

# **Catamount Energy Partners**

**San Juan Basin  
La Plata County CO  
Campbell 33-7-4 #2H**

**Lateral #2**

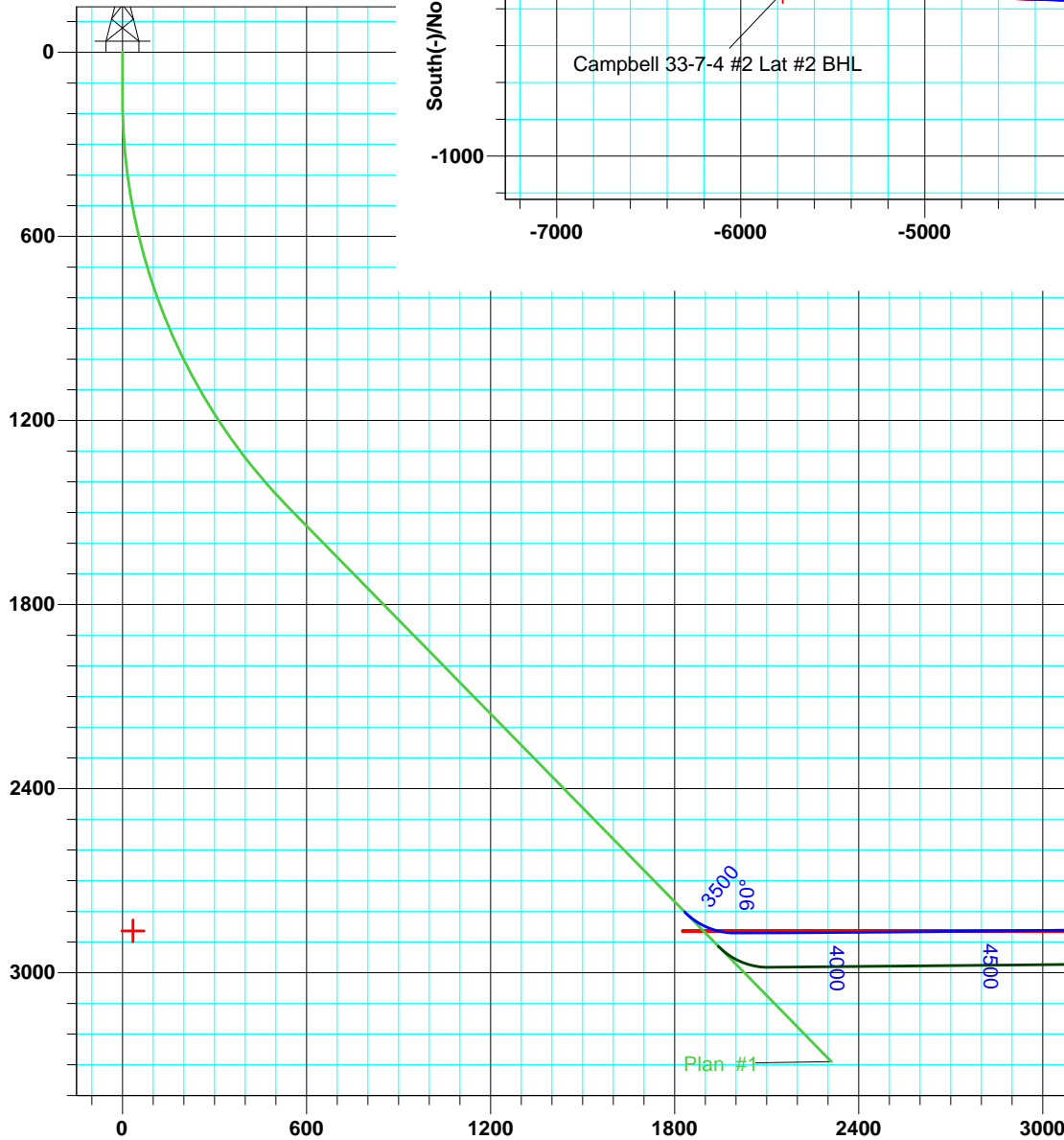
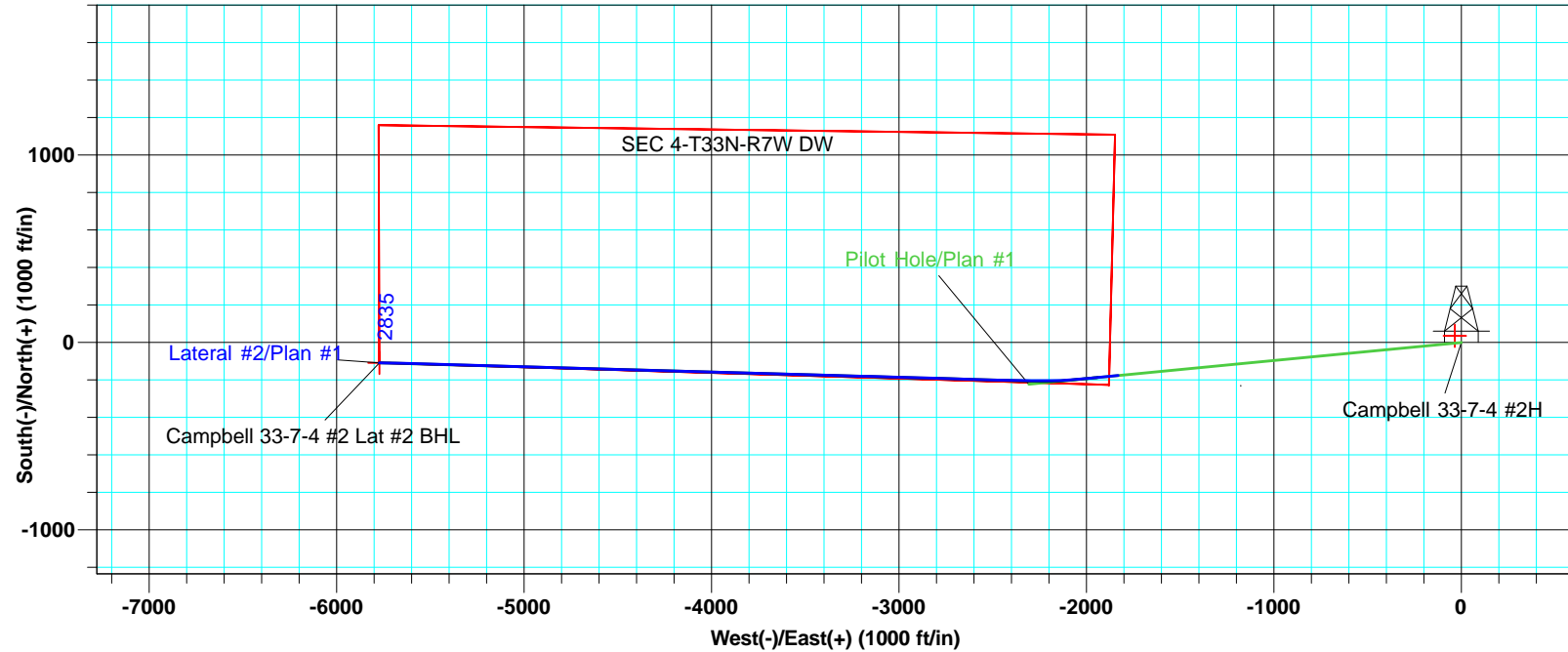
**Plan: Plan #1**

