



# Marathon Oil

## Marathon Oil

Eddy County, NM

Trebuchet Fee 23-28-19

WXY #10H

OH

Design: OH 212'-14073' PTB 14128'

## Survey Report

28 May, 2018

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DISTRICT II-ARTESIA O.C.D.



<b>Company:</b> Marathon Oil	<b>Local Co-ordinate Reference:</b> Well WXY #10H
<b>Project:</b> Eddy County, NM	<b>TVD Reference:</b> Well @ 3112.00usft (GL: 3087' + KB: 25' (Prec594))
<b>Site:</b> Trebuchet Fee 23-28-19	<b>MD Reference:</b> Well @ 3112.00usft (GL: 3087' + KB: 25' (Prec594))
<b>Well:</b> WXY #10H	<b>North Reference:</b> Grid
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> OH 212'-14073' PTB 14128'	<b>Database:</b> WellPlanner1

<b>Project:</b> Eddy County, NM	
<b>Map System:</b> US State Plane 1927 (Exact solution)	<b>System Datum:</b> Mean Sea Level
<b>Geo Datum:</b> NAD 1927 (NADCON CONUS)	
<b>Map Zone:</b> New Mexico East 3001	

<b>Site:</b> Trebuchet Fee 23-28-19		
<b>Site Position:</b>	<b>Northing:</b> 467,096.80 usft	<b>Latitude:</b> 32.284003
<b>From:</b> Map	<b>Easting:</b> 562,703.28 usft	<b>Longitude:</b> -104.130434
<b>Position Uncertainty:</b> 0.00 usft	<b>Slot Radius:</b> 13-3/16 "	<b>Grid Convergence:</b> 0.11 °

<b>Well:</b> WXY #10H			
<b>Well Position</b>	<b>+N-S</b> 0.00 usft	<b>Northing:</b> 467,096.79 usft	<b>Latitude:</b> 32.284003
	<b>+E-W</b> 0.00 usft	<b>Easting:</b> 562,733.28 usft	<b>Longitude:</b> -104.130336
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b> usft	<b>Ground Level:</b> 3,087.00 usft

<b>Wellbore:</b> OH					
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
			(°)	(°)	(nT)
	HDGM	4/1/2018	7.30	60.05	48,014.70

<b>Design:</b> OH 212'-14073' PTB 14128'				
<b>Audit Notes:</b>				
<b>Version:</b> 1.0	<b>Phase:</b> ACTUAL	<b>Tie On Depth:</b> 0.00		
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N-S</b>	<b>+E-W</b>	<b>Direction</b>
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	0.00

<b>Company:</b> Marathon Oil	<b>Local Co-ordinate Reference:</b> Well WXY #10H
<b>Project:</b> Eddy County, NM	<b>TVD Reference:</b> Well @ 3112.00usft (GL: 3087' + KB: 25' (Prec594))
<b>Site:</b> Trebuchet Fee 23-28-19	<b>MD Reference:</b> Well @ 3112.00usft (GL: 3087' + KB: 25' (Prec594))
<b>Well:</b> WXY #10H	<b>North Reference:</b> Grid
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> OH 212'-14073' PTB 14128'	<b>Database:</b> WellPlanner1

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
212.00	513.00	Survey #1 (OH)	GYRO-MWD	OWSG Gyro MWD
598.00	14,128.00	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	467,096.79	562,733.28
212.00	0.20	229.00	212.00	-0.24	-0.24	-0.28	0.37	229.00	467,096.55	562,733.00
332.00	1.10	250.00	331.99	-0.77	-0.77	-1.52	1.71	243.01	467,096.02	562,731.76
423.00	2.80	284.00	422.94	-0.54	-0.54	-4.50	4.53	263.21	467,096.25	562,728.78
513.00	2.20	293.00	512.85	0.67	0.67	-8.22	8.25	274.67	467,097.46	562,725.06
598.00	2.10	301.50	597.79	2.12	2.12	-11.05	11.25	280.87	467,098.91	562,722.23
689.00	1.20	302.50	688.75	3.51	3.51	-13.28	13.73	284.79	467,100.30	562,720.00
780.00	0.60	59.50	779.75	4.26	4.26	-13.67	14.32	287.31	467,101.05	562,719.61
872.00	1.60	85.80	871.73	4.60	4.60	-11.97	12.83	291.01	467,101.39	562,721.31
963.00	1.00	71.40	962.71	4.94	4.94	-9.95	11.11	296.42	467,101.73	562,723.33
1,054.00	0.80	83.10	1,053.69	5.27	5.27	-8.57	10.06	301.61	467,102.06	562,724.71
1,143.00	0.80	99.70	1,142.69	5.24	5.24	-7.34	9.02	305.54	467,102.03	562,725.94
1,232.00	0.60	105.40	1,231.68	5.02	5.02	-6.28	8.04	308.62	467,101.81	562,727.00
1,321.00	0.30	123.30	1,320.68	4.76	4.76	-5.63	7.38	310.21	467,101.55	562,727.65
1,411.00	0.10	329.50	1,410.68	4.70	4.70	-5.48	7.22	310.65	467,101.49	562,727.80
1,500.00	0.60	320.00	1,499.67	5.13	5.13	-5.82	7.75	311.39	467,101.92	562,727.46
1,590.00	0.60	318.10	1,589.67	5.84	5.84	-6.43	8.69	312.22	467,102.63	562,726.85
1,679.00	0.30	136.40	1,678.67	6.02	6.02	-6.58	8.92	312.42	467,102.81	562,726.70
1,768.00	1.20	125.90	1,767.66	5.30	5.30	-5.67	7.76	313.08	467,102.09	562,727.61
1,857.00	1.50	127.00	1,856.63	4.05	4.05	-3.98	5.68	315.50	467,100.84	562,729.30
1,946.00	1.90	123.00	1,945.59	2.55	2.55	-1.82	3.13	324.53	467,099.34	562,731.46

