

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY Fee #1H
Project:	Eddy County, NM	TVD Reference:	well @ 3108.00usft
Site:	Thor 28 (1-3-5-8)	MD Reference:	well @ 3108.00usft
Well:	WXY Fee #1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Project	Eddy 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	Thor 28 (1-3-5-8)		
Site Position:		Northing:	462,147.63 usft
From:	Map	Easting:	573,236.71 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 16' 13.218256 N
		Longitude:	104° 5' 46.983432 W
		Grid Convergence:	0.13 °

Well	WXY Fee #1H		
Well Position	+N/-S	0.00 usft	Northing: 462,147.63 usft
	+E/-W	0.00 usft	Easting: 573,236.71 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 16' 13.218256 N
		Longitude:	104° 5' 46.983432 W
		Ground Level:	3,083.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	HDGM	8/15/2019	7.12
			59.98
			47,872.20

Design	Prelim Plan A		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			359.58

Survey Tool Program	Date: 8/15/2019		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
0.00	1,850.00	Prelim Plan A (OH)	MWD+HDGM
1,850.00	5,400.00	Prelim Plan A (OH)	MWD+HDGM
5,400.00	9,000.00	Prelim Plan A (OH)	MWD+HDGM
9,000.00	14,309.41	Prelim Plan A (OH)	MWD+HDGM
			Description
			OWSG MWD + HRGM
			OWSG MWD + HRGM
			OWSG MWD + HRGM
			OWSG MWD + HRGM

Planned Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
[ThorWXY#1H]FTP									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00

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Well:	WXY Fee #1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	2.00	114.69	1,299.98	-0.73	1.59	-0.74	2.00	2.00	0.00
1,400.00	4.00	114.69	1,399.84	-2.91	6.34	-2.96	2.00	2.00	0.00
1,500.00	6.00	114.69	1,499.45	-6.56	14.26	-6.66	2.00	2.00	0.00
1,600.00	8.00	114.69	1,598.70	-11.65	25.33	-11.83	2.00	2.00	0.00
1,700.00	10.00	114.69	1,697.47	-18.18	39.54	-18.47	2.00	2.00	0.00
1,800.00	10.00	114.69	1,795.95	-25.43	55.32	-25.84	0.00	0.00	0.00
1,900.00	10.00	114.69	1,894.43	-32.69	71.10	-33.21	0.00	0.00	0.00
2,000.00	10.00	114.69	1,992.91	-39.94	86.88	-40.57	0.00	0.00	0.00
2,100.00	10.00	114.69	2,091.39	-47.19	102.65	-47.94	0.00	0.00	0.00
2,200.00	10.00	114.69	2,189.87	-54.45	118.43	-55.31	0.00	0.00	0.00
2,300.00	10.00	114.69	2,288.35	-61.70	134.21	-62.68	0.00	0.00	0.00
2,400.00	10.00	114.69	2,386.83	-68.95	149.99	-70.05	0.00	0.00	0.00
2,500.00	10.00	114.69	2,485.31	-76.20	165.76	-77.42	0.00	0.00	0.00
2,600.00	10.00	114.69	2,583.79	-83.46	181.54	-84.79	0.00	0.00	0.00
2,700.00	10.00	114.69	2,682.27	-90.71	197.32	-92.16	0.00	0.00	0.00
2,800.00	10.00	114.69	2,780.75	-97.96	213.10	-99.52	0.00	0.00	0.00
2,900.00	10.00	114.69	2,879.23	-105.22	228.87	-106.89	0.00	0.00	0.00
3,000.00	10.00	114.69	2,977.72	-112.47	244.65	-114.26	0.00	0.00	0.00
3,100.00	10.00	114.69	3,076.20	-119.72	260.43	-121.63	0.00	0.00	0.00
3,200.00	10.00	114.69	3,174.68	-126.98	276.21	-129.00	0.00	0.00	0.00
3,300.00	10.00	114.69	3,273.16	-134.23	291.98	-136.37	0.00	0.00	0.00
3,400.00	10.00	114.69	3,371.64	-141.48	307.76	-143.74	0.00	0.00	0.00
3,500.00	10.00	114.69	3,470.12	-148.74	323.54	-151.10	0.00	0.00	0.00
3,600.00	10.00	114.69	3,568.60	-155.99	339.32	-158.47	0.00	0.00	0.00
3,700.00	10.00	114.69	3,667.08	-163.24	355.09	-165.84	0.00	0.00	0.00
3,800.00	10.00	114.69	3,765.56	-170.50	370.87	-173.21	0.00	0.00	0.00
3,900.00	10.00	114.69	3,864.04	-177.75	386.65	-180.58	0.00	0.00	0.00
4,000.00	10.00	114.69	3,962.52	-185.00	402.43	-187.95	0.00	0.00	0.00
4,100.00	10.00	114.69	4,061.00	-192.26	418.20	-195.32	0.00	0.00	0.00
4,200.00	10.00	114.69	4,159.48	-199.51	433.98	-202.68	0.00	0.00	0.00
4,300.00	10.00	114.69	4,257.97	-206.76	449.76	-210.05	0.00	0.00	0.00
4,400.00	10.00	114.69	4,356.45	-214.02	465.54	-217.42	0.00	0.00	0.00
4,500.00	10.00	114.69	4,454.93	-221.27	481.31	-224.79	0.00	0.00	0.00
4,600.00	10.00	114.69	4,553.41	-228.52	497.09	-232.16	0.00	0.00	0.00
4,700.00	10.00	114.69	4,651.89	-235.77	512.87	-239.53	0.00	0.00	0.00
4,800.00	10.00	114.69	4,750.37	-243.03	528.65	-246.90	0.00	0.00	0.00
4,900.00	10.00	114.69	4,848.85	-250.28	544.42	-254.27	0.00	0.00	0.00

