

Marathon Oil Company
Indian Hills Unit 39

slot #1
INDIAN BASIN
Eddy County New Mexico

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

by
Baker Hughes INTEQ

Your ref : MWD survey
Our ref : svy1924
License :

Date printed : 16-Apr-2002
Date created : 15-Mar-2002
Last revised : 16-Apr-2002

Field is centred on n32 30 0.000,w104 30 0
Structure is centred on 446855.100,537053.500,999.00000,N

Slot location is n32 28 34.873,w104 30 20.406
Slot Grid coordinates are N 537053.500, E 446855.100
Slot local coordinates are 0.00 N 0.00 E

Projection type: mercator - New Mexico East (3001), Spheroid: Clarke - 1866

Reference North is True North

Marathon Oil Company
Indian Hills Unit 39, slot #1
INDIAN BASIN, Eddy County New Mexico

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Measured Depth	Inclin. Degrees	Azimuth Degrees	True 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 E	0.00	0.00
100.00	0.66	193.21	100.00	0.56 S 0.13 W	0.66	0.19
200.00	0.78	167.49	199.99	1.79 S 0.12 W	0.34	0.88
300.00	0.71	189.75	299.98	3.06 S 0.07 W	0.30	1.61
400.00	0.69	169.53	399.97	4.26 S 0.07 W	0.25	2.26
500.00	0.59	198.54	499.97	5.34 S 0.12 W	0.33	2.81
600.00	0.46	164.85	599.96	6.22 S 0.18 W	0.33	3.23
700.00	0.28	206.26	699.96	6.83 S 0.19 W	0.31	3.56
800.00	0.33	197.65	799.96	7.32 S 0.38 W	0.07	3.67
900.00	0.44	149.25	899.96	7.92 S 0.27 W	0.33	4.09
1000.00	0.19	125.39	999.96	8.35 S 0.06 E	0.28	4.60
1100.00	0.04	100.13	1099.96	8.45 S 0.23 E	0.15	4.80
1200.00	0.24	187.33	1199.96	8.67 S 0.24 E	0.24	4.92
1300.00	0.06	100.22	1299.96	8.88 S 0.26 E	0.24	5.06
1400.00	0.23	254.88	1399.96	8.94 S 0.12 E	0.29	4.97
1500.00	0.33	114.07	1499.96	9.11 S 0.19 E	0.53	5.12
1600.00	0.10	163.35	1599.96	9.32 S 0.48 E	0.28	5.47
1700.00	0.64	101.77	1699.95	9.51 S 1.05 E	0.60	6.06
1800.00	0.77	101.72	1799.95	9.76 S 2.25 E	0.13	7.21
1900.00	0.90	129.34	1899.94	10.40 S 3.52 E	0.42	8.61
2000.00	1.32	125.27	1999.92	11.56 S 5.07 E	0.43	10.55
2100.00	1.00	138.32	2099.90	12.88 S 6.59 E	0.41	12.54
2200.00	0.84	138.00	2199.88	14.07 S 7.66 E	0.16	14.09
2300.00	0.63	155.64	2299.87	15.12 S 8.38 E	0.31	15.26
2400.00	0.48	119.90	2399.87	15.83 S 8.96 E	0.37	16.14

All data is in feet unless otherwise stated.

Coordinates from slot #1 and TVD from rotary table.

Bottom hole distance is 1707.68 on azimuth 123.50 degrees from wellhead.
Vertical section is from S 0.00 E 0.00 on azimuth 123.00 degrees.

Calculation uses the minimum curvature method.

