



Scientific Drilling

Rocky Mountain Operations

Project: Garfield County, CO NAD 83
Site: 696-5A Pad
Well: 696-5A-31
Wellbore: OH
Design: Plan #1

Marathon Oil Co.

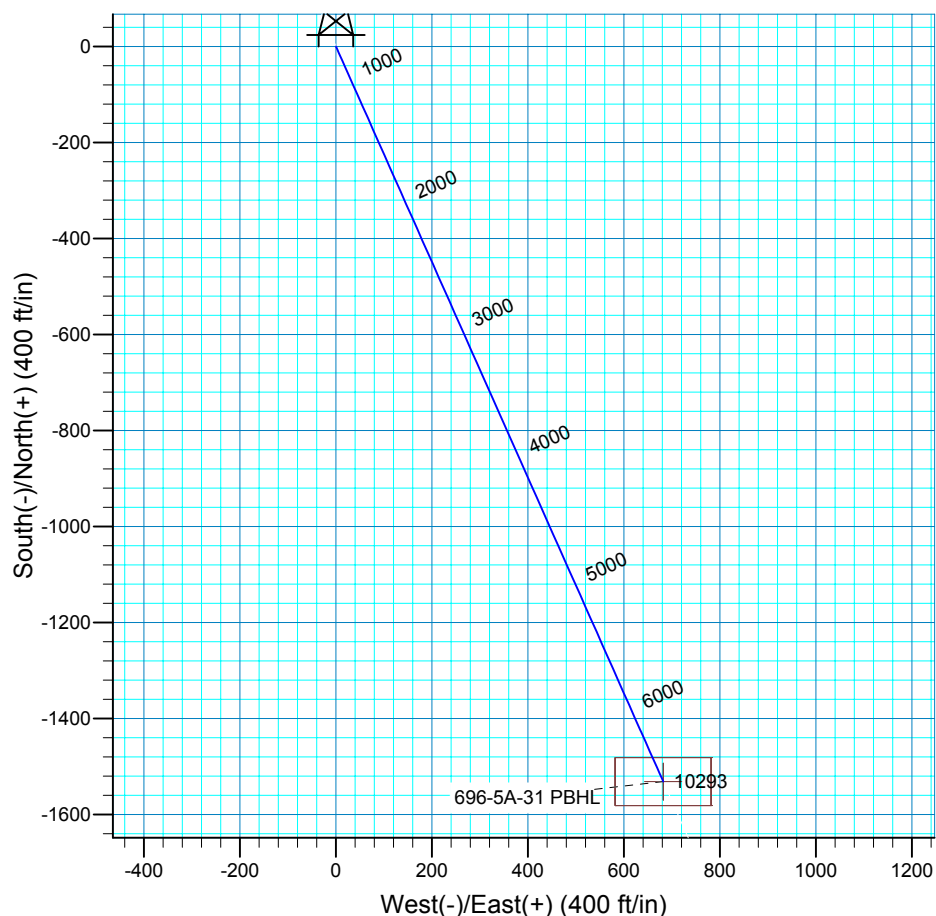
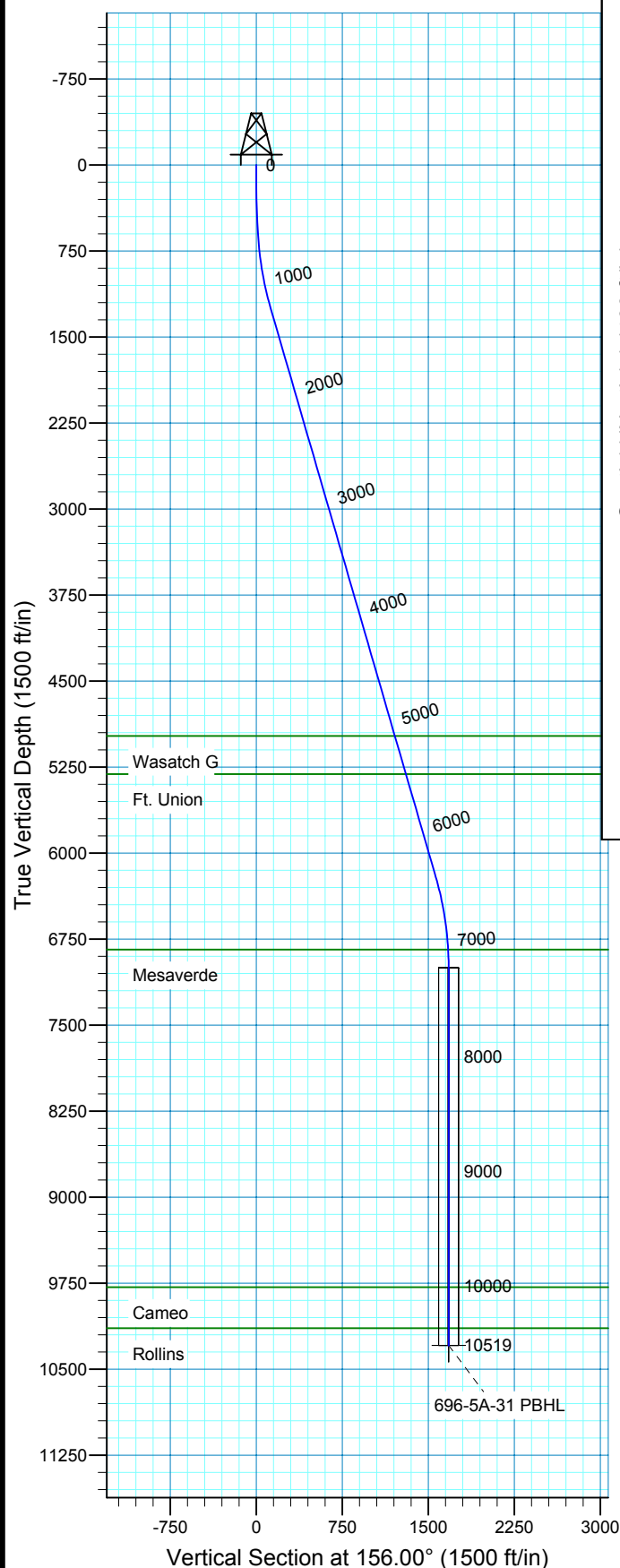