**Company:** Marathon Oil  
**Project:** Eddy County, NM  
**Site:** Trebuchet Fee 23-28-19  
**Well:** WXY #10H  
**Wellbore:** OH  
**Design:** OH 212'-14073' PTB 14128'

**Local Co-ordinate Reference:** Well WXY #10H  
**TVD Reference:** Well @ 3112.00usft (GL: 3087' + KB: 25' (Prec594))  
**MD Reference:** Well @ 3112.00usft (GL: 3087' + KB: 25' (Prec594))  
**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)		
2,035.00	3.30	118.60	2,034.50	0.52	0.52	1.67	1.75	72.74	467,097.31	562,734.95		
2,125.00	5.40	109.50	2,124.24	-2.13	-2.13	7.94	8.22	105.05	467,094.66	562,741.22		
2,214.00	6.40	104.10	2,212.77	-4.74	-4.74	16.70	17.36	105.85	467,092.05	562,749.98		
2,304.00	5.70	106.90	2,302.26	-7.26	-7.26	25.84	26.84	105.70	467,089.53	562,759.12		
2,393.00	5.40	105.40	2,390.85	-9.66	-9.66	34.10	35.45	105.81	467,087.13	562,767.38		
2,567.00	5.60	100.30	2,564.05	-13.35	-13.35	50.35	52.09	104.85	467,083.44	562,783.63		
2,652.00	7.20	98.10	2,648.51	-14.84	-14.84	59.71	61.52	103.96	467,081.95	562,792.99		
2,741.00	9.40	100.30	2,736.58	-16.93	-16.93	72.38	74.33	103.16	467,079.86	562,805.66		
2,831.00	9.90	100.30	2,825.30	-19.63	-19.63	87.22	89.40	102.68	467,077.16	562,820.50		
2,920.00	9.30	100.70	2,913.06	-22.33	-22.33	101.82	104.24	102.37	467,074.46	562,835.10		
3,009.00	9.20	99.00	3,000.90	-24.78	-24.78	115.91	118.53	102.07	467,072.01	562,849.19		
3,098.00	9.10	96.90	3,088.77	-26.74	-26.74	129.92	132.65	101.63	467,070.05	562,863.20		
3,187.00	8.10	99.10	3,176.77	-28.57	-28.57	143.10	145.93	101.29	467,068.22	562,876.38		
3,277.00	9.40	95.80	3,265.72	-30.32	-30.32	156.68	159.58	100.95	467,066.47	562,889.96		
3,366.00	11.00	93.10	3,353.31	-31.51	-31.51	172.39	175.24	100.36	467,065.28	562,905.67		
3,455.00	11.80	90.90	3,440.55	-32.12	-32.12	189.96	192.66	99.60	467,064.67	562,923.24		
3,544.00	11.60	90.40	3,527.70	-32.32	-32.32	208.01	210.51	98.83	467,064.47	562,941.29		
3,634.00	10.90	91.00	3,615.97	-32.53	-32.53	225.57	227.90	98.21	467,064.26	562,958.85		
3,723.00	10.60	90.60	3,703.41	-32.77	-32.77	242.17	244.37	97.71	467,064.02	562,975.45		
3,812.00	9.80	92.10	3,791.00	-33.13	-33.13	257.92	260.04	97.32	467,063.66	562,991.20		
3,901.00	9.60	91.10	3,878.73	-33.55	-33.55	272.91	274.97	97.01	467,063.24	563,006.19		
3,990.00	9.40	93.40	3,966.51	-34.12	-34.12	287.59	289.60	96.77	467,062.67	563,020.87		
4,079.00	9.60	92.80	4,054.29	-34.92	-34.92	302.25	304.26	96.59	467,061.87	563,035.53		
4,168.00	9.70	93.10	4,142.03	-35.68	-35.68	317.15	319.15	96.42	467,061.11	563,050.43		
4,257.00	9.90	96.00	4,229.73	-36.89	-36.89	332.25	334.29	96.34	467,059.90	563,065.53		
4,346.00	10.40	100.30	4,317.34	-39.13	-39.13	347.76	349.96	96.42	467,057.66	563,081.04		
4,435.00	9.90	98.70	4,404.95	-41.72	-41.72	363.23	365.62	96.55	467,055.07	563,096.51		

