

**Provide Signature Page for
Directional Survey**



Marathon Oil

Marathon Oil

Eddy County, NM

El Presidente State 5-6-10

TB #6H

OH

30-015-44484

Design: OH 194'-13811' PTB 13874'

Survey Report

24 January, 2018

NM OIL CONSERVATION
ARTESIA DISTRICT

JUL 30 2018

RECEIVED



PRODIRECTIONAL



Professional Directional
Survey Report



Company: Marathon Oil
Project: Eddy County, NM
Site: El Presidente State 5-6-10
Well: TB #6H
Wellbore: OH
Design: OH 194'-13811' PTB 13874'

Local Co-ordinate Reference: Well TB #6H
TVD Reference: Well @ 3161.50usft (GL: 3135' + KB: 26.5' (H&P423))
MD Reference: Well @ 3161.50usft (GL: 3135' + KB: 26.5' (H&P423))
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Project Eddy County, NM

Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

System Datum: Mean Sea Level

Site El Presidente State 5-6-10

Site Position:		Northing:	451,111.94 usft	Latitude:	32.240098
From:	Map	Easting:	555,065.83 usft	Longitude:	-104.155233
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.10 °

Well TB #6H

Well Position	+N/-S	0.00 usft	Northing:	451,111.94 usft	Latitude:	32.240098
	+E/-W	0.00 usft	Easting:	555,115.83 usft	Longitude:	-104.155071
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,135.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/31/2017	7.33	60.05	48,032.60

Design OH 194'-13811' PTB 13874'

Audit Notes:

Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	1.20	



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Survey Program **Date** 1/24/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
194.00	467.00	Survey #1 (OH)	GYRO-MWD	OWSG Gyro MWD
603.00	13,874.00	Survey #2 (OH)	MWD+IFR1	OWSG MWD + IFR1

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	451,111.94	555,115.83
194.00	0.30	326.00	194.00	0.42	0.42	-0.28	0.51	326.00	451,112.36	555,115.55
284.00	0.90	348.00	283.99	1.30	1.31	-0.56	1.42	336.72	451,113.25	555,115.27
375.00	0.80	347.00	374.98	2.61	2.63	-0.85	2.76	341.98	451,114.57	555,114.98
467.00	1.00	344.00	466.97	4.00	4.02	-1.22	4.20	343.13	451,115.96	555,114.81
603.00	2.60	13.50	602.90	8.14	8.16	-0.83	8.21	354.22	451,120.10	555,115.00
695.00	2.40	10.20	694.82	12.09	12.09	0.00	12.09	0.01	451,124.03	555,115.83
787.00	2.10	23.50	786.75	15.55	15.53	1.01	15.56	3.74	451,127.47	555,116.84
879.00	0.60	94.80	878.72	17.08	17.04	2.17	17.17	7.25	451,128.98	555,118.00
970.00	1.20	140.50	969.71	16.33	16.26	3.25	16.58	11.29	451,128.20	555,119.08
1,160.00	1.40	140.80	1,159.66	13.05	12.93	5.98	14.24	24.83	451,124.87	555,121.81
1,254.00	1.70	137.20	1,253.63	11.17	11.01	7.65	13.41	34.79	451,122.95	555,123.48
1,349.00	1.80	136.40	1,348.58	9.10	8.90	9.64	13.12	47.29	451,120.84	555,125.47
1,443.00	2.90	157.90	1,442.50	5.87	5.63	11.55	12.85	64.03	451,117.57	555,127.38
1,538.00	4.30	162.80	1,537.31	0.28	0.00	13.51	13.51	90.01	451,111.94	555,129.34
1,632.00	5.00	168.40	1,631.00	-7.06	-7.38	15.38	17.06	115.64	451,104.56	555,131.21
1,726.00	5.20	174.40	1,724.63	-15.28	-15.63	16.62	22.81	133.26	451,096.31	555,132.45
1,821.00	5.60	183.30	1,819.21	-24.19	-24.55	16.77	29.73	145.66	451,087.39	555,132.60
1,916.00	5.60	195.60	1,913.76	-33.31	-33.64	15.25	36.94	155.61	451,078.30	555,131.08
2,010.00	6.10	207.30	2,007.28	-42.24	-42.49	11.73	44.08	164.57	451,069.45	555,127.56
2,104.00	6.50	216.20	2,100.71	-51.08	-51.23	6.30	51.61	172.99	451,060.71	555,122.13