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Well:	WXY Fee #1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,000.00	10.00	114.69	4,947.33	-257.53	560.20	-261.63	0.00	0.00	0.00	
5,100.00	10.00	114.69	5,045.81	-264.79	575.98	-269.00	0.00	0.00	0.00	
5,200.00	10.00	114.69	5,144.29	-272.04	591.76	-276.37	0.00	0.00	0.00	
5,300.00	10.00	114.69	5,242.77	-279.29	607.53	-283.74	0.00	0.00	0.00	
5,400.00	10.00	114.69	5,341.25	-286.55	623.31	-291.11	0.00	0.00	0.00	
5,500.00	10.00	114.69	5,439.73	-293.80	639.09	-298.48	0.00	0.00	0.00	
5,600.00	10.00	114.69	5,538.22	-301.05	654.86	-305.85	0.00	0.00	0.00	
5,700.00	10.00	114.69	5,636.70	-308.31	670.64	-313.21	0.00	0.00	0.00	
5,800.00	10.00	114.69	5,735.18	-315.56	686.42	-320.58	0.00	0.00	0.00	
5,900.00	10.00	114.69	5,833.66	-322.81	702.20	-327.95	0.00	0.00	0.00	
6,000.00	10.00	114.69	5,932.14	-330.07	717.97	-335.32	0.00	0.00	0.00	
6,100.00	10.00	114.69	6,030.62	-337.32	733.75	-342.69	0.00	0.00	0.00	
6,200.00	10.00	114.69	6,129.10	-344.57	749.53	-350.06	0.00	0.00	0.00	
6,300.00	10.00	114.69	6,227.58	-351.83	765.31	-357.43	0.00	0.00	0.00	
6,400.00	10.00	114.69	6,326.06	-359.08	781.08	-364.80	0.00	0.00	0.00	
6,500.00	10.00	114.69	6,424.54	-366.33	796.86	-372.16	0.00	0.00	0.00	
6,600.00	10.00	114.69	6,523.02	-373.59	812.64	-379.53	0.00	0.00	0.00	
6,700.00	10.00	114.69	6,621.50	-380.84	828.42	-386.90	0.00	0.00	0.00	
6,800.00	10.00	114.69	6,719.99	-388.09	844.19	-394.27	0.00	0.00	0.00	
6,900.00	10.00	114.69	6,818.47	-395.35	859.97	-401.64	0.00	0.00	0.00	
7,000.00	10.00	114.69	6,916.95	-402.60	875.75	-409.01	0.00	0.00	0.00	
7,100.00	10.00	114.69	7,015.43	-409.85	891.53	-416.38	0.00	0.00	0.00	
7,200.00	10.00	114.69	7,113.91	-417.10	907.30	-423.74	0.00	0.00	0.00	
7,300.00	10.00	114.69	7,212.39	-424.36	923.08	-431.11	0.00	0.00	0.00	
7,400.00	10.00	114.69	7,310.87	-431.61	938.86	-438.48	0.00	0.00	0.00	
7,500.00	10.00	114.69	7,409.35	-438.86	954.64	-445.85	0.00	0.00	0.00	
7,600.00	10.00	114.69	7,507.83	-446.12	970.41	-453.22	0.00	0.00	0.00	
7,700.00	10.00	114.69	7,606.31	-453.37	986.19	-460.59	0.00	0.00	0.00	
7,800.00	10.00	114.69	7,704.79	-460.62	1,001.97	-467.96	0.00	0.00	0.00	
7,900.00	10.00	114.69	7,803.27	-467.88	1,017.75	-475.32	0.00	0.00	0.00	
8,000.00	10.00	114.69	7,901.75	-475.13	1,033.52	-482.69	0.00	0.00	0.00	
8,100.00	10.00	114.69	8,000.24	-482.38	1,049.30	-490.06	0.00	0.00	0.00	
8,140.09	10.00	114.69	8,039.71	-485.29	1,055.63	-493.02	0.00	0.00	0.00	
8,200.00	8.80	114.69	8,098.82	-489.38	1,064.52	-497.17	2.00	-2.00	0.00	
8,300.00	6.80	114.69	8,197.89	-495.05	1,076.85	-502.93	2.00	-2.00	0.00	
8,400.00	4.80	114.69	8,297.37	-499.27	1,086.03	-507.22	2.00	-2.00	0.00	
8,500.00	2.80	114.69	8,397.15	-502.04	1,092.06	-510.03	2.00	-2.00	0.00	
8,600.00	0.80	114.69	8,497.09	-503.35	1,094.92	-511.37	2.00	-2.00	0.00	
8,640.09	0.00	0.00	8,537.18	-503.47	1,095.17	-511.48	2.00	-2.00	0.00	
8,700.00	0.00	0.00	8,597.09	-503.47	1,095.17	-511.48	0.00	0.00	0.00	
8,800.00	0.00	0.00	8,697.09	-503.47	1,095.17	-511.48	0.00	0.00	0.00	
8,900.00	0.00	0.00	8,797.09	-503.47	1,095.17	-511.48	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,897.09	-503.47	1,095.17	-511.48	0.00	0.00	0.00	
9,100.00	0.00	0.00	8,997.09	-503.47	1,095.17	-511.48	0.00	0.00	0.00	