## **Standard Planning Report**

**30 October, 2013**



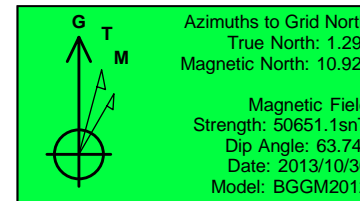
Project: San Juan Basin  
 Site: La Plata County CO  
 Well: Campbell 33-7-4 #2H  
 Wellbore: Lateral #2  
 Design: Plan #1



WELL DETAILS						
Campbell 33-7-4 #2H						
Ground Level: 6689.0						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	1174967.71	2387533.00	37° 7' 41.770 N	107° 36' 3.328 W	

SITE DETAILS: La Plata County CO	
Site Centre Northing:	760788.19
Easting:	2556100.64
Positional Uncertainty:	0.0
Convergence:	-0.92
Local North:	Grid

PROJECT DETAILS: San Juan Basin	
Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	Colorado Southern Zone
System Datum:	Mean Sea Level



ALL AZIMUTHS MUST BE CORRECTED TO GRID NORTH  
 To convert a Magnetic Direction to a Grid Direction, Add 10.92°  
 To convert a True Direction to a Grid Direction, Add 1.29°

Vertical Section at 268.93° (600 ft/in)

<b>Database:</b>	EDM 5000.1 Old	<b>Local Co-ordinate Reference:</b>	Well Campbell 33-7-4 #2H
<b>Company:</b>	Catamount Energy Partners	<b>TVD Reference:</b>	KB @ 6701.0ft (Original Well Elev)
<b>Project:</b>	San Juan Basin	<b>MD Reference:</b>	KB @ 6701.0ft (Original Well Elev)
<b>Site:</b>	La Plata County CO	<b>North Reference:</b>	Grid
<b>Well:</b>	Campbell 33-7-4 #2H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral #2		
<b>Design:</b>	Plan #1		

<b>Project</b>	San Juan Basin, Southern Colorado, Fruitland Coal HZ		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Southern Zone		Using geodetic scale factor

<b>Site</b>	La Plata County CO		
<b>Site Position:</b>		<b>Northing:</b>	760,788.19 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,556,100.64 usft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	6-1/8 "
		<b>Latitude:</b>	36° 0' 0.000 N
		<b>Longitude:</b>	107° 0' 0.000 W
		<b>Grid Convergence:</b>	-0.92 °

<b>Well</b>	Campbell 33-7-4 #2H, Fruitland Coal Horizontal		
<b>Well Position</b>	<b>+N/-S</b>	413,993.4 ft	<b>Northing:</b> 1,174,967.71 usft
	<b>+E/-W</b>	-168,491.9 ft	<b>Easting:</b> 2,387,533.00 usft
<b>Position Uncertainty</b>		1.0 ft	<b>Wellhead Elevation:</b>
			<b>Ground Level:</b> 6,689.0 ft

<b>Wellbore</b>	Lateral #2				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2012	2013/10/30	9.63	63.74	50,651

<b>Design</b>	Plan #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	3,475.0	
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	268.93	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
3,475.0	44.50	264.50	2,802.2	-176.2	-1,830.0	0.00	0.00	0.00	0.00	
3,657.0	90.00	264.50	2,870.8	-191.9	-1,992.7	25.00	25.00	0.00	0.00	
4,013.5	90.57	271.61	2,869.0	-204.0	-2,348.8	2.00	0.16	1.99	85.41	
7,437.2	90.57	271.61	2,835.0	-108.0	-5,771.0	0.00	0.00	0.00	0.00	Campbell 33-7-4 #2