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Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
2,199.00	6.90	226.60	2,195.07	-59.49	-59.49	-1.02	59.49	180.99	451,052.45	555,114.81	
2,319.00	6.50	230.20	2,314.25	-69.01	-68.79	-11.48	69.74	189.48	451,043.15	555,104.35	
2,480.00	5.90	232.10	2,474.30	-80.21	-79.70	-25.01	83.53	197.42	451,032.24	555,090.82	
2,670.00	8.00	231.10	2,662.90	-94.89	-94.01	-43.01	103.38	204.58	451,017.93	555,072.82	
2,764.00	8.40	231.20	2,755.94	-103.51	-102.42	-53.45	115.52	207.56	451,009.52	555,062.38	
2,859.00	8.30	231.50	2,849.93	-112.35	-111.03	-64.22	128.27	210.05	451,000.91	555,051.61	
2,953.00	8.40	231.70	2,942.93	-121.05	-119.51	-74.92	141.05	212.08	450,992.43	555,040.91	
3,048.00	8.00	215.40	3,036.97	-130.94	-129.20	-84.20	154.22	213.09	450,982.74	555,031.63	
3,143.00	7.50	214.40	3,131.11	-141.59	-139.71	-91.53	167.02	213.23	450,972.23	555,024.30	
3,238.00	6.70	215.20	3,225.38	-151.37	-149.35	-98.23	178.76	213.33	450,962.59	555,017.60	
3,332.00	6.70	215.90	3,318.74	-160.43	-158.27	-104.60	189.72	213.46	450,953.67	555,011.23	
3,427.00	7.70	209.20	3,412.99	-170.60	-168.32	-110.96	201.60	213.39	450,943.62	555,004.87	
3,522.00	7.70	208.90	3,507.13	-181.86	-179.45	-117.14	214.29	213.14	450,932.49	554,998.69	
3,616.00	7.10	208.60	3,600.35	-192.59	-190.06	-122.96	226.37	212.90	450,921.88	554,992.87	
3,711.00	6.60	208.20	3,694.67	-202.67	-200.03	-128.35	237.67	212.69	450,911.91	554,987.48	
3,806.00	6.20	207.40	3,789.08	-212.14	-209.39	-133.30	248.22	212.48	450,902.55	554,982.53	
3,901.00	6.30	208.10	3,883.51	-221.39	-218.54	-138.11	258.53	212.29	450,893.40	554,977.72	
3,996.00	6.20	207.00	3,977.95	-230.65	-227.71	-142.90	268.83	212.11	450,884.23	554,972.93	
4,091.00	6.10	207.40	4,072.40	-239.80	-236.76	-147.55	278.98	211.93	450,875.18	554,968.28	
4,185.00	4.60	220.50	4,165.99	-247.20	-244.07	-152.29	287.68	211.96	450,867.87	554,963.54	
4,280.00	2.10	228.80	4,260.82	-251.32	-248.11	-156.08	293.12	212.17	450,863.83	554,959.75	
4,375.00	2.10	220.40	4,355.76	-253.85	-250.58	-158.52	296.51	212.32	450,861.36	554,957.31	
4,469.00	2.30	219.70	4,449.69	-256.66	-253.34	-160.84	300.09	212.41	450,858.60	554,954.99	
4,563.00	2.30	225.30	4,543.61	-259.49	-256.12	-163.38	303.80	212.53	450,855.82	554,952.45	
4,658.00	0.80	251.90	4,638.58	-261.08	-257.67	-165.37	306.17	212.69	450,854.27	554,950.46	
4,848.00	0.80	277.80	4,828.56	-261.36	-257.90	-167.94	307.76	213.07	450,854.04	554,947.89	
4,943.00	0.80	281.10	4,923.55	-261.17	-257.68	-169.25	308.30	213.30	450,854.26	554,946.58	

