

**PROJECT DETAILS: Garfield County, CO**  
 Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: Colorado Central Zone  
 System Datum: Mean Sea Level

**WELL DETAILS: CC Federal 0697-03-06W**  
 Ground Level: 8609.0  
 +N/-S: 0.0    +E/-W: 0.0    Northing: 1639440.00    Easting: 2233549.86  
 Latitude: 39.557562    Longitude: -108.218761

**Project: Garfield County, CO**  
 Site: CC 604-41-32 Pad  
 Well: CC Federal 0697-03-06W  
 Wellbore: Wellbore #1  
 Design: Design #3  
 Latitude: 39.557562  
 Longitude: -108.218761  
 Ground Level: 8609.0  
 Well @ 8639.0usft (RKB 30')



**REFERENCE INFORMATION**  
 Co-ordinate (N/E) Reference: Well CC Federal 0697-03-06W, True North  
 Vertical (TVD) Reference: Well @ 8639.0usft (RKB 30')  
 Section (V/S) Reference: Slot -10.0N, 0.0E  
 Measured Depth Reference: Well @ 8639.0usft (RKB 30')  
 Calculation Method: Minimum Curvature

**Azimuths to True North**  
 Magnetic North: 9.77°  
 Magnetic Field Strength: 51479.5nT  
 Dip Angle: 65.59°  
 Data: 16/4/2017  
 Model: IGRF2015

**FORMATION TOP DETAILS**

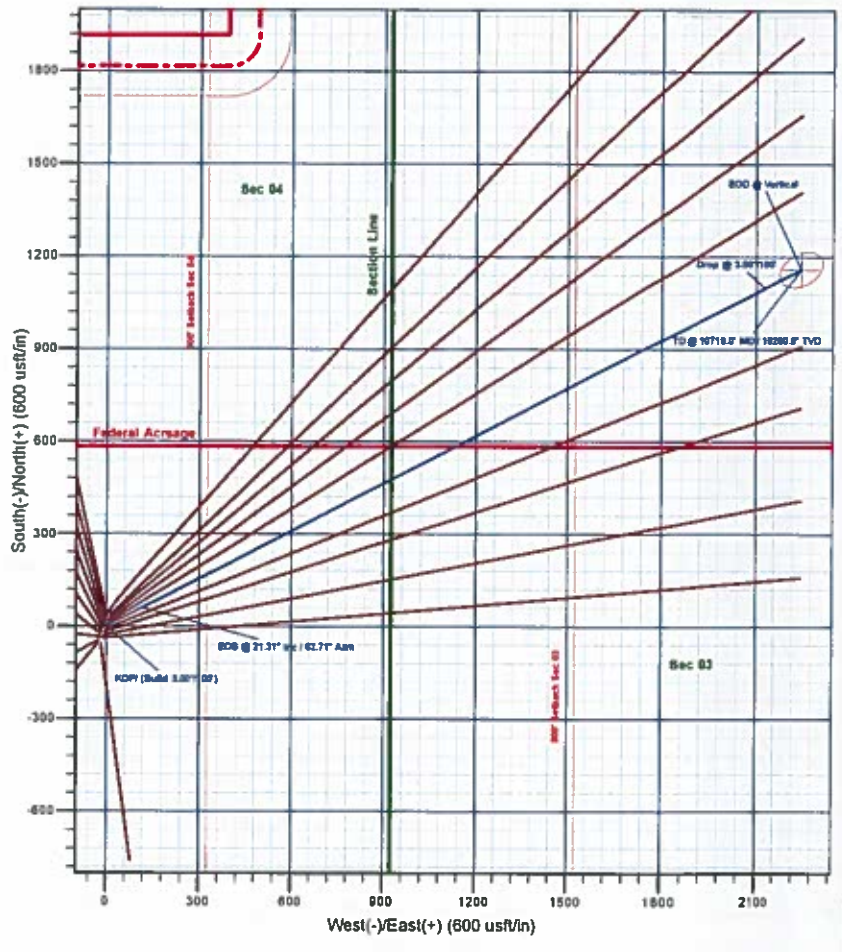
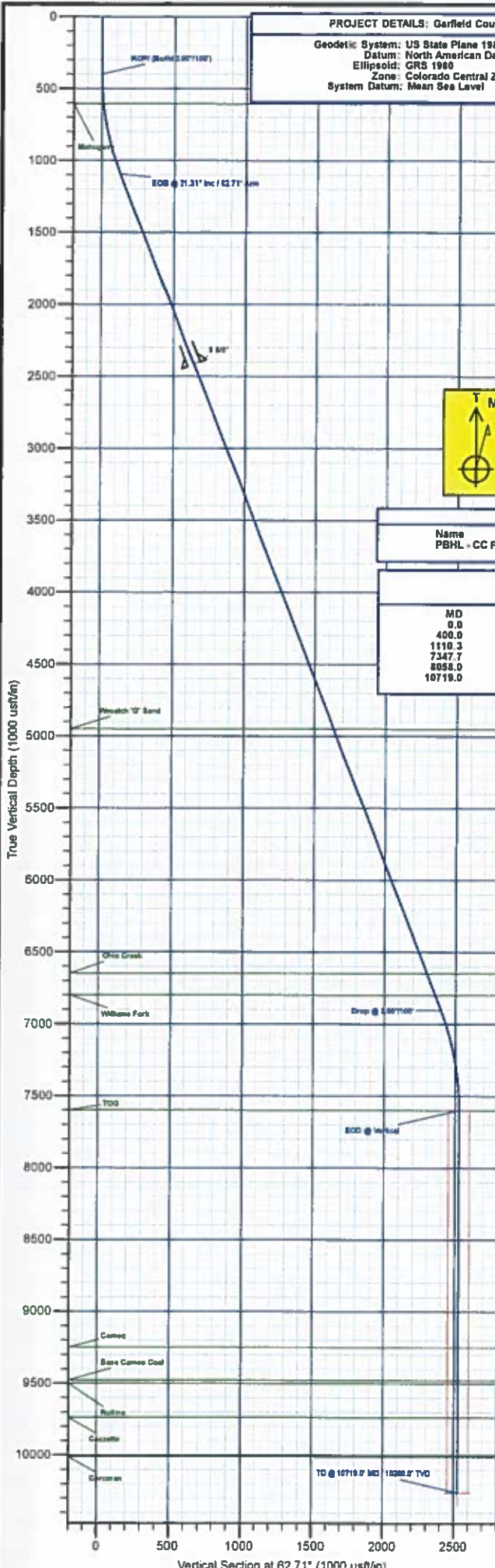
TVDPath	MDPath	Formation
606.0	606.4	Mahogany
4949.0	5246.2	Wasatch 'O' Sand
6649.0	7073.0	Ohio Creek
6739.0	7234.0	Williams Fork
7539.0	8058.0	TDC
9249.0	9708.0	Cameo
9479.0	9936.0	Base Cameo Coal
9499.0	9956.0	Rollins
8737.0	10196.0	Cozzette
10010.0	10469.0	Corcoran