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Measured Depth	Inclin. Degrees	Azimuth Degrees	True 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
2500.00	0.36	154.38	2499.87	16.32 S 9.46 E	0.27	16.83
2600.00	0.40	103.85	2599.87	16.69 S 9.94 E	0.33	17.42
2700.00	0.46	161.36	2699.86	17.15 S 10.41 E	0.42	18.07
2800.00	0.24	220.93	2799.86	17.69 S 10.40 E	0.40	18.35
2820.00	0.37	204.04	2819.86	17.78 S 10.34 E	0.78	18.36
2935.00	0.20	145.50	2934.86	18.29 S 10.31 E	0.27	18.60
3031.00	3.30	125.50	3030.80	20.03 S 12.65 E	3.24	21.52
3126.00	5.40	128.30	3125.53	24.39 S 18.39 E	2.22	28.70
3221.00	7.70	127.60	3219.90	31.04 S 26.94 E	2.42	39.50
3315.00	9.70	126.50	3312.81	39.60 S 38.29 E	2.13	53.68
3410.00	12.30	125.80	3406.06	50.28 S 52.94 E	2.74	71.78
3506.00	14.80	127.60	3499.38	63.74 S 70.95 E	2.64	94.22
3648.00	17.80	132.50	3635.66	89.48 S 101.33 E	2.32	133.71
3680.00	18.10	131.80	3666.11	96.10 S 108.64 E	1.15	143.45
3712.00	18.40	131.10	3696.50	102.73 S 116.15 E	1.16	153.36
3744.00	19.00	129.70	3726.81	109.38 S 123.96 E	2.34	163.54
3776.00	19.30	127.90	3757.04	115.95 S 132.15 E	2.07	173.98
3807.00	19.60	127.90	3786.27	122.29 S 140.29 E	0.97	184.26
3839.00	20.04	126.20	3816.37	128.83 S 148.95 E	2.27	195.09
3903.00	19.90	127.20	3876.52	141.89 S 166.47 E	0.58	216.90
3966.00	19.50	125.80	3935.84	154.52 S 183.54 E	0.98	238.09
4029.00	18.60	123.40	3995.39	166.21 S 200.46 E	1.89	258.64
4095.00	18.20	124.40	4058.01	177.82 S 217.75 E	0.77	279.47
4156.00	18.30	123.00	4115.94	188.42 S 233.64 E	0.74	298.57
4219.00	18.20	123.70	4175.78	199.27 S 250.12 E	0.38	318.30

All data is in feet unless otherwise stated.

Coordinates from slot #1 and TVD from rotary table.

Bottom hole distance is 1707.68 on azimuth 123.50 degrees from wellhead.

Vertical section is from S 0.00 E 0.00 on azimuth 123.00 degrees.

Calculation uses the minimum curvature method.

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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
4283.00	18.30	123.30	4236.56	210.33 S 266.84 E	0.25	338.34
4347.00	18.30	122.60	4297.32	221.26 S 283.70 E	0.34	358.44
4409.00	18.30	122.70	4356.18	231.76 S 300.09 E	0.05	377.91
4473.00	18.70	122.30	4416.88	242.67 S 317.22 E	0.66	398.21
4535.00	18.60	121.90	4475.62	253.21 S 334.01 E	0.26	418.04
4598.00	18.70	121.60	4535.31	263.81 S 351.15 E	0.22	438.18
4661.00	18.50	121.30	4595.02	274.29 S 368.29 E	0.35	458.26
4725.00	18.50	120.20	4655.72	284.68 S 385.74 E	0.55	478.56
4789.00	18.50	119.50	4716.41	294.78 S 403.35 E	0.35	498.83
4853.00	18.30	118.70	4777.14	304.61 S 421.00 E	0.50	518.99
4917.00	18.30	117.40	4837.90	314.06 S 438.74 E	0.64	539.01
4981.00	18.00	118.40	4898.72	323.39 S 456.36 E	0.68	558.86
5044.00	18.30	118.10	4958.58	332.67 S 473.64 E	0.50	578.42
5107.00	19.00	116.30	5018.27	341.88 S 491.56 E	1.44	598.46
5171.00	17.90	116.30	5078.98	350.85 S 509.72 E	1.72	618.58
5235.00	17.90	117.30	5139.88	359.72 S 527.28 E	0.48	638.13
5298.00	17.70	118.10	5199.87	368.67 S 544.33 E	0.50	657.31
5393.00	18.10	118.40	5290.27	382.49 S 570.05 E	0.43	686.41
5456.00	18.40	120.10	5350.10	392.13 S 587.26 E	0.97	706.09
5519.00	18.70	119.50	5409.83	402.09 S 604.65 E	0.56	726.10
5596.00	18.70	118.80	5482.76	414.12 S 626.21 E	0.29	750.73
5659.00	18.30	118.40	5542.51	423.69 S 643.76 E	0.67	770.66
5722.00	17.70	120.50	5602.42	433.25 S 660.72 E	1.40	790.09
5785.00	16.90	120.90	5662.57	442.82 S 676.83 E	1.28	808.81
5847.00	17.10	118.40	5721.87	451.78 S 692.58 E	1.22	826.90