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<b>Site:</b> Trebuchet Fee 23-28-19	<b>MD Reference:</b> Well @ 3112.00usft (GL: 3087' + KB: 25' (Prec594))
<b>Well:</b> WXY #10H	<b>North Reference:</b> Grid
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> OH 212'-14073' PTB 14128'	<b>Database:</b> 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)	
4,524.00	8.80	99.70	4,492.76	-44.02	-44.02	377.50	380.06	96.65	467,052.77	563,110.78	
4,614.00	9.00	100.70	4,581.68	-46.49	-46.49	391.21	393.96	96.78	467,050.30	563,124.49	
4,703.00	9.90	100.20	4,669.47	-49.14	-49.14	405.58	408.54	96.91	467,047.65	563,138.86	
4,792.00	10.80	99.60	4,757.02	-51.88	-51.88	421.33	424.51	97.02	467,044.91	563,154.61	
4,882.00	12.60	102.00	4,845.15	-55.33	-55.33	439.25	442.72	97.18	467,041.46	563,172.53	
4,971.00	13.40	104.40	4,931.87	-59.91	-59.91	458.73	462.63	97.44	467,036.88	563,192.01	
5,061.00	12.10	104.80	5,019.65	-64.92	-64.92	477.95	482.34	97.73	467,031.87	563,211.23	
5,150.00	12.70	102.80	5,106.57	-69.47	-69.47	496.51	501.35	97.96	467,027.32	563,229.79	
5,239.00	12.80	103.10	5,193.38	-73.87	-73.87	515.65	520.92	98.15	467,022.92	563,248.93	
5,328.00	11.90	100.30	5,280.32	-77.74	-77.74	534.28	539.91	98.28	467,019.05	563,267.56	
5,418.00	10.90	98.20	5,368.54	-80.62	-80.62	551.84	557.69	98.31	467,016.17	563,285.12	
5,507.00	11.50	99.70	5,455.85	-83.31	-83.31	568.91	574.98	98.33	467,013.48	563,302.19	
5,597.00	12.00	100.80	5,543.96	-86.58	-86.58	586.94	593.29	98.39	467,010.21	563,320.22	
5,686.00	10.10	102.10	5,631.31	-89.95	-89.95	603.66	610.33	98.47	467,006.84	563,336.94	
5,775.00	10.70	105.40	5,718.84	-93.78	-93.78	619.26	626.32	98.61	467,003.01	563,352.54	
5,864.00	9.90	109.10	5,806.41	-98.47	-98.47	634.46	642.05	98.82	466,998.32	563,367.74	
5,953.00	9.40	107.60	5,894.15	-103.18	-103.18	648.61	656.77	99.04	466,993.61	563,381.89	
6,042.00	8.40	106.90	5,982.08	-107.26	-107.26	661.76	670.40	99.21	466,989.53	563,395.04	
6,132.00	8.50	104.00	6,071.10	-110.78	-110.78	674.51	683.54	99.33	466,986.01	563,407.79	
6,221.00	7.20	95.50	6,159.27	-112.91	-112.91	686.44	695.66	99.34	466,983.88	563,419.72	
6,310.00	6.20	100.20	6,247.66	-114.30	-114.30	696.72	706.03	99.32	466,982.49	563,430.00	
6,399.00	7.90	103.80	6,335.98	-116.61	-116.61	707.39	716.94	99.36	466,980.18	563,440.67	
6,488.00	7.70	100.40	6,424.16	-119.14	-119.14	719.20	729.00	99.41	466,977.65	563,452.48	
6,578.00	7.50	94.40	6,513.37	-120.68	-120.68	730.98	740.88	99.37	466,976.11	563,464.26	
6,667.00	8.70	93.50	6,601.48	-121.54	-121.54	743.49	753.36	99.28	466,975.25	563,476.77	
6,757.00	8.00	98.80	6,690.53	-122.91	-122.91	756.48	766.40	99.23	466,973.88	563,489.76	
6,846.00	7.30	98.80	6,778.74	-124.72	-124.72	768.19	778.24	99.22	466,972.07	563,501.47	

