

Marathon Oil Permian, LLC

Eddy County, NM (NAD27)

Squirrel Master Fee 23-28-5

WA #5H

30-015-44875

NM OIL CONSERVATION
ARTESIA DISTRICT

APR 10 2018

OH

RECEIVED

Plan: Plan #1

Standard Planning Report

05 April, 2018



www.scientificdrilling.com

Planning Report

Database:	Midland District	Local Co-ordinate Reference:	Well WA #5H
Company:	Marathon Oil Permian, LLC	TVD Reference:	KB = 26.5' @ 3056.50usft (Rig TBD)
Project:	Eddy County, NM (NAD27)	MD Reference:	KB = 26.5' @ 3056.50usft (Rig TBD)
Site:	Squirrel Master Fee 23-28-5	North Reference:	Grid
Well:	WA #5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Eddy County, NM (NAD27)		
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		Using geodetic scale factor

Site	Squirrel Master Fee 23-28-5		
Site Position:		Northing:	486,529.83 usft
From:	Map	Easting:	565,703.16 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 20' 14.665 N
		Longitude:	104° 7' 14.166 W
		Grid Convergence:	0.11 °

Well	WA #5H		
Well Position	+N/-S	-0.01 usft	Northing:
	+E/-W	90.01 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 20' 14.663 N
		Longitude:	104° 7' 13.117 W
		Ground Level:	3,030.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	HDGM	4/5/2018	7.28
			Dip Angle (°)
			60.12
			Field Strength (nT)
			48,033

Design	Plan #1		
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
			Direction (bearing)
			90.00

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	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	
1,150.00	1.50	0.00	1,149.98	1.96	0.00	1.00	1.00	0.00	0.00	
1,200.00	1.50	0.00	1,199.97	3.27	0.00	0.00	0.00	0.00	0.00	
1,685.96	10.00	75.00	1,683.31	20.59	40.85	2.00	1.75	15.43	83.49	
5,120.96	10.00	75.00	5,066.13	174.98	617.01	0.00	0.00	0.00	0.00	
5,620.96	0.00	0.00	5,563.59	186.24	659.05	2.00	-2.00	0.00	180.00	
9,056.65	0.00	0.00	8,999.28	186.24	659.05	0.00	0.00	0.00	0.00	
9,945.65	88.90	89.71	9,572.13	189.05	1,221.00	10.00	10.00	0.00	89.71	
14,627.05	88.90	89.71	9,662.00	212.49	5,901.49	0.00	0.00	0.00	0.00	BHL[SMIWA#5H]
14,672.05	88.90	89.71	9,662.86	212.71	5,946.48	0.00	0.00	0.00	0.00	