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Site:	Thor 28 (1-3-5-8)	MD Reference:	well @ 3108.00usft
Well:	WXY Fee #1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,173.41	0.00	0.00	9,070.50	-503.47	1,095.17	-511.48	0.00	0.00	0.00
[ThorWXY#1H]KOP									
9,175.00	0.19	359.58	9,072.09	-503.47	1,095.17	-511.48	12.00	12.00	0.00
9,200.00	3.19	359.58	9,097.08	-502.73	1,095.16	-510.74	12.00	12.00	0.00
9,225.00	6.19	359.58	9,121.99	-500.69	1,095.15	-508.70	12.00	12.00	0.00
9,250.00	9.19	359.58	9,146.76	-497.34	1,095.12	-505.35	12.00	12.00	0.00
9,275.00	12.19	359.58	9,171.33	-492.70	1,095.09	-500.72	12.00	12.00	0.00
9,300.00	15.19	359.58	9,195.61	-486.79	1,095.05	-494.80	12.00	12.00	0.00
9,325.00	18.19	359.58	9,219.56	-479.61	1,094.99	-487.62	12.00	12.00	0.00
9,350.00	21.19	359.58	9,243.09	-471.19	1,094.93	-479.20	12.00	12.00	0.00
9,375.00	24.19	359.58	9,266.16	-461.54	1,094.86	-469.56	12.00	12.00	0.00
9,400.00	27.19	359.58	9,288.68	-450.71	1,094.78	-458.72	12.00	12.00	0.00
9,425.00	30.19	359.58	9,310.61	-438.71	1,094.69	-446.72	12.00	12.00	0.00
9,450.00	33.19	359.58	9,331.88	-425.57	1,094.60	-433.59	12.00	12.00	0.00
9,475.00	36.19	359.58	9,352.43	-411.35	1,094.49	-419.36	12.00	12.00	0.00
9,500.00	39.19	359.58	9,372.21	-396.06	1,094.38	-404.08	12.00	12.00	0.00
9,525.00	42.19	359.58	9,391.17	-379.77	1,094.26	-387.78	12.00	12.00	0.00
9,550.00	45.19	359.58	9,409.24	-362.50	1,094.13	-370.51	12.00	12.00	0.00
9,575.00	48.19	359.58	9,426.39	-344.31	1,094.00	-352.32	12.00	12.00	0.00
9,600.00	51.19	359.58	9,442.56	-325.25	1,093.86	-333.26	12.00	12.00	0.00
9,625.00	54.19	359.58	9,457.71	-305.37	1,093.71	-313.38	12.00	12.00	0.00
9,650.00	57.19	359.58	9,471.80	-284.72	1,093.56	-292.73	12.00	12.00	0.00
9,675.00	60.19	359.58	9,484.79	-263.36	1,093.40	-271.37	12.00	12.00	0.00
9,700.00	63.19	359.58	9,496.64	-241.36	1,093.24	-249.36	12.00	12.00	0.00
9,725.00	66.19	359.58	9,507.33	-218.76	1,093.07	-226.77	12.00	12.00	0.00
9,750.00	69.19	359.58	9,516.82	-195.63	1,092.90	-203.64	12.00	12.00	0.00
9,775.00	72.19	359.58	9,525.09	-172.04	1,092.73	-180.05	12.00	12.00	0.00
9,800.00	75.19	359.58	9,532.11	-148.05	1,092.55	-156.06	12.00	12.00	0.00
9,825.00	78.19	359.58	9,537.86	-123.73	1,092.37	-131.73	12.00	12.00	0.00
9,850.00	81.19	359.58	9,542.33	-99.14	1,092.19	-107.14	12.00	12.00	0.00
9,875.00	84.19	359.58	9,545.51	-74.34	1,092.01	-82.35	12.00	12.00	0.00
9,900.00	87.19	359.58	9,547.39	-49.42	1,091.83	-57.42	12.00	12.00	0.00
9,923.40	90.00	359.58	9,547.97	-26.02	1,091.66	-34.02	12.00	12.00	0.00
10,000.00	90.00	359.58	9,547.97	50.57	1,091.09	42.57	0.00	0.00	0.00
10,100.00	90.00	359.58	9,547.97	150.57	1,090.36	142.57	0.00	0.00	0.00
10,200.00	90.00	359.58	9,547.97	250.57	1,089.62	242.57	0.00	0.00	0.00
10,300.00	90.00	359.58	9,547.97	350.56	1,088.88	342.57	0.00	0.00	0.00
10,400.00	90.00	359.58	9,547.97	450.56	1,088.15	442.57	0.00	0.00	0.00
10,500.00	90.00	359.58	9,547.97	550.56	1,087.41	542.57	0.00	0.00	0.00
10,600.00	90.00	359.58	9,547.97	650.55	1,086.68	642.57	0.00	0.00	0.00
10,700.00	90.00	359.58	9,547.97	750.55	1,085.94	742.57	0.00	0.00	0.00
10,800.00	90.00	359.58	9,547.97	850.55	1,085.20	842.57	0.00	0.00	0.00
10,900.00	90.00	359.58	9,547.97	950.55	1,084.47	942.57	0.00	0.00	0.00