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**Well:** WXY #10H  
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**Design:** OH 212'-14073' PTB 14128'

**Local Co-ordinate Reference:**  
**TVD Reference:**  
**MD Reference:**  
**North Reference:**  
**Survey Calculation Method:**  
**Database:**

Well WXY #10H  
 Well @ 3112.00usft (GL: 3087' + KB: 25' (Prec594))  
 Well @ 3112.00usft (GL: 3087' + KB: 25' (Prec594))  
 Grid  
 Minimum Curvature  
 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)		
6,935.00	7.30	106.00	6,867.02	-127.15	-127.15	779.21	789.51	99.27	466,969.64	563,512.49		
7,025.00	8.80	107.80	6,956.13	-130.83	-130.83	791.26	802.00	99.39	466,965.96	563,524.54		
7,114.00	7.90	104.20	7,044.18	-134.41	-134.41	803.67	814.83	99.49	466,962.38	563,536.95		
7,203.00	6.00	101.50	7,132.53	-136.84	-136.84	814.16	825.58	99.54	466,959.95	563,547.44		
7,292.00	6.10	101.40	7,221.03	-138.70	-138.70	823.35	834.96	99.56	466,958.09	563,556.63		
7,381.00	6.80	108.00	7,309.47	-141.26	-141.26	833.00	844.89	99.62	466,955.53	563,566.28		
7,470.00	7.70	103.90	7,397.76	-144.32	-144.32	843.80	856.05	99.71	466,952.47	563,577.08		
7,559.00	10.10	97.50	7,485.68	-146.77	-146.77	857.33	869.80	99.71	466,950.02	563,590.61		
7,649.00	6.70	95.30	7,574.70	-148.29	-148.29	870.38	882.93	99.67	466,948.50	563,603.66		
7,738.00	5.80	96.90	7,663.17	-149.31	-149.31	880.02	892.59	99.63	466,947.48	563,613.30		
7,827.00	5.40	101.20	7,751.75	-150.66	-150.66	888.59	901.27	99.62	466,946.13	563,621.87		
7,917.00	4.70	101.60	7,841.40	-152.23	-152.23	896.36	909.19	99.64	466,944.56	563,629.64		
8,006.00	3.00	97.10	7,930.19	-153.25	-153.25	902.24	915.16	99.64	466,943.54	563,635.52		
8,095.00	2.20	83.40	8,019.10	-153.34	-153.34	906.25	919.13	99.60	466,943.45	563,639.53		
8,185.00	1.50	81.50	8,109.05	-152.97	-152.97	909.13	921.91	99.55	466,943.82	563,642.41		
8,274.00	2.80	105.40	8,197.99	-153.37	-153.37	912.38	925.18	99.54	466,943.42	563,645.66		
8,363.00	2.70	105.00	8,286.89	-154.49	-154.49	916.50	929.43	99.57	466,942.30	563,649.78		
8,453.00	2.20	133.50	8,376.81	-156.23	-156.23	919.80	932.97	99.64	466,940.56	563,653.08		
8,542.00	1.80	128.00	8,465.76	-158.27	-158.27	922.14	935.62	99.74	466,938.52	563,655.42		
8,631.00	1.60	153.50	8,554.72	-160.24	-160.24	923.80	937.59	99.84	466,936.55	563,657.08		
8,720.00	3.00	98.80	8,643.65	-161.71	-161.71	926.65	940.66	99.90	466,935.08	563,659.93		
8,810.00	2.00	96.10	8,733.57	-162.23	-162.23	930.54	944.58	99.89	466,934.56	563,663.82		
8,900.00	4.50	352.60	8,823.47	-158.90	-158.90	931.65	945.10	99.68	466,937.89	563,664.93		
8,944.00	11.00	347.50	8,867.04	-153.08	-153.08	930.52	943.02	99.34	466,943.71	563,663.80		
8,989.00	15.30	353.40	8,910.85	-142.99	-142.99	928.90	939.84	98.75	466,953.80	563,662.18		
9,034.00	18.30	355.50	8,953.93	-130.04	-130.04	927.67	936.74	97.98	466,966.75	563,660.95		
9,079.00	23.30	354.20	8,995.98	-114.13	-114.13	926.21	933.22	97.03	466,982.66	563,659.49		