Planning Report

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 Site: Squirrel Master Fee 23-28-5
 Well: WA #5H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well WA #5H
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 MD Reference: KB = 26.5' @ 3056.50usft (Rig TBD)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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
461.00	0.00	0.00	461.00	0.00	0.00	0.00	0.00	0.00	0.00
Salado/Castile									
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
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
KOP - NUDGE									
1,100.00	1.00	0.00	1,099.99	0.87	0.00	0.00	1.00	1.00	0.00
1,150.00	1.50	0.00	1,149.98	1.96	0.00	0.00	1.00	1.00	0.00
HOLD									
1,200.00	1.50	0.00	1,199.97	3.27	0.00	0.00	0.00	0.00	0.00
Build 2.0° / 100									
1,300.00	2.63	49.02	1,299.91	6.09	1.73	1.73	2.00	1.13	49.02
1,400.00	4.43	63.85	1,399.71	9.29	6.93	6.93	2.00	1.80	14.83
1,500.00	6.35	69.96	1,499.27	12.89	15.59	15.59	2.00	1.92	6.10
1,600.00	8.30	73.22	1,598.45	16.87	27.70	27.70	2.00	1.96	3.26
1,685.96	10.00	75.00	1,683.31	20.59	40.85	40.85	2.00	1.97	2.07
EOB - HOLD									
1,700.00	10.00	75.00	1,697.14	21.23	43.21	43.21	0.00	0.00	0.00
1,800.00	10.00	75.00	1,795.62	25.72	59.98	59.98	0.00	0.00	0.00
1,900.00	10.00	75.00	1,894.10	30.21	76.75	76.75	0.00	0.00	0.00
2,000.00	10.00	75.00	1,992.58	34.71	93.53	93.53	0.00	0.00	0.00
2,100.00	10.00	75.00	2,091.06	39.20	110.30	110.30	0.00	0.00	0.00
2,200.00	10.00	75.00	2,189.54	43.70	127.07	127.07	0.00	0.00	0.00
2,300.00	10.00	75.00	2,288.02	48.19	143.85	143.85	0.00	0.00	0.00
2,400.00	10.00	75.00	2,386.50	52.69	160.62	160.62	0.00	0.00	0.00
2,424.88	10.00	75.00	2,411.00	53.80	164.79	164.79	0.00	0.00	0.00
Lamar									
2,486.82	10.00	75.00	2,472.00	56.59	175.18	175.18	0.00	0.00	0.00
Bell Canyon									
2,500.00	10.00	75.00	2,484.98	57.18	177.39	177.39	0.00	0.00	0.00
2,600.00	10.00	75.00	2,583.46	61.67	194.17	194.17	0.00	0.00	0.00
2,700.00	10.00	75.00	2,681.95	66.17	210.94	210.94	0.00	0.00	0.00
2,800.00	10.00	75.00	2,780.43	70.66	227.71	227.71	0.00	0.00	0.00
2,900.00	10.00	75.00	2,878.91	75.16	244.49	244.49	0.00	0.00	0.00
3,000.00	10.00	75.00	2,977.39	79.65	261.26	261.26	0.00	0.00	0.00
3,100.00	10.00	75.00	3,075.87	84.15	278.03	278.03	0.00	0.00	0.00
3,200.00	10.00	75.00	3,174.35	88.64	294.80	294.80	0.00	0.00	0.00
3,294.08	10.00	75.00	3,267.00	92.87	310.59	310.59	0.00	0.00	0.00
Cherry Canyon									
3,300.00	10.00	75.00	3,272.83	93.14	311.58	311.58	0.00	0.00	0.00
3,400.00	10.00	75.00	3,371.31	97.63	328.35	328.35	0.00	0.00	0.00
3,500.00	10.00	75.00	3,469.79	102.12	345.12	345.12	0.00	0.00	0.00
3,600.00	10.00	75.00	3,568.27	106.62	361.90	361.90	0.00	0.00	0.00
3,700.00	10.00	75.00	3,666.75	111.11	378.67	378.67	0.00	0.00	0.00
3,800.00	10.00	75.00	3,765.23	115.61	395.44	395.44	0.00	0.00	0.00

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 Well: WA #5H
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 Design: Plan #1