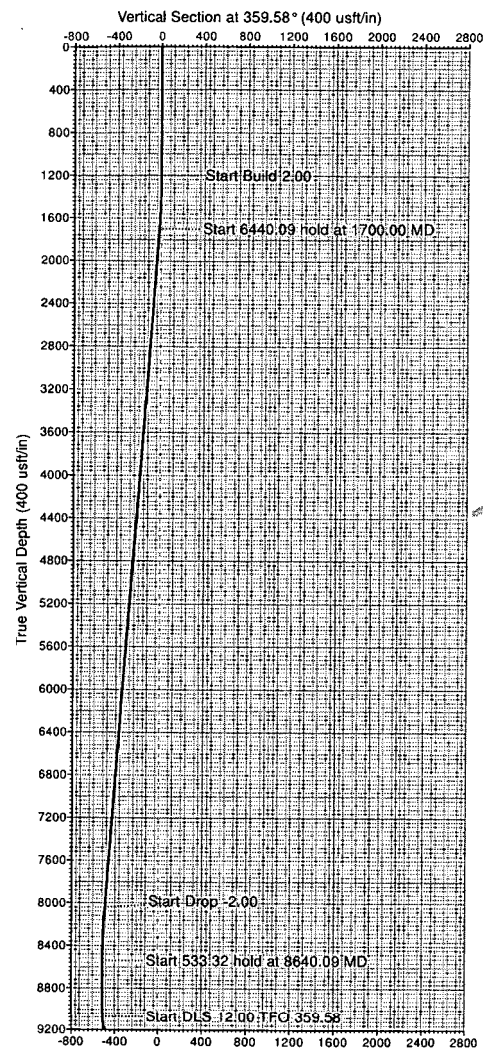
Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY Fee #1H
Project:	Eddy County, NM	TVD Reference:	well @ 3108.00usft
Site:	Thor 28 (1-3-5-8)	MD Reference:	well @ 3108.00usft
Well:	WXY Fee #1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,000.00	90.00	359.58	9,547.97	1,050.54	1,083.73	1,042.57	0.00	0.00	0.00
11,100.00	90.00	359.58	9,547.97	1,150.54	1,082.99	1,142.57	0.00	0.00	0.00
11,200.00	90.00	359.58	9,547.98	1,250.54	1,082.26	1,242.57	0.00	0.00	0.00
11,300.00	90.00	359.58	9,547.98	1,350.54	1,081.52	1,342.57	0.00	0.00	0.00
11,400.00	90.00	359.58	9,547.98	1,450.53	1,080.79	1,442.57	0.00	0.00	0.00
11,500.00	90.00	359.58	9,547.98	1,550.53	1,080.05	1,542.57	0.00	0.00	0.00
11,600.00	90.00	359.58	9,547.98	1,650.53	1,079.31	1,642.57	0.00	0.00	0.00
11,700.00	90.00	359.58	9,547.98	1,750.53	1,078.58	1,742.57	0.00	0.00	0.00
11,800.00	90.00	359.58	9,547.98	1,850.52	1,077.84	1,842.57	0.00	0.00	0.00
11,900.00	90.00	359.58	9,547.98	1,950.52	1,077.11	1,942.57	0.00	0.00	0.00
12,000.00	90.00	359.58	9,547.98	2,050.52	1,076.37	2,042.57	0.00	0.00	0.00
12,100.00	90.00	359.58	9,547.98	2,150.51	1,075.63	2,142.57	0.00	0.00	0.00
12,200.00	90.00	359.58	9,547.98	2,250.51	1,074.90	2,242.57	0.00	0.00	0.00
12,300.00	90.00	359.58	9,547.98	2,350.51	1,074.16	2,342.57	0.00	0.00	0.00
12,400.00	90.00	359.58	9,547.98	2,450.51	1,073.43	2,442.57	0.00	0.00	0.00