Azimuths to True North
Magnetic North: 10.75°

Magnetic Field
Strength: 52547.3snT
Dip Angle: 65.85°
Date: 2008-09-26
Model: IGRF2005-10

WELL DETAILS: 696-5A-31

GL 8101' & RKB 24' @ 8125.00ft 8101.00
+N/-S 0.00 +E/-W 0.00 Northing 1639237.65 Easting 2258440.03 Latitude 39° 33' 32.432 N Longitude 108° 7' 49.855 W



Plan: Plan #1 (696-5A-31/OH)

Created By: Julie Cruse Date: 2008-10-01

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
Location: Sec 5 T6S R96W
System Datum: Mean Sea Level
Local North: True

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
0.00	0.00	0.00	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	
700.00	5.00	156.00	699.37	-19.92	8.87	1.00	156.00	21.80	696-5A-31 PBHL
1259.65	16.19	156.00	1248.59	-113.79	50.66	2.00	0.00	124.55	
6416.73	16.19	156.00	6201.09	-1427.65	635.55	0.00	0.00	1562.72	
7226.38	0.00	0.00	7000.00	-1531.47	681.77	2.00	180.00	1676.37	
10519.38	0.00	0.00	10293.00	-1531.47	681.77	0.00	0.00	1676.37	696-5A-31 PBHL



Scientific Drilling
Rocky Mountain Operations

Marathon Oil Co.

Garfield County, CO NAD 83

696-5A Pad

696-5A-31 - Slot I

OH

Plan: Plan #1

Standard Planning Report

01 October, 2008

Database:	EDM 2003.16 Multiuser DB	Local Co-ordinate Reference:	Well 696-5A-31 - Slot I
Company:	Marathon Oil Co.	TVD Reference:	GL 8101' & RKB 24' @ 8125.00ft
Project:	Garfield County, CO NAD 83	MD Reference:	GL 8101' & RKB 24' @ 8125.00ft
Site:	696-5A Pad	North Reference:	True
Well:	696-5A-31	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		696-5A Pad, Sec 5 T6S R96W			
Site Position:		Northing:	1,639,219.87 ft	Latitude:	39° 33' 32.257 N
From:	Map	Easting:	2,258,442.99 ft	Longitude:	108° 7' 49.811 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	-1.66 °

