

Company: Marathon Oil
Project: Eddy County, NM

Site: Fiddle Fee 24-28-23 (3-4-7-8)

Well: WD #8H

Wellbore: OH

Design: Prelim Plan A

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well WD #8H

Well @ 3023.00usft (GL: 2996' KB: 27' (Precision582))

Well @ 3023.00usft (GL: 2996' KB: 27' (Precision582))

Grid

Minimum Curvature

WellPlanner1

30-015-45038

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	Fiddle Fee 24-28-23 (3-4-7-8)		
Site Position:	Map	Northing: 438,692.25 usft	Latitude: 32.205799
From:		Easting: 582,820.53 usft	Longitude: -104.065567
Position Uncertainty:	0.00 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0.14 °

Well	WD #8H		
Well Position	+N/-S 0.00 usft	Northing: 438,722.25 usft	Latitude: 32.205881
	+E/-W 0.00 usft	Easting: 582,820.53 usft	Longitude: -104.065566
Position Uncertainty	0.00 usft	Wellhead Elevation: usft	Ground Level: 2,996.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	HDGM	6/8/2018	7.18
			Dip Angle (°)
			59.98
			Field Strength (nT)
			47,991.60

Design	Prelim Plan A		
Audit Notes:			
Version:	Phase: PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°)
			90.61

Survey Tool Program	Date 6/11/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
0.00	1,850.00	Prelim Plan A (OH)	MWD+IFR1
1,850.00	5,400.00	Prelim Plan A (OH)	MWD+IFR1
5,400.00	10,000.00	Prelim Plan A (OH)	MWD+IFR1
10,000.00	15,347.60	Prelim Plan A (OH)	MWD+IFR1
			Description
			OWSG MWD + IFR1
			OWSG MWD + IFR1
			OWSG MWD + IFR1
			OWSG MWD + IFR1

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)
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
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00