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5,037.00	0.80	270.90	5,017.54	-261.06	-257.55	-170.55	308.90	213.51	450,854.39	554,945.28	
5,132.00	0.70	275.90	5,112.53	-261.02	-257.48	-171.79	309.53	213.71	450,854.46	554,944.04	
5,227.00	0.70	227.60	5,207.53	-261.37	-257.81	-172.80	310.36	213.83	450,854.13	554,943.03	
5,416.00	0.80	187.00	5,396.51	-263.48	-259.90	-173.81	312.66	213.77	450,852.04	554,942.02	
5,511.00	1.00	178.60	5,491.50	-264.97	-261.38	-173.87	313.93	213.63	450,850.56	554,941.96	
5,606.00	1.20	186.90	5,586.48	-266.79	-263.20	-173.97	315.50	213.46	450,848.74	554,941.86	
5,700.00	1.50	167.10	5,680.46	-268.96	-265.38	-173.81	317.23	213.22	450,846.56	554,942.02	
5,795.00	1.80	163.80	5,775.42	-271.59	-268.02	-173.12	319.07	212.86	450,843.92	554,942.71	
5,890.00	1.70	164.90	5,870.37	-274.36	-270.81	-172.34	321.00	212.47	450,841.13	554,943.49	
5,984.00	1.80	167.90	5,964.33	-277.14	-273.60	-171.66	323.00	212.10	450,838.34	554,944.17	
6,079.00	1.90	183.60	6,059.28	-280.16	-276.63	-171.45	325.46	211.79	450,835.31	554,944.38	
6,174.00	2.10	185.70	6,154.22	-283.47	-279.94	-171.72	328.41	211.53	450,832.00	554,944.11	
6,269.00	0.70	162.40	6,249.19	-285.76	-282.22	-171.72	330.36	211.32	450,829.72	554,944.11	
6,363.00	1.30	184.20	6,343.18	-287.37	-283.83	-171.62	331.69	211.16	450,828.11	554,944.21	
6,458.00	1.30	134.20	6,438.16	-289.18	-285.66	-170.93	332.89	210.89	450,826.28	554,944.90	
6,553.00	0.80	133.40	6,533.14	-290.36	-286.87	-169.68	333.29	210.60	450,825.07	554,946.15	
6,647.00	0.80	196.20	6,627.13	-291.43	-287.95	-169.38	334.07	210.47	450,823.99	554,946.45	
6,742.00	1.00	187.90	6,722.12	-292.90	-289.41	-169.68	335.48	210.38	450,822.53	554,946.15	
6,837.00	0.90	23.70	6,817.12	-293.03	-289.54	-169.49	335.51	210.34	450,822.40	554,946.34	
6,932.00	1.40	7.00	6,912.10	-291.19	-287.71	-169.05	333.70	210.44	450,824.23	554,946.78	
7,027.00	1.00	348.80	7,007.08	-289.22	-285.74	-169.07	332.02	210.61	450,826.20	554,946.76	
7,121.00	0.30	349.50	7,101.07	-288.18	-284.70	-169.28	331.22	210.74	450,827.24	554,946.55	
7,216.00	0.70	260.50	7,196.07	-288.04	-284.55	-169.89	331.41	210.84	450,827.39	554,945.94	
7,311.00	1.70	227.60	7,291.05	-289.12	-285.60	-171.51	333.14	210.99	450,826.34	554,944.32	
7,405.00	2.50	223.40	7,384.98	-291.60	-288.02	-173.95	336.48	211.13	450,823.92	554,941.88	
7,500.00	1.00	219.20	7,479.93	-293.79	-290.17	-175.89	339.32	211.22	450,821.77	554,939.94	
7,595.00	1.00	0.80	7,574.93	-293.62	-289.99	-176.41	339.43	211.31	450,821.95	554,939.42	