Well	696-5A-31 - Slot I					
Well Position	+N/-S	0.00 ft	Northing:	1,639,237.65 ft	Latitude:	39° 33' 32.432 N
	+E/-W	0.00 ft	Easting:	2,258,440.03 ft	Longitude:	108° 7' 49.855 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	8,101.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	2008-09-26	10.75	65.85	52,547

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	156.00	

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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	5.00	156.00	699.37	-19.92	8.87	1.00	1.00	0.00	156.00	696-5A-31 PBHL
1,259.65	16.19	156.00	1,248.59	-113.79	50.66	2.00	2.00	0.00	0.00	
6,416.73	16.19	156.00	6,201.09	-1,427.65	635.55	0.00	0.00	0.00	0.00	
7,226.38	0.00	0.00	7,000.00	-1,531.47	681.77	2.00	-2.00	0.00	180.00	
10,519.38	0.00	0.00	10,293.00	-1,531.47	681.77	0.00	0.00	0.00	0.00	696-5A-31 PBHL

Database:	EDM 2003.16 Multiuser DB	Local Co-ordinate Reference:	Well 696-5A-31 - Slot I
Company:	Marathon Oil Co.	TVD Reference:	GL 8101' & RKB 24' @ 8125.00ft
Project:	Garfield County, CO NAD 83	MD Reference:	GL 8101' & RKB 24' @ 8125.00ft
Site:	696-5A Pad	North Reference:	True
Well:	696-5A-31	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
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	1.00	156.00	299.99	-0.80	0.35	0.87	1.00	1.00	0.00
400.00	2.00	156.00	399.96	-3.19	1.42	3.49	1.00	1.00	0.00
500.00	3.00	156.00	499.86	-7.17	3.19	7.85	1.00	1.00	0.00
600.00	4.00	156.00	599.68	-12.75	5.68	13.96	1.00	1.00	0.00
700.00	5.00	156.00	699.37	-19.92	8.87	21.80	1.00	1.00	0.00
800.00	7.00	156.00	798.81	-29.47	13.12	32.26	2.00	2.00	0.00
900.00	9.00	156.00	897.83	-42.18	18.78	46.17	2.00	2.00	0.00
1,000.00	11.00	156.00	996.31	-58.04	25.84	63.54	2.00	2.00	0.00
1,100.00	13.00	156.00	1,094.12	-77.04	34.29	84.33	2.00	2.00	0.00
1,200.00	15.00	156.00	1,191.14	-99.14	44.13	108.52	2.00	2.00	0.00
1,259.65	16.19	156.00	1,248.59	-113.79	50.66	124.55	2.00	2.00	0.00
1,300.00	16.19	156.00	1,287.35	-124.07	55.23	135.81	0.00	0.00	0.00
1,400.00	16.19	156.00	1,383.38	-149.54	66.57	163.69	0.00	0.00	0.00
1,500.00	16.19	156.00	1,479.41	-175.02	77.92	191.58	0.00	0.00	0.00
1,600.00	16.19	156.00	1,575.45	-200.50	89.26	219.47	0.00	0.00	0.00
1,700.00	16.19	156.00	1,671.48	-225.97	100.60	247.36	0.00	0.00	0.00
1,800.00	16.19	156.00	1,767.51	-251.45	111.94	275.24	0.00	0.00	0.00
1,900.00	16.19	156.00	1,863.54	-276.93	123.28	303.13	0.00	0.00	0.00
2,000.00	16.19	156.00	1,959.58	-302.41	134.62	331.02	0.00	0.00	0.00
2,100.00	16.19	156.00	2,055.61	-327.88	145.97	358.90	0.00	0.00	0.00
2,200.00	16.19	156.00	2,151.64	-353.36	157.31	386.79	0.00	0.00	0.00
2,300.00	16.19	156.00	2,247.67	-378.84	168.65	414.68	0.00	0.00	0.00
2,400.00	16.19	156.00	2,343.71	-404.31	179.99	442.57	0.00	0.00	0.00
2,500.00	16.19	156.00	2,439.74	-429.79	191.33	470.45	0.00	0.00	0.00
2,600.00	16.19	156.00	2,535.77	-455.27	202.67	498.34	0.00	0.00	0.00
2,700.00	16.19	156.00	2,631.81	-480.74	214.01	526.23	0.00	0.00	0.00
2,800.00	16.19	156.00	2,727.84	-506.22	225.36	554.12	0.00	0.00	0.00
2,900.00	16.19	156.00	2,823.87	-531.70	236.70	582.00	0.00	0.00	0.00
3,000.00	16.19	156.00	2,919.90	-557.17	248.04	609.89	0.00	0.00	0.00
3,100.00	16.19	156.00	3,015.94	-582.65	259.38	637.78	0.00	0.00	0.00
3,200.00	16.19	156.00	3,111.97	-608.13	270.72	665.66	0.00	0.00	0.00
3,300.00	16.19	156.00	3,208.00	-633.60	282.06	693.55	0.00	0.00	0.00
3,400.00	16.19	156.00	3,304.04	-659.08	293.41	721.44	0.00	0.00	0.00
3,500.00	16.19	156.00	3,400.07	-684.56	304.75	749.33	0.00	0.00	0.00
3,600.00	16.19	156.00	3,496.10	-710.03	316.09	777.21	0.00	0.00	0.00
3,700.00	16.19	156.00	3,592.13	-735.51	327.43	805.10	0.00	0.00	0.00
3,800.00	16.19	156.00	3,688.17	-760.99	338.77	832.99	0.00	0.00	0.00
3,900.00	16.19	156.00	3,784.20	-786.46	350.11	860.87	0.00	0.00	0.00
4,000.00	16.19	156.00	3,880.23	-811.94	361.46	888.76	0.00	0.00	0.00
4,100.00	16.19	156.00	3,976.27	-837.42	372.80	916.65	0.00	0.00	0.00
4,200.00	16.19	156.00	4,072.30	-862.89	384.14	944.54	0.00	0.00	0.00
4,300.00	16.19	156.00	4,168.33	-888.37	395.48	972.42	0.00	0.00	0.00
4,400.00	16.19	156.00	4,264.36	-913.85	406.82	1,000.31	0.00	0.00	0.00
4,500.00	16.19	156.00	4,360.40	-939.32	418.16	1,028.20	0.00	0.00	0.00
4,600.00	16.19	156.00	4,456.43	-964.80	429.51	1,056.09	0.00	0.00	0.00
4,700.00	16.19	156.00	4,552.46	-990.28	440.85	1,083.97	0.00	0.00	0.00
4,800.00	16.19	156.00	4,648.50	-1,015.75	452.19	1,111.86	0.00	0.00	0.00
4,900.00	16.19	156.00	4,744.53	-1,041.23	463.53	1,139.75	0.00	0.00	0.00
5,000.00	16.19	156.00	4,840.56	-1,066.71	474.87	1,167.63	0.00	0.00	0.00
5,100.00	16.19	156.00	4,936.59	-1,092.18	486.21	1,195.52	0.00	0.00	0.00
5,143.12	16.19	156.00	4,978.00	-1,103.17	491.10	1,207.55	0.00	0.00	0.00

