


Scientific Drilling
Rocky Mountain Operations

Project: Garfield County, CO NAD
Site: 596-33C Pad
Well: 596-33A-18
Wellbore: OH
Design: Plan #1

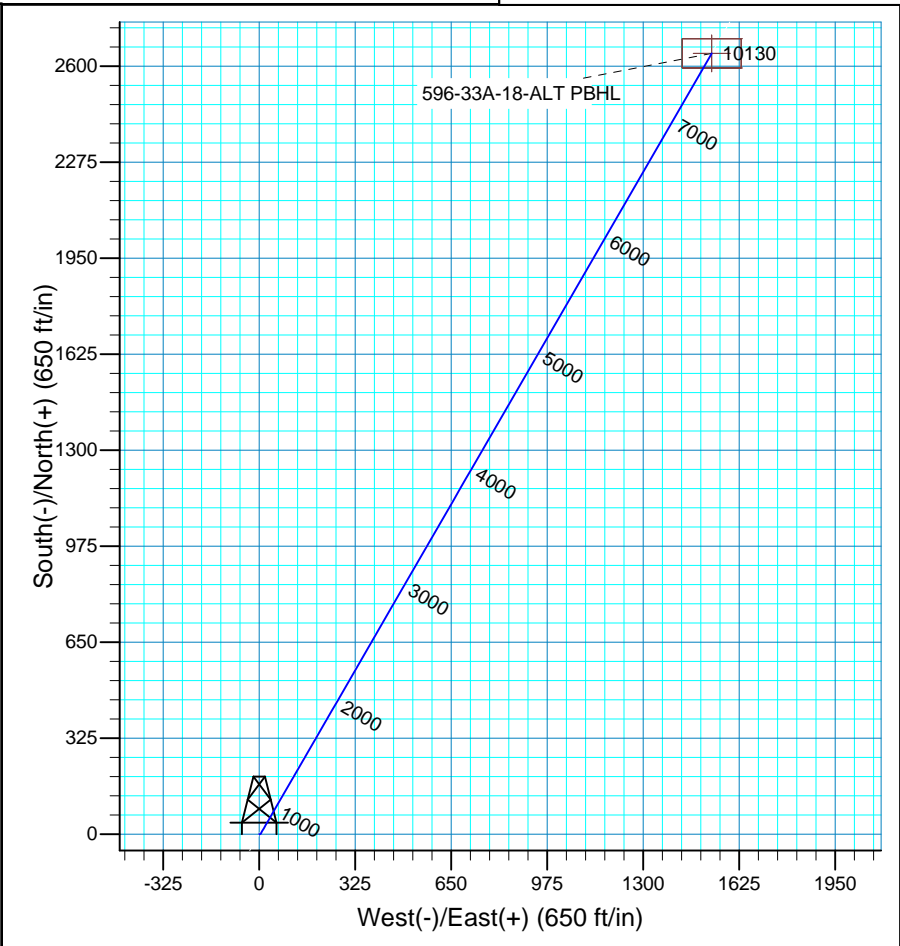
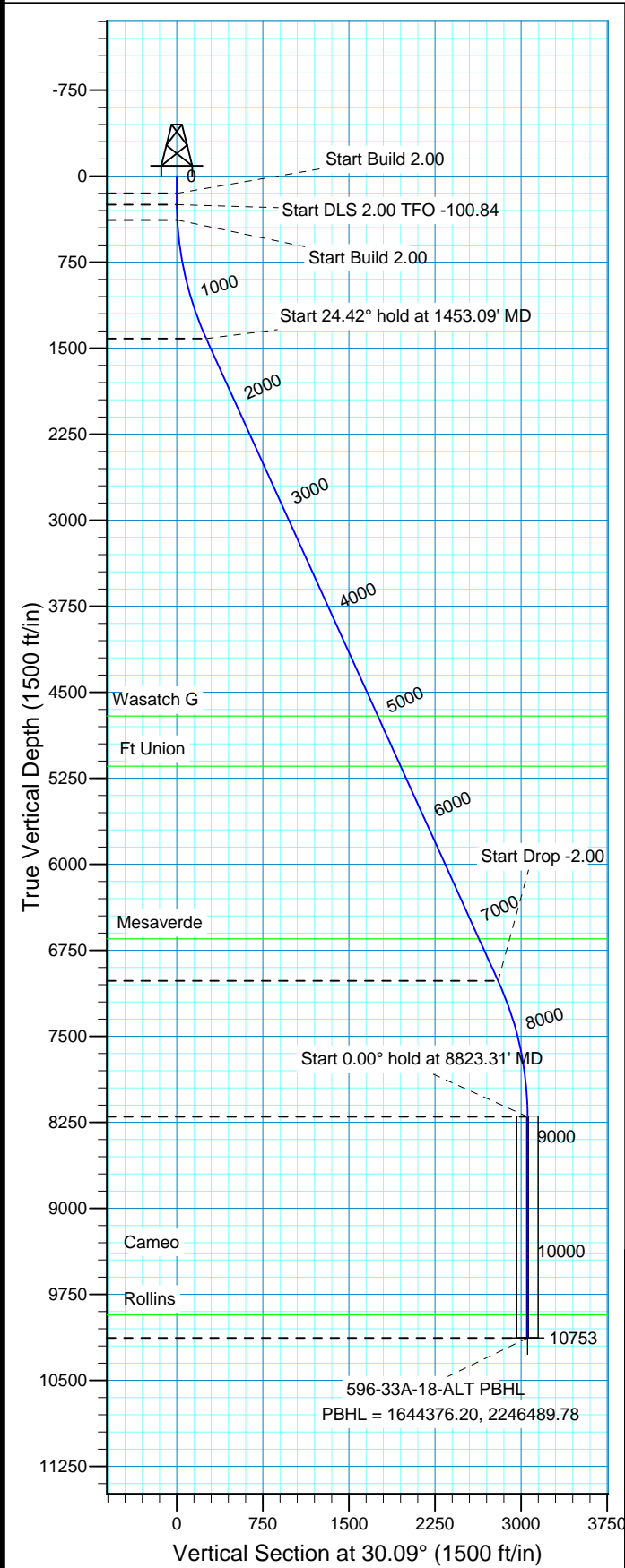


