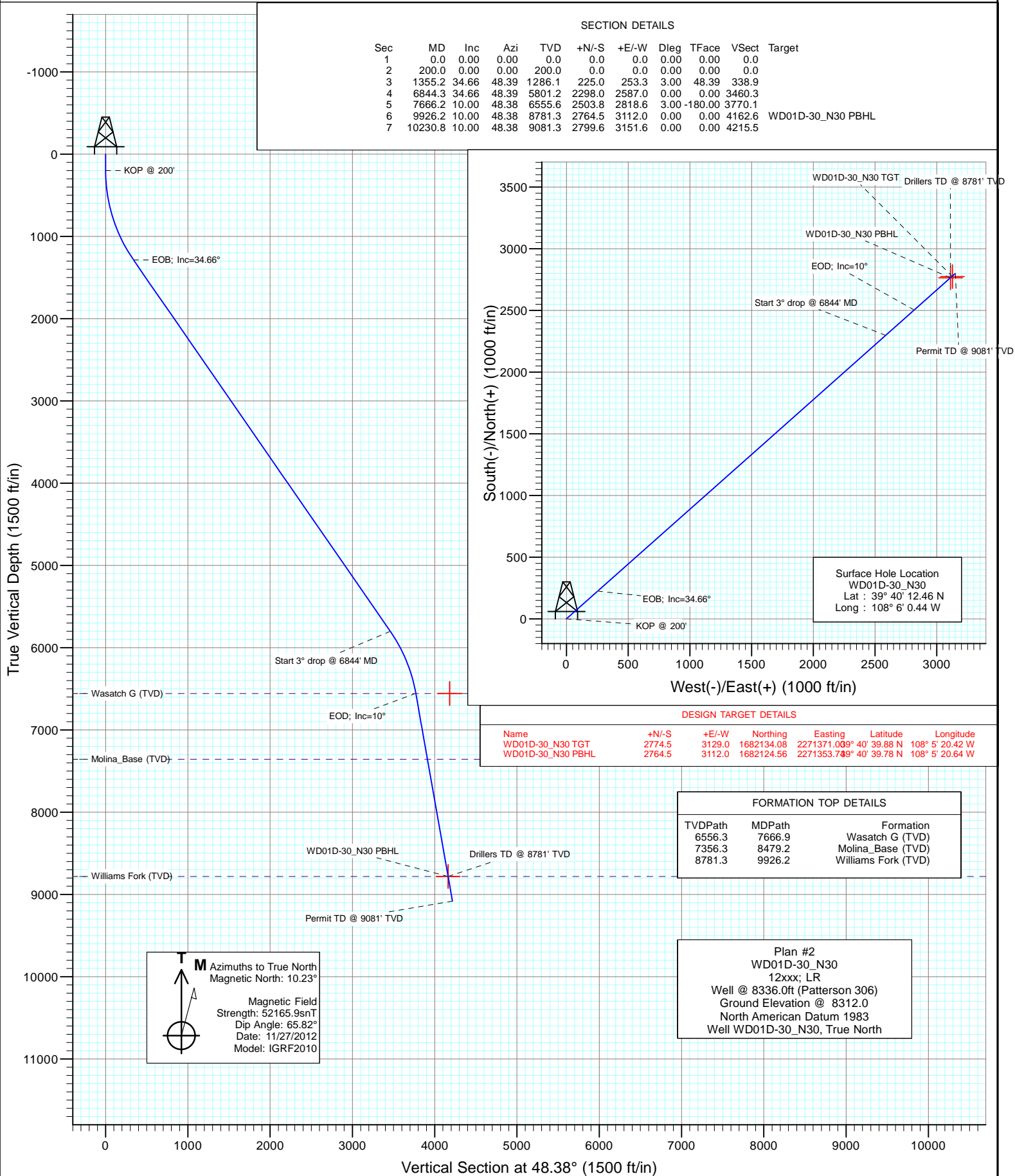




Project: Story Gulch  
Site: N30 495  
Well: WD01D-30\_N30  
Wellbore: DD  
Design: Plan #2



