



Marathon Oil

Marathon Oil

Lea County, NM

Dee Boot Fee 24-34-26 (3-6-7-19)

WXY #19H

OH

Design: Gyros/MWD 100'-17460' PTB 17515'

Survey Report

17 July, 2018



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY #19H
Project:	Lea County, NM	TVD Reference:	Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))
Site:	Dee Boot Fee 24-34-26 (3-6-7-19)	MD Reference:	Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))
Well:	WXY #19H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Gyros/MWD 100'-17460' PTB 17515'	Database:	WellPlanner1

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

Site		Dee Boot Fee 24-34-26 (3-6-7-19)				
Site Position:		Northing:	435,782.47	usft	Latitude:	32.194895
From:	Map	Easting:	777,788.07	usft	Longitude:	-103.435339
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16	"	Grid Convergence:	0.48 °

Well		WXY #19H				
Well Position	+N/-S	0.00 usft	Northing:	435,782.47 usft	Latitude:	32.194895
	+E/-W	0.00 usft	Easting:	777,788.07 usft	Longitude:	-103.435339
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,446.00 usft

Wellbore		OH			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	4/26/2018	6.74	59.91	48,033.50

Design		Gyros/MWD 100'-17460' PTB 17515'		
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	179.60



Professional Directional Survey Report



Company: Marathon Oil
Project: Lea County, NM
Site: Dee Boot Fee 24-34-26 (3-6-7-19)
Well: WXY #19H
Wellbore: OH
Design: Gyros/MWD 100'-17460' PTB 17515'

Local Co-ordinate Reference: Well WXY #19H
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey Program		Date 7/17/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	996.00	Survey #1 (OH)	GYRO-NS-CT	OWSG XYZ Accel with XY Static and Continuous Gyro
1,149.00	17,515.00	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	435,782.47	777,788.07
100.00	0.50	306.36	100.00	-0.26	0.26	-0.35	0.44	306.36	435,782.73	777,787.72
200.00	0.37	315.98	200.00	-0.76	0.75	-0.93	1.19	308.95	435,783.22	777,787.14
300.00	0.13	334.26	299.99	-1.09	1.08	-1.20	1.62	312.07	435,783.55	777,786.87
400.00	0.18	349.68	399.99	-1.35	1.34	-1.28	1.85	316.37	435,783.81	777,786.79
500.00	0.19	6.63	499.99	-1.67	1.66	-1.29	2.10	322.21	435,784.13	777,786.78
600.00	0.23	11.87	599.99	-2.03	2.02	-1.23	2.36	328.74	435,784.49	777,786.84
700.00	0.28	4.77	699.99	-2.47	2.46	-1.17	2.72	334.66	435,784.93	777,786.90
800.00	0.29	359.91	799.99	-2.97	2.96	-1.15	3.17	338.83	435,785.43	777,786.92
900.00	0.37	350.51	899.99	-3.54	3.53	-1.20	3.73	341.24	435,786.00	777,786.87
996.00	0.72	340.82	995.98	-4.41	4.40	-1.45	4.64	341.80	435,786.87	777,786.62
1,149.00	0.40	67.80	1,148.98	-5.52	5.51	-1.27	5.66	347.04	435,787.98	777,786.80
1,239.00	0.30	99.60	1,238.98	-5.60	5.59	-0.75	5.64	352.40	435,788.06	777,787.32
1,330.00	0.40	25.20	1,329.98	-5.84	5.84	-0.38	5.85	356.32	435,788.31	777,787.69
1,422.00	2.00	40.10	1,421.95	-7.35	7.36	0.79	7.40	6.16	435,789.83	777,788.86
1,516.00	2.50	42.00	1,515.88	-10.12	10.14	3.22	10.64	17.64	435,792.61	777,791.29
1,611.00	2.50	41.50	1,610.79	-13.19	13.23	5.98	14.52	24.33	435,795.70	777,794.05
1,705.00	2.40	42.50	1,704.70	-16.16	16.22	8.67	18.39	28.13	435,798.69	777,796.74
1,800.00	2.40	51.60	1,799.62	-18.84	18.92	11.57	22.18	31.46	435,801.39	777,799.64
1,894.00	2.50	61.60	1,893.54	-21.01	21.12	14.92	25.85	35.24	435,803.59	777,802.99
1,988.00	2.60	60.30	1,987.44	-23.02	23.15	18.57	29.68	38.74	435,805.62	777,806.64

