



Site: Sec 4-T1N-R100W  
Well: Fletcher Gulch Federal 4-24-2  
Wellbore: Wellbore #1  
Design: Plan #1

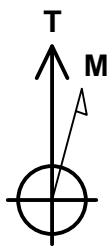
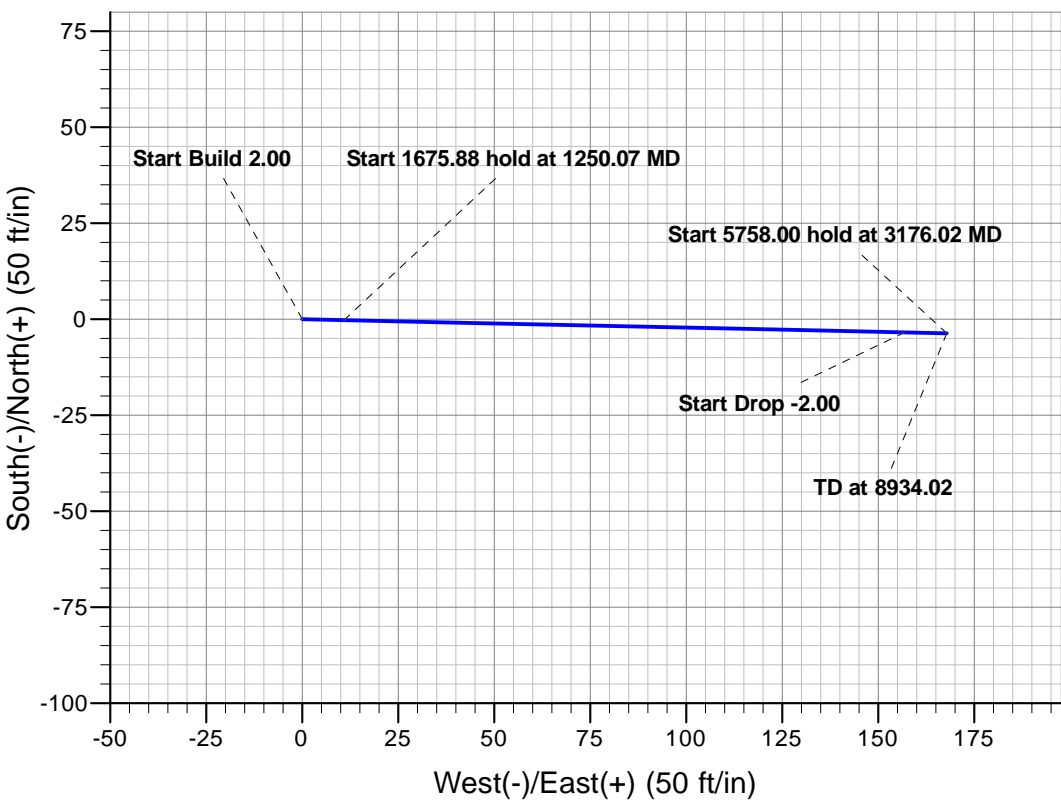
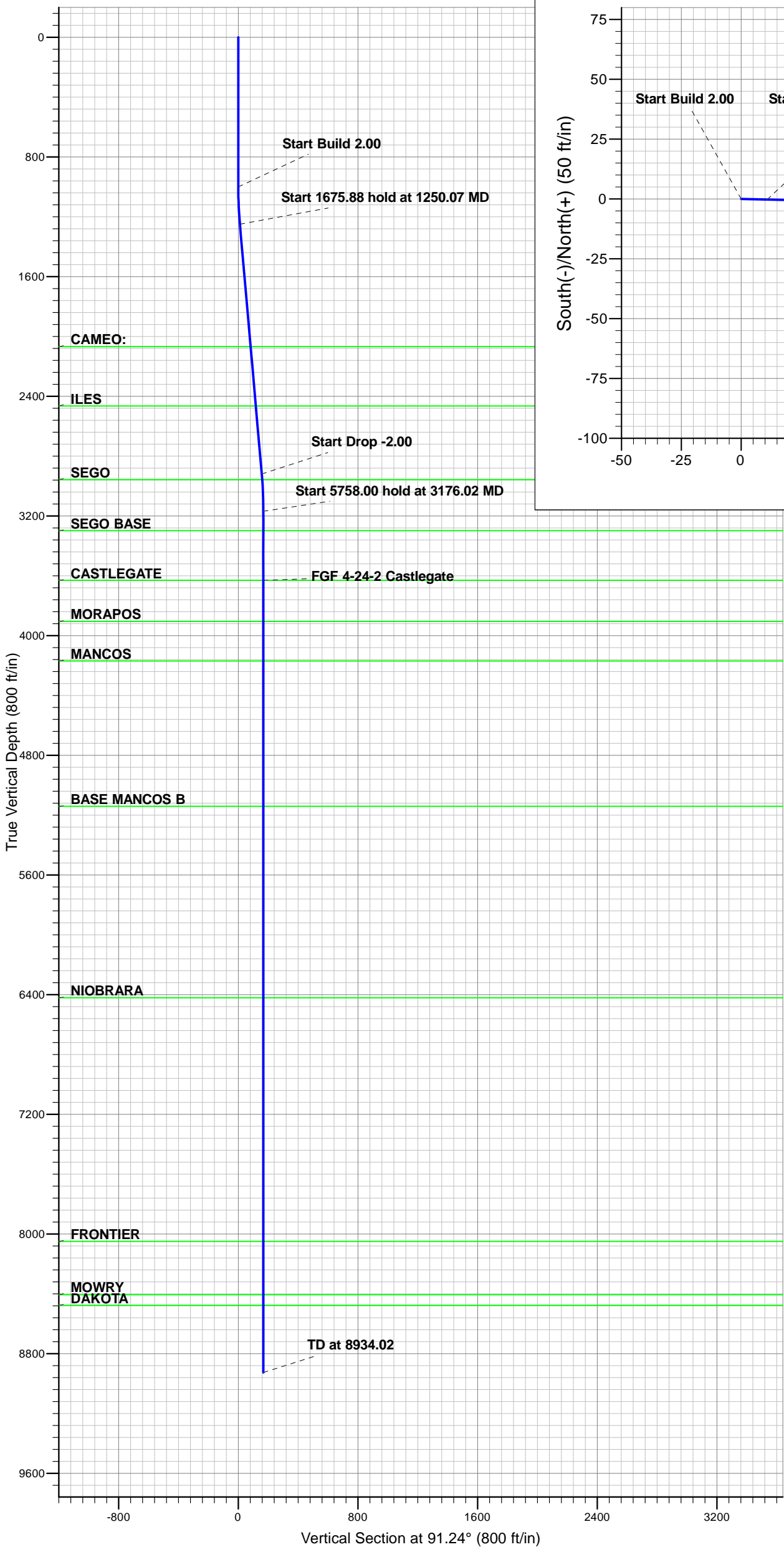
Reference Details - WELL CENTRE  
Geodetic System: US State Plane 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
Northing: 1289764.28  
Easting: 2128411.03  
Latitude: 40.08675  
Longitude: -108.61573  
Grid Convergence: 2.01° East  
Ground Elevation: 6505.00  
KB Elevation: WELL @ 6526.00ft (Original Well Elev)