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well WD01D-30_N30
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	Well @ 8336.0ft (Patterson 306)
<b>Project:</b>	Story Gulch	<b>MD Reference:</b>	Well @ 8336.0ft (Patterson 306)
<b>Site:</b>	N30 495	<b>North Reference:</b>	True
<b>Well:</b>	WD01D-30_N30	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #2		

<b>Project</b>	Story Gulch		
<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		

Site	N30 495				
Site Position:		Northing:	1,679,450.30 ft	Latitude:	39° 40' 12.46 N
From:	Lat/Long	Easting:	2,268,163.89 ft	Longitude:	108° 6' 0.44 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.64 °

Well	WD01D-30_N30					
Well Position	+N/-S	0.0 ft	Northing:	1,679,450.29 ft	Latitude:	39° 40' 12.46 N
	+E/-W	0.0 ft	Easting:	2,268,163.89 ft	Longitude:	108° 6' 0.44 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,312.0 ft

<b>Wellbore</b>	DD				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	11/27/2012	10.23	65.82	52,166

<b>Design</b>	Plan #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<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	48.38

<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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,355.2	34.66	48.39	1,286.1	225.0	253.3	3.00	3.00	0.00	48.39	
6,844.3	34.66	48.39	5,801.2	2,298.0	2,587.0	0.00	0.00	0.00	0.00	
7,666.2	10.00	48.38	6,555.6	2,503.8	2,818.6	3.00	-3.00	0.00	-180.00	
9,926.2	10.00	48.38	8,781.3	2,764.5	3,112.0	0.00	0.00	0.00	0.00	WD01D-30_N30 PBH
10,230.8	10.00	48.38	9,081.3	2,799.6	3,151.6	0.00	0.00	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well WD01D-30_N30
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	Well @ 8336.0ft (Patterson 306)
<b>Project:</b>	Story Gulch	<b>MD Reference:</b>	Well @ 8336.0ft (Patterson 306)
<b>Site:</b>	N30 495	<b>North Reference:</b>	True
<b>Well:</b>	WD01D-30_N30	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #2		