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Project: Lea County, NM
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Wellbore: OH
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Local Co-ordinate Reference: Well WXY #19H
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MD Reference: Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))
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)
2,083.00	2.60	57.60	2,082.35	-25.21	25.37	22.27	33.75	41.27	435,807.84	777,810.34
2,177.00	2.70	66.90	2,176.25	-27.20	27.38	26.10	37.83	43.63	435,809.85	777,814.17
2,272.00	3.30	77.80	2,271.12	-28.62	28.84	30.83	42.22	46.92	435,811.31	777,818.90
2,366.00	2.40	85.50	2,365.00	-29.31	29.56	35.44	46.15	50.17	435,812.03	777,823.51
2,461.00	1.40	102.80	2,459.95	-29.19	29.46	38.55	48.52	52.61	435,811.93	777,826.62
2,555.00	1.50	98.60	2,553.92	-28.74	29.02	40.89	50.14	54.63	435,811.49	777,828.96
2,650.00	1.40	90.70	2,648.89	-28.52	28.82	43.28	52.00	56.34	435,811.29	777,831.35
2,744.00	1.20	93.00	2,742.86	-28.44	28.76	45.41	53.75	57.66	435,811.23	777,833.48
2,839.00	1.10	83.20	2,837.84	-28.48	28.81	47.31	55.39	58.66	435,811.28	777,835.38
2,933.00	0.50	116.70	2,931.83	-28.40	28.74	48.57	56.44	59.39	435,811.21	777,836.64
3,028.00	0.70	200.70	3,026.83	-27.67	28.01	48.74	56.21	60.12	435,810.48	777,836.81
3,122.00	0.70	181.50	3,120.82	-26.56	26.90	48.52	55.48	61.00	435,809.37	777,836.59
3,217.00	0.50	164.40	3,215.82	-25.58	25.92	48.62	55.09	61.94	435,808.39	777,836.69
3,311.00	0.50	139.90	3,309.81	-24.86	25.21	48.99	55.10	62.77	435,807.68	777,837.06
3,406.00	0.60	140.50	3,404.81	-24.16	24.51	49.57	55.30	63.69	435,806.98	777,837.64
3,500.00	0.70	142.60	3,498.80	-23.32	23.67	50.24	55.53	64.77	435,806.14	777,838.31
3,595.00	0.60	128.70	3,593.80	-22.54	22.90	50.98	55.88	65.81	435,805.37	777,839.05
3,689.00	0.60	136.70	3,687.79	-21.87	22.23	51.70	56.28	66.73	435,804.70	777,839.77
3,784.00	0.60	174.10	3,782.79	-21.01	21.36	52.09	56.31	67.69	435,803.85	777,840.16
3,878.00	1.00	219.30	3,876.78	-19.89	20.25	51.62	55.45	68.58	435,802.72	777,839.69
3,973.00	1.30	213.10	3,971.76	-18.35	18.71	50.51	53.86	69.68	435,801.18	777,838.58
4,067.00	0.80	148.00	4,065.75	-16.91	17.26	50.27	53.15	71.05	435,799.73	777,838.34
4,162.00	1.50	99.80	4,160.73	-16.12	16.48	51.85	54.41	72.36	435,798.95	777,839.92
4,256.00	1.50	119.40	4,254.70	-15.29	15.67	54.13	56.36	73.86	435,798.14	777,842.20
4,350.00	1.70	124.60	4,348.66	-13.88	14.27	56.35	58.13	75.79	435,796.74	777,844.42
4,445.00	1.50	86.40	4,443.63	-13.14	13.55	58.75	60.30	77.01	435,796.02	777,846.82
4,539.00	2.10	55.00	4,537.58	-14.19	14.62	61.39	63.11	76.61	435,797.09	777,849.46