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Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,900.00	10.00	75.00	3,863.71	120.10	412.22	412.22	0.00	0.00	0.00
4,000.00	10.00	75.00	3,962.20	124.60	428.99	428.99	0.00	0.00	0.00
4,100.00	10.00	75.00	4,060.68	129.09	445.76	445.76	0.00	0.00	0.00
4,200.00	10.00	75.00	4,159.16	133.58	462.54	462.54	0.00	0.00	0.00
4,300.00	10.00	75.00	4,257.64	138.08	479.31	479.31	0.00	0.00	0.00
4,400.00	10.00	75.00	4,356.12	142.57	496.08	496.08	0.00	0.00	0.00
4,500.00	10.00	75.00	4,454.60	147.07	512.86	512.86	0.00	0.00	0.00
4,532.90	10.00	75.00	4,487.00	148.55	518.37	518.37	0.00	0.00	0.00
Brushy Canyon									
4,600.00	10.00	75.00	4,553.08	151.56	529.63	529.63	0.00	0.00	0.00
4,700.00	10.00	75.00	4,651.56	156.06	546.40	546.40	0.00	0.00	0.00
4,800.00	10.00	75.00	4,750.04	160.55	563.17	563.17	0.00	0.00	0.00
4,900.00	10.00	75.00	4,848.52	165.04	579.95	579.95	0.00	0.00	0.00
5,000.00	10.00	75.00	4,947.00	169.54	596.72	596.72	0.00	0.00	0.00
5,100.00	10.00	75.00	5,045.48	174.03	613.49	613.49	0.00	0.00	0.00
5,120.96	10.00	75.00	5,066.13	174.98	617.01	617.01	0.00	0.00	0.00
DROP 2.0° / 100									
5,200.00	8.42	75.00	5,144.14	178.25	629.23	629.23	2.00	-2.00	0.00
5,300.00	6.42	75.00	5,243.30	181.59	641.70	641.70	2.00	-2.00	0.00
5,400.00	4.42	75.00	5,342.85	184.04	650.82	650.82	2.00	-2.00	0.00
5,500.00	2.42	75.00	5,442.67	185.58	656.58	656.58	2.00	-2.00	0.00
5,600.00	0.42	75.00	5,542.63	186.22	658.98	658.98	2.00	-2.00	0.00
5,620.96	0.00	0.00	5,563.59	186.24	659.05	659.05	2.00	-2.00	0.00
EOD - HOLD									
5,700.00	0.00	0.00	5,642.63	186.24	659.05	659.05	0.00	0.00	0.00
5,800.00	0.00	0.00	5,742.63	186.24	659.05	659.05	0.00	0.00	0.00
5,900.00	0.00	0.00	5,842.63	186.24	659.05	659.05	0.00	0.00	0.00
5,972.37	0.00	0.00	5,915.00	186.24	659.05	659.05	0.00	0.00	0.00
Bone Spring									
6,000.00	0.00	0.00	5,942.63	186.24	659.05	659.05	0.00	0.00	0.00
6,100.00	0.00	0.00	6,042.63	186.24	659.05	659.05	0.00	0.00	0.00
6,200.00	0.00	0.00	6,142.63	186.24	659.05	659.05	0.00	0.00	0.00
6,300.00	0.00	0.00	6,242.63	186.24	659.05	659.05	0.00	0.00	0.00
6,400.00	0.00	0.00	6,342.63	186.24	659.05	659.05	0.00	0.00	0.00
6,500.00	0.00	0.00	6,442.63	186.24	659.05	659.05	0.00	0.00	0.00
6,600.00	0.00	0.00	6,542.63	186.24	659.05	659.05	0.00	0.00	0.00
6,700.00	0.00	0.00	6,642.63	186.24	659.05	659.05	0.00	0.00	0.00
6,800.00	0.00	0.00	6,742.63	186.24	659.05	659.05	0.00	0.00	0.00
6,900.00	0.00	0.00	6,842.63	186.24	659.05	659.05	0.00	0.00	0.00
6,956.37	0.00	0.00	6,899.00	186.24	659.05	659.05	0.00	0.00	0.00
1st Bone Spring Sand									
7,000.00	0.00	0.00	6,942.63	186.24	659.05	659.05	0.00	0.00	0.00
7,100.00	0.00	0.00	7,042.63	186.24	659.05	659.05	0.00	0.00	0.00
7,200.00	0.00	0.00	7,142.63	186.24	659.05	659.05	0.00	0.00	0.00
7,300.00	0.00	0.00	7,242.63	186.24	659.05	659.05	0.00	0.00	0.00
7,400.00	0.00	0.00	7,342.63	186.24	659.05	659.05	0.00	0.00	0.00
7,500.00	0.00	0.00	7,442.63	186.24	659.05	659.05	0.00	0.00	0.00
7,600.00	0.00	0.00	7,542.63	186.24	659.05	659.05	0.00	0.00	0.00
7,700.00	0.00	0.00	7,642.63	186.24	659.05	659.05	0.00	0.00	0.00
7,756.37	0.00	0.00	7,699.00	186.24	659.05	659.05	0.00	0.00	0.00
2nd Bone Spring Sand									
7,800.00	0.00	0.00	7,742.63	186.24	659.05	659.05	0.00	0.00	0.00
7,900.00	0.00	0.00	7,842.63	186.24	659.05	659.05	0.00	0.00	0.00