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Project:	Garfield County, CO NAD 83	MD Reference:	GL 8101' & RKB 24' @ 8125.00ft
Site:	696-5A Pad	North Reference:	True
Well:	696-5A-31	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)
Wasatch G									
5,200.00	16.19	156.00	5,032.63	-1,117.66	497.56	1,223.41	0.00	0.00	0.00
5,300.00	16.19	156.00	5,128.66	-1,143.14	508.90	1,251.30	0.00	0.00	0.00
5,400.00	16.19	156.00	5,224.69	-1,168.62	520.24	1,279.18	0.00	0.00	0.00
5,489.87	16.19	156.00	5,311.00	-1,191.51	530.43	1,304.25	0.00	0.00	0.00
Ft. Union									
5,500.00	16.19	156.00	5,320.72	-1,194.09	531.58	1,307.07	0.00	0.00	0.00
5,600.00	16.19	156.00	5,416.76	-1,219.57	542.92	1,334.96	0.00	0.00	0.00
5,700.00	16.19	156.00	5,512.79	-1,245.05	554.26	1,362.84	0.00	0.00	0.00
5,800.00	16.19	156.00	5,608.82	-1,270.52	565.61	1,390.73	0.00	0.00	0.00
5,900.00	16.19	156.00	5,704.86	-1,296.00	576.95	1,418.62	0.00	0.00	0.00
6,000.00	16.19	156.00	5,800.89	-1,321.48	588.29	1,446.51	0.00	0.00	0.00
6,100.00	16.19	156.00	5,896.92	-1,346.95	599.63	1,474.39	0.00	0.00	0.00
6,200.00	16.19	156.00	5,992.95	-1,372.43	610.97	1,502.28	0.00	0.00	0.00
6,300.00	16.19	156.00	6,088.99	-1,397.91	622.31	1,530.17	0.00	0.00	0.00
6,400.00	16.19	156.00	6,185.02	-1,423.38	633.66	1,558.06	0.00	0.00	0.00
6,416.73	16.19	156.00	6,201.09	-1,427.65	635.55	1,562.72	0.00	0.00	0.00
6,500.00	14.53	156.00	6,281.38	-1,447.79	644.52	1,584.78	2.00	-2.00	0.00
6,600.00	12.53	156.00	6,378.60	-1,469.16	654.04	1,608.17	2.00	-2.00	0.00
6,700.00	10.53	156.00	6,476.58	-1,487.42	662.16	1,628.15	2.00	-2.00	0.00
6,800.00	8.53	156.00	6,575.19	-1,502.54	668.89	1,644.70	2.00	-2.00	0.00
6,900.00	6.53	156.00	6,674.33	-1,514.51	674.22	1,657.80	2.00	-2.00	0.00
7,000.00	4.53	156.00	6,773.86	-1,523.31	678.14	1,667.43	2.00	-2.00	0.00
7,067.30	3.18	156.00	6,841.00	-1,527.44	679.98	1,671.96	2.00	-2.00	0.00
Mesaverde									
7,100.00	2.53	156.00	6,873.66	-1,528.93	680.64	1,673.59	2.00	-2.00	0.00
7,200.00	0.53	156.00	6,973.62	-1,531.36	681.73	1,676.25	2.00	-2.00	0.00
7,226.38	0.00	0.00	7,000.00	-1,531.47	681.77	1,676.37	2.00	-2.00	0.00
7,300.00	0.00	0.00	7,073.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
7,400.00	0.00	0.00	7,173.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
7,500.00	0.00	0.00	7,273.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
7,600.00	0.00	0.00	7,373.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
7,700.00	0.00	0.00	7,473.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
7,800.00	0.00	0.00	7,573.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
7,900.00	0.00	0.00	7,673.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
8,000.00	0.00	0.00	7,773.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
8,100.00	0.00	0.00	7,873.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
8,200.00	0.00	0.00	7,973.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
8,300.00	0.00	0.00	8,073.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
8,400.00	0.00	0.00	8,173.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
8,500.00	0.00	0.00	8,273.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
8,600.00	0.00	0.00	8,373.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
8,700.00	0.00	0.00	8,473.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
8,800.00	0.00	0.00	8,573.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
8,900.00	0.00	0.00	8,673.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
9,000.00	0.00	0.00	8,773.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
9,100.00	0.00	0.00	8,873.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
9,200.00	0.00	0.00	8,973.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
9,300.00	0.00	0.00	9,073.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
9,400.00	0.00	0.00	9,173.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
9,500.00	0.00	0.00	9,273.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
9,600.00	0.00	0.00	9,373.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
9,700.00	0.00	0.00	9,473.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00