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North Reference: Grid
Survey Calculation Method: Minimum Curvature
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Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Buid Rate (°/100usft)	Turn Rate (°/100usft)
600.00	1.00	270.00	599.99	0.00	-0.87	-0.87	1.00	1.00	0.00
700.00	2.00	270.00	699.96	0.00	-3.49	-3.49	1.00	1.00	0.00
800.00	2.00	270.00	799.90	0.00	-6.98	-6.98	0.00	0.00	0.00
900.00	2.00	270.00	899.84	0.00	-10.47	-10.47	0.00	0.00	0.00
1,000.00	2.97	312.06	999.75	1.74	-14.14	-14.16	2.00	0.97	42.06
1,100.00	4.65	328.82	1,099.53	6.94	-18.16	-18.24	2.00	1.68	16.75
1,200.00	6.52	336.38	1,199.05	15.61	-22.54	-22.70	2.00	1.86	7.56
1,300.00	8.44	340.55	1,298.20	27.73	-27.25	-27.55	2.00	1.93	4.17
1,379.97	10.00	342.73	1,377.13	39.90	-31.27	-31.70	2.00	1.95	2.72
1,400.00	10.00	342.73	1,396.86	43.22	-32.31	-32.76	0.00	0.00	0.00
1,500.00	10.00	342.73	1,495.34	59.81	-37.46	-38.10	0.00	0.00	0.00
1,600.00	10.00	342.73	1,593.82	76.40	-42.62	-43.43	0.00	0.00	0.00
1,700.00	10.00	342.73	1,692.29	92.98	-47.78	-48.77	0.00	0.00	0.00
1,800.00	10.00	342.73	1,790.77	109.57	-52.94	-54.10	0.00	0.00	0.00
1,900.00	10.00	342.73	1,889.25	126.16	-58.09	-59.43	0.00	0.00	0.00
2,000.00	10.00	342.73	1,987.73	142.75	-63.25	-64.77	0.00	0.00	0.00
2,100.00	10.00	342.73	2,086.21	159.33	-68.41	-70.10	0.00	0.00	0.00
2,200.00	10.00	342.73	2,184.69	175.92	-73.57	-75.44	0.00	0.00	0.00
2,300.00	10.00	342.73	2,283.17	192.51	-78.73	-80.77	0.00	0.00	0.00
2,400.00	10.00	342.73	2,381.65	209.09	-83.88	-86.10	0.00	0.00	0.00
2,500.00	10.00	342.73	2,480.13	225.68	-89.04	-91.44	0.00	0.00	0.00
2,600.00	10.00	342.73	2,578.61	242.27	-94.20	-96.77	0.00	0.00	0.00
2,700.00	10.00	342.73	2,677.09	258.86	-99.36	-102.11	0.00	0.00	0.00
2,800.00	10.00	342.73	2,775.57	275.44	-104.51	-107.44	0.00	0.00	0.00
2,900.00	10.00	342.73	2,874.05	292.03	-109.67	-112.77	0.00	0.00	0.00
3,000.00	10.00	342.73	2,972.53	308.62	-114.83	-118.11	0.00	0.00	0.00
3,100.00	10.00	342.73	3,071.01	325.21	-119.99	-123.44	0.00	0.00	0.00
3,200.00	10.00	342.73	3,169.49	341.79	-125.15	-128.78	0.00	0.00	0.00
3,300.00	10.00	342.73	3,267.97	358.38	-130.30	-134.11	0.00	0.00	0.00
3,400.00	10.00	342.73	3,366.45	374.97	-135.46	-139.45	0.00	0.00	0.00
3,500.00	10.00	342.73	3,464.93	391.55	-140.62	-144.78	0.00	0.00	0.00
3,600.00	10.00	342.73	3,563.41	408.14	-145.78	-150.11	0.00	0.00	0.00
3,700.00	10.00	342.73	3,661.89	424.73	-150.93	-155.45	0.00	0.00	0.00
3,800.00	10.00	342.73	3,760.37	441.32	-156.09	-160.78	0.00	0.00	0.00
3,900.00	10.00	342.73	3,858.85	457.90	-161.25	-166.12	0.00	0.00	0.00
4,000.00	10.00	342.73	3,957.33	474.49	-166.41	-171.45	0.00	0.00	0.00
4,100.00	10.00	342.73	4,055.81	491.08	-171.57	-176.78	0.00	0.00	0.00
4,200.00	10.00	342.73	4,154.29	507.66	-176.72	-182.12	0.00	0.00	0.00
4,300.00	10.00	342.73	4,252.77	524.25	-181.88	-187.45	0.00	0.00	0.00
4,400.00	10.00	342.73	4,351.25	540.84	-187.04	-192.79	0.00	0.00	0.00
4,500.00	10.00	342.73	4,449.73	557.43	-192.20	-198.12	0.00	0.00	0.00
4,600.00	10.00	342.73	4,548.21	574.01	-197.35	-203.45	0.00	0.00	0.00