Departure  
Energy Services (US) LP

Denver, Colorado  
Phone: 303.542.2000

Casper, Wyoming  
Phone: 307.265.2231  
Fax: 307.472.5064  
www.departureus.com



Azimuths to True North  
Magnetic North: 10.69°

Magnetic Field  
Strength: 52468.4snT  
Dip Angle: 66.10°  
Date: 08/11/2011  
Model: IGRF2010

FORMATION TOP DETAILS

TVDPPath	MDPath	Formation
2068.00	2071.44	CAMEO:
2465.00	2469.96	ILES
2957.00	2963.82	SEGO
3299.00	3306.02	SEGO BASE
3631.00	3638.02	CASTLEGATE
3905.00	3912.02	MORAPOS
4170.00	4177.02	MANCOS
5141.00	5148.02	BASE MANCOS B
6421.00	6428.02	NIOBRARA
8050.00	8057.02	FRONTIER
8407.00	8414.02	MOWRY
8477.00	8484.02	DAKOTA

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
1000.00	1000.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1249.75	1250.07	5.00	91.24	-0.24	10.90	10.91	10.91	Start 1675.88 hold at 1250.07 MD
2919.25	2925.95	5.00	91.24	-3.40	156.97	157.01	157.01	Start Drop -2.00
3169.00	3176.02	0.00	0.00	-3.63	167.88	167.92	167.92	Start 5758.00 hold at 3176.02 MD
8927.00	8934.02	0.00	0.00	-3.63	167.88	167.92	167.92	TD at 8934.02



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## **Laramie Energy II, LLC**

Rio Blanco County, Colorado

Sec 4 – T1N – R100W

Fletcher Gulch Federal 4-24-2

S- Well

Well Plan #1

Job Number: TBD

## **Well Plan Report**

August 11, 2011

<b>Database:</b>	EDM Depart	<b>Local Co-ordinate Reference:</b>	Well Fletcher Gulch Federal 4-24-2
<b>Company:</b>	Laramie Energy II, LLC	<b>TVD Reference:</b>	WELL @ 6526.00ft (Original Well Elev)
<b>Project:</b>	Rio Blanco County, CO	<b>MD Reference:</b>	WELL @ 6526.00ft (Original Well Elev)
<b>Site:</b>	Sec 4-T1N-R100W	<b>North Reference:</b>	True
<b>Well:</b>	Fletcher Gulch Federal 4-24-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1		

<b>Project</b>	Rio Blanco 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 Northern Zone		

<b>Site</b>	Sec 4-T1N-R100W			
<b>Site Position:</b>		<b>Northing:</b>	1,288,048.65 ft	<b>Latitude:</b> 40.08211
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,129,103.89 ft	<b>Longitude:</b> -108.61304
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -2.01 °

<b>Well</b>	Fletcher Gulch Federal 4-24-2			
<b>Well Position</b>	<b>+N/-S</b>	1,690.25 ft	<b>Northing:</b>	1,289,764.28 ft
	<b>+E/-W</b>	-752.66 ft	<b>Easting:</b>	2,128,411.02 ft
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	<b>Ground Level:</b> 6,505.00 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	08/11/11	10.69	66.10	52,468

<b>Design</b>	Plan #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	91.24

<b>Plan Sections</b>										
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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,250.07	5.00	91.24	1,249.75	-0.24	10.90	2.00	2.00	0.00	91.24	
2,925.95	5.00	91.24	2,919.25	-3.40	156.97	0.00	0.00	0.00	0.00	
3,176.02	0.00	0.00	3,169.00	-3.63	167.88	2.00	-2.00	0.00	180.00	
8,934.02	0.00	0.00	8,927.00	-3.63	167.88	0.00	0.00	0.00	0.00	FGF 4-24-2 TD