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**Wellbore:** OH  
**Design:** OH 212'-14073' PTB 14128'

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**TVD Reference:** Well @ 3112.00usft (GL: 3087' + KB: 25' (Prec594))  
**MD Reference:** Well @ 3112.00usft (GL: 3087' + KB: 25' (Prec594))  
**North Reference:** Grid  
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**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)		
9,124.00	28.40	353.90	9,036.46	-94.63	-94.63	924.17	929.01	95.85	467,002.16	563,657.45		
9,169.00	32.20	354.90	9,075.31	-72.04	-72.04	921.97	924.78	94.47	467,024.75	563,655.25		
9,213.00	35.80	356.90	9,111.78	-47.50	-47.50	920.23	921.46	92.95	467,049.29	563,653.51		
9,258.00	39.00	0.50	9,147.53	-20.19	-20.19	919.64	919.86	91.26	467,076.60	563,652.92		
9,302.00	41.50	3.60	9,181.11	8.21	8.21	920.68	920.72	89.49	467,105.00	563,653.96		
9,347.00	44.70	6.60	9,213.97	38.83	38.83	923.44	924.25	87.59	467,135.62	563,656.72		
9,392.00	49.50	8.70	9,244.60	71.48	71.48	927.85	930.60	85.59	467,168.27	563,661.13		
9,436.00	51.80	5.40	9,272.50	105.24	105.24	932.00	937.93	83.56	467,202.03	563,665.28		
9,481.00	54.60	2.00	9,299.46	141.19	141.19	934.31	944.92	81.41	467,237.98	563,667.59		
9,526.00	60.20	1.80	9,323.69	179.06	179.06	935.56	952.55	79.17	467,275.85	563,668.84		
9,570.00	67.80	1.00	9,342.97	218.57	218.57	936.52	961.69	76.86	467,315.36	563,669.80		
9,615.00	71.60	359.40	9,358.58	260.76	260.76	936.66	972.28	74.44	467,357.55	563,669.94		
9,660.00	74.60	357.70	9,371.66	303.80	303.80	935.57	983.65	72.01	467,400.59	563,668.85		
9,704.00	79.60	356.80	9,381.48	346.62	346.62	933.51	995.78	69.63	467,443.41	563,666.79		
9,736.00	83.60	357.20	9,386.15	378.23	378.23	931.85	1,005.68	67.91	467,475.02	563,665.13		
9,837.00	89.20	357.90	9,392.49	478.90	478.90	927.54	1,043.88	62.69	467,575.69	563,660.82		
9,931.00	88.90	357.80	9,394.05	572.82	572.82	924.02	1,087.17	58.20	467,669.61	563,657.30		
10,024.00	90.70	359.50	9,394.37	665.79	665.79	921.83	1,137.12	54.16	467,762.58	563,655.11		
10,118.00	90.10	359.10	9,393.72	759.78	759.78	920.68	1,193.70	50.47	467,856.57	563,653.96		
10,212.00	89.30	358.80	9,394.21	853.76	853.76	918.96	1,254.35	47.11	467,950.55	563,652.24		
10,306.00	90.90	0.00	9,394.05	947.75	947.75	917.97	1,319.43	44.09	468,044.54	563,651.25		
10,399.00	89.90	359.50	9,393.40	1,040.74	1,040.74	917.57	1,387.47	41.40	468,137.53	563,650.85		
10,494.00	92.10	1.30	9,391.74	1,135.72	1,135.72	918.23	1,460.48	38.96	468,232.51	563,651.51		
10,589.00	93.00	1.70	9,387.51	1,230.59	1,230.59	920.71	1,536.90	36.80	468,327.38	563,653.99		
10,683.00	93.90	2.10	9,381.85	1,324.37	1,324.37	923.82	1,614.74	34.90	468,421.16	563,657.10		
10,777.00	92.40	2.00	9,376.69	1,418.16	1,418.16	927.18	1,694.36	33.18	468,514.95	563,660.46		
10,872.00	91.60	1.60	9,373.37	1,513.05	1,513.05	930.16	1,776.10	31.58	468,609.84	563,663.44		

<b>Company:</b>	Marathon Oil	<b>Local Co-ordinate Reference:</b>	Well WXY #10H
<b>Project:</b>	Eddy County, NM	<b>TVD Reference:</b>	Well @ 3112.00usft (GL: 3087' + KB: 25' (Prec594))
<b>Site:</b>	Trebuchet Fee 23-28-19	<b>MD Reference:</b>	Well @ 3112.00usft (GL: 3087' + KB: 25' (Prec594))
<b>Well:</b>	WXY #10H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH 212'-14073' PTB 14128'	<b>Database:</b>	WellPlanner1