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4,700.00	10.00	342.73	4,646.69	590.60	-202.51	-208.79	0.00	0.00	0.00
4,800.00	10.00	342.73	4,745.17	607.19	-207.67	-214.12	0.00	0.00	0.00
4,900.00	10.00	342.73	4,843.65	623.78	-212.83	-219.46	0.00	0.00	0.00
5,000.00	10.00	342.73	4,942.13	640.36	-217.99	-224.79	0.00	0.00	0.00
5,100.00	10.00	342.73	5,040.61	656.95	-223.14	-230.12	0.00	0.00	0.00
5,202.32	10.00	342.73	5,141.37	673.92	-228.42	-235.58	0.00	0.00	0.00
5,300.00	8.05	342.73	5,237.84	688.56	-232.97	-240.29	2.00	-2.00	0.00
5,400.00	6.05	342.73	5,337.08	700.27	-236.61	-244.06	2.00	-2.00	0.00
5,500.00	4.05	342.73	5,436.68	708.68	-239.23	-246.76	2.00	-2.00	0.00
5,600.00	2.05	342.73	5,536.54	713.76	-240.81	-248.39	2.00	-2.00	0.00
5,702.49	0.00	0.00	5,639.00	715.51	-241.35	-248.96	2.00	-2.00	0.00
5,800.00	0.00	0.00	5,736.51	715.51	-241.35	-248.96	0.00	0.00	0.00
5,900.00	0.00	0.00	5,836.51	715.51	-241.35	-248.96	0.00	0.00	0.00
6,000.00	0.00	0.00	5,936.51	715.51	-241.35	-248.96	0.00	0.00	0.00
6,100.00	0.00	0.00	6,036.51	715.51	-241.35	-248.96	0.00	0.00	0.00
6,200.00	0.00	0.00	6,136.51	715.51	-241.35	-248.96	0.00	0.00	0.00
6,300.00	0.00	0.00	6,236.51	715.51	-241.35	-248.96	0.00	0.00	0.00
6,400.00	0.00	0.00	6,336.51	715.51	-241.35	-248.96	0.00	0.00	0.00
6,500.00	0.00	0.00	6,436.51	715.51	-241.35	-248.96	0.00	0.00	0.00
6,600.00	0.00	0.00	6,536.51	715.51	-241.35	-248.96	0.00	0.00	0.00
6,700.00	0.00	0.00	6,636.51	715.51	-241.35	-248.96	0.00	0.00	0.00
6,800.00	0.00	0.00	6,736.51	715.51	-241.35	-248.96	0.00	0.00	0.00
6,900.00	0.00	0.00	6,836.51	715.51	-241.35	-248.96	0.00	0.00	0.00
7,000.00	0.00	0.00	6,936.51	715.51	-241.35	-248.96	0.00	0.00	0.00
7,100.00	0.00	0.00	7,036.51	715.51	-241.35	-248.96	0.00	0.00	0.00
7,200.00	0.00	0.00	7,136.51	715.51	-241.35	-248.96	0.00	0.00	0.00
7,300.00	0.00	0.00	7,236.51	715.51	-241.35	-248.96	0.00	0.00	0.00
7,400.00	0.00	0.00	7,336.51	715.51	-241.35	-248.96	0.00	0.00	0.00
7,500.00	0.00	0.00	7,436.51	715.51	-241.35	-248.96	0.00	0.00	0.00
7,600.00	0.00	0.00	7,536.51	715.51	-241.35	-248.96	0.00	0.00	0.00
7,700.00	0.00	0.00	7,636.51	715.51	-241.35	-248.96	0.00	0.00	0.00
7,800.00	0.00	0.00	7,736.51	715.51	-241.35	-248.96	0.00	0.00	0.00
7,900.00	0.00	0.00	7,836.51	715.51	-241.35	-248.96	0.00	0.00	0.00
8,000.00	0.00	0.00	7,936.51	715.51	-241.35	-248.96	0.00	0.00	0.00
8,100.00	0.00	0.00	8,036.51	715.51	-241.35	-248.96	0.00	0.00	0.00
8,200.00	0.00	0.00	8,136.51	715.51	-241.35	-248.96	0.00	0.00	0.00
8,300.00	0.00	0.00	8,236.51	715.51	-241.35	-248.96	0.00	0.00	0.00
8,400.00	0.00	0.00	8,336.51	715.51	-241.35	-248.96	0.00	0.00	0.00
8,500.00	0.00	0.00	8,436.51	715.51	-241.35	-248.96	0.00	0.00	0.00
8,600.00	0.00	0.00	8,536.51	715.51	-241.35	-248.96	0.00	0.00	0.00
8,700.00	0.00	0.00	8,636.51	715.51	-241.35	-248.96	0.00	0.00	0.00
8,800.00	0.00	0.00	8,736.51	715.51	-241.35	-248.96	0.00	0.00	0.00