<b>Database:</b>	EDM Depart	<b>Local Co-ordinate Reference:</b>	Well Fletcher Gulch Federal 4-24-2
<b>Company:</b>	Laramie Energy II, LLC	<b>TVD Reference:</b>	WELL @ 6526.00ft (Original Well Elev)
<b>Project:</b>	Rio Blanco County, CO	<b>MD Reference:</b>	WELL @ 6526.00ft (Original Well Elev)
<b>Site:</b>	Sec 4-T1N-R100W	<b>North Reference:</b>	True
<b>Well:</b>	Fletcher Gulch Federal 4-24-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
1,100.00	2.00	91.24	1,099.98	-0.04	1.74	1.75	2.00	2.00	0.00
1,200.00	4.00	91.24	1,199.84	-0.15	6.98	6.98	2.00	2.00	0.00
1,250.07	5.00	91.24	1,249.75	-0.24	10.90	10.91	2.00	2.00	0.00
<b>Start 1675.88 hold at 1250.07 MD</b>									
1,300.00	5.00	91.24	1,299.49	-0.33	15.26	15.26	0.00	0.00	0.00
1,400.00	5.00	91.24	1,399.11	-0.52	23.97	23.98	0.00	0.00	0.00
1,500.00	5.00	91.24	1,498.73	-0.71	32.69	32.70	0.00	0.00	0.00
1,600.00	5.00	91.24	1,598.35	-0.90	41.40	41.41	0.00	0.00	0.00
1,700.00	5.00	91.24	1,697.97	-1.08	50.12	50.13	0.00	0.00	0.00
1,800.00	5.00	91.24	1,797.59	-1.27	58.84	58.85	0.00	0.00	0.00
1,900.00	5.00	91.24	1,897.21	-1.46	67.55	67.57	0.00	0.00	0.00
2,000.00	5.00	91.24	1,996.83	-1.65	76.27	76.29	0.00	0.00	0.00
2,071.44	5.00	91.24	2,068.00	-1.79	82.50	82.52	0.00	0.00	0.00
<b>CAMEO:</b>									
2,100.00	5.00	91.24	2,096.45	-1.84	84.98	85.00	0.00	0.00	0.00
2,200.00	5.00	91.24	2,196.07	-2.03	93.70	93.72	0.00	0.00	0.00
2,300.00	5.00	91.24	2,295.69	-2.22	102.42	102.44	0.00	0.00	0.00
2,400.00	5.00	91.24	2,395.30	-2.41	111.13	111.16	0.00	0.00	0.00
2,469.96	5.00	91.24	2,465.00	-2.54	117.23	117.26	0.00	0.00	0.00
<b>ILES</b>									
2,500.00	5.00	91.24	2,494.92	-2.59	119.85	119.88	0.00	0.00	0.00
2,600.00	5.00	91.24	2,594.54	-2.78	128.56	128.59	0.00	0.00	0.00
2,700.00	5.00	91.24	2,694.16	-2.97	137.28	137.31	0.00	0.00	0.00
2,800.00	5.00	91.24	2,793.78	-3.16	146.00	146.03	0.00	0.00	0.00
2,900.00	5.00	91.24	2,893.40	-3.35	154.71	154.75	0.00	0.00	0.00
2,925.95	5.00	91.24	2,919.25	-3.40	156.97	157.01	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
2,963.82	4.24	91.24	2,957.00	-3.46	160.03	160.06	2.00	-2.00	0.00
<b>SEGO</b>									
3,000.00	3.52	91.24	2,993.10	-3.52	162.47	162.51	2.00	-2.00	0.00
3,100.00	1.52	91.24	3,092.99	-3.61	166.87	166.91	2.00	-2.00	0.00
3,176.02	0.00	0.00	3,169.00	-3.63	167.88	167.92	2.00	-2.00	0.00
<b>Start 5758.00 hold at 3176.02 MD</b>									
3,200.00	0.00	0.00	3,192.98	-3.63	167.88	167.92	0.00	0.00	0.00
3,300.00	0.00	0.00	3,292.98	-3.63	167.88	167.92	0.00	0.00	0.00
3,306.02	0.00	0.00	3,299.00	-3.63	167.88	167.92	0.00	0.00	0.00
<b>SEGO BASE</b>									
3,400.00	0.00	0.00	3,392.98	-3.63	167.88	167.92	0.00	0.00	0.00
3,500.00	0.00	0.00	3,492.98	-3.63	167.88	167.92	0.00	0.00	0.00
3,600.00	0.00	0.00	3,592.98	-3.63	167.88	167.92	0.00	0.00	0.00
3,638.02	0.00	0.00	3,631.00	-3.63	167.88	167.92	0.00	0.00	0.00
<b>CASTLEGATE</b>									
3,700.00	0.00	0.00	3,692.98	-3.63	167.88	167.92	0.00	0.00	0.00
3,800.00	0.00	0.00	3,792.98	-3.63	167.88	167.92	0.00	0.00	0.00
3,900.00	0.00	0.00	3,892.98	-3.63	167.88	167.92	0.00	0.00	0.00
3,912.02	0.00	0.00	3,905.00	-3.63	167.88	167.92	0.00	0.00	0.00
<b>MORAPOS</b>									
4,000.00	0.00	0.00	3,992.98	-3.63	167.88	167.92	0.00	0.00	0.00
4,100.00	0.00	0.00	4,092.98	-3.63	167.88	167.92	0.00	0.00	0.00
4,177.02	0.00	0.00	4,170.00	-3.63	167.88	167.92	0.00	0.00	0.00
<b>MANCOS</b>									