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4,634.00	2.80	67.80	4,632.49	-16.04	16.49	64.97	67.03	75.76	435,798.96	777,853.04	
4,728.00	3.60	80.30	4,726.35	-17.37	17.86	70.00	72.24	75.69	435,800.33	777,858.07	
4,823.00	4.00	81.00	4,821.14	-18.35	18.88	76.22	78.52	76.09	435,801.35	777,864.29	
4,918.00	4.20	77.30	4,915.90	-19.58	20.16	82.88	85.30	76.33	435,802.63	777,870.95	
5,012.00	4.80	81.40	5,009.61	-20.88	21.51	90.13	92.66	76.58	435,803.98	777,878.20	
5,107.00	5.40	84.70	5,104.23	-21.83	22.51	98.51	101.05	77.13	435,804.98	777,886.58	
5,201.00	5.80	86.70	5,197.78	-22.44	23.20	107.66	110.13	77.84	435,805.67	777,895.73	
5,296.00	5.70	87.50	5,292.30	-22.86	23.68	117.16	119.53	78.57	435,806.15	777,905.23	
5,390.00	5.20	86.80	5,385.88	-23.24	24.12	126.08	128.36	79.17	435,806.59	777,914.15	
5,477.00	4.90	87.50	5,472.54	-23.57	24.50	133.73	135.95	79.62	435,806.97	777,921.80	
5,662.00	4.30	85.30	5,656.94	-24.38	25.41	148.53	150.69	80.29	435,807.88	777,936.60	
5,757.00	6.00	78.80	5,751.56	-25.57	26.67	156.95	159.20	80.36	435,809.14	777,945.02	
5,851.00	7.10	77.80	5,844.94	-27.68	28.85	167.45	169.92	80.22	435,811.32	777,955.52	
5,945.00	6.90	77.80	5,938.24	-30.03	31.27	178.65	181.36	80.07	435,813.74	777,966.72	
6,039.00	6.80	76.40	6,031.57	-32.45	33.77	189.58	192.56	79.90	435,816.24	777,977.65	
6,134.00	6.70	76.10	6,125.91	-35.03	36.43	200.42	203.71	79.70	435,818.90	777,988.49	
6,228.00	8.30	72.70	6,219.11	-38.28	39.76	212.22	215.92	79.39	435,822.23	778,000.29	
6,322.00	9.90	70.70	6,311.92	-42.87	44.45	226.33	230.65	78.89	435,826.92	778,014.40	
6,417.00	9.10	68.60	6,405.62	-48.21	49.89	241.03	246.14	78.31	435,832.36	778,029.10	
6,512.00	8.30	67.50	6,499.52	-53.48	55.26	254.36	260.29	77.74	435,837.73	778,042.43	
6,606.00	9.70	68.80	6,592.36	-58.85	60.72	268.01	274.80	77.24	435,843.19	778,056.08	
6,701.00	11.40	71.20	6,685.75	-64.65	66.64	284.36	292.07	76.81	435,849.11	778,072.43	
6,795.00	11.40	71.90	6,777.90	-70.41	72.52	301.99	310.57	76.50	435,854.99	778,090.06	
6,889.00	11.30	71.30	6,870.06	-76.12	78.36	319.54	329.01	76.22	435,860.83	778,107.61	
6,984.00	11.10	69.60	6,963.25	-82.18	84.53	336.93	347.37	75.92	435,867.00	778,125.00	
7,079.00	11.20	69.40	7,056.46	-88.49	90.96	354.14	365.63	75.59	435,873.43	778,142.21	
7,173.00	11.50	68.40	7,148.62	-95.03	97.62	371.39	384.01	75.27	435,880.09	778,159.46	