12,500.00	90.00	359.58	9,547.99	2,550.50	1,072.69	2,542.57	0.00	0.00	0.00
12,600.00	90.00	359.58	9,547.99	2,650.50	1,071.95	2,642.57	0.00	0.00	0.00
12,700.00	90.00	359.58	9,547.99	2,750.50	1,071.22	2,742.57	0.00	0.00	0.00
12,800.00	90.00	359.58	9,547.99	2,850.50	1,070.48	2,842.57	0.00	0.00	0.00
12,900.00	90.00	359.58	9,547.99	2,950.49	1,069.74	2,942.57	0.00	0.00	0.00
13,000.00	90.00	359.58	9,547.99	3,050.49	1,069.01	3,042.57	0.00	0.00	0.00
13,100.00	90.00	359.58	9,547.99	3,150.49	1,068.27	3,142.57	0.00	0.00	0.00
13,200.00	90.00	359.58	9,547.99	3,250.48	1,067.54	3,242.57	0.00	0.00	0.00
13,300.00	90.00	359.58	9,547.99	3,350.48	1,066.80	3,342.57	0.00	0.00	0.00
13,400.00	90.00	359.58	9,547.99	3,450.48	1,066.06	3,442.57	0.00	0.00	0.00
13,500.00	90.00	359.58	9,547.99	3,550.48	1,065.33	3,542.57	0.00	0.00	0.00
13,600.00	90.00	359.58	9,547.99	3,650.47	1,064.59	3,642.57	0.00	0.00	0.00
13,700.00	90.00	359.58	9,548.00	3,750.47	1,063.86	3,742.57	0.00	0.00	0.00
13,800.00	90.00	359.58	9,548.00	3,850.47	1,063.12	3,842.57	0.00	0.00	0.00
13,900.00	90.00	359.58	9,548.00	3,950.47	1,062.38	3,942.57	0.00	0.00	0.00
14,000.00	90.00	359.58	9,548.00	4,050.46	1,061.65	4,042.57	0.00	0.00	0.00
14,100.00	90.00	359.58	9,548.00	4,150.46	1,060.91	4,142.57	0.00	0.00	0.00
14,200.00	90.00	359.58	9,548.00	4,250.46	1,060.18	4,242.57	0.00	0.00	0.00
14,309.41	90.00	359.58	9,548.00	4,359.86	1,059.37	4,351.98	0.00	0.00	0.00
[ThorWXY#1H]LTP/BHL									