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7,689.00	1.20	358.70	7,668.91	-291.81	-288.18	-176.42	337.89	211.47	450,823.76	554,939.41	
7,784.00	0.80	322.90	7,763.90	-290.30	-286.66	-176.84	336.82	211.67	450,825.28	554,938.99	
7,879.00	1.10	283.90	7,858.89	-289.58	-285.91	-178.13	336.86	211.92	450,826.03	554,937.70	
7,973.00	1.60	317.10	7,952.86	-288.44	-284.73	-179.89	336.80	212.28	450,827.21	554,935.94	
8,068.00	0.50	43.40	8,047.85	-287.18	-283.46	-180.51	336.06	212.49	450,828.48	554,935.32	
8,163.00	1.50	123.20	8,142.83	-287.53	-283.84	-179.19	335.67	212.26	450,828.10	554,936.64	
8,258.00	1.00	153.90	8,237.81	-288.93	-285.26	-177.78	336.13	211.93	450,826.68	554,938.05	
8,352.00	2.00	191.20	8,331.78	-291.27	-287.61	-177.74	338.10	211.72	450,824.33	554,938.09	
8,446.00	2.70	192.30	8,425.70	-295.06	-291.38	-178.53	341.73	211.50	450,820.56	554,937.30	
8,540.00	2.70	28.30	8,519.66	-295.26	-291.60	-177.95	341.61	211.39	450,820.34	554,937.88	
8,587.00	7.60	10.90	8,566.46	-291.21	-287.57	-176.84	337.59	211.59	450,824.37	554,938.99	
8,635.00	11.40	8.90	8,613.80	-283.38	-279.76	-175.50	330.25	212.10	450,832.18	554,940.33	
8,682.00	15.40	7.70	8,659.51	-272.57	-268.98	-173.95	320.33	212.89	450,842.96	554,941.88	
8,729.00	20.10	7.90	8,704.26	-258.34	-254.79	-172.00	307.41	214.02	450,857.15	554,943.83	
8,776.00	25.00	7.50	8,747.65	-240.43	-236.93	-169.59	291.38	215.59	450,875.01	554,946.24	
8,824.00	30.60	6.60	8,790.09	-218.17	-214.72	-166.86	271.94	217.85	450,897.22	554,948.97	
8,871.00	36.00	4.90	8,829.36	-192.46	-189.06	-164.31	250.48	220.99	450,922.88	554,951.52	
8,919.00	40.50	2.70	8,867.05	-162.78	-159.42	-162.37	227.55	225.52	450,952.52	554,953.46	
8,966.00	44.70	1.50	8,901.64	-130.98	-127.63	-161.21	205.62	231.63	450,984.31	554,954.62	
9,014.00	49.00	1.30	8,934.46	-95.97	-92.63	-160.36	185.19	239.99	451,019.31	554,955.47	
9,061.00	54.60	0.60	8,963.51	-59.05	-55.72	-159.76	169.19	250.77	451,056.22	554,956.07	
9,109.00	60.60	0.10	8,989.22	-18.55	-15.21	-159.52	160.24	264.55	451,096.73	554,956.31	
9,156.00	65.40	357.50	9,010.56	23.27	26.64	-160.41	162.61	279.43	451,138.58	554,955.42	
9,203.00	67.70	356.00	9,029.26	66.26	69.68	-162.86	177.14	293.16	451,181.62	554,952.97	
9,250.00	71.10	357.40	9,045.79	110.11	113.60	-165.39	200.64	304.48	451,225.54	554,950.44	
9,297.00	75.30	359.20	9,059.38	155.03	158.56	-166.71	230.08	313.56	451,270.50	554,949.12	
9,344.00	80.30	2.00	9,069.31	200.95	204.48	-166.22	263.52	320.89	451,316.42	554,949.61	