<b>Database:</b>	EDM Depart	<b>Local Co-ordinate Reference:</b>	Well Fletcher Gulch Federal 4-24-2
<b>Company:</b>	Laramie Energy II, LLC	<b>TVD Reference:</b>	WELL @ 6526.00ft (Original Well Elev)
<b>Project:</b>	Rio Blanco County, CO	<b>MD Reference:</b>	WELL @ 6526.00ft (Original Well Elev)
<b>Site:</b>	Sec 4-T1N-R100W	<b>North Reference:</b>	True
<b>Well:</b>	Fletcher Gulch Federal 4-24-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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)
4,200.00	0.00	0.00	4,192.98	-3.63	167.88	167.92	0.00	0.00	0.00
4,300.00	0.00	0.00	4,292.98	-3.63	167.88	167.92	0.00	0.00	0.00
4,400.00	0.00	0.00	4,392.98	-3.63	167.88	167.92	0.00	0.00	0.00
4,500.00	0.00	0.00	4,492.98	-3.63	167.88	167.92	0.00	0.00	0.00
4,600.00	0.00	0.00	4,592.98	-3.63	167.88	167.92	0.00	0.00	0.00
4,700.00	0.00	0.00	4,692.98	-3.63	167.88	167.92	0.00	0.00	0.00
4,800.00	0.00	0.00	4,792.98	-3.63	167.88	167.92	0.00	0.00	0.00
4,900.00	0.00	0.00	4,892.98	-3.63	167.88	167.92	0.00	0.00	0.00
5,000.00	0.00	0.00	4,992.98	-3.63	167.88	167.92	0.00	0.00	0.00
5,100.00	0.00	0.00	5,092.98	-3.63	167.88	167.92	0.00	0.00	0.00
5,148.02	0.00	0.00	5,141.00	-3.63	167.88	167.92	0.00	0.00	0.00
<b>BASE MANCOS B</b>									
5,200.00	0.00	0.00	5,192.98	-3.63	167.88	167.92	0.00	0.00	0.00
5,300.00	0.00	0.00	5,292.98	-3.63	167.88	167.92	0.00	0.00	0.00
5,400.00	0.00	0.00	5,392.98	-3.63	167.88	167.92	0.00	0.00	0.00
5,500.00	0.00	0.00	5,492.98	-3.63	167.88	167.92	0.00	0.00	0.00
5,600.00	0.00	0.00	5,592.98	-3.63	167.88	167.92	0.00	0.00	0.00
5,700.00	0.00	0.00	5,692.98	-3.63	167.88	167.92	0.00	0.00	0.00
5,800.00	0.00	0.00	5,792.98	-3.63	167.88	167.92	0.00	0.00	0.00
5,900.00	0.00	0.00	5,892.98	-3.63	167.88	167.92	0.00	0.00	0.00
6,000.00	0.00	0.00	5,992.98	-3.63	167.88	167.92	0.00	0.00	0.00
6,100.00	0.00	0.00	6,092.98	-3.63	167.88	167.92	0.00	0.00	0.00
6,200.00	0.00	0.00	6,192.98	-3.63	167.88	167.92	0.00	0.00	0.00
6,300.00	0.00	0.00	6,292.98	-3.63	167.88	167.92	0.00	0.00	0.00
6,400.00	0.00	0.00	6,392.98	-3.63	167.88	167.92	0.00	0.00	0.00
6,428.02	0.00	0.00	6,421.00	-3.63	167.88	167.92	0.00	0.00	0.00
<b>NIOBRARA</b>									
6,500.00	0.00	0.00	6,492.98	-3.63	167.88	167.92	0.00	0.00	0.00
6,600.00	0.00	0.00	6,592.98	-3.63	167.88	167.92	0.00	0.00	0.00
6,700.00	0.00	0.00	6,692.98	-3.63	167.88	167.92	0.00	0.00	0.00
6,800.00	0.00	0.00	6,792.98	-3.63	167.88	167.92	0.00	0.00	0.00
6,900.00	0.00	0.00	6,892.98	-3.63	167.88	167.92	0.00	0.00	0.00
7,000.00	0.00	0.00	6,992.98	-3.63	167.88	167.92	0.00	0.00	0.00
7,100.00	0.00	0.00	7,092.98	-3.63	167.88	167.92	0.00	0.00	0.00
7,200.00	0.00	0.00	7,192.98	-3.63	167.88	167.92	0.00	0.00	0.00
7,300.00	0.00	0.00	7,292.98	-3.63	167.88	167.92	0.00	0.00	0.00
7,400.00	0.00	0.00	7,392.98	-3.63	167.88	167.92	0.00	0.00	0.00
7,500.00	0.00	0.00	7,492.98	-3.63	167.88	167.92	0.00	0.00	0.00
7,600.00	0.00	0.00	7,592.98	-3.63	167.88	167.92	0.00	0.00	0.00
7,700.00	0.00	0.00	7,692.98	-3.63	167.88	167.92	0.00	0.00	0.00
7,800.00	0.00	0.00	7,792.98	-3.63	167.88	167.92	0.00	0.00	0.00
7,900.00	0.00	0.00	7,892.98	-3.63	167.88	167.92	0.00	0.00	0.00
8,000.00	0.00	0.00	7,992.98	-3.63	167.88	167.92	0.00	0.00	0.00
8,057.02	0.00	0.00	8,050.00	-3.63	167.88	167.92	0.00	0.00	0.00
<b>FRONTIER</b>									
8,100.00	0.00	0.00	8,092.98	-3.63	167.88	167.92	0.00	0.00	0.00
8,200.00	0.00	0.00	8,192.98	-3.63	167.88	167.92	0.00	0.00	0.00
8,300.00	0.00	0.00	8,292.98	-3.63	167.88	167.92	0.00	0.00	0.00
8,400.00	0.00	0.00	8,392.98	-3.63	167.88	167.92	0.00	0.00	0.00
8,414.02	0.00	0.00	8,407.00	-3.63	167.88	167.92	0.00	0.00	0.00
<b>MOWRY</b>									
8,484.02	0.00	0.00	8,477.00	-3.63	167.88	167.92	0.00	0.00	0.00
<b>DAKOTA</b>									