<b>Database:</b>	EDM 5000.1 Old	<b>Local Co-ordinate Reference:</b>	Well Campbell 33-7-4 #2H
<b>Company:</b>	Catamount Energy Partners	<b>TVD Reference:</b>	KB @ 6701.0ft (Original Well Elev)
<b>Project:</b>	San Juan Basin	<b>MD Reference:</b>	KB @ 6701.0ft (Original Well Elev)
<b>Site:</b>	La Plata County CO	<b>North Reference:</b>	Grid
<b>Well:</b>	Campbell 33-7-4 #2H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral #2		
<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 (°/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
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	1.50	264.50	200.0	-0.1	-0.7	0.7	3.00	3.00	0.00
300.0	4.50	264.50	299.8	-0.6	-5.9	5.9	3.00	3.00	0.00
400.0	7.50	264.50	399.3	-1.6	-16.3	16.3	3.00	3.00	0.00
500.0	10.50	264.50	498.0	-3.1	-31.8	31.9	3.00	3.00	0.00
600.0	13.50	264.50	595.8	-5.1	-52.5	52.6	3.00	3.00	0.00
700.0	16.50	264.50	692.4	-7.5	-78.3	78.4	3.00	3.00	0.00
800.0	19.50	264.50	787.5	-10.5	-109.0	109.2	3.00	3.00	0.00
900.0	22.50	264.50	880.9	-13.9	-144.7	144.9	3.00	3.00	0.00
1,000.0	25.50	264.50	972.2	-17.8	-185.2	185.5	3.00	3.00	0.00
1,100.0	28.50	264.50	1,061.3	-22.2	-230.4	230.8	3.00	3.00	0.00
1,200.0	31.50	264.50	1,147.9	-27.0	-280.1	280.6	3.00	3.00	0.00
1,300.0	34.50	264.50	1,231.8	-32.2	-334.3	334.9	3.00	3.00	0.00
1,400.0	37.50	264.50	1,312.6	-37.8	-392.8	393.5	3.00	3.00	0.00
1,500.0	40.50	264.50	1,390.4	-43.9	-455.5	456.2	3.00	3.00	0.00
1,600.0	43.50	264.50	1,464.7	-50.3	-522.1	522.9	3.00	3.00	0.00
1,633.3	44.50	264.50	1,488.6	-52.5	-545.1	546.0	3.00	3.00	0.00
1,700.0	44.50	264.50	1,536.2	-57.0	-591.6	592.6	0.00	0.00	0.00
1,800.0	44.50	264.50	1,607.5	-63.7	-661.4	662.5	0.00	0.00	0.00
1,900.0	44.50	264.50	1,678.8	-70.4	-731.2	732.4	0.00	0.00	0.00
2,000.0	44.50	264.50	1,750.2	-77.1	-800.9	802.2	0.00	0.00	0.00
2,100.0	44.50	264.50	1,821.5	-83.8	-870.7	872.1	0.00	0.00	0.00
2,200.0	44.50	264.50	1,892.8	-90.6	-940.5	942.0	0.00	0.00	0.00
2,252.1	44.50	264.50	1,930.0	-94.1	-976.8	978.4	0.00	0.00	0.00
<b>SEC 4-T33N-R7W DW</b>									
2,300.0	44.50	264.50	1,964.1	-97.3	-1,010.3	1,011.9	0.00	0.00	0.00
2,400.0	44.50	264.50	2,035.5	-104.0	-1,080.0	1,081.8	0.00	0.00	0.00
2,500.0	44.50	264.50	2,106.8	-110.7	-1,149.8	1,151.7	0.00	0.00	0.00
2,600.0	44.50	264.50	2,178.1	-117.4	-1,219.6	1,221.5	0.00	0.00	0.00
2,700.0	44.50	264.50	2,249.4	-124.1	-1,289.3	1,291.4	0.00	0.00	0.00
2,800.0	44.50	264.50	2,320.8	-130.9	-1,359.1	1,361.3	0.00	0.00	0.00
2,900.0	44.50	264.50	2,392.1	-137.6	-1,428.9	1,431.2	0.00	0.00	0.00
3,000.0	44.50	264.50	2,463.4	-144.3	-1,498.6	1,501.1	0.00	0.00	0.00
3,100.0	44.50	264.50	2,534.7	-151.0	-1,568.4	1,570.9	0.00	0.00	0.00
3,200.0	44.50	264.50	2,606.1	-157.7	-1,638.2	1,640.8	0.00	0.00	0.00
3,300.0	44.50	264.50	2,677.4	-164.5	-1,707.9	1,710.7	0.00	0.00	0.00
3,400.0	44.50	264.50	2,748.7	-171.2	-1,777.7	1,780.6	0.00	0.00	0.00
3,475.0	44.50	264.50	2,802.2	-176.2	-1,830.0	1,833.0	0.00	0.00	0.00
3,480.0	45.75	264.50	2,805.7	-176.6	-1,833.6	1,836.5	25.00	25.00	0.00
3,500.0	50.75	264.50	2,819.0	-178.0	-1,848.4	1,851.4	25.00	25.00	0.00
3,520.0	55.75	264.50	2,831.0	-179.5	-1,864.3	1,867.4	25.00	25.00	0.00
3,540.0	60.75	264.50	2,841.5	-181.1	-1,881.3	1,884.3	25.00	25.00	0.00
3,560.0	65.75	264.50	2,850.5	-182.9	-1,899.0	1,902.1	25.00	25.00	0.00
3,580.0	70.75	264.50	2,857.9	-184.6	-1,917.5	1,920.6	25.00	25.00	0.00
3,600.0	75.75	264.50	2,863.7	-186.5	-1,936.6	1,939.7	25.00	25.00	0.00
3,620.0	80.75	264.50	2,867.8	-188.3	-1,956.1	1,959.3	25.00	25.00	0.00
3,640.0	85.75	264.50	2,870.1	-190.3	-1,975.8	1,979.0	25.00	25.00	0.00
3,657.0	90.00	264.50	2,870.8	-191.9	-1,992.7	1,996.0	25.00	25.00	0.00
3,700.0	90.07	265.36	2,870.7	-195.7	-2,035.6	2,038.9	2.00	0.16	1.99
3,800.0	90.23	267.35	2,870.5	-202.0	-2,135.4	2,138.8	2.00	0.16	1.99
3,900.0	90.39	269.34	2,869.9	-204.9	-2,235.3	2,238.8	2.00	0.16	1.99
4,000.0	90.55	271.34	2,869.1	-204.3	-2,335.3	2,338.7	2.00	0.16	1.99