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9,392.00	84.10	1.90	9,075.82	248.49	252.00	-164.60	300.99	326.85	451,363.94	554,951.23	
9,487.00	89.60	2.40	9,081.04	343.30	346.75	-161.05	382.32	335.09	451,458.69	554,954.78	
9,582.00	89.70	0.70	9,081.62	438.29	441.71	-158.48	469.28	340.26	451,553.65	554,957.35	
9,676.00	89.40	359.30	9,082.36	532.27	535.70	-158.48	558.65	343.52	451,647.64	554,957.35	
9,771.00	90.80	358.00	9,082.19	627.17	630.67	-160.72	650.83	345.70	451,742.61	554,955.11	
9,866.00	93.30	357.20	9,078.79	721.91	725.52	-164.69	743.98	347.21	451,837.46	554,951.14	
9,981.00	91.70	356.70	9,073.78	836.48	840.24	-170.80	857.43	348.51	451,952.18	554,945.03	
10,076.00	90.20	357.80	9,072.20	931.24	935.12	-175.36	951.42	349.38	452,047.06	554,940.47	
10,171.00	87.80	359.40	9,073.86	1,026.12	1,030.07	-177.68	1,045.28	350.21	452,142.01	554,938.15	
10,266.00	88.30	0.00	9,077.09	1,121.03	1,125.01	-178.18	1,139.03	351.00	452,236.95	554,937.65	
10,361.00	89.10	0.40	9,079.25	1,215.99	1,219.98	-177.85	1,232.88	351.71	452,331.92	554,937.98	
10,456.00	90.70	0.90	9,079.41	1,310.98	1,314.97	-176.77	1,326.80	352.34	452,426.91	554,939.06	
10,550.00	89.30	0.80	9,079.41	1,404.98	1,408.96	-175.37	1,419.83	352.90	452,520.90	554,940.46	
10,645.00	87.10	359.00	9,082.40	1,499.90	1,503.90	-175.54	1,514.11	353.34	452,615.84	554,940.29	
10,740.00	87.80	358.70	9,086.62	1,594.72	1,598.79	-177.44	1,608.61	353.67	452,710.73	554,938.39	
10,834.00	89.10	358.50	9,089.17	1,688.59	1,692.72	-179.74	1,702.24	353.94	452,804.66	554,936.09	
10,929.00	90.80	358.60	9,089.25	1,783.48	1,787.69	-182.14	1,796.95	354.18	452,899.63	554,933.69	
11,023.00	89.70	357.90	9,088.84	1,877.36	1,881.64	-185.01	1,890.72	354.38	452,993.58	554,930.82	
11,117.00	89.60	357.00	9,089.41	1,971.15	1,975.55	-189.20	1,984.59	354.53	453,087.49	554,926.63	
11,211.00	90.60	357.70	9,089.25	2,064.94	2,069.45	-193.54	2,078.48	354.66	453,181.39	554,922.29	
11,306.00	90.50	357.00	9,088.34	2,159.72	2,164.34	-197.93	2,173.37	354.77	453,276.28	554,917.90	
11,400.00	89.10	357.00	9,088.67	2,253.46	2,258.21	-202.85	2,267.30	354.87	453,370.15	554,912.98	
11,494.00	89.40	0.70	9,089.90	2,347.36	2,352.16	-204.74	2,361.06	355.03	453,464.10	554,911.09	
11,589.00	90.60	2.10	9,089.90	2,442.36	2,447.13	-202.42	2,455.49	355.27	453,559.07	554,913.41	
11,683.00	92.10	2.40	9,087.68	2,536.31	2,541.03	-198.73	2,548.79	355.53	453,652.97	554,917.10	
11,778.00	90.00	2.20	9,085.94	2,631.27	2,635.93	-194.92	2,643.13	355.77	453,747.87	554,920.91	
11,873.00	88.40	0.50	9,087.27	2,726.26	2,730.89	-192.68	2,737.68	355.96	453,842.83	554,923.15	



Professional Directional Survey Report



Company: Marathon Oil
Project: Eddy County, NM
Site: El Presidente State 5-6-10
Well: TB #6H
Wellbore: OH
Design: OH 194'-13811' PTB 13874'