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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)
8,900.00	0.00	0.00	8,836.51	715.51	-241.35	-248.96	0.00	0.00	0.00
9,000.00	0.00	0.00	8,936.51	715.51	-241.35	-248.96	0.00	0.00	0.00
9,100.00	0.00	0.00	9,036.51	715.51	-241.35	-248.96	0.00	0.00	0.00
9,200.00	0.00	0.00	9,136.51	715.51	-241.35	-248.96	0.00	0.00	0.00
9,300.00	0.00	0.00	9,236.51	715.51	-241.35	-248.96	0.00	0.00	0.00
9,400.00	0.00	0.00	9,336.51	715.51	-241.35	-248.96	0.00	0.00	0.00
9,500.00	0.00	0.00	9,436.51	715.51	-241.35	-248.96	0.00	0.00	0.00
9,600.00	0.00	0.00	9,536.51	715.51	-241.35	-248.96	0.00	0.00	0.00
9,700.00	0.00	0.00	9,636.51	715.51	-241.35	-248.96	0.00	0.00	0.00
9,800.00	0.00	0.00	9,736.51	715.51	-241.35	-248.96	0.00	0.00	0.00
9,900.00	0.00	0.00	9,836.51	715.51	-241.35	-248.96	0.00	0.00	0.00
9,920.49	0.00	0.00	9,857.00	715.51	-241.35	-248.96	0.00	0.00	0.00
FiddleFee#8H]KOP									
9,950.00	2.95	90.61	9,886.50	715.50	-240.59	-248.20	10.00	10.00	0.00
10,000.00	7.95	90.61	9,936.26	715.45	-235.84	-243.45	10.00	10.00	0.00
10,050.00	12.95	90.61	9,985.41	715.36	-226.78	-234.38	10.00	10.00	0.00
10,100.00	17.95	90.61	10,033.59	715.21	-213.46	-221.06	10.00	10.00	0.00
10,150.00	22.95	90.61	10,080.42	715.03	-196.00	-203.60	10.00	10.00	0.00
10,175.86	25.54	90.61	10,104.00	714.92	-185.38	-192.98	10.00	10.00	0.00
FiddleFee#8H]FTP									
10,200.00	27.95	90.61	10,125.56	714.80	-174.52	-182.12	10.00	10.00	0.00
10,250.00	32.95	90.61	10,168.65	714.53	-149.19	-156.79	10.00	10.00	0.00
10,300.00	37.95	90.61	10,209.36	714.23	-120.20	-127.79	10.00	10.00	0.00
10,350.00	42.95	90.61	10,247.40	713.88	-87.77	-95.36	10.00	10.00	0.00
10,400.00	47.95	90.61	10,282.47	713.51	-52.15	-59.74	10.00	10.00	0.00
10,450.00	52.95	90.61	10,314.29	713.10	-13.61	-21.20	10.00	10.00	0.00
10,500.00	57.95	90.61	10,342.64	712.66	27.56	19.97	10.00	10.00	0.00
10,550.00	62.95	90.61	10,367.29	712.20	71.04	63.45	10.00	10.00	0.00
10,600.00	67.95	90.61	10,388.06	711.72	116.50	108.92	10.00	10.00	0.00
10,650.00	72.95	90.61	10,404.78	711.23	163.60	156.02	10.00	10.00	0.00
10,700.00	77.95	90.61	10,417.34	710.71	211.98	204.40	10.00	10.00	0.00
10,750.00	82.95	90.61	10,425.63	710.19	261.27	253.69	10.00	10.00	0.00
10,800.00	87.95	90.61	10,429.59	709.66	311.09	303.52	10.00	10.00	0.00
10,808.52	88.80	90.61	10,429.83	709.57	319.61	312.04	10.00	10.00	0.00
10,900.00	88.80	90.61	10,431.74	708.61	411.06	403.50	0.00	0.00	0.00
11,000.00	88.80	90.61	10,433.83	707.55	511.04	503.47	0.00	0.00	0.00
11,100.00	88.80	90.61	10,435.92	706.49	611.01	603.45	0.00	0.00	0.00
11,200.00	88.80	90.61	10,438.01	705.43	710.98	703.43	0.00	0.00	0.00
11,300.00	88.80	90.61	10,440.09	704.38	810.95	803.41	0.00	0.00	0.00
11,400.00	88.80	90.61	10,442.18	703.32	910.93	903.39	0.00	0.00	0.00
11,500.00	88.80	90.61	10,444.27	702.26	1,010.90	1,003.37	0.00	0.00	0.00
11,600.00	88.80	90.61	10,446.36	701.20	1,110.87	1,103.34	0.00	0.00	0.00

