

NM OIL CONSERVATION
ARTESIA DISTRICT

NOV 21 2017

RECEIVED



Marathon Oil

Marathon Oil

Eddy County, NM

Southern Comfort 25-36 State X

No. 1H

OH

30-015-44332

Design: OH 81' - 16955' PTB 17001'

Survey Report

19 September, 2017



Provide Signature Page for
Directional Survey



Professional Directional
Survey Report



Marathon Oil Eddy County, NM Southern Comfort 25-36 State X No. 1H OH OH 81' - 16955' PTB 17001'		Well No. 1H Well @ 2941.00usft (GL: 2916' KB: 25' (H&P498)) Well @ 2941.00usft (GL: 2916' KB: 25' (H&P498)) Grid Minimum Curvature WellPlanner1				
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					
Southern Comfort 25-36 State X						
Site Position:		Northing:	432,195.37 usft			
From:	Map	Easting:	592,068.17 usft			
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "			
		Latitude:	32.1878720			
		Longitude:	-104.0357263			
		Grid Convergence:	0.16 "			
No. 1H						
Well Position	+N-S	0.00 usft	Northing:	432,193.82 usft	Latitude:	32.1878753
	+E-W	0.00 usft	Easting:	591,057.79 usft	Longitude:	-104.0389923
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	2,916.00 usft	
OH						
HDGM						
9/11/2017						
7.20						
60.02						
48,085.40						
OH 81' - 16955' PTB 17001'						
Audit Notes:						
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00	
	0.00	0.00	0.00	179.88		



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Survey Report



Marathon Oil Eddy County, NM Southern Comfort 25-36 State X No. 1H OH OH 81' - 16955' PTB 17001'	Well No. 1H Well @ 2941.00ust (GL: 2916' KB: 25' (H&P498)) Well @ 2941.00ust (GL: 2916' KB: 25' (H&P498)) Grid Minimum Curvature WellPlanner1
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Date 9/19/2017										
81.00	429.00	Survey #1 (OH)		MWD+IFR1		OWSG MWD + IFR1				
509.00	17,001.00	Survey #2 (OH)		MWD+IFR1		OWSG MWD + IFR1				
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	432,193.82	591,057.79
81.00	0.78	357.33	81.00	-0.55	0.55	-0.03	0.55	357.33	432,194.37	591,057.76
183.00	2.62	14.62	182.95	-3.50	3.50	0.53	3.54	8.62	432,197.32	591,058.32
269.00	3.52	5.69	268.82	-8.03	8.03	1.29	8.13	9.12	432,201.85	591,059.08
356.00	4.03	13.83	355.64	-13.65	13.66	2.28	13.85	9.50	432,207.48	591,060.07
429.00	3.54	17.26	428.48	-18.29	18.30	3.57	18.64	11.03	432,212.12	591,061.36
509.00	5.10	18.30	508.25	-24.02	24.03	5.42	24.64	12.70	432,217.85	591,063.21
601.00	5.10	7.60	599.89	-31.95	31.97	7.24	32.78	12.76	432,225.79	591,065.03
693.00	3.30	0.80	691.63	-38.65	38.67	7.82	39.45	11.43	432,232.49	591,065.61
785.00	0.80	332.60	783.57	-41.87	41.89	7.56	42.57	10.23	432,235.71	591,065.35
877.00	1.70	237.50	875.55	-41.71	41.73	6.11	42.17	8.33	432,235.55	591,063.90
970.00	2.20	246.70	968.50	-40.27	40.28	3.31	40.41	4.70	432,234.10	591,061.10
1,062.00	2.20	249.20	1,060.43	-38.95	38.95	0.04	38.95	0.05	432,232.77	591,057.83
1,156.00	2.20	251.30	1,154.36	-37.74	37.73	-3.36	37.88	354.91	432,231.55	591,054.43
1,250.00	1.70	250.10	1,248.31	-36.69	36.68	-6.38	37.23	350.14	432,230.50	591,051.41
1,345.00	1.00	243.50	1,343.28	-35.85	35.83	-8.45	36.81	346.74	432,229.65	591,049.34
1,440.00	0.80	239.60	1,438.27	-35.15	35.13	-9.78	36.46	344.47	432,228.95	591,048.03
1,534.00	1.70	280.40	1,532.25	-35.07	35.05	-11.70	36.95	341.54	432,228.87	591,046.09
1,629.00	2.60	290.40	1,627.18	-36.08	36.05	-15.10	39.09	337.27	432,229.87	591,042.69
1,724.00	2.20	271.60	1,722.10	-36.89	36.85	-18.94	41.44	332.79	432,230.67	591,038.85
1,818.00	2.20	230.70	1,816.03	-35.81	35.76	-22.14	42.06	328.23	432,229.58	591,035.65