All data is in feet unless otherwise stated.

Coordinates from slot #1 and TVD from rotary table.

Bottom hole distance is 1707.68 on azimuth 123.50 degrees from wellhead.
Vertical section is from S 0.00 E 0.00 on azimuth 123.00 degrees.

Calculation uses the minimum curvature method.

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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
5910.00	16.50	119.80	5782.18	460.63 S 708.49 E	1.15	845.07
5973.00	16.40	119.80	5842.60	469.50 S 723.97 E	0.16	862.88
6035.00	16.40	118.40	5902.08	478.01 S 739.26 E	0.64	880.34
6099.00	16.00	119.10	5963.53	486.60 S 754.92 E	0.70	898.15
6162.00	15.90	119.10	6024.11	495.02 S 770.05 E	0.16	915.42
6225.00	17.10	121.20	6084.51	504.01 S 785.51 E	2.13	933.29
6288.00	17.50	121.90	6144.66	513.82 S 801.47 E	0.72	952.02
6352.00	18.00	123.30	6205.62	524.33 S 817.91 E	1.03	971.53
6382.00	18.80	123.30	6234.08	529.53 S 825.82 E	2.67	981.00
6446.00	18.40	121.60	6294.74	540.48 S 843.05 E	1.05	1001.41
6509.00	18.00	121.20	6354.59	550.74 S 859.84 E	0.67	1021.08
6572.00	18.20	120.60	6414.47	560.79 S 876.64 E	0.43	1040.64
6633.00	18.90	119.50	6472.30	570.50 S 893.43 E	1.28	1060.01
6696.00	19.10	120.90	6531.87	580.82 S 911.16 E	0.79	1080.50
6757.00	18.80	122.30	6589.56	591.20 S 928.03 E	0.89	1100.30
6820.00	19.00	121.90	6649.17	602.04 S 945.32 E	0.38	1120.71
6883.00	18.80	120.50	6708.77	612.61 S 962.77 E	0.79	1141.10
6945.00	19.10	120.90	6767.41	622.89 S 980.08 E	0.53	1161.22
7008.00	19.70	122.30	6826.83	633.86 S 997.90 E	1.20	1182.14
7072.00	20.00	122.00	6887.03	645.42 S 1016.30 E	0.50	1203.87
7134.00	20.10	121.30	6945.27	656.58 S 1034.40 E	0.42	1225.12
7197.00	20.20	121.60	7004.42	667.90 S 1052.91 E	0.23	1246.81
7259.00	21.50	121.60	7062.36	679.46 S 1071.71 E	2.10	1268.87
7321.00	19.70	121.60	7120.39	690.89 S 1090.29 E	2.90	1290.68
7383.00	18.40	124.80	7178.99	701.95 S 1107.22 E	2.69	1310.91