Professional Directional Survey Report



Company: Marathon Oil
Project: Lea County, NM
Site: Dee Boot Fee 24-34-26 (3-6-7-19)
Well: WXY #19H
Wellbore: OH
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Local Co-ordinate Reference: Well WXY #19H
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Survey										
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7,268.00	11.60	66.50	7,241.70	-102.20	104.92	388.96	402.86	74.90	435,887.39	778,177.03
7,362.00	11.60	69.90	7,333.78	-109.10	111.94	406.50	421.63	74.60	435,894.41	778,194.57
7,457.00	11.00	71.30	7,426.94	-115.16	118.12	424.05	440.20	74.43	435,900.59	778,212.12
7,551.00	10.90	69.40	7,519.23	-121.05	124.13	440.87	458.01	74.28	435,906.60	778,228.94
7,646.00	10.10	70.00	7,612.63	-126.94	130.14	457.10	475.27	74.11	435,912.61	778,245.17
7,740.00	10.50	77.70	7,705.12	-131.47	134.78	473.22	492.04	74.10	435,917.25	778,261.29
7,835.00	12.00	81.50	7,798.30	-134.65	138.08	491.44	510.48	74.31	435,920.55	778,279.51
7,929.00	11.80	80.10	7,890.28	-137.61	141.18	510.58	529.74	74.54	435,923.65	778,298.65
8,024.00	10.60	81.30	7,983.47	-140.48	144.17	528.78	548.09	74.75	435,926.64	778,316.85
8,118.00	12.00	83.10	8,075.64	-142.83	146.65	547.03	566.35	74.99	435,929.12	778,335.10
8,213.00	11.20	81.60	8,168.70	-145.23	149.19	565.96	585.30	75.23	435,931.66	778,354.03
8,307.00	10.90	79.10	8,260.96	-148.12	152.20	583.72	603.24	75.39	435,934.67	778,371.79
8,401.00	10.50	75.90	8,353.32	-151.77	155.97	600.76	620.67	75.45	435,938.44	778,388.83
8,496.00	10.60	73.70	8,446.72	-156.22	160.53	617.54	638.06	75.43	435,943.00	778,405.61
8,590.00	11.30	72.60	8,539.01	-161.28	165.71	634.63	655.90	75.37	435,948.18	778,422.70
8,685.00	11.40	71.20	8,632.15	-166.96	171.52	652.39	674.57	75.27	435,953.99	778,440.46
8,779.00	9.10	69.10	8,724.64	-172.50	177.17	668.14	691.23	75.15	435,959.64	778,456.21
8,874.00	8.00	68.50	8,818.59	-177.51	182.27	681.30	705.26	75.02	435,964.74	778,469.37
8,968.00	6.30	65.90	8,911.85	-181.94	186.77	692.10	716.86	74.90	435,969.24	778,480.17
9,062.00	5.60	65.10	9,005.34	-185.91	190.81	700.97	726.47	74.77	435,973.28	778,489.04
9,157.00	5.70	67.30	9,099.88	-189.62	194.58	709.52	735.72	74.66	435,977.05	778,497.59
9,251.00	6.10	70.60	9,193.39	-193.02	198.04	718.54	745.33	74.59	435,980.51	778,506.61
9,345.00	6.10	69.40	9,286.85	-196.37	201.46	727.93	755.29	74.53	435,983.93	778,516.00
9,440.00	5.10	73.00	9,381.40	-199.32	204.47	736.69	764.54	74.49	435,986.94	778,524.76
9,534.00	4.10	74.90	9,475.10	-201.37	206.57	743.93	772.08	74.48	435,989.04	778,532.00
9,628.00	3.40	75.50	9,568.89	-202.90	208.14	749.87	778.22	74.49	435,990.61	778,537.94
9,723.00	2.90	83.70	9,663.75	-203.83	209.11	754.99	783.41	74.52	435,991.58	778,543.06

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Wellbore: OH
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TVD Reference: Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))
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North Reference: Grid
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Survey										
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9,817.00	2.30	83.10	9,757.65	-204.29	209.60	759.23	787.63	74.57	435,992.07	778,547.30
9,911.00	1.60	74.70	9,851.60	-204.84	210.17	762.36	790.80	74.59	435,992.64	778,550.43
10,006.00	1.20	72.00	9,946.57	-205.48	210.83	764.59	793.12	74.58	435,993.30	778,552.66
10,101.00	1.60	143.70	10,041.55	-204.71	210.07	766.32	794.59	74.67	435,992.54	778,554.39
10,196.00	2.10	157.30	10,136.50	-202.03	207.39	767.78	795.29	74.88	435,989.86	778,555.85
10,290.00	2.00	164.10	10,230.44	-198.85	204.22	768.89	795.55	75.13	435,986.69	778,556.96
10,385.00	2.30	152.10	10,325.37	-195.56	200.95	770.24	796.02	75.38	435,983.42	778,558.31
10,479.00	2.30	141.60	10,419.30	-192.40	197.80	772.29	797.22	75.63	435,980.27	778,560.36
10,574.00	2.10	148.90	10,514.23	-189.41	194.82	774.38	798.51	75.88	435,977.29	778,562.45
10,668.00	1.80	151.60	10,608.17	-186.62	192.04	775.97	799.38	76.10	435,974.51	778,564.04
10,763.00	2.20	159.40	10,703.11	-183.59	189.02	777.32	799.97	76.33	435,971.49	778,565.39
10,857.00	1.90	164.90	10,797.05	-180.39	185.83	778.36	800.23	76.57	435,968.30	778,566.43
10,952.00	1.70	180.90	10,892.01	-177.46	182.90	778.75	799.94	76.78	435,965.37	778,566.82
11,045.00	1.10	195.90	10,984.98	-175.22	180.66	778.48	799.17	76.93	435,963.13	778,566.55
11,140.00	1.00	219.60	11,079.96	-173.71	179.15	777.70	798.07	77.03	435,961.62	778,565.77
11,234.00	0.80	237.50	11,173.95	-172.74	178.16	776.63	796.80	77.08	435,960.63	778,564.70
11,329.00	1.00	253.30	11,268.94	-172.15	177.57	775.27	795.35	77.10	435,960.04	778,563.34
11,423.00	1.40	242.70	11,362.92	-171.40	176.81	773.47	793.42	77.12	435,959.28	778,561.54
11,517.00	2.10	231.70	11,456.88	-169.82	175.21	771.09	790.75	77.20	435,957.68	778,559.16
11,612.00	1.50	213.00	11,551.83	-167.72	173.09	769.05	788.29	77.32	435,955.56	778,557.12
11,706.00	1.20	205.00	11,645.80	-165.80	171.17	767.97	786.81	77.44	435,953.64	778,556.04
11,801.00	1.60	209.80	11,740.77	-163.76	169.11	766.89	785.31	77.56	435,951.58	778,554.96
11,895.00	1.80	221.10	11,834.73	-161.52	166.86	765.26	783.24	77.70	435,949.33	778,553.33
11,917.00	1.70	223.40	11,856.72	-161.02	166.36	764.81	782.70	77.73	435,948.83	778,552.88
12,052.00	2.00	233.60	11,991.65	-158.19	163.51	761.54	778.90	77.88	435,945.98	778,549.61
12,147.00	1.90	241.50	12,086.60	-156.47	161.78	758.82	775.87	77.97	435,944.25	778,546.89
12,241.00	9.90	189.40	12,180.06	-147.76	153.04	756.13	771.46	78.56	435,935.51	778,544.20