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No. 1H
OH
OH 81' - 16955' PTB 17001'

Well No. 1H
Well @ 2941.00ust (GL: 2916' KB: 25' (H&P498))
Well @ 2941.00ust (GL: 2916' KB: 25' (H&P498))
Grid
Minimum Curvature
WellPlanner1

1,913.00	2.50	196.20	1,910.96	-32.67	32.62	-24.13	40.57	323.50	432,226.44	591,033.66
2,008.00	2.80	171.90	2,005.86	-28.38	28.33	-24.39	37.38	319.28	432,222.15	591,033.40
2,102.00	2.70	159.10	2,099.75	-24.04	23.99	-23.27	33.42	315.87	432,217.81	591,034.52
2,197.00	3.20	147.80	2,194.63	-19.70	19.65	-21.06	28.81	313.02	432,213.47	591,036.73
2,291.00	3.20	137.00	2,288.48	-15.55	15.51	-17.87	23.67	310.96	432,209.33	591,039.92
2,386.00	2.60	132.60	2,383.36	-12.15	12.12	-14.48	18.88	309.93	432,205.94	591,043.31
2,480.00	2.60	129.90	2,477.26	-9.33	9.31	-11.27	14.62	309.54	432,203.13	591,046.52
2,575.00	2.70	130.70	2,572.16	-6.48	6.46	-7.92	10.23	309.21	432,200.28	591,049.87
2,666.00	2.40	135.50	2,663.07	-3.72	3.71	-4.96	6.20	306.76	432,197.53	591,052.83
2,761.00	1.00	159.10	2,758.03	-1.52	1.52	-3.27	3.61	294.83	432,195.34	591,054.52
2,856.00	0.60	178.10	2,853.02	-0.25	0.24	-2.96	2.97	274.70	432,194.06	591,054.83
2,950.00	0.80	180.00	2,947.01	0.90	-0.90	-2.95	3.08	252.92	432,192.92	591,054.84
3,045.00	0.60	160.60	3,042.01	2.03	-2.04	-2.78	3.45	233.77	432,191.78	591,055.01
3,139.00	0.60	147.50	3,136.00	2.91	-2.92	-2.35	3.75	218.89	432,190.90	591,055.44
3,234.00	0.90	125.30	3,230.99	3.76	-3.77	-1.48	4.05	201.40	432,190.05	591,056.31
3,329.00	1.00	133.20	3,325.98	4.77	-4.77	-0.26	4.77	183.16	432,189.05	591,057.53
3,423.00	1.10	331.30	3,419.97	4.54	-4.54	-0.10	4.54	181.24	432,189.28	591,057.69
3,517.00	1.30	323.60	3,513.95	2.88	-2.89	-1.16	3.11	201.97	432,190.93	591,056.63
3,612.00	0.20	306.50	3,608.94	1.92	-1.92	-1.94	2.73	225.25	432,191.90	591,055.85
3,707.00	0.30	303.90	3,703.94	1.68	-1.68	-2.28	2.83	233.53	432,192.14	591,055.51
3,802.00	0.20	316.50	3,798.94	1.42	-1.42	-2.60	2.96	241.27	432,192.40	591,055.19
3,896.00	0.30	317.30	3,892.94	1.12	-1.12	-2.88	3.09	248.66	432,192.70	591,054.91
3,991.00	0.40	344.00	3,987.94	0.62	-0.62	-3.14	3.20	258.78	432,193.20	591,054.65
4,085.00	0.50	306.70	4,081.94	0.05	-0.06	-3.56	3.56	269.01	432,193.76	591,054.23
4,180.00	0.50	316.60	4,176.93	-0.50	0.49	-4.17	4.20	276.66	432,194.31	591,053.62
4,275.00	0.70	294.50	4,271.93	-1.04	1.03	-4.99	5.09	281.66	432,194.85	591,052.80
4,369.00	0.70	300.00	4,365.92	-1.57	1.55	-6.01	6.20	284.51	432,195.37	591,051.78



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OH 81' - 16955' PTB 17001'

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Minimum Curvature
WellPlanner1