**DESIGN TARGET DETAILS**

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL - CC Federal 0697-03-06W	10260.0	1159.1	2246.5	1640531.41	2235830.04	39.560744	-108.210793

**SECTION DETAILS**

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
1110.3	21.31	62.71	1094.1	59.9	116.0	3.00	82.71	130.6	KOP/ (Build 3.00"/100')
7347.7	21.31	62.71	6904.9	1099.3	2130.5	0.00	0.00	2397.3	EOB @ 21.31" Inc / 62.71" Azm
8056.0	0.00	0.00	7899.0	1159.1	2246.5	3.00	180.00	2527.9	Drop @ 3.00"/100'
10719.0	0.00	0.00	10260.0	1159.1	2246.5	0.00	0.00	2527.9	EOB @ Vertical TD @ 10719.0' MD / 10260.0' TVD



**Plan: Design #3 (CC Federal 0697-03-06W/Wellbore #1)**  
 Created By: Will Jircik    Date: 16:03, February 04 2019



# **Laramie Energy, LLC**

**Garfield County, CO  
CC 604-41-32 Pad  
CC Federal 0697-03-06W**

**Wellbore #1**

**Plan: Design #3**

## **QES Well Planning Report**

**04 February, 2019**





# Well Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CC Federal 0697-03-06W
<b>Company:</b>	Laramie Energy, LLC	<b>TVD Reference:</b>	Well @ 8639.0usft (RKB 30')
<b>Project:</b>	Garfield County, CO	<b>MD Reference:</b>	Well @ 8639.0usft (RKB 30')
<b>Site:</b>	CC 604-41-32 Pad	<b>North Reference:</b>	True
<b>Well:</b>	CC Federal 0697-03-06W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #3		