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<b>Project:</b>	San Juan Basin	<b>MD Reference:</b>	KB @ 6701.0ft (Original Well Elev)
<b>Site:</b>	La Plata County CO	<b>North Reference:</b>	Grid
<b>Well:</b>	Campbell 33-7-4 #2H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral #2		
<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 (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,013.5	90.57	271.61	2,869.0	-204.0	-2,348.8	2,352.2	2.00	0.16	1.99	
4,100.0	90.57	271.61	2,868.1	-201.6	-2,435.3	2,438.6	0.00	0.00	0.00	
4,200.0	90.57	271.61	2,867.1	-198.8	-2,535.2	2,538.5	0.00	0.00	0.00	
4,300.0	90.57	271.61	2,866.1	-195.9	-2,635.2	2,638.4	0.00	0.00	0.00	
4,400.0	90.57	271.61	2,865.1	-193.1	-2,735.1	2,738.3	0.00	0.00	0.00	
4,500.0	90.57	271.61	2,864.2	-190.3	-2,835.1	2,838.1	0.00	0.00	0.00	
4,600.0	90.57	271.61	2,863.2	-187.5	-2,935.0	2,938.0	0.00	0.00	0.00	
4,700.0	90.57	271.61	2,862.2	-184.7	-3,035.0	3,037.9	0.00	0.00	0.00	
4,800.0	90.57	271.61	2,861.2	-181.9	-3,135.0	3,137.8	0.00	0.00	0.00	
4,900.0	90.57	271.61	2,860.2	-179.1	-3,234.9	3,237.7	0.00	0.00	0.00	
5,000.0	90.57	271.61	2,859.2	-176.3	-3,334.9	3,337.6	0.00	0.00	0.00	
5,100.0	90.57	271.61	2,858.2	-173.5	-3,434.8	3,437.5	0.00	0.00	0.00	
5,200.0	90.57	271.61	2,857.2	-170.7	-3,534.8	3,537.4	0.00	0.00	0.00	
5,300.0	90.57	271.61	2,856.2	-167.9	-3,634.7	3,637.2	0.00	0.00	0.00	
5,400.0	90.57	271.61	2,855.2	-165.1	-3,734.7	3,737.1	0.00	0.00	0.00	
5,500.0	90.57	271.61	2,854.2	-162.3	-3,834.6	3,837.0	0.00	0.00	0.00	
5,600.0	90.57	271.61	2,853.2	-159.5	-3,934.6	3,936.9	0.00	0.00	0.00	
5,700.0	90.57	271.61	2,852.2	-156.7	-4,034.6	4,036.8	0.00	0.00	0.00	
5,800.0	90.57	271.61	2,851.3	-153.9	-4,134.5	4,136.7	0.00	0.00	0.00	
5,900.0	90.57	271.61	2,850.3	-151.1	-4,234.5	4,236.6	0.00	0.00	0.00	
6,000.0	90.57	271.61	2,849.3	-148.3	-4,334.4	4,336.4	0.00	0.00	0.00	
6,100.0	90.57	271.61	2,848.3	-145.5	-4,434.4	4,436.3	0.00	0.00	0.00	
6,200.0	90.57	271.61	2,847.3	-142.7	-4,534.3	4,536.2	0.00	0.00	0.00	
6,300.0	90.57	271.61	2,846.3	-139.9	-4,634.3	4,636.1	0.00	0.00	0.00	
6,400.0	90.57	271.61	2,845.3	-137.1	-4,734.2	4,736.0	0.00	0.00	0.00	
6,500.0	90.57	271.61	2,844.3	-134.3	-4,834.2	4,835.9	0.00	0.00	0.00	
6,600.0	90.57	271.61	2,843.3	-131.5	-4,934.2	4,935.8	0.00	0.00	0.00	
6,700.0	90.57	271.61	2,842.3	-128.7	-5,034.1	5,035.6	0.00	0.00	0.00	
6,800.0	90.57	271.61	2,841.3	-125.9	-5,134.1	5,135.5	0.00	0.00	0.00	
6,900.0	90.57	271.61	2,840.3	-123.1	-5,234.0	5,235.4	0.00	0.00	0.00	
7,000.0	90.57	271.61	2,839.3	-120.3	-5,334.0	5,335.3	0.00	0.00	0.00	
7,100.0	90.57	271.61	2,838.3	-117.5	-5,433.9	5,435.2	0.00	0.00	0.00	
7,200.0	90.57	271.61	2,837.4	-114.7	-5,533.9	5,535.1	0.00	0.00	0.00	
7,300.0	90.57	271.61	2,836.4	-111.8	-5,633.8	5,635.0	0.00	0.00	0.00	
7,400.0	90.57	271.61	2,835.4	-109.0	-5,733.8	5,734.8	0.00	0.00	0.00	
7,437.2	90.57	271.61	2,835.0	-108.0	-5,771.0	5,772.0	0.00	0.00	0.00	
Campbell 33-7-4 #2 Lat #2 BHL										