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11,700.00	88.80	90.61	10,448.45	700.15	1,210.84	1,203.32	0.00	0.00	0.00
11,800.00	88.80	90.61	10,450.53	699.09	1,310.82	1,303.30	0.00	0.00	0.00
11,900.00	88.80	90.61	10,452.62	698.03	1,410.79	1,403.28	0.00	0.00	0.00
12,000.00	88.80	90.61	10,454.71	696.97	1,510.76	1,503.26	0.00	0.00	0.00
12,100.00	88.80	90.61	10,456.80	695.92	1,610.74	1,603.24	0.00	0.00	0.00
12,200.00	88.80	90.61	10,458.88	694.86	1,710.71	1,703.21	0.00	0.00	0.00
12,300.00	88.80	90.61	10,460.97	693.80	1,810.68	1,803.19	0.00	0.00	0.00
12,400.00	88.80	90.61	10,463.06	692.74	1,910.65	1,903.17	0.00	0.00	0.00
12,500.00	88.80	90.61	10,465.15	691.69	2,010.63	2,003.15	0.00	0.00	0.00
12,600.00	88.80	90.61	10,467.24	690.63	2,110.60	2,103.13	0.00	0.00	0.00
12,700.00	88.80	90.61	10,469.32	689.57	2,210.57	2,203.10	0.00	0.00	0.00
12,800.00	88.80	90.61	10,471.41	688.51	2,310.54	2,303.08	0.00	0.00	0.00
12,900.00	88.80	90.61	10,473.50	687.46	2,410.52	2,403.06	0.00	0.00	0.00
13,000.00	88.80	90.61	10,475.59	686.40	2,510.49	2,503.04	0.00	0.00	0.00
13,100.00	88.80	90.61	10,477.67	685.34	2,610.46	2,603.02	0.00	0.00	0.00
13,200.00	88.80	90.61	10,479.76	684.28	2,710.43	2,703.00	0.00	0.00	0.00
13,300.00	88.80	90.61	10,481.85	683.23	2,810.41	2,802.97	0.00	0.00	0.00
13,400.00	88.80	90.61	10,483.94	682.17	2,910.38	2,902.95	0.00	0.00	0.00
13,500.00	88.80	90.61	10,486.03	681.11	3,010.35	3,002.93	0.00	0.00	0.00
13,600.00	88.80	90.61	10,488.11	680.05	3,110.32	3,102.91	0.00	0.00	0.00
13,700.00	88.80	90.61	10,490.20	678.99	3,210.30	3,202.89	0.00	0.00	0.00
13,800.00	88.80	90.61	10,492.29	677.94	3,310.27	3,302.86	0.00	0.00	0.00
13,900.00	88.80	90.61	10,494.38	676.88	3,410.24	3,402.84	0.00	0.00	0.00
14,000.00	88.80	90.61	10,496.46	675.82	3,510.21	3,502.82	0.00	0.00	0.00
14,100.00	88.80	90.61	10,498.55	674.76	3,610.19	3,602.80	0.00	0.00	0.00
14,200.00	88.80	90.61	10,500.64	673.71	3,710.16	3,702.78	0.00	0.00	0.00
14,300.00	88.80	90.61	10,502.73	672.65	3,810.13	3,802.76	0.00	0.00	0.00
14,400.00	88.80	90.61	10,504.82	671.59	3,910.11	3,902.73	0.00	0.00	0.00
14,500.00	88.80	90.61	10,506.90	670.53	4,010.08	4,002.71	0.00	0.00	0.00
14,600.00	88.80	90.61	10,508.99	669.48	4,110.05	4,102.69	0.00	0.00	0.00
14,700.00	88.80	90.61	10,511.08	668.42	4,210.02	4,202.67	0.00	0.00	0.00
14,800.00	88.80	90.61	10,513.17	667.36	4,310.00	4,302.65	0.00	0.00	0.00
14,900.00	88.80	90.61	10,515.26	666.30	4,409.97	4,402.62	0.00	0.00	0.00
15,000.00	88.80	90.61	10,517.34	665.25	4,509.94	4,502.60	0.00	0.00	0.00
15,100.00	88.80	90.61	10,519.43	664.19	4,609.91	4,602.58	0.00	0.00	0.00
15,200.00	88.80	90.61	10,521.52	663.13	4,709.89	4,702.56	0.00	0.00	0.00
15,300.00	88.80	90.61	10,523.61	662.07	4,809.86	4,802.54	0.00	0.00	0.00
15,347.60	88.80	90.61	10,524.60	661.57	4,857.45	4,850.13	0.00	0.00	0.00