### 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)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200'
300.0	3.00	48.39	300.0	1.7	2.0	2.6	3.00	3.00	
400.0	6.00	48.39	399.6	6.9	7.8	10.5	3.00	3.00	
500.0	9.00	48.39	498.8	15.6	17.6	23.5	3.00	3.00	
600.0	12.00	48.39	597.1	27.7	31.2	41.7	3.00	3.00	
700.0	15.00	48.39	694.3	43.2	48.7	65.1	3.00	3.00	
800.0	18.00	48.39	790.2	62.1	69.9	93.5	3.00	3.00	
900.0	21.00	48.39	884.4	84.2	94.8	126.9	3.00	3.00	
1,000.0	24.00	48.39	976.8	109.7	123.4	165.1	3.00	3.00	
1,100.0	27.00	48.39	1,067.1	138.2	155.6	208.2	3.00	3.00	
1,200.0	30.00	48.39	1,154.9	169.9	191.3	255.9	3.00	3.00	
1,300.0	33.00	48.39	1,240.2	204.6	230.4	308.1	3.00	3.00	
1,355.2	34.66	48.39	1,286.1	225.0	253.3	338.9	3.00	3.00	EOB; Inc=34.66°
1,400.0	34.66	48.39	1,322.9	242.0	272.4	364.3	0.00	0.00	
1,500.0	34.66	48.39	1,405.1	279.7	314.9	421.2	0.00	0.00	
1,600.0	34.66	48.39	1,487.4	317.5	357.4	478.1	0.00	0.00	
1,700.0	34.66	48.39	1,569.7	355.2	399.9	534.9	0.00	0.00	
1,800.0	34.66	48.39	1,651.9	393.0	442.4	591.8	0.00	0.00	
1,900.0	34.66	48.39	1,734.2	430.8	485.0	648.7	0.00	0.00	
2,000.0	34.66	48.39	1,816.4	468.5	527.5	705.5	0.00	0.00	
2,100.0	34.66	48.39	1,898.7	506.3	570.0	762.4	0.00	0.00	
2,200.0	34.66	48.39	1,980.9	544.1	612.5	819.2	0.00	0.00	
2,300.0	34.66	48.39	2,063.2	581.8	655.0	876.1	0.00	0.00	
2,400.0	34.66	48.39	2,145.5	619.6	697.5	933.0	0.00	0.00	
2,500.0	34.66	48.39	2,227.7	657.4	740.0	989.8	0.00	0.00	
2,600.0	34.66	48.39	2,310.0	695.1	782.6	1,046.7	0.00	0.00	
2,700.0	34.66	48.39	2,392.2	732.9	825.1	1,103.6	0.00	0.00	
2,800.0	34.66	48.39	2,474.5	770.7	867.6	1,160.4	0.00	0.00	
2,900.0	34.66	48.39	2,556.7	808.4	910.1	1,217.3	0.00	0.00	
3,000.0	34.66	48.39	2,639.0	846.2	952.6	1,274.2	0.00	0.00	
3,100.0	34.66	48.39	2,721.3	884.0	995.1	1,331.0	0.00	0.00	
3,200.0	34.66	48.39	2,803.5	921.7	1,037.6	1,387.9	0.00	0.00	
3,300.0	34.66	48.39	2,885.8	959.5	1,080.2	1,444.8	0.00	0.00	
3,400.0	34.66	48.39	2,968.0	997.3	1,122.7	1,501.6	0.00	0.00	
3,500.0	34.66	48.39	3,050.3	1,035.0	1,165.2	1,558.5	0.00	0.00	
3,600.0	34.66	48.39	3,132.5	1,072.8	1,207.7	1,615.4	0.00	0.00	
3,700.0	34.66	48.39	3,214.8	1,110.6	1,250.2	1,672.2	0.00	0.00	
3,800.0	34.66	48.39	3,297.1	1,148.3	1,292.7	1,729.1	0.00	0.00	
3,900.0	34.66	48.39	3,379.3	1,186.1	1,335.2	1,786.0	0.00	0.00	
4,000.0	34.66	48.39	3,461.6	1,223.9	1,377.8	1,842.8	0.00	0.00	
4,100.0	34.66	48.39	3,543.8	1,261.6	1,420.3	1,899.7	0.00	0.00	
4,200.0	34.66	48.39	3,626.1	1,299.4	1,462.8	1,956.6	0.00	0.00	
4,300.0	34.66	48.39	3,708.4	1,337.2	1,505.3	2,013.4	0.00	0.00	
4,400.0	34.66	48.39	3,790.6	1,374.9	1,547.8	2,070.3	0.00	0.00	
4,500.0	34.66	48.39	3,872.9	1,412.7	1,590.3	2,127.2	0.00	0.00	
4,600.0	34.66	48.39	3,955.1	1,450.5	1,632.8	2,184.0	0.00	0.00	
4,700.0	34.66	48.39	4,037.4	1,488.2	1,675.4	2,240.9	0.00	0.00	
4,800.0	34.66	48.39	4,119.6	1,526.0	1,717.9	2,297.8	0.00	0.00	
4,900.0	34.66	48.39	4,201.9	1,563.7	1,760.4	2,354.6	0.00	0.00	
5,000.0	34.66	48.39	4,284.2	1,601.5	1,802.9	2,411.5	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well WD01D-30_N30
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	Well @ 8336.0ft (Patterson 306)
<b>Project:</b>	Story Gulch	<b>MD Reference:</b>	Well @ 8336.0ft (Patterson 306)
<b>Site:</b>	N30 495	<b>North Reference:</b>	True
<b>Well:</b>	WD01D-30_N30	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #2		