<b>Database:</b>	EDM 5000.1 Old	<b>Local Co-ordinate Reference:</b>	Well Campbell 33-7-4 #2H
<b>Company:</b>	Catamount Energy Partners	<b>TVD Reference:</b>	KB @ 6701.0ft (Original Well Elev)
<b>Project:</b>	San Juan Basin	<b>MD Reference:</b>	KB @ 6701.0ft (Original Well Elev)
<b>Site:</b>	La Plata County CO	<b>North Reference:</b>	Grid
<b>Well:</b>	Campbell 33-7-4 #2H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral #2		
<b>Design:</b>	Plan #1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
Campbell 33-7-4 #2 L	0.00	360.00	2,835.0	-108.0	-5,771.0	1,174,859.70	2,381,761.90	37° 7' 39.413 N	107° 37' 14.540 W
- plan hits target center									
- Point									
SEC 4-T33N-R7W DV	0.00	360.00	2,864.0	35.5	-34.4	1,175,003.26	2,387,498.59	37° 7' 42.114 N	107° 36' 3.762 W
- plan misses target center by 1333.2ft at 2252.1ft MD (1930.0 TVD, -94.1 N, -976.8 E)									
- Polygon									
Point 1			2,864.0	1,123.7	-5,740.9	1,176,126.98	2,381,757.59		
Point 2			2,864.0	1,073.2	-1,812.7	1,176,076.48	2,385,685.86		
Point 3			2,864.0	-262.2	-1,845.0	1,174,741.05	2,385,653.56		
Point 4			2,864.0	-144.1	-5,738.1	1,174,859.15	2,381,760.39		