4,464.00	0.80	291.20	4,460.91	-2.10	2.08	-7.13	7.43	286.30	432,195.90	591,050.66
4,558.00	0.90	286.00	4,554.90	-2.54	2.52	-8.45	8.82	286.64	432,196.34	591,049.34
4,653.00	0.80	277.90	4,649.89	-2.84	2.82	-9.82	10.22	286.03	432,196.64	591,047.97
4,748.00	0.90	282.00	4,744.88	-3.09	3.07	-11.21	11.62	285.31	432,196.89	591,046.58
4,843.00	1.00	280.90	4,839.87	-3.41	3.38	-12.75	13.19	284.84	432,197.20	591,045.04
4,937.00	1.00	278.60	4,933.85	-3.69	3.66	-14.37	14.83	284.28	432,197.48	591,043.42
5,032.00	1.00	115.50	5,028.85	-3.45	3.42	-14.44	14.84	283.34	432,197.24	591,043.35
5,127.00	1.10	111.40	5,123.83	-2.76	2.74	-12.84	13.13	282.02	432,196.56	591,044.95
5,221.00	1.50	333.40	5,217.82	-3.53	3.51	-12.55	13.04	285.60	432,197.33	591,045.24
5,316.00	3.10	318.00	5,312.74	-6.56	6.53	-14.83	16.20	293.76	432,200.35	591,042.96
5,411.00	4.60	315.50	5,407.53	-11.19	11.15	-19.22	22.22	300.13	432,204.97	591,038.57
5,505.00	4.50	314.30	5,501.23	-16.47	16.42	-24.50	29.49	303.83	432,210.24	591,033.29
5,600.00	5.50	322.70	5,595.87	-22.70	22.64	-29.93	37.53	307.11	432,216.46	591,027.86
5,695.00	5.50	323.80	5,690.43	-30.01	29.94	-35.37	46.34	310.24	432,223.76	591,022.42
5,790.00	5.30	322.00	5,785.01	-37.15	37.07	-40.76	55.10	312.28	432,230.89	591,017.03
5,884.00	5.20	320.50	5,878.62	-43.87	43.78	-46.15	63.61	313.49	432,237.60	591,011.64
5,979.00	4.90	321.20	5,973.25	-50.37	50.26	-51.43	71.91	314.34	432,244.08	591,006.36
6,073.00	4.80	319.80	6,066.91	-56.51	56.39	-56.48	79.81	314.95	432,250.21	591,001.31
6,168.00	4.50	319.00	6,161.60	-62.37	62.24	-61.49	87.49	315.35	432,256.06	590,996.30
6,263.00	4.50	318.30	6,256.30	-67.98	67.84	-66.42	94.94	315.61	432,261.66	590,991.37
6,357.00	4.00	320.30	6,350.05	-73.26	73.11	-70.96	101.89	315.85	432,266.93	590,986.83
6,452.00	3.60	329.10	6,444.84	-78.38	78.22	-74.61	108.10	316.35	432,272.04	590,983.18
6,546.00	3.20	324.10	6,538.67	-83.04	82.88	-77.67	113.58	316.86	432,276.70	590,980.12
6,641.00	2.60	287.20	6,633.56	-85.83	85.66	-81.28	118.09	316.50	432,279.48	590,976.51
6,735.00	1.70	244.50	6,727.50	-85.87	85.69	-84.58	120.40	315.38	432,279.51	590,973.21
6,830.00	0.50	194.90	6,822.48	-84.87	84.69	-85.95	120.66	314.57	432,278.51	590,971.84
6,924.00	1.50	152.40	6,916.46	-83.38	83.20	-85.49	119.29	314.22	432,277.02	590,972.30



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Southern Comfort 25-36 State X
No. 1H
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OH 81' - 16955' PTB 17001'

Well No. 1H
Well @ 2941.00uoft (GL: 2916' KB: 25' (H&P498))
Well @ 2941.00uoft (GL: 2916' KB: 25' (H&P498))
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Minimum Curvature
WellPlanner1