Company: Marathon Oil
Project: Lea County, NM
Site: Dee Boot Fee 24-34-26 (3-6-7-19)
Well: WXY #19H
Wellbore: OH
Design: Gyros/MWD 100'-17460' PTB 17515'

Local Co-ordinate Reference: Well WXY #19H
TVD Reference: Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))
MD Reference: Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))
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)
12,336.00	21.20	180.60	12,271.44	-122.45	127.72	754.61	765.34	80.39	435,910.19	778,542.68
12,431.00	32.80	176.00	12,355.95	-79.45	84.73	756.23	760.96	83.61	435,867.20	778,544.30
12,525.00	42.50	174.80	12,430.29	-22.26	27.57	760.89	761.39	87.92	435,810.04	778,548.96
12,620.00	51.80	172.10	12,494.84	46.89	-41.52	768.95	770.07	93.09	435,740.95	778,557.02
12,714.00	58.70	174.60	12,548.39	123.61	-118.19	777.82	786.75	98.64	435,664.28	778,565.89
12,809.00	68.40	178.00	12,590.66	208.42	-202.95	783.19	809.06	104.53	435,579.52	778,571.26
12,904.00	76.20	176.80	12,619.52	298.78	-293.29	787.32	840.17	110.43	435,489.18	778,575.39
12,998.00	79.30	177.30	12,639.47	390.54	-385.02	792.04	880.66	115.92	435,397.45	778,580.11
13,092.00	89.90	178.30	12,648.30	483.94	-478.40	795.62	928.37	121.02	435,304.07	778,583.69
13,186.00	92.40	178.70	12,646.41	577.90	-572.34	798.08	982.09	125.65	435,210.13	778,586.15
13,281.00	91.20	180.00	12,643.43	672.84	-667.28	799.16	1,041.11	129.86	435,115.19	778,587.23
13,375.00	89.40	179.60	12,642.94	766.84	-761.28	799.49	1,103.96	133.60	435,021.19	778,587.56
13,470.00	86.10	179.80	12,646.67	861.75	-856.19	799.98	1,171.76	136.94	434,926.28	778,588.05
13,564.00	87.20	179.60	12,652.16	955.59	-950.02	800.48	1,242.30	139.88	434,832.45	778,588.55
13,658.00	88.50	179.00	12,655.69	1,049.52	-1,043.95	801.62	1,316.22	142.48	434,738.52	778,589.69
13,752.00	88.70	177.80	12,657.98	1,143.47	-1,137.88	804.25	1,393.41	144.75	434,644.59	778,592.32
13,846.00	90.70	179.30	12,658.47	1,237.44	-1,231.84	806.63	1,472.44	146.78	434,550.63	778,594.70
13,940.00	91.80	179.20	12,656.42	1,331.42	-1,325.81	807.86	1,552.55	148.64	434,456.66	778,595.93
14,035.00	91.20	180.00	12,653.94	1,426.39	-1,420.78	808.52	1,634.72	150.36	434,361.69	778,596.59
14,129.00	92.70	180.60	12,650.74	1,520.32	-1,514.72	808.03	1,716.76	151.92	434,267.75	778,596.10
14,223.00	87.70	180.00	12,650.41	1,614.28	-1,608.68	807.53	1,799.99	153.34	434,173.79	778,595.60
14,318.00	88.70	181.50	12,653.40	1,709.21	-1,703.63	806.29	1,884.79	154.67	434,078.84	778,594.36
14,412.00	89.00	181.50	12,655.28	1,803.14	-1,797.57	803.83	1,969.12	155.91	433,984.90	778,591.90
14,506.00	89.20	181.10	12,656.76	1,897.09	-1,891.54	801.70	2,054.42	157.03	433,890.93	778,589.77
14,600.00	90.20	181.60	12,657.25	1,991.04	-1,985.51	799.48	2,140.43	158.07	433,796.96	778,587.55
14,695.00	88.40	181.10	12,658.41	2,085.99	-2,080.47	797.25	2,228.00	159.03	433,702.00	778,585.32
14,789.00	90.20	184.40	12,659.56	2,179.82	-2,174.34	792.74	2,314.34	159.97	433,608.13	778,580.81