<b>Project</b>	Garfield County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		

<b>Site</b>	CC 604-41-32 Pad				
<b>Site Position:</b>		<b>Northing:</b>	1,639,484.67 usft	<b>Latitude:</b>	39.557630
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,233,548.14 usft	<b>Longitude:</b>	-108.218770
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16"	<b>Grid Convergence:</b>	-1.71°

<b>Well</b>	CC Federal 0697-03-06W					
<b>Well Position</b>	<b>+N/-S</b>	-24.6 usft	<b>Northing:</b>	1,639,440.00 usft	<b>Latitude:</b>	39.557562
	<b>+E/-W</b>	2.5 usft	<b>Easting:</b>	2,233,549.86 usft	<b>Longitude:</b>	-108.218761
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	8,609.0 usft

<b>Wellbore</b>	Wellbore #1
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/4/2017	9.77	65.59	51,479.52667220

<b>Design</b>	Design #3
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<b>Audit Notes:</b>	
<b>Version:</b>	Phase: PLAN Tie On Depth: 0.0
<b>Vertical Section:</b>	Depth From (TVD) (usft) +N/-S (usft) +E/-W (usft) Direction (°)
	0.0 0.0 0.0 62.71

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,110.3	21.31	62.71	1,094.1	59.9	116.0	3.00	3.00	0.00	62.71	
7,347.7	21.31	62.71	6,904.9	1,099.3	2,130.5	0.00	0.00	0.00	0.00	
8,058.0	0.00	0.00	7,599.0	1,159.1	2,246.5	3.00	-3.00	0.00	180.00	
10,719.0	0.00	0.00	10,260.0	1,159.1	2,246.5	0.00	0.00	0.00	0.00	PBHL - CC Federal 01



# Well Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CC Federal 0697-03-06W
<b>Company:</b>	Laramia Energy, LLC	<b>TVD Reference:</b>	Well @ 8639 0usft (RKB 30')
<b>Project:</b>	Garfield County, CO	<b>MD Reference:</b>	Well @ 8639 0usft (RKB 30')
<b>Site:</b>	CC 604-41-32 Pad	<b>North Reference:</b>	True
<b>Well:</b>	CC Federal 0697-03-06W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #3		