Marathon Oil Co.

WELL DETAILS: 596-33A-18

+N/-S	+E/-W	GL 8238' & RKB 24' @ 8262.00ft (H&P 324)	8238.00	Slot
0.00	0.00	Northing Easting Latitude Longitude	ALT	
1641778.41	2244880.14	39° 33' 53.650 N	108° 10' 43.817 W	ALT

Compass Rose:
T: True North
M: Magnetic North
Azimuths to True North: 10.64°
Magnetic Field Strength: 52505.5snT
Dip Angle: 65.82°
Date: 10/22/2009
Model: IGRF200510



FORMATION TOP DETAILS						Plan: Plan #1 (596-33A-18/OH)					
TVDPath MDPATH Formation 4708.00 5068.01 Wasatch G 5145.00 5547.93 Ft Union 6650.00 7200.76 Mesaverde 9396.00 10019.31 Cameo 9930.00 10553.31 Rollins						Created By: Rex Hall Date: 2009-10-22					
						PROJECT DETAILS: Garfield County, CO NAD 83					
						Geodetic System: US State Plane 1983 Datum: North American Datum 1983 Ellipsoid: GRS 1980 Zone: Colorado Central Zone					
						System Datum: Mean Sea Level Local North: True					
SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target	
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00		
3	250.00	2.00	90.00	249.98	0.00	1.75	2.00	90.00	0.88		
4	382.21	3.00	30.03	382.09	3.00	5.78	2.00	-100.84	5.49	596-33A-18-ALT PBHL	
5	1453.09	24.42	30.03	1416.41	221.44	132.04	2.00	0.00	257.80		
6	7602.44	24.42	30.03	7015.75	2422.28	1404.13	0.00	0.00	2799.83		
7	8823.31	0.00	0.00	8200.00	2644.12	1532.35	2.00	180.00	3056.06		
8	10753.31	0.00	0.00	10130.00	2644.12	1532.35	0.00	0.00	3056.06	596-33A-18-ALT PBHL	

Marathon Oil Co.

