA COUNTY, NEW MEXICO

SURVEY LISTING Page 1
Your ref :
Last revised : 13-Oct-93

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100Ft	Vert Sect
0.00	0.00	0.00	0.00	0.00	N	0.00	0.00
100.00	0.50	241.63	100.00	0.21	S	0.38	-0.21
200.00	0.52	247.72	199.99	0.59	S	1.19	-0.59
300.00	0.55	230.08	299.99	1.07	S	1.98	-1.07
400.00	0.45	228.01	399.99	1.64	S	2.64	-1.64
500.00	0.59	233.41	499.98	2.21	S	3.34	-2.21
600.00	0.57	261.39	599.98	2.59	S	4.25	-2.59
700.00	0.47	245.93	699.97	2.83	S	5.11	-2.83
800.00	0.46	246.34	799.97	3.16	S	5.85	-3.16
900.00	0.58	258.27	899.97	3.42	S	6.72	-3.42
1000.00	0.53	244.42	999.96	3.72	S	7.63	-3.72
1100.00	0.47	262.66	1099.96	3.98	S	8.45	-3.98
1200.00	0.37	263.76	1199.96	4.06	S	9.18	-4.06
1300.00	0.33	322.34	1299.95	3.87	S	9.68	-3.87
1400.00	0.90	353.57	1399.95	2.86	S	9.94	-2.86
1500.00	1.00	346.29	1499.93	1.24	S	10.24	-1.24
1600.00	1.07	352.06	1599.92	0.54	N	10.57	0.54
1700.00	1.14	358.00	1699.90	2.46	N	10.74	2.46
1800.00	1.15	2.04	1799.88	4.45	N	10.74	4.45
1900.00	1.14	2.91	1899.86	6.45	N	10.65	6.45
2000.00	1.06	10.94	1999.84	8.35	N	10.42	8.35
2100.00	0.86	16.45	2099.83	9.98	N	10.04	9.98
2200.00	0.71	15.01	2199.82	11.30	N	9.66	11.30
2300.00	0.95	11.65	2299.81	12.71	N	9.34	12.71
2400.00	0.84	6.75	2399.79	14.25	N	9.08	14.25
2500.00	0.92	20.89	2499.78	15.72	N	8.71	15.72
2600.00	0.79	34.66	2599.77	17.04	N	8.03	17.04
2700.00	1.39	36.53	2699.75	18.58	N	6.92	18.58
2800.00	1.35	40.96	2799.72	20.45	N	5.42	20.45
2900.00	1.37	45.24	2899.70	22.18	N	3.80	22.18
3000.00	1.50	38.54	2999.66	24.04	N	2.14	24.04
3100.00	1.38	34.72	3099.63	26.06	N	0.64	26.06
3200.00	1.34	21.73	3199.60	28.13	N	0.48	28.13
3300.00	1.44	17.85	3299.58	30.42	N	1.30	30.42
3400.00	1.69	6.44	3399.54	33.08	N	1.85	33.08
3500.00	1.96	358.99	3499.49	36.25	N	1.99	36.25
3600.00	2.15	350.17	3599.42	39.81	N	1.64	39.81
3700.00	2.39	345.88	3699.34	43.68	N	0.81	43.68
3800.00	2.61	339.42	3799.25	47.84	N	0.50	47.84
3900.00	2.72	339.61	3899.14	52.19	N	2.13	52.19
4000.00	2.99	337.56	3999.02	56.82	N	3.95	56.82
4100.00	3.07	336.65	4098.88	61.69	N	6.01	61.69
4200.00	3.27	334.79	4198.72	66.73	N	8.28	66.73
4300.00	3.34	335.16	4298.56	71.96	N	10.72	71.96
4400.00	3.58	335.01	4398.38	77.43	N	13.26	77.43
4500.00	3.77	334.39	4498.17	83.22	N	16.00	83.22
4600.00	3.98	332.76	4597.94	89.28	N	19.01	89.28
4700.00	4.20	329.62	4697.69	95.52	N	22.46	95.52
4800.00	4.23	330.92	4797.42	101.90	N	26.10	101.90
4900.00	4.31	330.27	4897.14	108.39	N	29.76	108.39

All data is in feet unless otherwise stated
Coordinates from structure and TVD from wellhead.
Vertical section is from N 0.00 E 0.00 on azimuth 0.00 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