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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
<b>OP/ (Build 3.00°/100')</b>										
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	3.00	62.71	500.0	1.2	2.3	2.6	3.00	3.00	0.00	
600.0	6.00	62.71	599.6	4.8	9.3	10.5	3.00	3.00	0.00	
<b>Mahogany</b>										
606.4	6.19	62.71	606.0	5.1	9.9	11.1	3.00	3.00	0.00	
700.0	9.00	62.71	698.8	10.8	20.9	23.5	3.00	3.00	0.00	
800.0	12.00	62.71	797.1	19.1	37.1	41.7	3.00	3.00	0.00	
900.0	15.00	62.71	894.3	29.8	57.8	65.1	3.00	3.00	0.00	
1,000.0	18.00	62.71	990.2	42.9	83.1	93.5	3.00	3.00	0.00	
1,100.0	21.00	62.71	1,084.4	58.2	112.7	126.9	3.00	3.00	0.00	
<b>EOB @ 21.31° Inc / 62.71° Azm</b>										
1,110.3	21.31	62.71	1,094.1	59.9	116.0	130.6	3.00	3.00	0.00	
1,200.0	21.31	62.71	1,177.6	74.8	145.0	163.2	0.00	0.00	0.00	
1,300.0	21.31	62.71	1,270.8	91.5	177.3	199.5	0.00	0.00	0.00	
1,400.0	21.31	62.71	1,363.9	108.1	209.6	235.9	0.00	0.00	0.00	
1,500.0	21.31	62.71	1,457.1	124.8	241.9	272.2	0.00	0.00	0.00	
1,600.0	21.31	62.71	1,550.3	141.5	274.2	308.5	0.00	0.00	0.00	
1,700.0	21.31	62.71	1,643.4	158.1	306.5	344.9	0.00	0.00	0.00	
1,800.0	21.31	62.71	1,736.6	174.8	338.8	381.2	0.00	0.00	0.00	
1,900.0	21.31	62.71	1,829.7	191.5	371.1	417.6	0.00	0.00	0.00	
2,000.0	21.31	62.71	1,922.9	208.1	403.4	453.9	0.00	0.00	0.00	
2,100.0	21.31	62.71	2,016.1	224.8	435.7	490.2	0.00	0.00	0.00	
2,200.0	21.31	62.71	2,109.2	241.5	468.0	526.6	0.00	0.00	0.00	
2,300.0	21.31	62.71	2,202.4	258.1	500.3	562.9	0.00	0.00	0.00	
2,400.0	21.31	62.71	2,295.6	274.8	532.6	599.3	0.00	0.00	0.00	
2,500.0	21.31	62.71	2,388.7	291.5	564.9	635.6	0.00	0.00	0.00	
2,600.0	21.31	62.71	2,481.9	308.1	597.1	672.0	0.00	0.00	0.00	
2,700.0	21.31	62.71	2,575.0	324.8	629.4	708.3	0.00	0.00	0.00	
2,800.0	21.31	62.71	2,668.2	341.4	661.7	744.6	0.00	0.00	0.00	
2,900.0	21.31	62.71	2,761.4	358.1	694.0	781.0	0.00	0.00	0.00	
3,000.0	21.31	62.71	2,854.5	374.8	726.3	817.3	0.00	0.00	0.00	
3,100.0	21.31	62.71	2,947.7	391.4	758.6	853.7	0.00	0.00	0.00	
3,200.0	21.31	62.71	3,040.9	408.1	790.9	890.0	0.00	0.00	0.00	
3,300.0	21.31	62.71	3,134.0	424.8	823.2	926.3	0.00	0.00	0.00	
3,400.0	21.31	62.71	3,227.2	441.4	855.5	962.7	0.00	0.00	0.00	
3,500.0	21.31	62.71	3,320.3	458.1	887.8	999.0	0.00	0.00	0.00	
3,600.0	21.31	62.71	3,413.5	474.8	920.1	1,035.4	0.00	0.00	0.00	
3,700.0	21.31	62.71	3,506.7	491.4	952.4	1,071.7	0.00	0.00	0.00	
3,800.0	21.31	62.71	3,599.8	508.1	984.7	1,108.1	0.00	0.00	0.00	
3,900.0	21.31	62.71	3,693.0	524.7	1,017.0	1,144.4	0.00	0.00	0.00	
4,000.0	21.31	62.71	3,786.2	541.4	1,049.3	1,180.7	0.00	0.00	0.00	
4,100.0	21.31	62.71	3,879.3	558.1	1,081.6	1,217.1	0.00	0.00	0.00	
4,200.0	21.31	62.71	3,972.5	574.7	1,113.9	1,253.4	0.00	0.00	0.00	
4,300.0	21.31	62.71	4,065.6	591.4	1,146.2	1,289.8	0.00	0.00	0.00	
4,400.0	21.31	62.71	4,158.8	608.1	1,178.5	1,326.1	0.00	0.00	0.00	
4,500.0	21.31	62.71	4,252.0	624.7	1,210.8	1,362.4	0.00	0.00	0.00	
4,600.0	21.31	62.71	4,345.1	641.4	1,243.1	1,398.8	0.00	0.00	0.00	
4,700.0	21.31	62.71	4,438.3	658.1	1,275.4	1,435.1	0.00	0.00	0.00	



## Well Planning Report



<b>Database:</b>	EDM 5000 1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CC Federal 0697-03-06W
<b>Company:</b>	Laramie Energy, LLC	<b>TVD Reference:</b>	Well @ 8639 Dusr (RKB 30')
<b>Project:</b>	Garfield County, CO	<b>MD Reference:</b>	Well @ 8639 Dusr (RKB 30')
<b>Site:</b>	CC 604-41-32 Pad	<b>North Reference:</b>	True
<b>Well:</b>	CC Federal 0697-03-06W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #3		