Garfield County, CO NAD 83

596-33C Pad

596-33A-18 - Slot ALT

OH

Plan: Plan #1

Standard Planning Report

22 October, 2009

Scientific Drilling International

Planning Report

Database:	EDM 2003.16 Multi-User Db	Local Co-ordinate Reference:	Well 596-33A-18 - Slot ALT
Company:	Marathon Oil Co.	TVD Reference:	GL 8238' & RKB 24' @ 8262.00ft (H&P 324)
Project:	Garfield County, CO NAD 83	MD Reference:	GL 8238' & RKB 24' @ 8262.00ft (H&P 324)
Site:	596-33C Pad	North Reference:	True
Well:	596-33A-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Garfield County, CO NAD 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		596-33C Pad, Sec 33 T5S R96W			
Site Position:		Northing:	1,641,786.19 ft	Latitude:	39° 33' 53.724 N
From:	Map	Easting:	2,244,870.36 ft	Longitude:	108° 10' 43.945 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	-1.69 °

Well	596-33A-18 - Slot ALT, 186' FSL & 1308' FWL					
Well Position	+N/-S	0.00 ft	Northing:	1,641,778.41 ft	Latitude:	39° 33' 53.650 N
	+E/-W	0.00 ft	Easting:	2,244,880.14 ft	Longitude:	108° 10' 43.817 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	8,238.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF200510	10/22/2009	10.64	65.82	52,506

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	30.09	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	2.00	90.00	249.98	0.00	1.75	2.00	2.00	0.00	90.00	
382.21	3.00	30.03	382.09	3.00	5.78	2.00	0.76	-45.36	-100.84	596-33A-18-ALT PBH
1,453.09	24.42	30.03	1,416.41	221.44	132.04	2.00	2.00	0.00	0.00	
7,602.44	24.42	30.03	7,015.75	2,422.28	1,404.13	0.00	0.00	0.00	0.00	
8,823.31	0.00	0.00	8,200.00	2,644.12	1,532.35	2.00	-2.00	0.00	180.00	
10,753.31	0.00	0.00	10,130.00	2,644.12	1,532.35	0.00	0.00	0.00	0.00	596-33A-18-ALT PBH