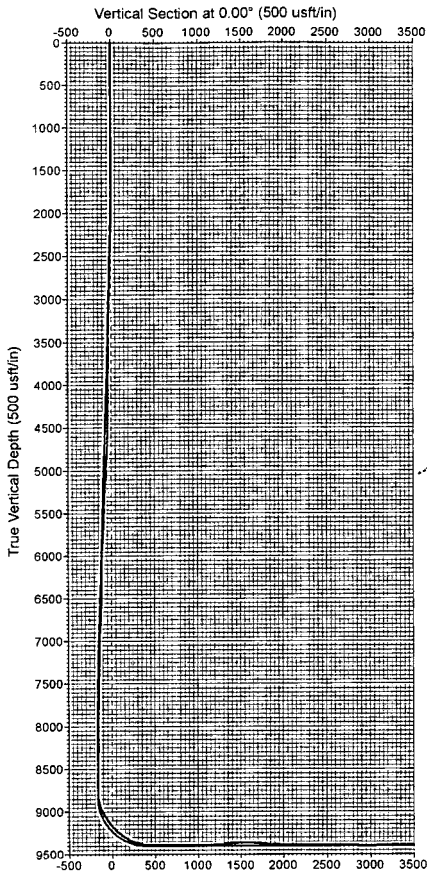
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
10,966.00	88.00	1.70	9,373.70	1,607.00	1,607.00	932.87	1,858.14	30.14	468,703.79	563,666.15
11,061.00	87.30	2.20	9,377.60	1,701.86	1,701.86	936.10	1,942.32	28.81	468,798.65	563,669.38
11,154.00	87.50	2.60	9,381.82	1,794.69	1,794.69	939.99	2,025.95	27.64	468,891.48	563,673.27
11,248.00	88.90	2.90	9,384.77	1,888.53	1,888.53	944.50	2,111.54	26.57	468,985.32	563,677.78
11,342.00	87.30	0.40	9,387.89	1,982.43	1,982.43	947.20	2,197.09	25.54	469,079.22	563,680.48
11,436.00	89.90	0.90	9,390.18	2,076.39	2,076.39	948.27	2,282.67	24.55	469,173.18	563,681.55
11,529.00	88.80	359.00	9,391.24	2,169.37	2,169.37	948.19	2,367.54	23.61	469,266.16	563,681.47
11,625.00	88.20	358.80	9,393.75	2,265.32	2,265.32	946.35	2,455.05	22.67	469,362.11	563,679.63
11,719.00	91.50	359.20	9,394.00	2,359.30	2,359.30	944.71	2,541.41	21.82	469,456.09	563,677.99
11,813.00	90.40	358.70	9,392.44	2,453.26	2,453.26	942.98	2,628.26	21.03	469,550.05	563,676.26
11,907.00	89.00	359.40	9,392.93	2,547.25	2,547.25	941.43	2,715.65	20.28	469,644.04	563,674.71
12,002.00	89.90	0.20	9,393.84	2,642.24	2,642.24	941.09	2,804.83	19.60	469,739.03	563,674.37
12,096.00	87.30	0.00	9,396.14	2,736.20	2,736.20	941.26	2,893.58	18.98	469,832.99	563,674.54
12,190.00	87.00	359.50	9,400.81	2,830.09	2,830.09	940.85	2,982.38	18.39	469,926.88	563,674.13
12,284.00	90.50	1.10	9,402.86	2,924.05	2,924.05	941.34	3,071.83	17.84	470,020.84	563,674.62
12,379.00	89.80	1.00	9,402.61	3,019.03	3,019.03	943.08	3,162.90	17.35	470,115.82	563,676.36
12,473.00	91.10	1.80	9,401.88	3,113.00	3,113.00	945.38	3,253.38	16.89	470,209.79	563,678.66
12,568.00	93.40	2.80	9,398.15	3,207.84	3,207.84	949.19	3,345.32	16.48	470,304.63	563,682.47
12,662.00	91.90	1.30	9,393.80	3,301.67	3,301.67	952.54	3,436.33	16.09	470,398.46	563,685.82
12,756.00	90.60	0.00	9,391.75	3,395.64	3,395.64	953.61	3,527.00	15.69	470,492.43	563,686.89
12,850.00	90.20	358.70	9,391.09	3,489.63	3,489.63	952.54	3,617.30	15.27	470,586.42	563,685.82
12,945.00	88.80	358.10	9,391.92	3,584.59	3,584.59	949.89	3,708.31	14.84	470,681.38	563,683.17
13,039.00	92.40	0.30	9,390.94	3,678.55	3,678.55	948.58	3,798.89	14.46	470,775.34	563,681.86
13,132.00	93.10	359.30	9,386.48	3,771.44	3,771.44	948.26	3,888.82	14.11	470,868.23	563,681.54
13,227.00	90.80	359.90	9,383.24	3,866.38	3,866.38	947.59	3,980.80	13.77	470,963.17	563,680.87
13,321.00	87.00	0.50	9,385.05	3,960.34	3,960.34	947.92	4,072.20	13.46	471,057.13	563,681.20
13,415.00	83.40	359.30	9,392.91	4,053.99	4,053.99	947.76	4,163.31	13.16	471,150.78	563,681.04