7,019.00	1.90	110.10	7,011.43	-81.73	81.56	-83.43	116.67	314.35	432,275.38	590,974.36
7,113.00	2.20	140.80	7,105.37	-79.79	79.62	-80.83	113.46	314.57	432,273.44	590,976.96
7,208.00	1.20	164.40	7,200.33	-77.42	77.25	-79.41	110.79	314.21	432,271.07	590,978.38
7,303.00	0.90	251.20	7,295.32	-76.22	76.05	-79.85	110.27	313.61	432,269.87	590,977.94
7,397.00	0.60	27.70	7,389.31	-76.42	76.25	-80.32	110.75	313.51	432,270.07	590,977.47
7,492.00	0.50	10.60	7,484.31	-77.27	77.10	-80.01	111.11	313.94	432,270.92	590,977.78
7,586.00	0.70	16.30	7,578.30	-78.22	78.05	-79.78	111.61	314.38	432,271.87	590,978.01
7,681.00	0.30	68.40	7,673.30	-78.87	78.70	-79.38	111.78	314.75	432,272.52	590,978.41
7,775.00	0.20	242.00	7,767.30	-78.88	78.72	-79.30	111.73	314.79	432,272.54	590,978.49
7,870.00	1.40	16.60	7,862.29	-79.92	79.75	-79.11	112.33	315.23	432,273.57	590,978.68
7,965.00	0.30	290.80	7,957.28	-81.12	80.95	-79.01	113.12	315.69	432,274.77	590,978.78
8,060.00	1.80	297.80	8,052.26	-81.90	81.73	-80.57	114.77	315.41	432,275.55	590,977.22
8,154.00	2.70	317.40	8,146.19	-84.23	84.05	-83.37	118.39	315.23	432,277.87	590,974.42
8,249.00	1.70	321.70	8,241.12	-86.99	86.81	-85.76	122.02	315.35	432,280.63	590,972.03
8,343.00	2.70	349.60	8,335.05	-90.26	90.08	-87.02	125.25	315.99	432,283.90	590,970.77
8,438.00	2.60	336.50	8,429.95	-94.44	94.26	-88.28	129.14	316.87	432,288.08	590,969.51
8,532.00	1.90	0.20	8,523.88	-97.96	97.77	-89.13	132.30	317.65	432,291.59	590,968.66
8,627.00	1.30	335.00	8,618.84	-100.51	100.32	-89.58	134.49	318.24	432,294.14	590,968.21
8,722.00	0.60	196.80	8,713.83	-101.01	100.82	-90.18	135.27	318.19	432,294.64	590,967.61
8,816.00	2.00	159.30	8,807.81	-99.00	98.82	-89.74	133.48	317.76	432,292.64	590,968.05
8,911.00	2.90	171.90	8,902.72	-95.07	94.89	-88.82	129.97	316.89	432,288.71	590,968.97
9,006.00	2.60	178.00	8,997.61	-90.54	90.35	-88.40	126.41	315.62	432,284.17	590,969.39
9,100.00	5.50	177.30	9,091.37	-83.90	83.72	-88.12	121.55	313.53	432,277.54	590,969.67
9,147.00	10.70	174.20	9,137.88	-77.31	77.13	-87.57	116.69	311.37	432,270.95	590,970.22
9,195.00	15.40	173.00	9,184.63	-66.54	66.36	-86.34	108.90	307.55	432,260.18	590,971.45
9,242.00	21.20	175.30	9,229.23	-51.86	51.68	-84.88	99.38	301.34	432,245.50	590,972.91
9,289.00	26.70	176.30	9,272.17	-32.84	32.66	-83.50	89.66	291.36	432,226.48	590,974.29



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OH 81' - 16955' PTB 17001'

Well No. 1H
Well @ 2941.00usft (GL: 2916' KB: 25' (H&P498))
Well @ 2941.00usft (GL: 2916' KB: 25' (H&P498))
Grid
Minimum Curvature
WellPlanner1