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY Fee #1H
Project:	Eddy County, NM	TVD Reference:	well @ 3108.00usft
Site:	Thor 28 (1-3-5-8)	MD Reference:	well @ 3108.00usft
Well:	WXY Fee #1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
[ThorWXY#1H]FTP	0.00	0.00	0.00	-273.48	1,093.48	461,874.15	574,330.19	32° 16' 10.487765 N	104° 5' 34.254477 W
- plan misses target center by 1127.16usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
[ThorWXY#1H]KOP	0.00	0.00	9,070.50	-503.47	1,095.17	461,644.16	574,331.88	32° 16' 8.211695 N	104° 5' 34.240796 W
- plan hits target center									
- Point									
[ThorWXY#1H]LTP/BHL	0.00	0.00	9,548.00	4,359.86	1,059.37	466,507.49	574,296.08	32° 16' 56.341044 N	104° 5' 34.530847 W
- plan hits target center									
- Point									

Checked By: _____ Approved By: _____ Date: _____



Marathon Oil
Eddy County, NM
Thor 28 (1-3-5-8)
WXY Fee #1H
Prelim Plan A

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

RKB Elevation: well @ 3108.00usft

+N/-S	+E/-W	Northing	Eastings	Latitude	Longitude	Spot
0.00	0.00	462147.63	573236.71	32° 16' 13.218256 N	104° 5' 46.983432 W	

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	1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00
3	1700.00	10.00	114.69	1697.47	-18.18	39.54	2.00	-18.47
4	8140.09	10.00	114.69	8039.71	-485.29	1055.63	0.00	-493.02
5	8640.09	0.00	0.00	8657.18	-503.47	1095.17	2.00	-511.48
6	9173.41	0.00	0.00	9070.50	-503.47	1095.17	0.00	-511.48
7	9923.40	90.00	359.58	9547.96	-26.02	1091.66	12.00	-34.02
8	14309.41	90.00	359.58	9548.00	4359.86	1059.37	0.00	4351.98

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Eastings
ThorWXY#1H/FTP	0.00	-273.48	1093.48	461874.15	574330.13
ThorWXY#1H/KOP	9070.50	-503.47	1095.17	461644.16	574331.88
ThorWXY#1H/LTP/BHL	9548.00	4359.86	1059.37	466507.49	574296.08