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 Site: Squirrel Master Fee 23-28-5
 Well: WA #5H
 Wellbore: OH
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8,000.00	0.00	0.00	7,942.63	186.24	659.05	659.05	0.00	0.00	0.00
8,100.00	0.00	0.00	8,042.63	186.24	659.05	659.05	0.00	0.00	0.00
8,200.00	0.00	0.00	8,142.63	186.24	659.05	659.05	0.00	0.00	0.00
8,300.00	0.00	0.00	8,242.63	186.24	659.05	659.05	0.00	0.00	0.00
8,400.00	0.00	0.00	8,342.63	186.24	659.05	659.05	0.00	0.00	0.00
8,500.00	0.00	0.00	8,442.63	186.24	659.05	659.05	0.00	0.00	0.00
8,600.00	0.00	0.00	8,542.63	186.24	659.05	659.05	0.00	0.00	0.00
8,700.00	0.00	0.00	8,642.63	186.24	659.05	659.05	0.00	0.00	0.00
8,800.00	0.00	0.00	8,742.63	186.24	659.05	659.05	0.00	0.00	0.00
8,900.00	0.00	0.00	8,842.63	186.24	659.05	659.05	0.00	0.00	0.00
9,000.00	0.00	0.00	8,942.63	186.24	659.05	659.05	0.00	0.00	0.00
9,011.37	0.00	0.00	8,954.00	186.24	659.05	659.05	0.00	0.00	0.00
3rd Bone Spring Sand									
9,056.65	0.00	0.00	8,999.28	186.24	659.05	659.05	0.00	0.00	0.00
Curve KOP - Build 10.0° / 100									
9,100.00	4.34	89.71	9,042.59	186.25	660.69	660.69	10.00	10.00	0.00
9,150.00	9.34	89.71	9,092.22	186.28	666.64	666.64	10.00	10.00	0.00
9,200.00	14.34	89.71	9,141.14	186.33	676.89	676.89	10.00	10.00	0.00
9,250.00	19.34	89.71	9,188.98	186.40	691.37	691.37	10.00	10.00	0.00
9,300.00	24.34	89.71	9,235.38	186.49	709.96	709.96	10.00	10.00	0.00
9,350.00	29.34	89.71	9,279.98	186.61	732.52	732.52	10.00	10.00	0.00
9,365.05	30.84	89.71	9,293.00	186.65	740.06	740.06	10.00	10.00	0.00
Wolfcamp									
9,400.00	34.34	89.71	9,322.45	186.74	758.89	758.89	10.00	10.00	0.00
9,450.00	39.34	89.71	9,362.45	186.89	788.85	788.85	10.00	10.00	0.00
9,500.00	44.34	89.71	9,399.69	187.06	822.19	822.19	10.00	10.00	0.00
9,542.56	48.59	89.71	9,429.00	187.21	853.04	853.04	10.00	10.00	0.00
Wolfcamp A									
9,550.00	49.34	89.71	9,433.89	187.24	858.65	858.65	10.00	10.00	0.00
9,600.00	54.34	89.71	9,484.77	187.44	897.95	897.95	10.00	10.00	0.00
9,650.00	59.34	89.71	9,492.12	187.65	939.79	939.79	10.00	10.00	0.00
9,700.00	64.34	89.71	9,515.71	187.87	983.85	983.85	10.00	10.00	0.00
9,750.00	69.34	89.71	9,535.37	188.10	1,029.81	1,029.81	10.00	10.00	0.00
9,800.00	74.34	89.71	9,550.95	188.33	1,077.30	1,077.30	10.00	10.00	0.00
9,850.00	79.34	89.71	9,562.34	188.58	1,125.97	1,125.97	10.00	10.00	0.00
9,900.00	84.34	89.71	9,569.44	188.83	1,175.45	1,175.45	10.00	10.00	0.00
9,945.65	88.90	89.71	9,572.13	189.05	1,221.00	1,221.00	10.00	10.00	0.00
EOC - HOLD									
9,976.45	88.90	89.71	9,572.72	189.21	1,251.80	1,251.80	0.00	0.00	0.00
FTP[SMIWA#5H]									
10,000.00	88.90	89.71	9,573.17	189.33	1,275.34	1,275.34	0.00	0.00	0.00
10,100.00	88.90	89.71	9,575.09	189.83	1,375.33	1,375.33	0.00	0.00	0.00
10,200.00	88.90	89.71	9,577.01	190.33	1,475.31	1,475.31	0.00	0.00	0.00
10,300.00	88.90	89.71	9,578.93	190.83	1,575.29	1,575.29	0.00	0.00	0.00
10,400.00	88.90	89.71	9,580.85	191.33	1,675.27	1,675.27	0.00	0.00	0.00
10,500.00	88.90	89.71	9,582.77	191.83	1,775.25	1,775.25	0.00	0.00	0.00
10,600.00	88.90	89.71	9,584.69	192.33	1,875.23	1,875.23	0.00	0.00	0.00
10,700.00	88.90	89.71	9,586.61	192.83	1,975.21	1,975.21	0.00	0.00	0.00
10,800.00	88.90	89.71	9,588.53	193.33	2,075.19	2,075.19	0.00	0.00	0.00
10,900.00	88.90	89.71	9,590.45	193.83	2,175.17	2,175.17	0.00	0.00	0.00
10,980.73	88.90	89.71	9,592.00	194.24	2,255.89	2,255.89	0.00	0.00	0.00
Wolfcamp B									
11,000.00	88.90	89.71	9,592.37	194.33	2,275.15	2,275.15	0.00	0.00	0.00