Local Co-ordinate Reference: Well TB #6H
TVD Reference: Well @ 3161.50usft (GL: 3135' + KB: 26.5' (H&P423))
MD Reference: Well @ 3161.50usft (GL: 3135' + KB: 26.5' (H&P423))
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
11,967.00	88.50	0.80	9,089.81	2,820.22	2,824.85	-191.61	2,831.34	356.12	453,936.79	554,924.22
12,062.00	89.40	1.40	9,091.55	2,915.20	2,919.81	-189.79	2,925.98	356.28	454,031.75	554,926.04
12,156.00	89.90	1.30	9,092.13	3,009.20	3,013.79	-187.58	3,019.62	356.44	454,125.73	554,928.25
12,251.00	90.80	2.30	9,091.55	3,104.19	3,108.74	-184.59	3,114.21	356.60	454,220.68	554,931.24
12,345.00	89.10	3.10	9,091.63	3,198.15	3,202.63	-180.16	3,207.69	356.78	454,314.57	554,935.67
12,440.00	89.80	3.50	9,092.54	3,293.08	3,297.46	-174.70	3,302.09	356.97	454,409.40	554,941.13
12,534.00	90.60	4.10	9,092.21	3,386.98	3,391.26	-168.47	3,395.44	357.16	454,503.20	554,947.36
12,628.00	90.10	5.20	9,091.64	3,480.81	3,484.94	-160.85	3,488.65	357.36	454,596.88	554,954.98
12,723.00	88.60	5.00	9,092.72	3,575.58	3,579.56	-152.40	3,582.80	357.56	454,691.50	554,963.43
12,818.00	88.00	5.10	9,095.53	3,670.33	3,674.15	-144.04	3,676.97	357.75	454,786.09	554,971.79
12,912.00	89.00	6.10	9,097.99	3,764.01	3,767.66	-134.87	3,770.08	357.95	454,879.60	554,980.96
13,007.00	90.00	6.20	9,098.82	3,858.65	3,862.11	-124.70	3,864.13	358.15	454,974.05	554,991.13
13,101.00	89.00	5.30	9,099.64	3,952.35	3,955.63	-115.28	3,957.31	358.33	455,067.57	555,000.55
13,196.00	89.10	4.50	9,101.22	4,047.14	4,050.27	-107.17	4,051.69	358.48	455,162.21	555,008.66
13,290.00	89.80	4.00	9,102.12	4,141.00	4,144.01	-100.20	4,145.22	358.61	455,255.95	555,015.63
13,385.00	91.00	4.80	9,101.46	4,235.85	4,238.72	-92.91	4,239.74	358.74	455,350.66	555,022.92
13,480.00	89.30	5.00	9,101.21	4,330.65	4,333.37	-84.80	4,334.20	358.88	455,445.31	555,031.03
13,574.00	88.70	4.70	9,102.85	4,424.44	4,427.02	-76.85	4,427.69	359.01	455,538.96	555,038.98
13,669.00	90.10	3.30	9,103.84	4,519.32	4,521.78	-70.23	4,522.33	359.11	455,633.72	555,045.60
13,764.00	91.40	3.30	9,102.60	4,614.24	4,616.61	-64.76	4,617.07	359.20	455,728.55	555,051.07
13,811.00	92.20	3.70	9,101.12	4,661.18	4,663.50	-61.89	4,663.91	359.24	455,775.44	555,053.94
Last Survey: 13811' MD, 9101' TVD										
13,874.00	92.20	3.70	9,098.71	4,724.08	4,726.32	-57.83	4,726.68	359.30	455,838.26	555,058.00
PTB: 13874' MD, 9099' TVD										



Professional Directional
Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well TB #6H
Project:	Eddy County, NM	TVD Reference:	Well @ 3161.50usft (GL: 3135' + KB: 26.5' (H&P423))
Site:	El Presidente State 5-6-10	MD Reference:	Well @ 3161.50usft (GL: 3135' + KB: 26.5' (H&P423))
Well:	TB #6H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH 194'-13811' PTB 13874'	Database:	WellPlanner1