<b>Company:</b> Marathon Oil	<b>Local Co-ordinate Reference:</b> Well WXY #10H
<b>Project:</b> Eddy County, NM	<b>TVD Reference:</b> Well @ 3112.00usft (GL: 3087' + KB: 25' (Prec594))
<b>Site:</b> Trebuchet Fee 23-28-19	<b>MD Reference:</b> Well @ 3112.00usft (GL: 3087' + KB: 25' (Prec594))
<b>Well:</b> WXY #10H	<b>North Reference:</b> Grid
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> OH 212'-14073' PTB 14128'	<b>Database:</b> WellPlanner1

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)
13,509.00	85.20	359.20	9,402.25	4,147.52	4,147.52	946.54	4,254.15	12.86	471,244.31	563,679.82
13,604.00	88.30	359.60	9,407.63	4,242.35	4,242.35	945.54	4,346.44	12.56	471,339.14	563,678.82
13,699.00	89.20	359.80	9,409.71	4,337.32	4,337.32	945.05	4,439.09	12.29	471,434.11	563,678.33
13,794.00	91.40	0.30	9,409.21	4,432.31	4,432.31	945.13	4,531.96	12.04	471,529.10	563,678.41
13,888.00	90.30	0.30	9,407.81	4,526.30	4,526.30	945.62	4,624.02	11.80	471,623.09	563,678.90
13,982.00	89.70	359.50	9,407.81	4,620.30	4,620.30	945.46	4,716.04	11.56	471,717.09	563,678.74
14,073.00	89.70	358.70	9,408.29	4,711.29	4,711.29	944.03	4,804.94	11.33	471,808.08	563,677.31
<b>Last Survey: 14073' MD, 9408' TVD</b>										
14,128.00	89.70	358.70	9,408.58	4,766.27	4,766.27	942.78	4,858.62	11.19	471,863.06	563,676.06
<b>PTB: 14128' MD, 9409' TVD</b>										

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
14,073.00	9,408.29	4,711.29	944.03	Last Survey: 14073' MD, 9408' TVD
14,128.00	9,408.58	4,766.27	942.78	PTB: 14128' MD, 9409' TVD



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

RKB Elevation: Well @ 3112.00usft (GL: 3087' + KB: 25' (Prec594))

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	467096.79	562733.28	32.284003	-104.130336	