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)	Comments / Formations
5,100.0	34.66	48.39	4,366.4	1,639.3	1,845.4	2,468.4	0.00	0.00	
5,200.0	34.66	48.39	4,448.7	1,677.0	1,887.9	2,525.2	0.00	0.00	
5,300.0	34.66	48.39	4,530.9	1,714.8	1,930.4	2,582.1	0.00	0.00	
5,400.0	34.66	48.39	4,613.2	1,752.6	1,973.0	2,639.0	0.00	0.00	
5,500.0	34.66	48.39	4,695.4	1,790.3	2,015.5	2,695.8	0.00	0.00	
5,600.0	34.66	48.39	4,777.7	1,828.1	2,058.0	2,752.7	0.00	0.00	
5,700.0	34.66	48.39	4,860.0	1,865.9	2,100.5	2,809.6	0.00	0.00	
5,800.0	34.66	48.39	4,942.2	1,903.6	2,143.0	2,866.4	0.00	0.00	
5,900.0	34.66	48.39	5,024.5	1,941.4	2,185.5	2,923.3	0.00	0.00	
6,000.0	34.66	48.39	5,106.7	1,979.2	2,228.0	2,980.2	0.00	0.00	
6,100.0	34.66	48.39	5,189.0	2,016.9	2,270.6	3,037.0	0.00	0.00	
6,200.0	34.66	48.39	5,271.2	2,054.7	2,313.1	3,093.9	0.00	0.00	
6,300.0	34.66	48.39	5,353.5	2,092.5	2,355.6	3,150.8	0.00	0.00	
6,400.0	34.66	48.39	5,435.8	2,130.2	2,398.1	3,207.6	0.00	0.00	
6,500.0	34.66	48.39	5,518.0	2,168.0	2,440.6	3,264.5	0.00	0.00	
6,600.0	34.66	48.39	5,600.3	2,205.8	2,483.1	3,321.4	0.00	0.00	
6,700.0	34.66	48.39	5,682.5	2,243.5	2,525.7	3,378.2	0.00	0.00	
6,800.0	34.66	48.39	5,764.8	2,281.3	2,568.2	3,435.1	0.00	0.00	
6,844.3	34.66	48.39	5,801.2	2,298.0	2,587.0	3,460.3	0.00	0.00	Start 3° drop @ 6844' MD
6,900.0	32.99	48.39	5,847.5	2,318.6	2,610.2	3,491.3	3.00	-3.00	
7,000.0	29.99	48.39	5,932.8	2,353.3	2,649.2	3,543.5	3.00	-3.00	
7,100.0	26.99	48.38	6,020.6	2,385.0	2,684.9	3,591.2	3.00	-3.00	
7,200.0	23.99	48.38	6,110.9	2,413.5	2,717.0	3,634.2	3.00	-3.00	
7,300.0	20.99	48.38	6,203.3	2,438.9	2,745.6	3,672.4	3.00	-3.00	
7,400.0	17.99	48.38	6,297.6	2,461.1	2,770.6	3,705.8	3.00	-3.00	
7,500.0	14.99	48.38	6,393.4	2,479.9	2,791.8	3,734.2	3.00	-3.00	
7,600.0	11.99	48.38	6,490.7	2,495.4	2,809.2	3,757.5	3.00	-3.00	
7,666.2	10.00	48.38	6,555.6	2,503.8	2,818.6	3,770.1	3.00	-3.00	EOD; Inc=10°
7,666.9	10.00	48.38	6,556.3	2,503.9	2,818.7	3,770.2	0.00	0.00	Wasatch G (TVD)
7,700.0	10.00	48.38	6,588.9	2,507.7	2,823.0	3,776.0	0.00	0.00	
7,738.3	10.00	48.38	6,626.7	2,512.1	2,828.0	3,782.6	0.00	0.00	WD01D-30_N30 TGT
7,800.0	10.00	48.38	6,687.4	2,519.2	2,836.0	3,793.3	0.00	0.00	
7,900.0	10.00	48.38	6,785.9	2,530.8	2,849.0	3,810.7	0.00	0.00	
8,000.0	10.00	48.38	6,884.4	2,542.3	2,862.0	3,828.1	0.00	0.00	
8,100.0	10.00	48.38	6,982.9	2,553.8	2,875.0	3,845.4	0.00	0.00	
8,200.0	10.00	48.38	7,081.3	2,565.4	2,887.9	3,862.8	0.00	0.00	
8,300.0	10.00	48.38	7,179.8	2,576.9	2,900.9	3,880.2	0.00	0.00	
8,400.0	10.00	48.38	7,278.3	2,588.4	2,913.9	3,897.5	0.00	0.00	
8,479.2	10.00	48.38	7,356.3	2,597.6	2,924.2	3,911.3	0.00	0.00	Molina_Base (TVD)
8,500.0	10.00	48.38	7,376.8	2,600.0	2,926.9	3,914.9	0.00	0.00	
8,600.0	10.00	48.38	7,475.3	2,611.5	2,939.9	3,932.3	0.00	0.00	
8,700.0	10.00	48.38	7,573.7	2,623.0	2,952.8	3,949.6	0.00	0.00	
8,800.0	10.00	48.38	7,672.2	2,634.6	2,965.8	3,967.0	0.00	0.00	
8,900.0	10.00	48.38	7,770.7	2,646.1	2,978.8	3,984.4	0.00	0.00	
9,000.0	10.00	48.38	7,869.2	2,657.6	2,991.8	4,001.7	0.00	0.00	
9,100.0	10.00	48.38	7,967.7	2,669.2	3,004.8	4,019.1	0.00	0.00	
9,200.0	10.00	48.38	8,066.1	2,680.7	3,017.7	4,036.5	0.00	0.00	
9,300.0	10.00	48.38	8,164.6	2,692.2	3,030.7	4,053.8	0.00	0.00	
9,400.0	10.00	48.38	8,263.1	2,703.8	3,043.7	4,071.2	0.00	0.00	
9,500.0	10.00	48.38	8,361.6	2,715.3	3,056.7	4,088.5	0.00	0.00	
9,600.0	10.00	48.38	8,460.1	2,726.8	3,069.7	4,105.9	0.00	0.00	
9,700.0	10.00	48.38	8,558.6	2,738.4	3,082.7	4,123.3	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well WD01D-30_N30
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	Well @ 8336.0ft (Patterson 306)
<b>Project:</b>	Story Gulch	<b>MD Reference:</b>	Well @ 8336.0ft (Patterson 306)
<b>Site:</b>	N30 495	<b>North Reference:</b>	True
<b>Well:</b>	WD01D-30_N30	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #2		