Planning Report

Database: Midland District
Company: Marathon Oil Permian, LLC
Project: Eddy County, NM (NAD27)
Site: Squirrel Master Fee 23-28-5
Well: WA #5H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well WA #5H
TVD Reference: KB = 26.5' @ 3056.50usft (Rig TBD)
MD Reference: KB = 26.5' @ 3056.50usft (Rig TBD)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,100.00	88.90	89.71	9,594.29	194.83	2,375.13	2,375.13	0.00	0.00	0.00
11,200.00	88.90	89.71	9,596.21	195.33	2,475.11	2,475.11	0.00	0.00	0.00
11,300.00	88.90	89.71	9,598.13	195.83	2,575.09	2,575.09	0.00	0.00	0.00
11,400.00	88.90	89.71	9,600.05	196.33	2,675.07	2,675.07	0.00	0.00	0.00
11,500.00	88.90	89.71	9,601.97	196.83	2,775.05	2,775.05	0.00	0.00	0.00
11,600.00	88.90	89.71	9,603.89	197.34	2,875.03	2,875.03	0.00	0.00	0.00
11,700.00	88.90	89.71	9,605.81	197.84	2,975.01	2,975.01	0.00	0.00	0.00
11,800.00	88.90	89.71	9,607.73	198.34	3,074.99	3,074.99	0.00	0.00	0.00
11,900.00	88.90	89.71	9,609.65	198.84	3,174.97	3,174.97	0.00	0.00	0.00
12,000.00	88.90	89.71	9,611.57	199.34	3,274.95	3,274.95	0.00	0.00	0.00
12,100.00	88.90	89.71	9,613.49	199.84	3,374.93	3,374.93	0.00	0.00	0.00
12,200.00	88.90	89.71	9,615.41	200.34	3,474.91	3,474.91	0.00	0.00	0.00
12,300.00	88.90	89.71	9,617.33	200.84	3,574.89	3,574.89	0.00	0.00	0.00
12,400.00	88.90	89.71	9,619.25	201.34	3,674.87	3,674.87	0.00	0.00	0.00
12,500.00	88.90	89.71	9,621.17	201.84	3,774.85	3,774.85	0.00	0.00	0.00
12,600.00	88.90	89.71	9,623.09	202.34	3,874.83	3,874.83	0.00	0.00	0.00
12,700.00	88.90	89.71	9,625.01	202.84	3,974.81	3,974.81	0.00	0.00	0.00
12,800.00	88.90	89.71	9,626.93	203.34	4,074.79	4,074.79	0.00	0.00	0.00
12,900.00	88.90	89.71	9,628.85	203.84	4,174.77	4,174.77	0.00	0.00	0.00
13,000.00	88.90	89.71	9,630.76	204.34	4,274.75	4,274.75	0.00	0.00	0.00
13,100.00	88.90	89.71	9,632.68	204.84	4,374.73	4,374.73	0.00	0.00	0.00
13,200.00	88.90	89.71	9,634.60	205.34	4,474.71	4,474.71	0.00	0.00	0.00
13,300.00	88.90	89.71	9,636.52	205.85	4,574.70	4,574.70	0.00	0.00	0.00
13,400.00	88.90	89.71	9,638.44	206.35	4,674.68	4,674.68	0.00	0.00	0.00
13,500.00	88.90	89.71	9,640.36	206.85	4,774.66	4,774.66	0.00	0.00	0.00
13,600.00	88.90	89.71	9,642.28	207.35	4,874.64	4,874.64	0.00	0.00	0.00
13,700.00	88.90	89.71	9,644.20	207.85	4,974.62	4,974.62	0.00	0.00	0.00
13,800.00	88.90	89.71	9,646.12	208.35	5,074.60	5,074.60	0.00	0.00	0.00
13,900.00	88.90	89.71	9,648.04	208.85	5,174.58	5,174.58	0.00	0.00	0.00
14,000.00	88.90	89.71	9,649.96	209.35	5,274.56	5,274.56	0.00	0.00	0.00
14,100.00	88.90	89.71	9,651.88	209.85	5,374.54	5,374.54	0.00	0.00	0.00
14,200.00	88.90	89.71	9,653.80	210.35	5,474.52	5,474.52	0.00	0.00	0.00
14,300.00	88.90	89.71	9,655.72	210.85	5,574.50	5,574.50	0.00	0.00	0.00
14,400.00	88.90	89.71	9,657.64	211.35	5,674.48	5,674.48	0.00	0.00	0.00
14,500.00	88.90	89.71	9,659.56	211.85	5,774.46	5,774.46	0.00	0.00	0.00
14,600.00	88.90	89.71	9,661.48	212.35	5,874.44	5,874.44	0.00	0.00	0.00
14,627.05	88.90	89.71	9,662.00	212.49	5,901.49	5,901.49	0.00	0.00	0.00
TD at 14627.05 - BHL[SMWA#5H]									
14,672.05	88.90	89.71	9,662.86	212.71	5,946.48	5,946.48	0.00	0.00	0.00
TD + 45' VS									