Company: Marathon Oil
Project: Lea County, NM
Site: Dee Boot Fee 24-34-26 (3-6-7-19)
Well: WXY #19H
Wellbore: OH
Design: Gyros/MWD 100'-17460' PTB 17515'

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

Well WXY #19H
 Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))
 Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))
 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)
14,884.00	87.50	184.10	12,661.47	2,274.48	-2,269.05	785.70	2,401.23	160.90	433,513.42	778,573.77
14,979.00	88.10	181.50	12,665.11	2,369.25	-2,363.86	781.06	2,489.56	161.72	433,418.61	778,569.13
15,073.00	88.60	178.50	12,667.82	2,463.20	-2,457.81	781.06	2,578.93	162.37	433,324.66	778,569.13
15,167.00	89.30	178.50	12,669.54	2,557.17	-2,551.76	783.52	2,669.34	162.93	433,230.71	778,571.59
15,262.00	89.10	177.00	12,670.87	2,652.11	-2,646.67	787.25	2,761.28	163.43	433,135.80	778,575.32
15,356.00	91.10	179.90	12,670.71	2,746.07	-2,740.63	789.79	2,852.16	163.92	433,041.84	778,577.86
15,451.00	91.30	179.80	12,668.72	2,841.05	-2,835.60	790.04	2,943.61	164.43	432,946.87	778,578.11
15,545.00	93.40	180.10	12,664.86	2,934.96	-2,929.52	790.12	3,034.20	164.91	432,852.95	778,578.19
15,639.00	91.70	181.10	12,660.68	3,028.85	-3,023.42	789.14	3,124.71	165.37	432,759.05	778,577.21
15,734.00	90.60	180.60	12,658.77	3,123.81	-3,118.39	787.73	3,216.34	165.82	432,664.08	778,575.80
15,829.00	91.20	180.50	12,657.28	3,218.78	-3,213.37	786.82	3,308.30	166.24	432,569.10	778,574.89
15,923.00	90.70	179.60	12,655.72	3,312.77	-3,307.35	786.74	3,399.64	166.62	432,475.12	778,574.81
16,018.00	90.30	178.30	12,654.89	3,407.75	-3,402.33	788.48	3,492.50	166.95	432,380.14	778,576.55
16,112.00	91.00	178.40	12,653.83	3,501.73	-3,496.29	791.19	3,584.69	167.25	432,286.18	778,579.26
16,207.00	90.80	178.40	12,652.33	3,596.69	-3,591.24	793.84	3,677.93	167.54	432,191.23	778,581.91
16,301.00	90.50	177.80	12,651.27	3,690.65	-3,685.18	796.95	3,770.37	167.80	432,097.29	778,585.02
16,396.00	89.40	176.90	12,651.35	3,785.58	-3,780.08	801.35	3,864.08	168.03	432,002.39	778,589.42
16,490.00	90.90	179.30	12,651.11	3,879.54	-3,874.01	804.46	3,956.66	168.27	431,908.46	778,592.53
16,585.00	90.80	179.10	12,649.70	3,974.52	-3,968.99	805.79	4,049.96	168.52	431,813.48	778,593.86
16,679.00	91.00	178.00	12,648.22	4,068.49	-4,062.95	808.17	4,142.55	168.75	431,719.52	778,596.24
16,774.00	91.20	178.10	12,646.40	4,163.44	-4,157.88	811.40	4,236.31	168.96	431,624.59	778,599.47
16,868.00	89.60	179.70	12,645.74	4,257.43	-4,251.85	813.20	4,328.92	169.17	431,530.62	778,601.27
16,963.00	88.70	177.90	12,647.15	4,352.40	-4,346.82	815.19	4,422.60	169.38	431,435.65	778,603.26
17,057.00	89.50	180.30	12,648.63	4,446.38	-4,440.79	816.67	4,515.26	169.58	431,341.68	778,604.74
17,152.00	90.80	180.60	12,648.38	4,541.37	-4,535.78	815.92	4,608.58	169.80	431,246.69	778,603.99
17,247.00	91.80	180.50	12,646.22	4,636.33	-4,630.75	815.01	4,701.92	170.02	431,151.72	778,603.08
17,342.00	91.50	179.80	12,643.49	4,731.28	-4,725.71	814.76	4,795.43	170.22	431,056.76	778,602.83