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)	Comments / Formations
9,800.0	10.00	48.38	8,657.0	2,749.9	3,095.6	4,140.6	0.00	0.00	
9,900.0	10.00	48.38	8,755.5	2,761.4	3,108.6	4,158.0	0.00	0.00	
9,926.2	10.00	48.38	8,781.3	2,764.5	3,112.0	4,162.6	0.00	0.00	Drillers TD @ 8781' TVD - Williams Fork (TVD)
10,000.0	10.00	48.38	8,854.0	2,773.0	3,121.6	4,175.4	0.00	0.00	
10,100.0	10.00	48.38	8,952.5	2,784.5	3,134.6	4,192.7	0.00	0.00	
10,200.0	10.00	48.38	9,051.0	2,796.0	3,147.6	4,210.1	0.00	0.00	
10,230.8	10.00	48.38	9,081.3	2,799.6	3,151.6	4,215.5	0.00	0.00	Permit TD @ 9081' TVD

Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	
- Shape									Latitude Longitude
WD01D-30_N30 PBHL	- plan hits target center	0.00	0.00	8,781.3	2,764.5	3,112.0	1,682,124.56	2,271,353.74	39° 40' 39.78 N 108° 5' 20.64 W
	- Rectangle (sides W30.0 H50.0 D0.0)								
WD01D-30_N30 TGT	- plan misses target center by 405.4ft at 7738.3ft MD (6626.7 TVD, 2512.1 N, 2828.0 E)	0.00	0.00	6,556.3	2,774.5	3,129.0	1,682,134.08	2,271,371.00	39° 40' 39.88 N 108° 5' 20.42 W
	- Point								

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
7,666.9	6,556.3	Wasatch G (TVD)				
8,479.2	7,356.3	Molina_Base (TVD)				
9,926.2	8,781.3	Williams Fork (TVD)				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
200.0	200.0	0.0	0.0	KOP @ 200'	
1,355.2	1,286.1	225.0	253.3	EOB; Inc=34.66°	
6,844.3	5,801.2	2,298.0	2,587.0	Start 3° drop @ 6844' MD	
7,666.2	6,555.6	2,503.8	2,818.6	EOD; Inc=10°	
9,926.2	8,781.3	2,764.5	3,112.0	Drillers TD @ 8781' TVD	
10,230.8	9,081.3	2,799.6	3,151.6	Permit TD @ 9081' TVD	