Planning Report

Database:	Midland District	Local Co-ordinate Reference:	Well WA #5H
Company:	Marathon Oil Permian, LLC	TVD Reference:	KB = 26.5' @ 3056.50usft (Rig TBD)
Project:	Eddy County, NM (NAD27)	MD Reference:	KB = 26.5' @ 3056.50usft (Rig TBD)
Site:	Squirrel Master Fee 23-28-5	North Reference:	Grid
Well:	WA #5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (bearing)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
FTP[SM/WA#5H]	0.00	0.00	9,429.00	188.90	1,254.56	486,718.70	567,047.61	32° 20' 16.508 N	104° 6' 58.490 W
- plan misses target center by 143.75usft at 9976.45usft MD (9572.72 TVD, 189.21 N, 1251.80 E)									
- Point									
BHL[SM/WA#5H]	0.00	0.00	9,662.00	212.49	5,901.49	486,742.29	571,694.14	32° 20' 16.645 N	104° 6' 4.330 W
- plan hits target center									
- Point									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)
461.00	461.00	Salado/Castile			
2,424.88	2,411.00	Lamar			
2,486.82	2,472.00	Bell Canyon			
3,294.08	3,267.00	Cherry Canyon			
4,532.90	4,487.00	Brushy Canyon			
5,972.37	5,915.00	Bone Spring			
6,956.37	6,899.00	1st Bone Spring Sand			
7,756.37	7,699.00	2nd Bone Spring Sand			
9,011.37	8,954.00	3rd Bone Spring Sand			
9,365.05	9,293.00	Wolfcamp			
9,542.56	9,429.00	Wolfcamp A			
10,980.73	9,592.00	Wolfcamp B			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,000.00	1,000.00	0.00	0.00	KOP - NUDGE
1,150.00	1,149.98	1.96	0.00	HOLD
1,200.00	1,199.97	3.27	0.00	Build 2.0° / 100
1,685.96	1,683.31	20.59	40.85	EOB - HOLD
5,120.96	5,066.13	174.98	617.01	DROP 2.0° / 100
5,620.96	5,563.59	186.24	659.05	EOD - HOLD
9,056.65	8,999.28	186.24	659.05	Curve KOP - Build 10.0° / 100
9,945.65	9,572.13	189.05	1,221.00	EOC - HOLD
14,627.05	9,662.00	212.49	5,901.49	TD at 14627.05
14,672.05	9,662.86	212.71	5,946.48	TD + 45' VS