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
13,811.00	9,101.12	4,663.50	-61.89	Last Survey: 13811' MD, 9101' TVD
13,874.00	9,098.71	4,726.32	-57.83	PTB: 13874' MD, 9099' TVD

Checked By: _____ Approved By: _____ Date: _____



Marathon Oil
Eddy County, NM
El Presidente State 5-6-10
TB #6H
Plan #2 - FINAL PVA
GL: 3135' + KB: 26.5' (H&P423)

US State Plane 1927 (Exact solution)
NAD 1927 (NADCON CONUS)
Clarke 1866
New Mexico East 3001
Mean Sea Level

RKB Elevation: Well @ 3161.50usft (GL: 3135' + KB: 26.5' (H&P423))

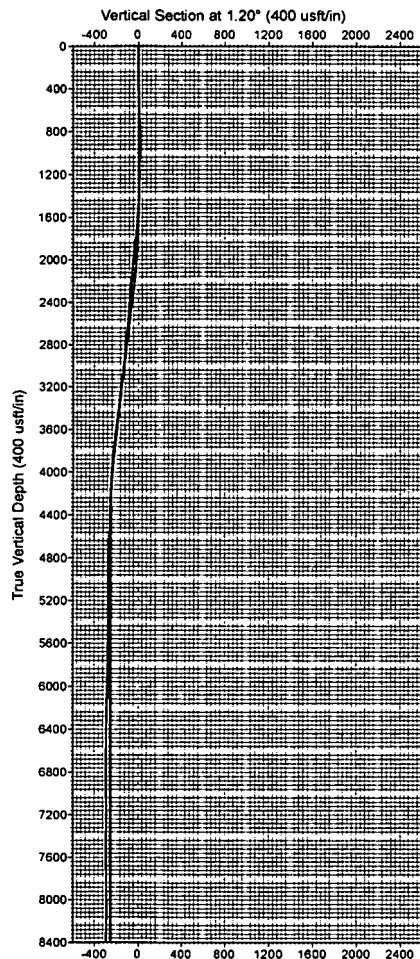
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Spot
0.00	0.00	451111.94	555115.83	32.240098	-104.155071	