Company: Marathon Oil
Project: Lea County, NM
Site: Dee Boot Fee 24-34-26 (3-6-7-19)
Well: WXY #19H
Wellbore: OH
Design: Gyros/MWD 100'-17460' PTB 17515'

Local Co-ordinate Reference: Well WXY #19H
TVD Reference: Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))
MD Reference: Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))
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)	
17,436.00	91.70	180.20	12,640.86	4,825.24	-4,819.67	814.76	4,888.06	170.40	430,962.80	778,602.83	
17,460.00	91.80	180.10	12,640.13	4,849.23	-4,843.66	814.70	4,911.70	170.45	430,938.81	778,602.77	
Last Survey: 17460' MD, 12640' TVD											
17,515.00	91.80	180.10	12,638.40	4,904.20	-4,898.64	814.60	4,965.90	170.56	430,883.83	778,602.67	
PTB: 17515' MD, 12638' TVD											

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
17,460.00	12,640.13	-4,843.66	814.70	Last Survey: 17460' MD, 12640' TVD	
17,515.00	12,638.40	-4,898.64	814.60	PTB: 17515' MD, 12638' TVD	



Marathon Oil
Lea County, NM
Dee Boot Fee 24-34-26 (3-6-7-19)
WXY #19H
Plan #6
GL: 3446' + KB: 26.5' (H&P480)

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

RKB Elevation: Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	435782.47	777788.07	32.194895	-103.435339	

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	1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00
3	1500.00	2.00	77.41	1499.92	1.52	6.81	0.50	-1.47
4	2000.39	2.00	77.41	2000.00	5.33	23.86	0.00	-5.16
5	2200.39	0.00	0.00	2199.96	6.09	27.26	1.00	-5.90
6	5150.39	0.00	0.00	5149.96	6.09	27.26	0.00	-5.90
7	5750.39	12.00	77.41	5745.59	19.74	88.36	2.00	-19.12
8	8875.11	12.00	77.41	8802.02	161.35	722.40	0.00	-156.31
9	9475.11	0.00	0.00	9397.65	175.00	783.50	2.00	-169.53
10	12209.46	0.00	0.00	12132.00	175.00	783.50	0.00	-169.53
11	13119.47	91.00	179.60	12704.87	-407.95	787.57	10.00	-413.44
12	17566.17	91.00	179.60	12627.18	-4853.86	818.64	0.00	4859.46
13	17611.17	91.00	179.60	12626.39	-4898.85	818.95	0.00	4904.45