9,384.00	36.10	177.60	9,353.17	16.54	-16.71	-80.95	82.66	258.34	432,177.11	590,976.84
9,479.00	43.20	176.80	9,426.27	77.05	-77.21	-77.96	109.72	225.27	432,116.61	590,979.83
9,574.00	49.00	180.20	9,492.12	145.44	-145.60	-76.27	164.36	207.65	432,048.22	590,981.52
9,669.00	52.70	180.80	9,552.09	219.09	-219.25	-76.92	232.35	199.33	431,974.57	590,980.87
9,716.00	54.10	181.20	9,580.11	256.82	-256.98	-77.58	268.43	196.80	431,936.84	590,980.21
9,789.00	56.20	182.00	9,621.83	316.69	-316.86	-79.26	326.62	194.04	431,876.96	590,978.53
9,820.00	59.60	181.50	9,638.30	342.93	-343.10	-80.06	352.32	193.13	431,850.72	590,977.73
9,852.00	63.20	180.10	9,653.61	371.02	-371.19	-80.44	379.81	192.23	431,822.63	590,977.35
9,884.00	65.40	178.80	9,667.49	399.85	-400.02	-80.16	407.97	191.33	431,793.80	590,977.63
9,915.00	67.00	179.20	9,680.00	428.21	-428.38	-79.67	435.72	190.54	431,765.44	590,978.12
9,946.00	67.40	177.40	9,692.01	456.78	-456.94	-78.82	463.69	189.79	431,736.88	590,978.97
9,978.00	70.00	175.40	9,703.64	486.53	-486.69	-76.94	492.74	188.98	431,707.13	590,980.85
10,009.00	74.90	175.20	9,712.98	515.98	-516.14	-74.52	521.49	188.22	431,677.68	590,983.27
10,041.00	80.80	175.30	9,719.72	547.15	-547.30	-71.93	552.01	187.49	431,646.52	590,985.86
10,072.00	82.00	174.70	9,724.35	577.69	-577.84	-69.26	581.97	186.84	431,615.98	590,988.53
10,104.00	81.80	175.40	9,728.86	609.26	-609.40	-66.53	613.02	186.23	431,584.42	590,991.26
10,135.00	85.10	176.60	9,732.40	639.98	-640.12	-64.38	643.35	185.74	431,553.70	590,993.41
10,167.00	90.60	177.70	9,733.60	671.91	-672.04	-62.79	674.97	185.34	431,521.78	590,995.00
10,198.00	94.60	179.30	9,732.19	702.86	-702.99	-61.98	705.72	185.04	431,490.83	590,995.81
10,292.00	93.90	181.80	9,725.22	796.59	-796.72	-62.88	799.20	184.51	431,397.10	590,994.91
10,387.00	91.90	181.80	9,720.42	891.41	-891.55	-65.86	893.98	184.22	431,302.27	590,991.93
10,482.00	91.20	181.10	9,717.85	986.34	-986.48	-68.26	988.84	183.96	431,207.34	590,989.53
10,576.00	90.30	178.20	9,716.62	1,080.32	-1,080.46	-67.69	1,082.58	183.58	431,113.36	590,990.10
10,671.00	93.60	177.40	9,713.38	1,175.19	-1,175.32	-64.05	1,177.07	183.12	431,018.50	590,993.74
10,766.00	92.80	176.50	9,708.08	1,269.91	-1,270.04	-59.00	1,271.41	182.66	430,923.78	590,998.79
10,860.00	93.30	179.80	9,703.08	1,363.72	-1,363.84	-55.97	1,364.99	182.35	430,829.98	591,001.82
10,986.00	91.10	180.40	9,698.24	1,489.62	-1,489.74	-56.19	1,490.80	182.16	430,704.08	591,001.60