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Measured Depth	Inclin. Degrees	Azimuth Degrees	True 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
7443.00	18.60	128.90	7235.90	713.37 S 1122.45 E	2.19	1329.89
7506.00	19.00	129.30	7295.54	726.17 S 1138.20 E	0.67	1350.08
7570.00	17.30	127.20	7356.35	738.52 S 1153.84 E	2.85	1369.92
7634.00	16.50	125.80	7417.59	749.59 S 1168.80 E	1.40	1388.49
7697.00	18.00	120.00	7477.75	759.70 S 1184.48 E	3.62	1407.15
7762.00	17.90	122.30	7539.59	770.06 S 1201.62 E	1.10	1427.17
7824.00	18.40	121.20	7598.51	780.22 S 1218.05 E	0.98	1446.48
7880.00	18.90	119.50	7651.57	789.26 S 1233.50 E	1.32	1464.36
7949.00	17.50	122.30	7717.11	800.31 S 1252.00 E	2.39	1485.89
8015.00	16.60	124.80	7780.21	810.99 S 1268.13 E	1.76	1505.24
8100.00	15.58	126.62	7861.88	824.73 S 1287.26 E	1.34	1528.77
8125.00	14.47	129.03	7886.03	828.70 S 1292.38 E	5.09	1535.23
8150.00	14.14	129.27	7910.25	832.60 S 1297.17 E	1.34	1541.37
8175.00	13.75	129.39	7934.52	836.42 S 1301.83 E	1.56	1547.36
8200.00	13.51	128.84	7958.81	840.14 S 1306.40 E	1.09	1553.21
8225.00	13.51	129.42	7983.12	843.82 S 1310.93 E	0.54	1559.02
8250.00	13.70	129.85	8007.42	847.57 S 1315.46 E	0.86	1564.86
8275.00	13.58	130.24	8031.71	851.37 S 1319.98 E	0.60	1570.71
8300.00	13.37	130.94	8056.03	855.16 S 1324.40 E	1.06	1576.49
8325.00	13.21	130.97	8080.36	858.92 S 1328.74 E	0.64	1582.18
8350.00	12.99	131.22	8104.71	862.65 S 1333.01 E	0.91	1587.79
8375.00	12.86	130.58	8129.07	866.31 S 1337.24 E	0.77	1593.33
8400.00	12.76	131.01	8153.45	869.93 S 1341.43 E	0.55	1598.82
8425.00	12.81	131.66	8177.83	873.58 S 1345.59 E	0.61	1604.29
8450.00	12.56	131.50	8202.22	877.23 S 1349.69 E	1.01	1609.72

All data is in feet unless otherwise stated.

Coordinates from slot #1 and TVD from rotary table.

Bottom hole distance is 1707.68 on azimuth 123.50 degrees from wellhead.

Vertical section is from S 0.00 E 0.00 on azimuth 123.00 degrees.

Calculation uses the minimum curvature method.

Presented by Baker Hughes INTEQ

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Depth	VERT COR	ANGLE DEG	DOGLEG DEG/100ft	VERT SECT
8475.00	12.46	132.27	8226.63	880.84 S	1353.73 E	0.78	1615.07
8500.00	12.23	131.68	8251.05	884.42 S	1357.70 E	1.05	1620.35
8508.50	12.18	131.32	8259.36	885.61 S	1359.04 E	1.07	1622.13
8918.00	12.18	131.32	8659.64	942.65 S	1423.93 E	0.00	1707.62 PROJ TO TD

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Coordinates from slot #1 and TVD from rotary table.
Bottom hole distance is 1707.68 on azimuth 123.50 degrees from wellhead.
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Indian Hills Unit 39,slot #1
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Comments in wellpath

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Comment

Rectangular Coords.

MD TVD

8918.00 8659.64 942.65 S 1423.93 E PROJ TO TD

Targets associated with this wellpath

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Target name Geographic Location T.V.D. Rectangular Coordinates Revised

UPPER PENN TOP 448101.000,536687.500,0.00000 7750.00 364.02S 1246.60E 29-Oct-2001
BASE OF UPPER PENN 8350.00 403.82S 1382.89W 7-Nov-2001