MARATHON OIL COMPANY
WARREN STATE AC2 #24, #24
WARREN, LEA COUNTY, NEW MEXICO

SURVEY LISTING Page 2
Your ref :
Last revised : 13-Oct-93

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100Ft	Vert Sect
5000.00	4.33	330.66	4996.86	114.94 N	33.47 W	0.04	114.94
5100.00	4.39	332.33	5096.57	121.62 N	37.10 W	0.14	121.62
5200.00	4.46	328.74	5196.27	128.34 N	40.89 W	0.28	128.34
5300.00	4.47	330.05	5295.96	135.04 N	44.85 W	0.10	135.04
5350.00	3.51	333.76	5345.84	138.10 N	46.50 W	1.99	138.10
5375.00	2.29	342.23	5370.81	139.26 N	46.99 W	5.16	139.26
5400.00	1.11	359.70	5395.80	139.98 N	47.15 W	5.10	139.98
5500.00	2.11	181.07	5495.78	139.10 N	47.19 W	3.22	139.10
5600.00	5.83	186.12	5595.52	132.21 N	47.76 W	3.73	132.21
5700.00	7.41	187.82	5694.86	120.77 N	49.18 W	1.59	120.77
5800.00	7.87	190.24	5793.97	107.65 N	51.28 W	0.56	107.65
5900.00	8.14	190.95	5892.99	93.96 N	53.84 W	0.29	93.96
6000.00	8.60	192.21	5991.93	79.70 N	56.76 W	0.50	79.70
6100.00	9.01	193.05	6090.75	64.76 N	60.11 W	0.43	64.76
6200.00	9.66	194.51	6189.42	49.01 N	63.98 W	0.69	49.01
6300.00	10.04	194.78	6287.95	32.46 N	68.31 W	0.38	32.46
6400.00	7.92	192.16	6386.72	17.30 N	71.98 W	2.16	17.30
6500.00	6.99	193.36	6485.87	4.64 N	74.84 W	0.94	4.64
6600.00	6.47	191.41	6585.18	6.80 S	77.36 W	0.57	-6.80
6700.00	5.99	191.57	6684.59	17.43 S	79.52 W	0.48	-17.43
6800.00	5.16	196.56	6784.12	26.86 S	81.85 W	0.96	-26.86
6900.00	4.34	201.85	6883.78	34.68 S	84.54 W	0.93	-34.68
7000.00	3.81	206.95	6983.52	41.15 S	87.46 W	0.64	-41.15
7100.00	3.05	209.95	7083.34	46.42 S	90.29 W	0.78	-46.42
7200.00	2.81	219.82	7183.21	50.61 S	93.19 W	0.56	-50.61
7300.00	2.49	230.50	7283.11	53.87 S	96.43 W	0.59	-53.87
7400.00	2.59	245.87	7383.01	56.18 S	100.17 W	0.69	-56.18
7500.00	2.66	248.13	7482.90	57.96 S	104.39 W	0.12	-57.96
7600.00	2.31	246.93	7582.81	59.62 S	108.40 W	0.35	-59.62
7700.00	2.11	243.30	7682.74	61.24 S	111.89 W	0.24	-61.24
7800.00	2.02	245.79	7782.67	62.79 S	115.15 W	0.13	-62.79
7900.00	1.92	252.18	7882.61	64.02 S	118.35 W	0.24	-64.02
8000.00	2.01	256.62	7982.55	64.94 S	121.65 W	0.18	-64.94
8050.00	1.75	262.14	8032.53	65.25 S	123.26 W	0.63	-65.25

All data is in feet unless otherwise stated
Coordinates from structure and TVD from wellhead.
Vertical section is from N 0.00 E 0.00 on azimuth 0.00 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

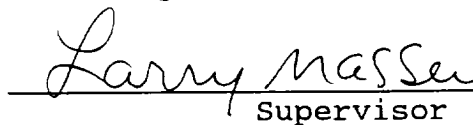
I, Ralph Rice, in the employ of Baker Hughes INTEQ on the day of October 13, 1993 conducted a Gyroscopic Multishot Survey by the method of gyroscopic orientation from a depth of 0 feet to 8050 feet, with recordings of inclination and direction being obtained at intervals of 100 feet.

This survey was conducted at the request of Marathon Oil Company for their Warren State AC2 No. 24, Lea County, New Mexico.

The data for this survey and the calculations were obtained and performed by me according to standards and procedures as set forth by Baker Hughes INTEQ and is true and correct to the best of my knowledge.


Surveyor

The data for this survey has been examined by me and conforms to principles and procedures set forth by Baker Hughes INTEQ.


Supervisor