Professional Directional
Survey Report



Marathon Oil Eddy County, NM Southern Comfort 25-36 State X No. 1H OH OH 81' - 16955' PTB 17001'				Well No. 1H Well @ 2941.00usft (GL: 2916' KB: 25' (H&P498)) Well @ 2941.00usft (GL: 2916' KB: 25' (H&P498)) Grid Minimum Curvature WellPlanner1						
11,080.00	89.80	181.70	9,697.50	1,583.59	-1,583.72	-57.91	1,584.78	182.09	430,610.10	590,999.88
11,175.00	89.70	181.10	9,697.92	1,678.56	-1,678.69	-60.23	1,679.77	182.05	430,515.13	590,997.56
11,269.00	89.60	181.10	9,698.49	1,772.54	-1,772.67	-62.04	1,773.76	182.00	430,421.15	590,995.75
11,363.00	90.00	180.70	9,698.82	1,866.52	-1,866.66	-63.51	1,867.74	181.95	430,327.16	590,994.28
11,457.00	90.60	181.30	9,698.33	1,960.50	-1,960.64	-65.15	1,961.72	181.90	430,233.18	590,992.64
11,551.00	91.30	181.40	9,696.77	2,054.46	-2,054.60	-67.37	2,055.71	181.88	430,139.22	590,990.42
11,646.00	89.80	181.50	9,695.86	2,149.41	-2,149.56	-69.77	2,150.70	181.86	430,044.26	590,988.02
11,739.00	90.20	181.60	9,695.86	2,242.37	-2,242.53	-72.29	2,243.70	181.85	429,951.29	590,985.50
11,834.00	89.90	182.20	9,695.77	2,337.31	-2,337.48	-75.44	2,338.69	181.85	429,856.34	590,982.35
11,928.00	90.60	181.50	9,695.36	2,431.26	-2,431.43	-78.47	2,432.69	181.85	429,762.39	590,979.32
12,022.00	91.20	181.40	9,693.89	2,525.21	-2,525.38	-80.85	2,526.68	181.83	429,668.44	590,976.94
12,117.00	87.70	177.90	9,694.80	2,620.17	-2,620.35	-80.27	2,621.58	181.75	429,573.47	590,977.52
12,213.00	87.00	178.00	9,699.24	2,716.02	-2,716.18	-76.84	2,717.27	181.62	429,477.64	590,980.95
12,307.00	86.80	178.30	9,704.32	2,809.84	-2,810.00	-73.81	2,810.97	181.50	429,383.82	590,983.98
12,401.00	88.30	179.00	9,708.34	2,903.73	-2,903.88	-71.60	2,904.76	181.41	429,289.94	590,986.19
12,495.00	90.20	180.40	9,709.57	2,997.71	-2,997.87	-71.11	2,998.71	181.36	429,195.95	590,986.68
12,590.00	90.60	179.80	9,708.91	3,092.71	-3,092.86	-71.27	3,093.68	181.32	429,100.96	590,986.52
12,684.00	90.40	179.70	9,708.09	3,186.70	-3,186.86	-70.86	3,187.65	181.27	429,006.96	590,986.93
12,780.00	89.90	179.80	9,707.84	3,282.70	-3,282.86	-70.44	3,283.61	181.23	428,910.96	590,987.35
12,874.00	89.10	183.40	9,708.66	3,376.64	-3,376.80	-73.07	3,377.59	181.24	428,817.02	590,984.72
12,968.00	88.40	183.40	9,710.71	3,470.44	-3,470.61	-78.64	3,471.50	181.30	428,723.21	590,979.15
13,062.00	91.00	183.30	9,711.20	3,564.26	-3,564.44	-84.13	3,565.44	181.35	428,629.38	590,973.66
13,156.00	90.50	182.70	9,709.97	3,658.11	-3,658.30	-89.05	3,659.39	181.39	428,535.52	590,968.74
13,250.00	90.30	182.40	9,709.31	3,752.01	-3,752.21	-93.23	3,753.37	181.42	428,441.61	590,964.56
13,345.00	87.80	179.80	9,710.89	3,846.96	-3,847.16	-95.06	3,848.34	181.42	428,346.66	590,962.73
13,440.00	90.20	178.30	9,712.54	3,941.92	-3,942.13	-93.48	3,943.23	181.36	428,251.69	590,964.31
13,535.00	91.20	178.90	9,711.38	4,036.89	-4,037.09	-91.16	4,038.12	181.29	428,156.73	590,966.63



Professional Directional
Survey Report



Marathon Oil
Eddy County, NM
Southern Comfort 25-36 State X
No. 1H
OH
OH 81' - 16955' PTB 17001'

Well No. 1H
Well @ 2941.00usft (GL: 2916' KB: 25' (H&P498))
Well @ 2941.00usft (GL: 2916' KB: 25' (H&P498))
Grid
Minimum Curvature
WellPlanner1