Scientific Drilling International

Planning Report

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Company:	Marathon Oil Co.	TVD Reference:	GL 8238' & RKB 24' @ 8262.00ft (H&P 324)
Project:	Garfield County, CO NAD 83	MD Reference:	GL 8238' & RKB 24' @ 8262.00ft (H&P 324)
Site:	596-33C Pad	North Reference:	True
Well:	596-33A-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
200.00	1.00	90.00	200.00	0.00	0.44	0.22	2.00	2.00	0.00
250.00	2.00	90.00	249.98	0.00	1.75	0.88	2.00	2.00	0.00
Start DLS 2.00 TFO -100.84									
300.00	2.06	61.53	299.95	0.43	3.41	2.08	2.00	0.12	-56.93
382.21	3.00	30.03	382.09	3.00	5.78	5.49	2.00	1.14	-38.32
Start Build 2.00									
400.00	3.36	30.03	399.84	3.85	6.28	6.48	2.00	2.00	0.00
500.00	5.36	30.03	499.55	10.42	10.08	14.07	2.00	2.00	0.00
600.00	7.36	30.03	598.93	20.01	15.62	25.14	2.00	2.00	0.00
700.00	9.36	30.03	697.86	32.59	22.89	39.67	2.00	2.00	0.00
800.00	11.36	30.03	796.23	48.15	31.88	57.65	2.00	2.00	0.00
900.00	13.36	30.03	893.91	66.68	42.59	79.05	2.00	2.00	0.00
1,000.00	15.36	30.03	990.78	88.14	55.00	103.84	2.00	2.00	0.00
1,100.00	17.36	30.03	1,086.73	112.52	69.09	132.00	2.00	2.00	0.00
1,200.00	19.36	30.03	1,181.64	139.78	84.85	163.49	2.00	2.00	0.00
1,300.00	21.36	30.03	1,275.39	169.90	102.25	198.27	2.00	2.00	0.00
1,400.00	23.36	30.03	1,367.87	202.83	121.29	236.30	2.00	2.00	0.00
1,453.09	24.42	30.03	1,416.41	221.44	132.04	257.80	2.00	2.00	0.00
Start 24.42° hold at 1453.09' MD									
1,500.00	24.42	30.03	1,459.12	238.23	141.75	277.19	0.00	0.00	0.00
1,600.00	24.42	30.03	1,550.18	274.02	162.44	318.53	0.00	0.00	0.00
1,700.00	24.42	30.03	1,641.24	309.81	183.12	359.87	0.00	0.00	0.00
1,800.00	24.42	30.03	1,732.29	345.60	203.81	401.21	0.00	0.00	0.00
1,900.00	24.42	30.03	1,823.35	381.39	224.49	442.54	0.00	0.00	0.00
2,000.00	24.42	30.03	1,914.40	417.18	245.18	483.88	0.00	0.00	0.00
2,100.00	24.42	30.03	2,005.46	452.97	265.87	525.22	0.00	0.00	0.00
2,200.00	24.42	30.03	2,096.51	488.76	286.55	566.56	0.00	0.00	0.00
2,300.00	24.42	30.03	2,187.57	524.55	307.24	607.90	0.00	0.00	0.00
2,400.00	24.42	30.03	2,278.63	560.34	327.93	649.24	0.00	0.00	0.00
2,500.00	24.42	30.03	2,369.68	596.13	348.61	690.57	0.00	0.00	0.00
2,600.00	24.42	30.03	2,460.74	631.92	369.30	731.91	0.00	0.00	0.00
2,700.00	24.42	30.03	2,551.79	667.71	389.99	773.25	0.00	0.00	0.00
2,800.00	24.42	30.03	2,642.85	703.50	410.67	814.59	0.00	0.00	0.00
2,900.00	24.42	30.03	2,733.90	739.29	431.36	855.93	0.00	0.00	0.00
3,000.00	24.42	30.03	2,824.96	775.08	452.05	897.26	0.00	0.00	0.00
3,100.00	24.42	30.03	2,916.02	810.87	472.73	938.60	0.00	0.00	0.00
3,200.00	24.42	30.03	3,007.07	846.66	493.42	979.94	0.00	0.00	0.00
3,300.00	24.42	30.03	3,098.13	882.45	514.11	1,021.28	0.00	0.00	0.00
3,400.00	24.42	30.03	3,189.18	918.24	534.79	1,062.62	0.00	0.00	0.00
3,500.00	24.42	30.03	3,280.24	954.03	555.48	1,103.95	0.00	0.00	0.00
3,600.00	24.42	30.03	3,371.30	989.82	576.16	1,145.29	0.00	0.00	0.00
3,700.00	24.42	30.03	3,462.35	1,025.61	596.85	1,186.63	0.00	0.00	0.00
3,800.00	24.42	30.03	3,553.41	1,061.40	617.54	1,227.97	0.00	0.00	0.00
3,900.00	24.42	30.03	3,644.46	1,097.18	638.22	1,269.31	0.00	0.00	0.00
4,000.00	24.42	30.03	3,735.52	1,132.97	658.91	1,310.65	0.00	0.00	0.00
4,100.00	24.42	30.03	3,826.57	1,168.76	679.60	1,351.98	0.00	0.00	0.00
4,200.00	24.42	30.03	3,917.63	1,204.55	700.28	1,393.32	0.00	0.00	0.00
4,300.00	24.42	30.03	4,008.69	1,240.34	720.97	1,434.66	0.00	0.00	0.00
4,400.00	24.42	30.03	4,099.74	1,276.13	741.66	1,476.00	0.00	0.00	0.00