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Project:	Garfield County, CO NAD 83	MD Reference:	GL 8101' & RKB 24' @ 8125.00ft
Site:	696-5A Pad	North Reference:	True
Well:	696-5A-31	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)
9,800.00	0.00	0.00	9,573.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
9,900.00	0.00	0.00	9,673.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
10,000.00	0.00	0.00	9,773.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
10,010.38	0.00	0.00	9,784.00	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
Cameo									
10,100.00	0.00	0.00	9,873.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
10,200.00	0.00	0.00	9,973.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
10,300.00	0.00	0.00	10,073.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
10,369.38	0.00	0.00	10,143.00	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
Rollins									
10,400.00	0.00	0.00	10,173.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
10,500.00	0.00	0.00	10,273.62	-1,531.47	681.77	1,676.37	0.00	0.00	0.00
10,519.38	0.00	0.00	10,293.00	-1,531.47	681.77	1,676.37	0.00	0.00	0.00

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									
696-5A-31 PBHL	0.00	0.00	10,293.00	-1,531.47	681.77	1,637,687.08	2,259,077.18	39° 33' 17.295 N	108° 7' 41.151 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 (°)	
5,143.12	4,978.00	Wasatch G		0.00		
5,489.87	5,311.00	Ft. Union		0.00		
7,067.30	6,841.00	Mesaverde		0.00		
10,010.38	9,784.00	Cameo		0.00		
10,369.38	10,143.00	Rollins		0.00		