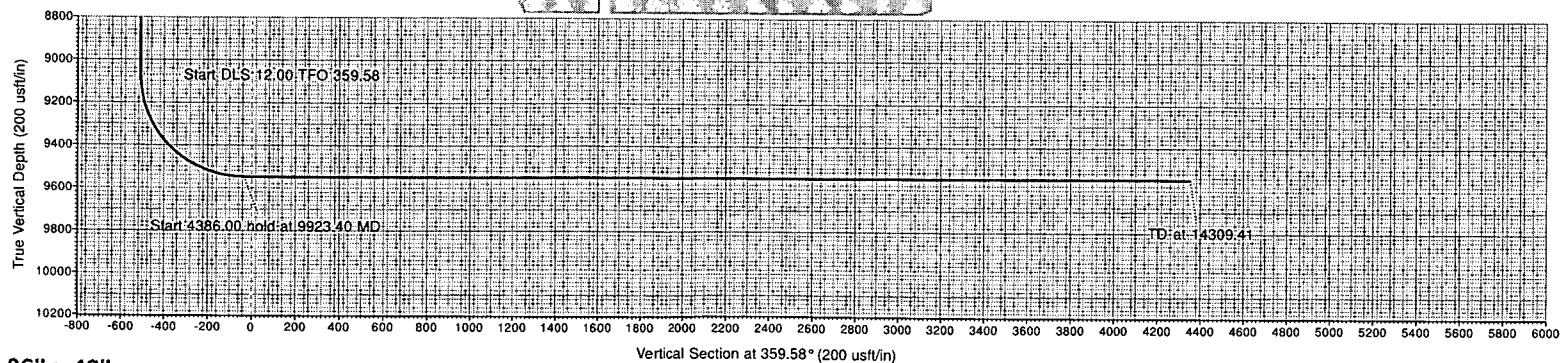
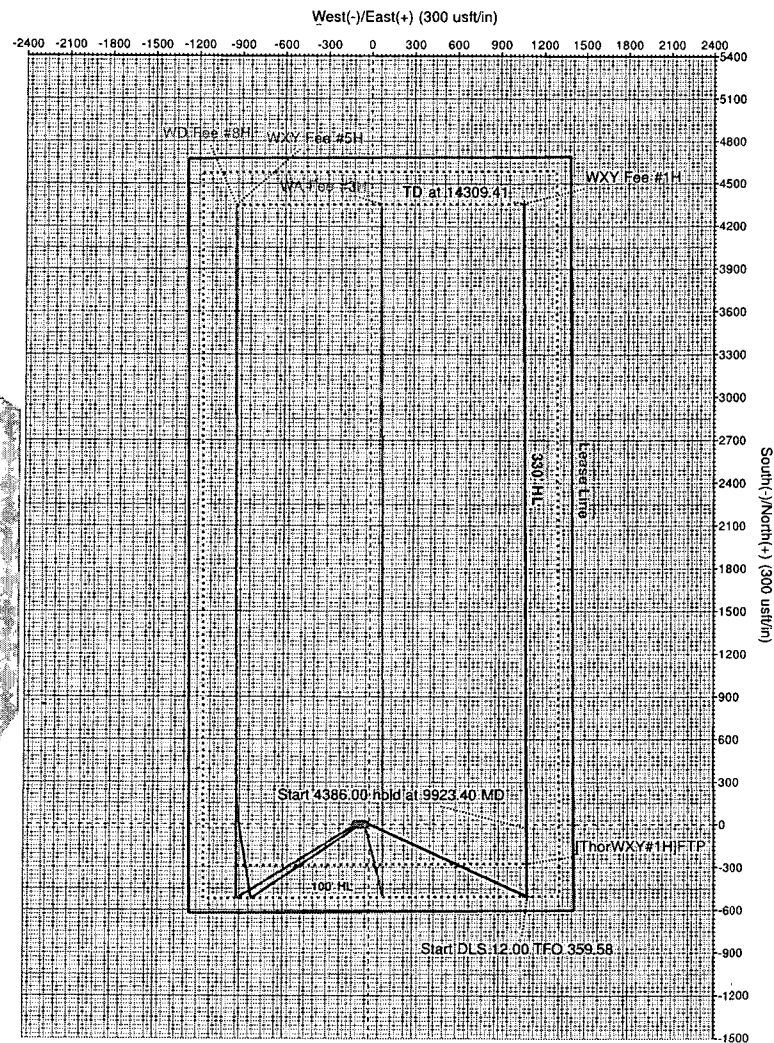
Azimuths to Grid North
 True North: -0.13°
 Magnetic North: 6.99°

Magnetic Field
 Strength: 47872.2nT
 Dip Angle: 59.89°
 Date: 8/15/2019
 Model: HDGM

Azimuth Corrections

Total Magnetic Corr. (M to G): 6.99°

Declination (M to T): 7.12° East



36" x 48"

Marathon Oil