[FiddleFee#8H]LTP/BHL



Pro Directional Survey Report



Marathon Oil

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WD #8H
Project:	Eddy County, NM	TVD Reference:	Well @ 3023.00usft (GL: 2996' KB: 27' (Precision582))
Site:	Fiddle Fee 24-28-23 (3-4-7-8)	MD Reference:	Well @ 3023.00usft (GL: 2996' KB: 27' (Precision582))
Well:	WD #8H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	WellPlanner1

Design Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FiddleFee#8H]KOP - plan hits target center - Point	0.00	0.00	9,857.00	715.51	-241.35	439,437.76	582,579.18	32.207850	-104.066341
FiddleFee#8H]FTP - plan misses target center by 242.04usft at 10181.32usft MD (10108.92 TVD, 714.89 N, -183.00 E) - Point	0.00	0.00	10,000.0 0	713.00	33.14	439,435.25	582,853.67	32.207841	-104.065454
[FiddleFee#8H]LTP/BHL - plan hits target center - Point	0.00	0.00	10,524.6 0	661.57	4,857.45	439,383.82	587,677.98	32.207665	-104.049856

Checked By: _____ Approved By: _____ Date: _____

**Marathon Oil
Eddy County, NM
Fiddle Fee 24-28-23 (3-4-7-8)
WD #8H
Prelim Plan A
GL: 2996' KB: 27' (Precision582)**

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

RKB Elevation: Well @ 3023.00ust (GL: 2996' KB: 27' (Precision582))

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	438722.25	582820.53	32.205881	-104.065566	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
FiddleFee#8H KOP	9857.00	715.51	-241.35	439437.76	582579.18
FiddleFee#8H FTP	10000.00	713.00	33.14	439435.25	582853.67
FiddleFee#8H LTP/BHL	10524.60	661.57	4857.45	439383.62	587677.98



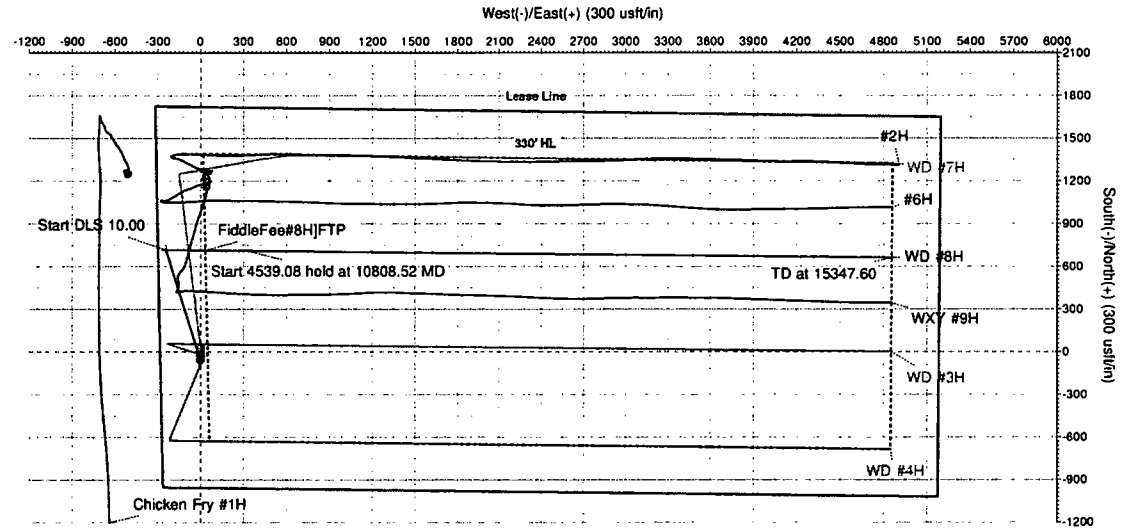
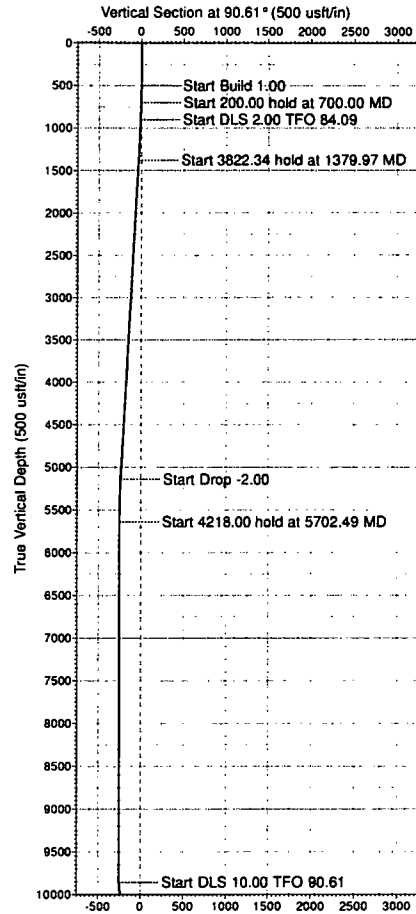
Azimuths to Grid North
True North: -0.14°
Magnetic North: 7.04°