13,629.00	87.60	179.50	9,712.37	4,130.86	-4,131.06	-89.85	4,132.04	181.25	426,062.76	590,967.94
13,724.00	94.70	180.00	9,710.46	4,225.78	-4,225.98	-89.44	4,226.92	181.21	427,967.84	590,968.35
13,820.00	89.50	179.10	9,706.95	4,321.68	-4,321.88	-88.68	4,322.79	181.18	427,871.94	590,969.11
13,914.00	91.30	175.90	9,706.29	4,415.58	-4,415.77	-84.58	4,416.58	181.10	427,778.05	590,973.21
14,009.00	91.50	176.50	9,703.97	4,510.36	-4,510.53	-78.29	4,511.21	180.99	427,683.29	590,979.50
14,104.00	89.40	175.30	9,703.22	4,605.12	-4,605.28	-71.50	4,605.83	180.89	427,588.54	590,986.29
14,199.00	90.60	175.10	9,703.22	4,699.80	-4,699.94	-63.55	4,700.37	180.77	427,493.88	590,994.24
14,294.00	91.90	175.70	9,701.15	4,794.48	-4,794.61	-55.93	4,794.94	180.67	427,399.21	591,001.86
14,389.00	91.60	176.20	9,698.25	4,889.22	-4,889.33	-49.22	4,889.58	180.58	427,304.49	591,008.57
14,483.00	90.50	175.90	9,696.53	4,982.99	-4,983.09	-42.75	4,983.27	180.49	427,210.73	591,015.04
14,577.00	90.90	179.30	9,695.38	5,076.89	-5,076.99	-38.81	5,077.13	180.44	427,116.83	591,018.98
14,672.00	91.00	179.40	9,693.80	5,171.88	-5,171.97	-37.74	5,172.10	180.42	427,021.85	591,020.05
14,767.00	88.70	181.80	9,694.05	5,266.85	-5,266.95	-38.73	5,267.09	180.42	426,926.87	591,019.06
14,861.00	88.50	181.40	9,696.35	5,360.78	-5,360.88	-41.35	5,361.04	180.44	426,832.94	591,016.44
14,955.00	89.00	181.30	9,696.40	5,454.73	-5,454.83	-43.57	5,455.01	180.46	426,738.99	591,014.22
15,049.00	86.50	181.30	9,702.09	5,548.62	-5,548.73	-45.70	5,548.92	180.47	426,645.09	591,012.09
15,144.00	89.30	181.20	9,705.57	5,643.52	-5,643.63	-47.77	5,643.84	180.48	426,550.19	591,010.02
15,239.00	89.80	181.20	9,706.32	5,738.49	-5,738.61	-49.76	5,738.83	180.50	426,455.21	591,008.03
15,332.00	88.50	180.70	9,707.70	5,831.46	-5,831.58	-51.30	5,831.81	180.50	426,362.24	591,006.49
15,427.00	89.10	180.60	9,709.69	5,926.43	-5,926.56	-52.38	5,926.79	180.51	426,267.26	591,005.41
15,521.00	88.60	180.10	9,711.57	6,020.41	-6,020.54	-52.95	6,020.77	180.50	426,173.28	591,004.84
15,616.00	90.20	181.80	9,712.57	6,115.38	-6,115.51	-54.53	6,115.75	180.51	426,078.31	591,003.26
15,710.00	90.30	181.00	9,712.16	6,209.35	-6,209.48	-56.82	6,209.74	180.52	425,984.34	591,000.97
15,804.00	88.50	180.00	9,713.14	6,303.33	-6,303.47	-57.65	6,303.73	180.52	425,890.35	591,000.14
15,899.00	90.50	180.10	9,713.97	6,398.32	-6,398.46	-57.73	6,398.72	180.52	425,795.36	591,000.06
15,993.00	89.10	179.90	9,714.30	6,492.32	-6,492.46	-57.73	6,492.71	180.51	425,701.36	591,000.06
16,088.00	92.20	181.90	9,713.22	6,587.28	-6,587.42	-59.22	6,587.69	180.52	425,606.40	590,998.57



Professional Directional
Survey Report



Marathon Oil Eddy County, NM Southern Comfort 25-36 State X No. 1H OH OH 81' - 16955' PTB 17001'	Well No. 1H Well @ 2941.00usft (GL: 2916' KB: 25' (H&P498)) Well @ 2941.00usft (GL: 2916' KB: 25' (H&P498)) Grid Minimum Curvature WellPlanner1
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16,182.00	92.80	181.70	9,709.12	6,681.14	-6,681.29	-62.17	6,681.57	180.53	425,512.53	590,995.62
16,277.00	92.80	181.80	9,704.48	6,775.98	-6,776.13	-65.07	6,776.44	180.55	425,417.69	590,992.72
16,371.00	93.50	181.80	9,699.31	6,869.78	-6,869.94	-68.02	6,870.28	180.57	425,323.88	590,989.77
16,465.00	89.80	181.30	9,696.61	6,963.69	-6,963.85	-70.56	6,964.21	180.58	425,229.97	590,987.23
16,559.00	90.00	180.40	9,696.77	7,057.67	-7,057.84	-71.95	7,058.20	180.58	425,135.98	590,985.84
16,654.00	89.10	179.80	9,697.52	7,152.67	-7,152.83	-72.12	7,153.20	180.58	425,040.99	590,985.67
16,749.00	88.30	178.90	9,699.67	7,247.64	-7,247.80	-71.04	7,248.15	180.56	424,946.02	590,986.75
16,843.00	90.60	178.80	9,700.58	7,341.61	-7,341.77	-69.15	7,342.10	180.54	424,852.05	590,988.64
16,937.00	89.90	177.30	9,700.17	7,435.56	-7,435.71	-65.95	7,436.00	180.51	424,758.11	590,991.84
16,955.00	89.90	177.10	9,700.20	7,453.54	-7,453.69	-65.07	7,453.97	180.50	424,740.13	590,992.72
Last Survey: 16955' MD, 9700' TVD										
17,001.00	89.90	177.10	9,700.28	7,499.48	-7,499.63	-62.75	7,499.89	180.48	424,694.19	590,995.04
PTB: 17001' MD, 9700' TVD										