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)	
4,800.0	21.31	62.71	4,531.5	674.7	1,307.7	1,471.5	0.00	0.00	0.00	
4,900.0	21.31	62.71	4,624.6	691.4	1,340.0	1,507.8	0.00	0.00	0.00	
5,000.0	21.31	62.71	4,717.8	708.1	1,372.3	1,544.2	0.00	0.00	0.00	
5,100.0	21.31	62.71	4,810.9	724.7	1,404.6	1,580.5	0.00	0.00	0.00	
5,200.0	21.31	62.71	4,904.1	741.4	1,436.8	1,616.8	0.00	0.00	0.00	
<b>Wasatch 'G' Sand</b>										
5,248.2	21.31	62.71	4,949.0	749.4	1,452.4	1,634.4	0.00	0.00	0.00	
5,300.0	21.31	62.71	4,997.3	758.0	1,469.1	1,653.2	0.00	0.00	0.00	
5,400.0	21.31	62.71	5,090.4	774.7	1,501.4	1,689.5	0.00	0.00	0.00	
5,500.0	21.31	62.71	5,183.6	791.4	1,533.7	1,725.9	0.00	0.00	0.00	
5,600.0	21.31	62.71	5,276.8	808.0	1,566.0	1,762.2	0.00	0.00	0.00	
5,700.0	21.31	62.71	5,369.9	824.7	1,598.3	1,798.6	0.00	0.00	0.00	
5,800.0	21.31	62.71	5,463.1	841.4	1,630.6	1,834.9	0.00	0.00	0.00	
5,900.0	21.31	62.71	5,556.2	858.0	1,662.9	1,871.2	0.00	0.00	0.00	
6,000.0	21.31	62.71	5,649.4	874.7	1,695.2	1,907.6	0.00	0.00	0.00	
6,100.0	21.31	62.71	5,742.6	891.4	1,727.5	1,943.9	0.00	0.00	0.00	
6,200.0	21.31	62.71	5,835.7	908.0	1,759.8	1,980.3	0.00	0.00	0.00	
6,300.0	21.31	62.71	5,928.9	924.7	1,792.1	2,016.6	0.00	0.00	0.00	
6,400.0	21.31	62.71	6,022.1	941.4	1,824.4	2,052.9	0.00	0.00	0.00	
6,500.0	21.31	62.71	6,115.2	958.0	1,856.7	2,089.3	0.00	0.00	0.00	
6,600.0	21.31	62.71	6,208.4	974.7	1,889.0	2,125.6	0.00	0.00	0.00	
6,700.0	21.31	62.71	6,301.5	991.3	1,921.3	2,162.0	0.00	0.00	0.00	
6,800.0	21.31	62.71	6,394.7	1,008.0	1,953.6	2,198.3	0.00	0.00	0.00	
6,900.0	21.31	62.71	6,487.9	1,024.7	1,985.9	2,234.7	0.00	0.00	0.00	
7,000.0	21.31	62.71	6,581.0	1,041.3	2,018.2	2,271.0	0.00	0.00	0.00	
<b>Ohio Creek</b>										
7,073.0	21.31	62.71	6,649.0	1,053.5	2,041.7	2,297.5	0.00	0.00	0.00	
7,100.0	21.31	62.71	6,674.2	1,058.0	2,050.5	2,307.3	0.00	0.00	0.00	
7,200.0	21.31	62.71	6,767.4	1,074.7	2,082.8	2,343.7	0.00	0.00	0.00	
<b>Williams Fork</b>										
7,234.0	21.31	62.71	6,799.0	1,080.3	2,093.7	2,358.0	0.00	0.00	0.00	
7,300.0	21.31	62.71	6,860.5	1,091.3	2,115.1	2,380.0	0.00	0.00	0.00	
<b>Drop @ 3.00°/100'</b>										
7,347.7	21.31	62.71	6,904.9	1,099.3	2,130.5	2,397.3	0.00	0.00	0.00	
7,400.0	19.74	62.71	6,953.9	1,107.7	2,146.8	2,415.7	3.00	-3.00	0.00	
7,500.0	16.74	62.71	7,048.9	1,122.0	2,174.6	2,447.0	3.00	-3.00	0.00	
7,600.0	13.74	62.71	7,145.4	1,134.1	2,197.9	2,473.3	3.00	-3.00	0.00	
7,700.0	10.74	62.71	7,243.1	1,143.8	2,216.8	2,494.5	3.00	-3.00	0.00	
7,800.0	7.74	62.71	7,341.8	1,151.2	2,231.0	2,510.5	3.00	-3.00	0.00	
7,900.0	4.74	62.71	7,441.2	1,156.2	2,240.7	2,521.4	3.00	-3.00	0.00	
8,000.0	1.74	62.71	7,541.0	1,158.7	2,245.7	2,527.0	3.00	-3.00	0.00	
<b>EOD @ Vertical - TOG</b>										
8,058.0	0.00	0.00	7,599.0	1,159.1	2,246.5	2,527.9	3.00	-3.00	0.00	
8,100.0	0.00	0.00	7,641.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
8,200.0	0.00	0.00	7,741.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
8,300.0	0.00	0.00	7,841.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
8,400.0	0.00	0.00	7,941.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,041.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,141.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,241.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,341.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,441.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
9,000.0	0.00	0.00	8,541.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
9,100.0	0.00	0.00	8,641.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	