Scientific Drilling International

Planning Report

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Company:	Marathon Oil Co.	TVD Reference:	GL 8238' & RKB 24' @ 8262.00ft (H&P 324)
Project:	Garfield County, CO NAD 83	MD Reference:	GL 8238' & RKB 24' @ 8262.00ft (H&P 324)
Site:	596-33C Pad	North Reference:	True
Well:	596-33A-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.00	24.42	30.03	4,190.80	1,311.92	762.34	1,517.34	0.00	0.00	0.00
4,600.00	24.42	30.03	4,281.85	1,347.71	783.03	1,558.67	0.00	0.00	0.00
4,700.00	24.42	30.03	4,372.91	1,383.50	803.72	1,600.01	0.00	0.00	0.00
4,800.00	24.42	30.03	4,463.97	1,419.29	824.40	1,641.35	0.00	0.00	0.00
4,900.00	24.42	30.03	4,555.02	1,455.08	845.09	1,682.69	0.00	0.00	0.00
5,000.00	24.42	30.03	4,646.08	1,490.87	865.77	1,724.03	0.00	0.00	0.00
5,068.01	24.42	30.03	4,708.00	1,515.21	879.84	1,752.14	0.00	0.00	0.00
Wasatch G									
5,100.00	24.42	30.03	4,737.13	1,526.66	886.46	1,765.36	0.00	0.00	0.00
5,200.00	24.42	30.03	4,828.19	1,562.45	907.15	1,806.70	0.00	0.00	0.00
5,300.00	24.42	30.03	4,919.24	1,598.24	927.83	1,848.04	0.00	0.00	0.00
5,400.00	24.42	30.03	5,010.30	1,634.03	948.52	1,889.38	0.00	0.00	0.00
5,500.00	24.42	30.03	5,101.36	1,669.82	969.21	1,930.72	0.00	0.00	0.00
5,547.93	24.42	30.03	5,145.00	1,686.98	979.12	1,950.53	0.00	0.00	0.00
Ft Union									
5,600.00	24.42	30.03	5,192.41	1,705.61	989.89	1,972.05	0.00	0.00	0.00
5,700.00	24.42	30.03	5,283.47	1,741.40	1,010.58	2,013.39	0.00	0.00	0.00
5,800.00	24.42	30.03	5,374.52	1,777.19	1,031.27	2,054.73	0.00	0.00	0.00
5,900.00	24.42	30.03	5,465.58	1,812.98	1,051.95	2,096.07	0.00	0.00	0.00
6,000.00	24.42	30.03	5,556.63	1,848.77	1,072.64	2,137.41	0.00	0.00	0.00
6,100.00	24.42	30.03	5,647.69	1,884.56	1,093.33	2,178.75	0.00	0.00	0.00
6,200.00	24.42	30.03	5,738.75	1,920.35	1,114.01	2,220.08	0.00	0.00	0.00
6,300.00	24.42	30.03	5,829.80	1,956.14	1,134.70	2,261.42	0.00	0.00	0.00
6,400.00	24.42	30.03	5,920.86	1,991.93	1,155.39	2,302.76	0.00	0.00	0.00
6,500.00	24.42	30.03	6,011.91	2,027.72	1,176.07	2,344.10	0.00	0.00	0.00
6,600.00	24.42	30.03	6,102.97	2,063.51	1,196.76	2,385.44	0.00	0.00	0.00
6,700.00	24.42	30.03	6,194.03	2,099.30	1,217.44	2,426.77	0.00	0.00	0.00
6,800.00	24.42	30.03	6,285.08	2,135.09	1,238.13	2,468.11	0.00	0.00	0.00
6,900.00	24.42	30.03	6,376.14	2,170.88	1,258.82	2,509.45	0.00	0.00	0.00
7,000.00	24.42	30.03	6,467.19	2,206.67	1,279.50	2,550.79	0.00	0.00	0.00
7,100.00	24.42	30.03	6,558.25	2,242.46	1,300.19	2,592.13	0.00	0.00	0.00
7,200.00	24.42	30.03	6,649.30	2,278.25	1,320.88	2,633.46	0.00	0.00	0.00
7,200.76	24.42	30.03	6,650.00	2,278.52	1,321.04	2,633.78	0.00	0.00	0.00
Mesaverde									
7,300.00	24.42	30.03	6,740.36	2,314.04	1,341.56	2,674.80	0.00	0.00	0.00
7,400.00	24.42	30.03	6,831.42	2,349.83	1,362.25	2,716.14	0.00	0.00	0.00
7,500.00	24.42	30.03	6,922.47	2,385.62	1,382.94	2,757.48	0.00	0.00	0.00
7,600.00	24.42	30.03	7,013.53	2,421.41	1,403.62	2,798.82	0.00	0.00	0.00
7,602.44	24.42	30.03	7,015.75	2,422.28	1,404.13	2,799.83	0.00	0.00	0.00
Start Drop -2.00									
7,700.00	22.47	30.03	7,105.25	2,455.88	1,423.55	2,838.63	2.00	-2.00	0.00
7,800.00	20.47	30.03	7,198.31	2,487.56	1,441.86	2,875.23	2.00	-2.00	0.00
7,900.00	18.47	30.03	7,292.59	2,516.41	1,458.54	2,908.55	2.00	-2.00	0.00
8,000.00	16.47	30.03	7,387.97	2,542.40	1,473.56	2,938.56	2.00	-2.00	0.00
8,100.00	14.47	30.03	7,484.35	2,565.49	1,486.90	2,965.23	2.00	-2.00	0.00
8,200.00	12.47	30.03	7,581.59	2,585.65	1,498.55	2,988.52	2.00	-2.00	0.00
8,300.00	10.47	30.03	7,679.59	2,602.86	1,508.50	3,008.39	2.00	-2.00	0.00
8,400.00	8.47	30.03	7,778.23	2,617.10	1,516.73	3,024.84	2.00	-2.00	0.00
8,500.00	6.47	30.03	7,877.37	2,628.34	1,523.23	3,037.83	2.00	-2.00	0.00
8,600.00	4.47	30.03	7,976.91	2,636.59	1,528.00	3,047.36	2.00	-2.00	0.00
8,700.00	2.47	30.03	8,076.73	2,641.83	1,531.02	3,053.40	2.00	-2.00	0.00
8,800.00	0.47	30.03	8,176.69	2,644.04	1,532.30	3,055.96	2.00	-2.00	0.00
8,823.31	0.00	0.00	8,200.00	2,644.12	1,532.35	3,056.06	2.00	-2.00	0.00