Magnetic Field
Strength: 47991.8nT
Dip Angle: 59.88°
Date: 8/8/2018
Model: HDGM

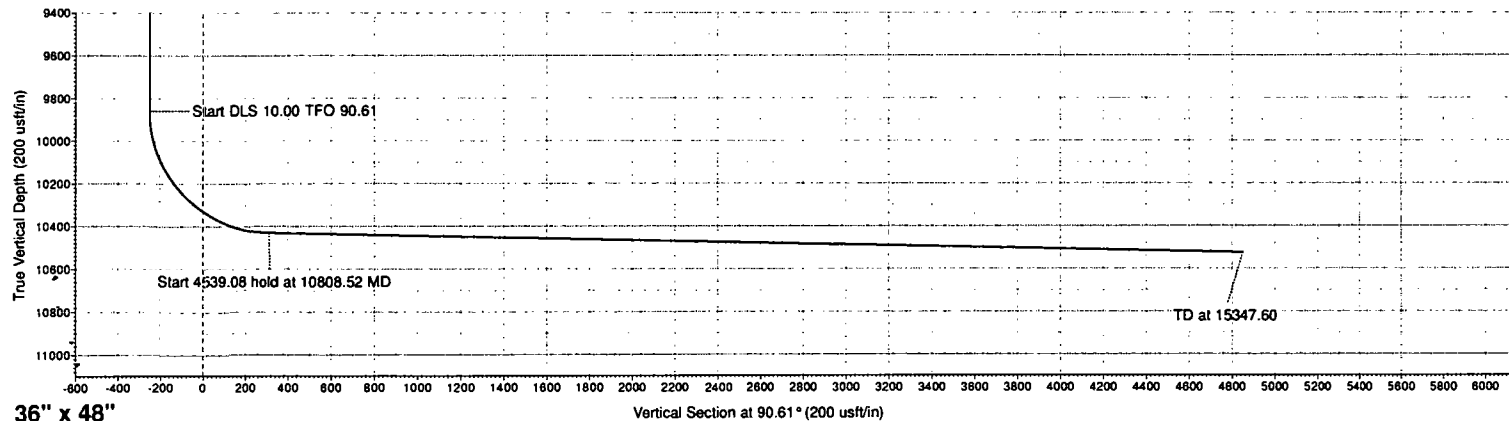
Azimuth Corrections
Total Magnetic Corr. (M to G): 7.04°
Declination (M to T): 7.18° East

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Diag	Vsect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00
3	700.00	2.00	270.00	699.96	0.00	-3.49	1.00	-3.49
4	900.00	2.00	270.00	899.84	0.00	-10.47	0.00	-10.47
5	1379.97	10.00	342.73	1377.13	39.90	-31.27	2.00	-31.70
6	5202.32	10.00	342.73	5141.37	673.92	-228.42	0.00	-235.58
7	5702.49	0.00	0.00	5639.00	715.51	-241.35	2.00	-248.96
8	9920.49	0.00	0.00	9857.00	715.51	-241.35	0.00	-248.96
9	10808.52	88.80	90.61	10429.83	709.57	319.61	10.00	312.04
10	15347.60	88.80	90.61	10524.60	661.57	4857.45	0.00	4850.13



Target Line: 10423' TVD @ 0° VS: 88.8° INC



**Marathon Oil
Corporation**