Marathon Oil Corporation

EDDY COUNTY, NM (NAD27)
SQUIRREL MASTER FEE 23-28-5
WA #5H

PLAN #1
RIG TBD

WELL DETAILS:

Ground Level: 3030.00
+N/-S 0.00 +E/-W 0.00
Northing 488529.82 Easting 565793.18
Latitude 32° 20' 14.863 N Longitude 104° 7' 13.117 W

SECTION DETAILS

MD	INC	AZI	TVD	+N/-S	+E/-W	DLEG	TFACE	VSECT	TARGET
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	
1150.00	1.50	0.00	1149.98	1.96	0.00	1.00	0.00	0.00	
1200.00	1.50	0.00	1199.97	3.27	0.00	0.00	0.00	0.00	
1685.96	10.00	75.00	1683.31	20.59	40.85	2.00	83.49	40.85	
5120.96	10.00	75.00	5066.13	174.98	617.01	0.00	0.00	617.01	
5620.96	0.00	0.00	5563.59	186.24	659.05	2.00	180.00	659.05	
9056.65	0.00	0.00	8999.28	186.24	659.05	0.00	0.00	659.05	
9945.65	88.90	89.71	9572.13	189.05	1221.00	10.00	89.71	1221.00	
14627.05	88.90	89.71	9662.00	212.49	5901.48	0.00	0.00	5901.48	BHL[SM1WA#5H]
14672.05	88.90	89.71	9662.86	212.71	5946.48	0.00	0.00	5946.48	

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
FTP[SM1WA#5H]	9429.00	188.90	1254.58	486718.70	567047.61
BHL[SM1WA#5H]	9662.00	212.49	5901.48	486742.29	571694.14

DRILLING TARGET: 9549 'TVD @ 0VS // 88.9° INC.

WINDOW: 10' U // 10' D // 30' L // 30' R



To convert Magnetic North to Grid, Add 7.17°
To convert True North to Grid, Subtract 0.11°

Azimuth to Grid North
True North: -0.11°
Magnetic North: 7.17°
Magnetic Field
Strength: 48033.1 nT
Dip Angle: 60.12°
Date: 4/5/2018
Model: HDGM

FORMATION TOP DETAILS

TVD PATH	MD PATH	FORMATION
461.00	461.00	SALADO/CASTILE
2411.00	2424.88	LAMAR
2472.00	2486.82	BELL CANYON
3267.00	3294.08	CHERRY CANYON
4487.00	4532.90	BRUSHY CANYON
5915.00	5972.37	BONE SPRING
6899.00	6956.37	1ST BONE SPRING SAND
7699.00	7756.37	2ND BONE SPRING SAND
8954.00	9011.37	3RD BONE SPRING SAND
9293.00	9365.05	WOLFCAMP
9429.00	9542.56	WOLFCAMP A
9592.00	10980.73	WOLFCAMP B

SITE DETAILS: Squirrel Master Fee 23-28-5
Site Centre Northing: 488529.83
Easting: 565703.16

Positional Uncertainty: 0.00
Convergence: 0.11
Local North: Grid

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001

Local Origin: Well WA #5H, Grid North

Latitude: 32° 20' 14.863 N
Longitude: 104° 7' 13.117 W

Grid East: 565793.16
Grid North: 488529.82
Scale Factor: 1.000

Geomagnetic Model: HDGM
Sample Date: 05-Apr-18
Magnetic Declination: 7.28°
Dip Angle from Horizontal: 60.12°
Magnetic Field Strength: 48033
To convert Magnetic North to Grid, Add 7.17°
To convert Magnetic North to True, Add 7.28° East
To convert True North to Grid, Subtract 0.11°

PROJECT DETAILS: Eddy County, NM (NAD27)
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001

System Datum: Mean Sea Level

GL ELEV.: 3030.00
DEPTH REF. KB = 26.5' @ 3056.50USFT (RIG TBD)

KOP - RUDDGE
HOLD
Build 2.0' / 100
EOB - HOLD

NM OIL CONSERVATION
ARTESIA DISTRICT

APR 10 2018

RECEIVED