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Site:	596-33C Pad	North Reference:	True
Well:	596-33A-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Start 0.00° hold at 8823.31' MD									
8,900.00	0.00	0.00	8,276.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
9,000.00	0.00	0.00	8,376.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
9,100.00	0.00	0.00	8,476.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
9,200.00	0.00	0.00	8,576.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
9,300.00	0.00	0.00	8,676.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
9,400.00	0.00	0.00	8,776.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
9,500.00	0.00	0.00	8,876.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
9,600.00	0.00	0.00	8,976.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
9,700.00	0.00	0.00	9,076.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
9,800.00	0.00	0.00	9,176.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
9,900.00	0.00	0.00	9,276.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
10,000.00	0.00	0.00	9,376.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
10,019.31	0.00	0.00	9,396.00	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
Cameo									
10,100.00	0.00	0.00	9,476.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
10,200.00	0.00	0.00	9,576.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
10,300.00	0.00	0.00	9,676.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
10,400.00	0.00	0.00	9,776.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
10,500.00	0.00	0.00	9,876.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
10,553.31	0.00	0.00	9,930.00	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
Rollins									
10,600.00	0.00	0.00	9,976.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
10,700.00	0.00	0.00	10,076.69	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
10,753.31	0.00	0.00	10,130.00	2,644.12	1,532.35	3,056.06	0.00	0.00	0.00
PBHL = 1644376.20, 2246489.78 - 596-33A-18-ALT PBHL - 596-33A-18-ALT PBHL									

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
596-33A-18 PBHL	0.00	0.00	10,157.00	2,654.49	1,994.87	1,644,372.93	2,246,952.40	39° 34' 19.885 N	108° 10' 18.341 W
- plan misses target center by 463.42ft at 10753.31ft MD (10130.00 TVD, 2644.12 N, 1532.35 E)									
- Rectangle (sides W100.00 H200.00 D0.00)									
596-33A-18-ALT PBHL	0.00	0.00	10,130.00	2,644.12	1,532.35	1,644,376.20	2,246,489.78	39° 34' 19.783 N	108° 10' 24.248 W
- plan hits target center									
- Rectangle (sides W100.00 H200.00 D0.00)									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,068.01	4,708.00	Wasatch G		0.00	
5,547.93	5,145.00	Ft Union		0.00	
7,200.76	6,650.00	Mesaverde		0.00	
10,019.31	9,396.00	Cameo		0.00	
10,553.31	9,930.00	Rollins		0.00	

Scientific Drilling International

Planning Report

Database:	EDM 2003.16 Multi-User Db	Local Co-ordinate Reference:	Well 596-33A-18 - Slot ALT
Company:	Marathon Oil Co.	TVD Reference:	GL 8238' & RKB 24' @ 8262.00ft (H&P 324)
Project:	Garfield County, CO NAD 83	MD Reference:	GL 8238' & RKB 24' @ 8262.00ft (H&P 324)
Site:	596-33C Pad	North Reference:	True
Well:	596-33A-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
150.00	150.00	0.00	0.00	Start Build 2.00
250.00	249.98	0.00	1.75	Start DLS 2.00 TFO -100.84
382.21	382.09	3.00	5.78	Start Build 2.00
1,453.09	1,416.41	221.44	132.04	Start 24.42° hold at 1453.09' MD
7,602.44	7,015.75	2,422.28	1,404.13	Start Drop -2.00
8,823.31	8,200.00	2,644.12	1,532.35	Start 0.00° hold at 8823.31' MD
10,753.31	10,130.00	2,644.12	1,532.35	PBHL = 1644376.20, 2246489.78