<b>Database:</b>	EDM Depart	<b>Local Co-ordinate Reference:</b>	Well Fletcher Gulch Federal 4-24-2
<b>Company:</b>	Laramie Energy II, LLC	<b>TVD Reference:</b>	WELL @ 6526.00ft (Original Well Elev)
<b>Project:</b>	Rio Blanco County, CO	<b>MD Reference:</b>	WELL @ 6526.00ft (Original Well Elev)
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<b>Well:</b>	Fletcher Gulch Federal 4-24-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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)
8,500.00	0.00	0.00	8,492.98	-3.63	167.88	167.92	0.00	0.00	0.00
8,600.00	0.00	0.00	8,592.98	-3.63	167.88	167.92	0.00	0.00	0.00
8,700.00	0.00	0.00	8,692.98	-3.63	167.88	167.92	0.00	0.00	0.00
8,800.00	0.00	0.00	8,792.98	-3.63	167.88	167.92	0.00	0.00	0.00
8,900.00	0.00	0.00	8,892.98	-3.63	167.88	167.92	0.00	0.00	0.00
8,934.02	0.00	0.00	8,927.00	-3.63	167.88	167.92	0.00	0.00	0.00

Design 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									
FGF 4-24-2 Castlegate	0.00	0.00	3,631.00	-3.63	167.88	1,289,754.75	2,128,578.67	40.08674	-108.61513
- plan hits target center									
- Point									
FGF 4-24-2 TD	0.00	0.00	8,927.00	-3.63	167.88	1,289,754.75	2,128,578.67	40.08674	-108.61513
- plan hits target center									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,071.44	2,068.00	CAMEO:				
2,469.96	2,465.00	ILES				
2,963.82	2,957.00	SEGO				
3,306.02	3,299.00	SEGO BASE				
3,638.02	3,631.00	CASTLEGATE				
3,912.02	3,905.00	MORAPOS				
4,177.02	4,170.00	MANCOS				
5,148.02	5,141.00	BASE MANCOS B				
6,428.02	6,421.00	NIOBRARA				
8,057.02	8,050.00	FRONTIER				
8,414.02	8,407.00	MOWRY				
8,484.02	8,477.00	DAKOTA				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,000.00	1,000.00	0.00	0.00	Start Build 2.00	
1,250.07	1,249.75	-0.24	10.90	Start 1675.88 hold at 1250.07 MD	
2,925.95	2,919.25	-3.40	156.97	Start Drop -2.00	
3,176.02	3,169.00	-3.63	167.88	Start 5758.00 hold at 3176.02 MD	
8,934.02	8,927.00	-3.63	167.88	TD at 8934.02	