16,955.00	9,700.20	-7,453.69	-65.07	Last Survey: 16955' MD, 9700' TVD
17,001.00	9,700.28	-7,499.63	-62.75	PTB: 17001' MD, 9700' TVD



Marathon Oil
Eddy County, NM
Southern Comfort 25-36 State X
No. 1H
Plan #2 - FINAL PVA
GL: 2916' KB: 25' (H&P498)

US State Plane 1927 (Exact solution)
NAD 1927 (NAD83 CONUS)
Clarke 1886
New Mexico East 3001
Mean Sea Level

RKB Elevation: Well @ 2941.00usft (GL: 2916' KB: 25' (H&P498))

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Spot
0.00	0.00	432193.82	591057.79	32 1878753	-104 0389923	

SECTION DETAILS

Sec	MD	Inc	Adj	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	5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00
3	5500.00	5.00	320.71	5499.37	16.87	-13.81	1.00	-16.90
4	8550.72	5.00	320.71	8546.08	87.75	-71.80	0.00	-87.90
5	8854.05	0.00	0.00	8873.00	95.00	-81.00	1.50	-99.17
6	9135.06	0.00	0.00	9130.00	99.00	-81.00	0.00	-99.17
7	10034.07	89.90	179.88	9702.96	-472.97	-79.79	10.00	472.80
8	17061.27	89.90	179.88	9715.09	-7500.14	-54.99	0.00	7468.99

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
[S.ComX#1H]FTP	0.00	-180.14	-80.43	432013.98	590977.36
[S.ComX#1H]PtaBHL	0.00	-7590.16	-84.80	424803.88	590993.19
[S.ComX#1H]LP/NewBHL	9715.09	-7500.14	-84.88	424893.88	590992.80

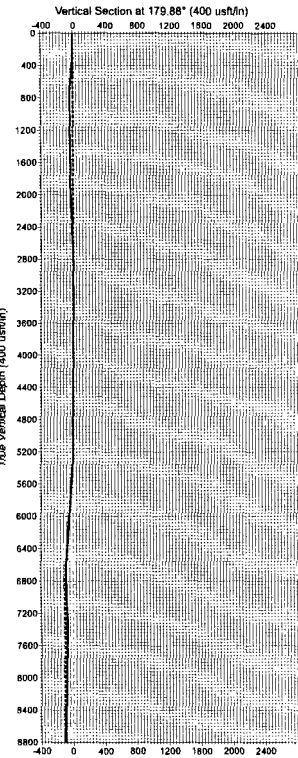


Azimuths to Grid North
True North: 0.15°
Magnetic North: 7.04°
Magnetic Field
Strength: 48083.4nT
Dip Angle: 60.32°
Date: 8/11/2017
Model: HDGM

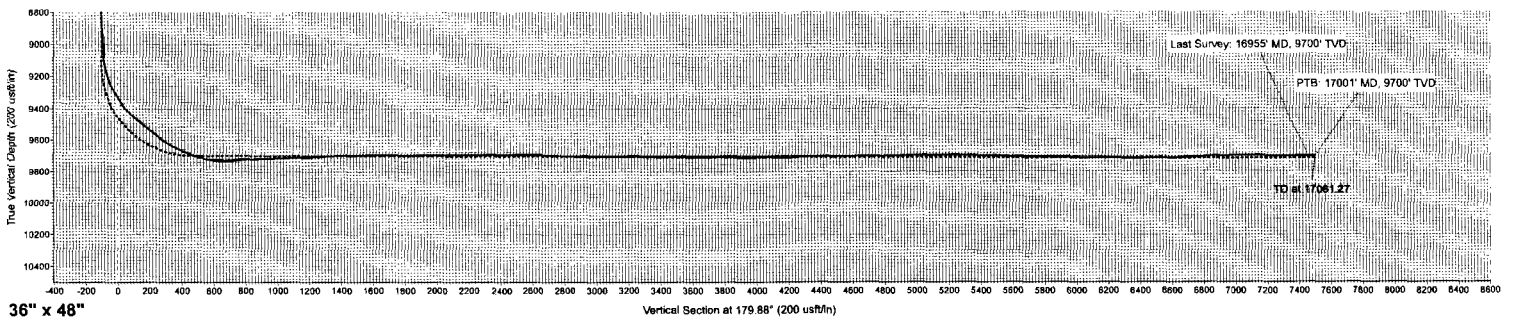
Azimuth Corrections

Total Magnetic Corr. (M to G): 7.04°

Declination (M to T): 7.20° East



Target Line: 9702' TVD @ 0° VS, 89.9° INC



36" x 48"