SECTION DETAILS

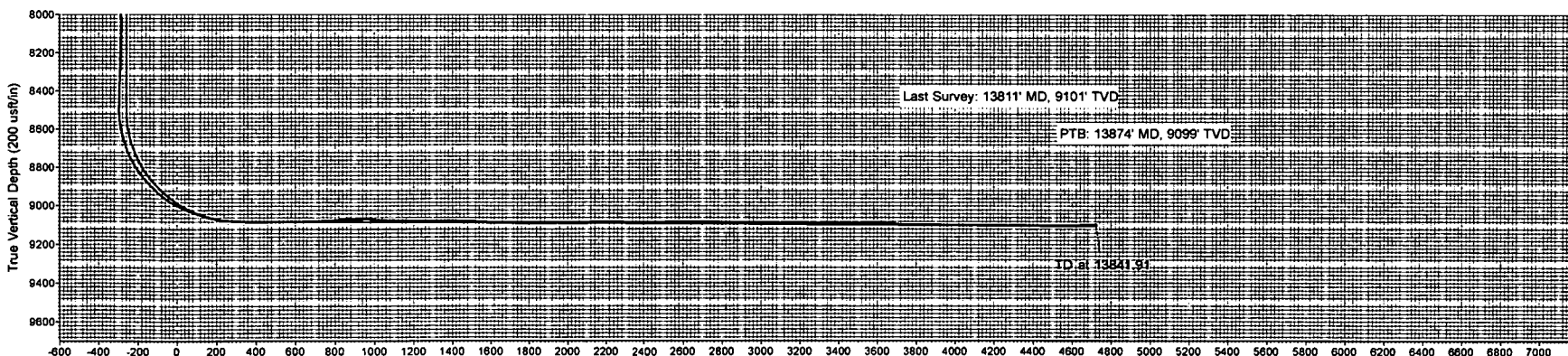
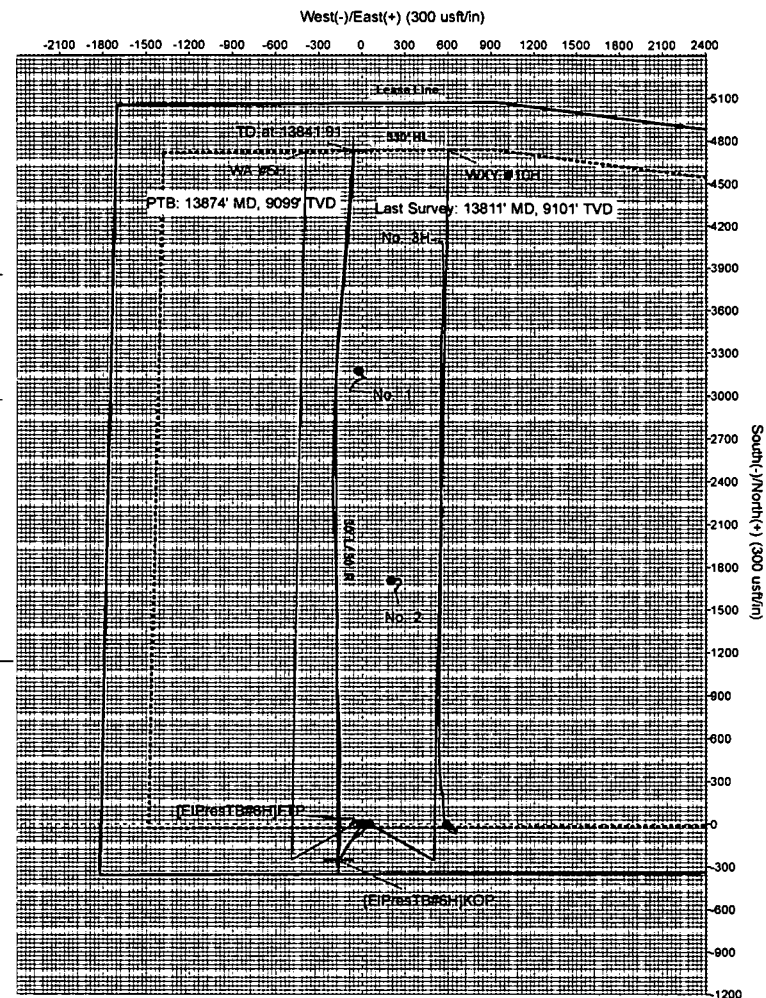
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00
3	2300.00	8.00	213.02	2297.40	-48.76	-30.38	1.00	-47.38
4	3700.94	8.00	213.02	3684.71	-210.24	-136.62	0.00	-213.06
5	4500.94	0.00	0.00	4482.11	-257.00	-167.00	1.00	-260.44
6	8525.58	0.00	0.00	8506.75	-257.00	-167.00	0.00	-260.44
7	9422.58	89.70	358.64	9079.70	312.95	-170.58	10.00	309.31
8	12114.31	89.70	358.64	9083.79	3004.59	-187.49	0.00	3000.00
9	12357.32	89.70	4.50	9095.06	3247.37	-178.72	2.00	3242.91
10	13841.91	89.70	4.50	9102.74	4727.36	-62.23	0.00	4725.02

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
[E]PresTB#6H[J]FTP	0.00	40.06	-160.66	451152.00	554955.17
[E]PresTB#6H[J]KOP	8506.75	-257.00	-167.00	450854.94	554948.83
[E]PresTB#6H[J]LTP/SHL	9102.74	4727.36	-62.23	455839.30	555053.60



Target Line: 9078' TVD @ 0' VS: 89.7° INC



Azimuths to Grid North
True North: -0.09°
Magnetic North: 7.24°
Magnetic Field
Strength: 48032.8nT
Dip Angle: 60.05°
Date: 12/31/2017
Model: IIGMM

Azimuth Corrections

Total Magnetic Corr. (M to G): 7.24°

Declination (M to T): 7.33° East