**SECTION DETAILS**

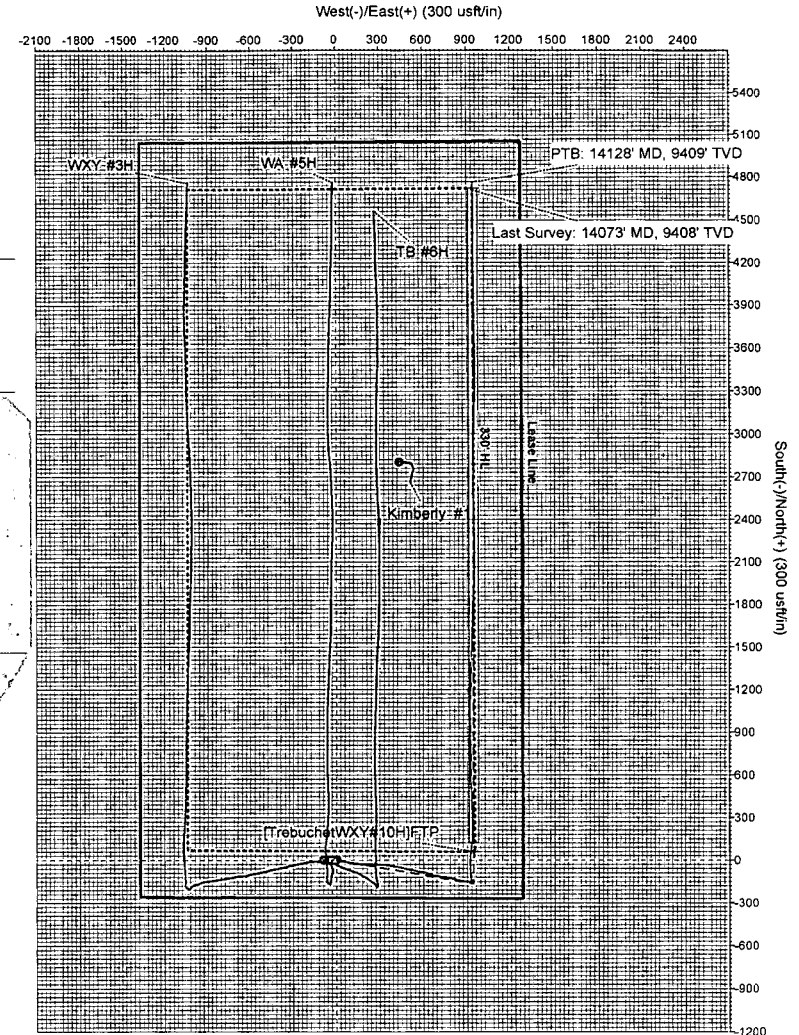
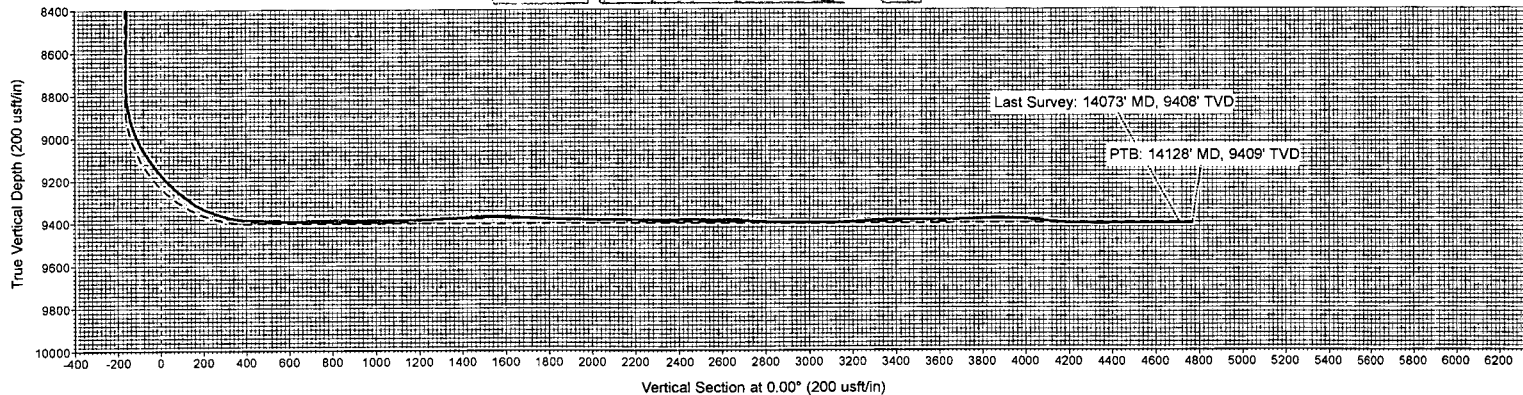
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00
3	2500.00	10.00	100.00	2497.47	-7.56	42.86	2.00	-7.56
4	7509.99	10.00	100.00	7431.34	-158.63	899.62	0.00	-158.63
5	8009.99	0.00	0.00	7928.80	-166.19	942.48	2.00	-166.19
6	8911.22	0.00	0.00	8830.04	-166.19	942.48	0.00	-166.19
7	9811.22	90.00	0.00	9403.00	406.77	942.48	10.00	406.77
8	14125.83	90.00	0.00	9403.00	4721.38	942.48	0.00	4721.38
9	14170.83	90.00	0.00	9403.00	4766.38	942.48	0.00	4766.38

**WELLBORE TARGET DETAILS (MAP CO-ORDINATES)**

Name	TVD	+N/-S	+E/-W	Northing	Easting
[TrebuchetWXY#10H]FTP	0.00	57.64	948.88	467154.43	563682.18
[TrebuchetWXY#10H]LTP/BHL	9403.00	4721.38	942.18	471818.17	563675.46



**Target Line: 9403' TVD @ 0° VS: 90° INC**



Azimuth to Grid North  
True North: -0.11°  
Magnetic North: 7.19°  
Magnetic Field  
Strength: 48014.7nT  
Dip Angle: 60.05°  
Date: 4/1/2018  
Model: HDGM

**Azimuth Corrections**

**Total Magnetic Corr. (M to G): 7.19°**

**Declination (M to T): 7.30° East**