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

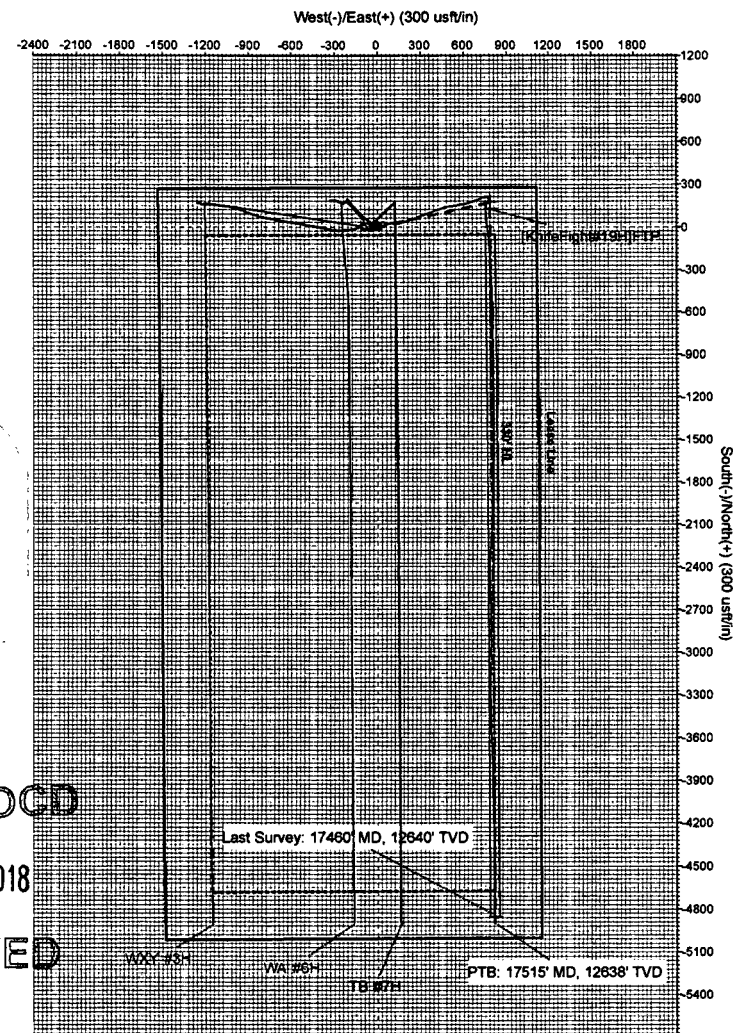
Name	TVD	+N/-S	+E/-W	Northing	Easting
[KnifeFight#19H]FTP	0.00	124.93	784.17	435907.40	778572.24
[KnifeFight#19H]KOP	12132.00	175.00	783.50	435957.47	778571.57
[KnifeFight#19H]JLTP/BHL	12627.18	-4853.86	818.64	430926.61	778606.71



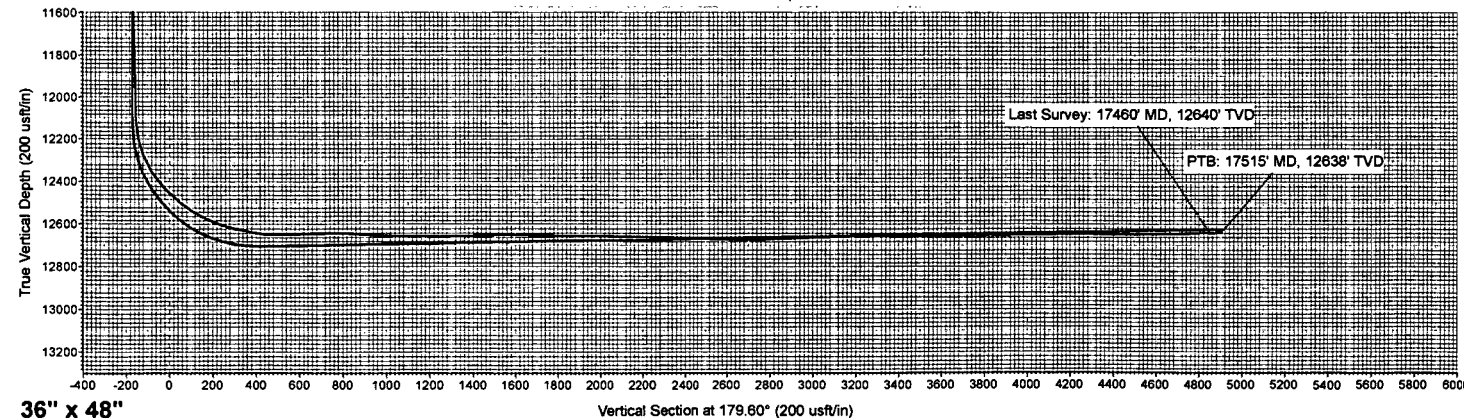
HOBBS OCD

NOV 05 2018

RECEIVED



Target Line: 12712' TVD @ 0° VS :: 91.0° INC



Azimuths to Grid North
True North: -0.48°
Magnetic North: 6.26°
Magnetic Field
Strength: 48033.5enT
Dip Angle: 59.91°
Date: 4/26/2018
Model: USER DEFINED

Azimuth Corrections

Total Magnetic Corr. (M to G): 6.26°

Declination (M to T): 6.74° East

36" x 48"