# Well Planning Report



<b>Database:</b>	EDM 5000 1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CC Federal 0697-03-06W
<b>Company:</b>	Laramie Energy, LLC	<b>TVD Reference:</b>	Well @ 8639 0usft (RKB 30')
<b>Project:</b>	Garfield County, CO	<b>MD Reference:</b>	Well @ 8639 0usft (RKB 30')
<b>Site:</b>	CC 604-41-32 Pad	<b>North Reference:</b>	True
<b>Well:</b>	CC Federal 0697-03-06W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #3		

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)	
9,200.0	0.00	0.00	8,741.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
9,300.0	0.00	0.00	8,841.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
9,400.0	0.00	0.00	8,941.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
9,500.0	0.00	0.00	9,041.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
9,600.0	0.00	0.00	9,141.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
9,700.0	0.00	0.00	9,241.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
<b>Cameo</b>										
9,708.0	0.00	0.00	9,249.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
9,800.0	0.00	0.00	9,341.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
9,900.0	0.00	0.00	9,441.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
<b>Base Cameo Coal</b>										
9,938.0	0.00	0.00	9,479.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
<b>Rollins</b>										
9,958.0	0.00	0.00	9,499.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
10,000.0	0.00	0.00	9,541.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
10,100.0	0.00	0.00	9,641.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
<b>Cozzette</b>										
10,196.0	0.00	0.00	9,737.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
10,200.0	0.00	0.00	9,741.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
10,300.0	0.00	0.00	9,841.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
10,400.0	0.00	0.00	9,941.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
<b>Corcoran</b>										
10,469.0	0.00	0.00	10,010.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
10,500.0	0.00	0.00	10,041.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
10,600.0	0.00	0.00	10,141.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
10,700.0	0.00	0.00	10,241.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	
<b>TD @ 10719.0' MD / 10260.0' TVD</b>										
10,719.0	0.00	0.00	10,260.0	1,159.1	2,246.5	2,527.9	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N-S (usft)	+E-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL - CC Federal 0697	0.00	0.00	10,260.0	1,159.1	2,246.5	1,640,531.41	2,235,830.04	39.560744	-108.210793	
- hit/miss target										
- Shape										
- plan hits target center										
- Ellipse (radii L50.0 W75.0 on 150.00 azi)										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
2,530.0	2,416.7	9 5/8"	9-5/8	14-3/4	



# Well Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CC Federal 0697-03-06W
<b>Company:</b>	Laramie Energy, LLC	<b>TVD Reference:</b>	Well @ 8639.0usft (RKB 30')
<b>Project:</b>	Garfield County, CO	<b>MD Reference:</b>	Well @ 8639.0usft (RKB 30')
<b>Site:</b>	CC 604-41-32 Pad	<b>North Reference:</b>	True
<b>Well:</b>	CC Federal 0697-03-06W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #3		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
606.4	606.0	Mahogany				
5,246.2	4,949.0	Wasatch 'G' Sand				
7,073.0	6,649.0	Ohio Creek				
7,234.0	6,799.0	Williams Fork				
8,058.0	7,599.0	TOG				
9,708.0	9,249.0	Cameo				
9,938.0	9,479.0	Base Cameo Coal				
9,958.0	9,499.0	Rollins				
10,196.0	9,737.0	Cozzette				
10,489.0	10,010.0	Corcoran				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N-S (usft)	+E-W (usft)		
400.0	400.0	0.0	0.0	OP/ (Build 3.00"/100')	
1,110.3	1,094.1	59.9	116.0	EOB @ 21.31° Inc / 62.71° Azm	
7,347.7	6,904.9	1,099.3	2,130.5	Drop @ 3.00"/100'	
8,058.0	7,599.0	1,159.1	2,246.5	EOD @ Vertical	
10,719.0	10,260.0	1,159.1	2,246.5	TD @ 10719.0' MD / 10260.0' TVD	