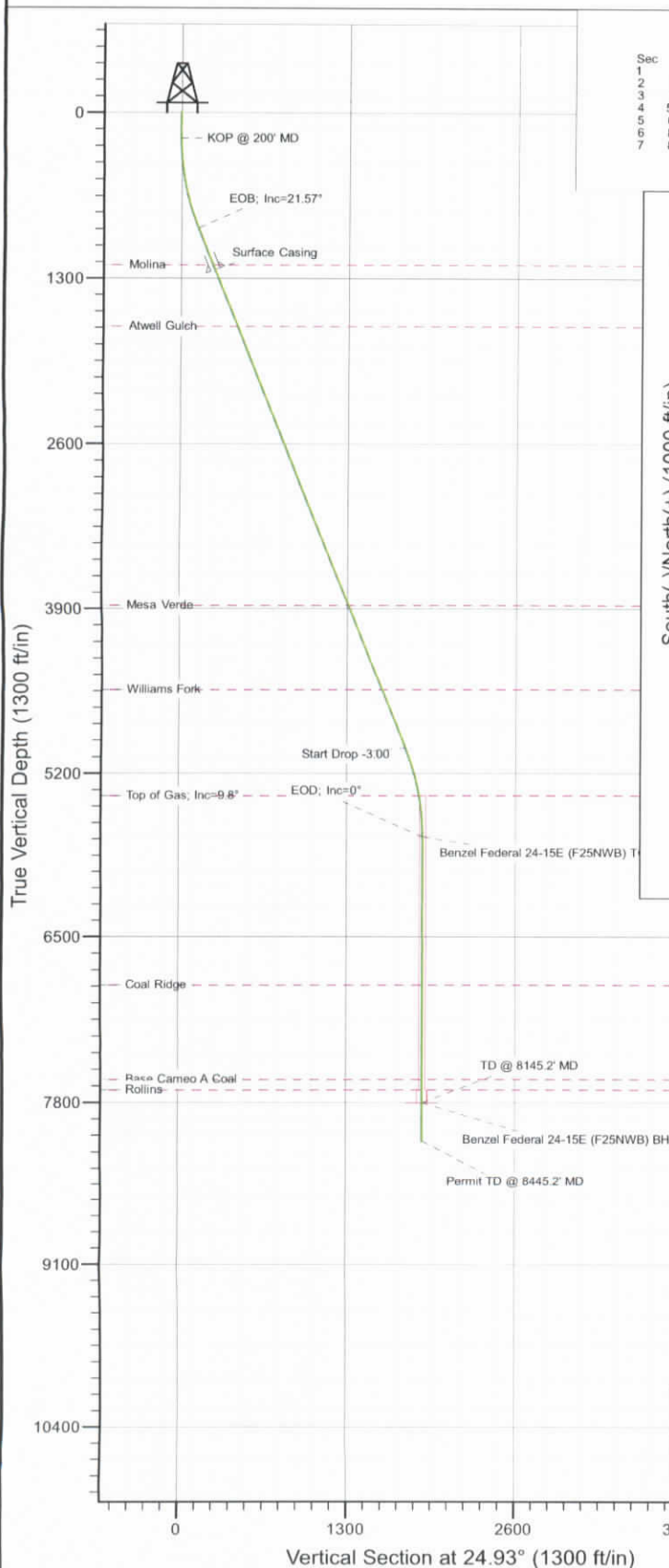
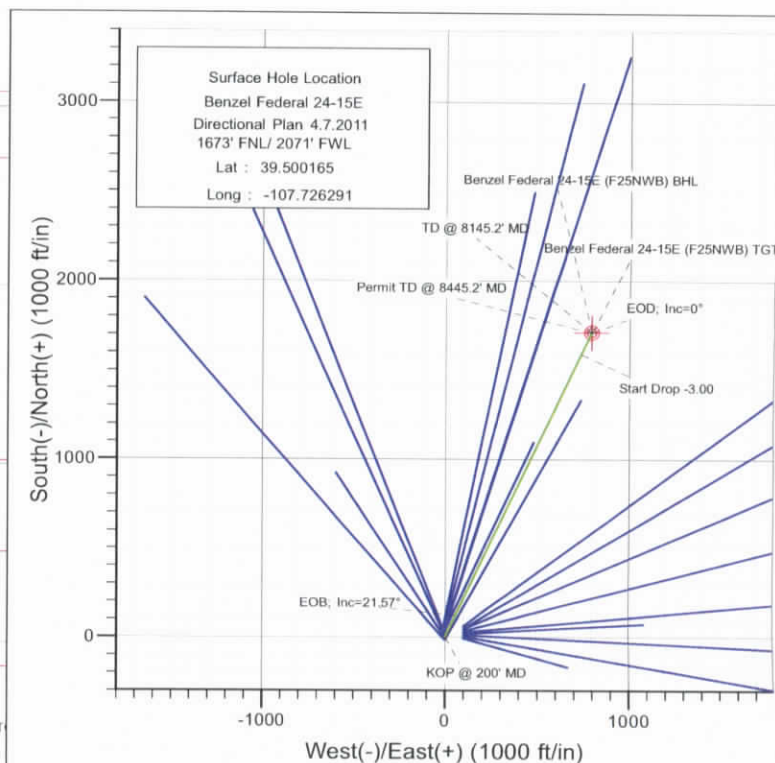




Project: Mamm Creek  
 Site: F25NWB Pad  
 Well: Benzel Federal 24-15E (F25NWB Pad) Directional Plan 4.7.2011  
 Wellbore: DD  
 Design: Plan #1



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	919.1	21.57	24.93	902.2	121.3	56.4	3.00	24.93	133.8	
4	5325.1	21.57	24.93	4999.6	1590.3	739.3	0.00	0.00	1753.7	
5	6044.2	0.00	0.00	5701.8	1711.6	795.7	3.00	180.00	1887.5	Benzel Federal 24-15E (F25NWB) TGT
6	8145.2	0.00	0.00	7802.8	1711.6	795.7	0.00	0.00	1887.5	Benzel Federal 24-15E (F25NWB) BHL
7	8445.2	0.00	0.00	8102.8	1711.6	795.7	0.00	0.00	1887.5	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1194.8	1233.7	Molina
1680.8	1756.3	Atwell Gulch
3875.8	4116.6	Mesa Verde
4539.8	4830.7	Williams Fork
5376.8	5717.6	Top of Gas; Inc=9.8°
6879.8	7222.2	Coal Ridge
7620.8	7963.2	Base Cameo A Coal
7702.8	8045.2	Rollins

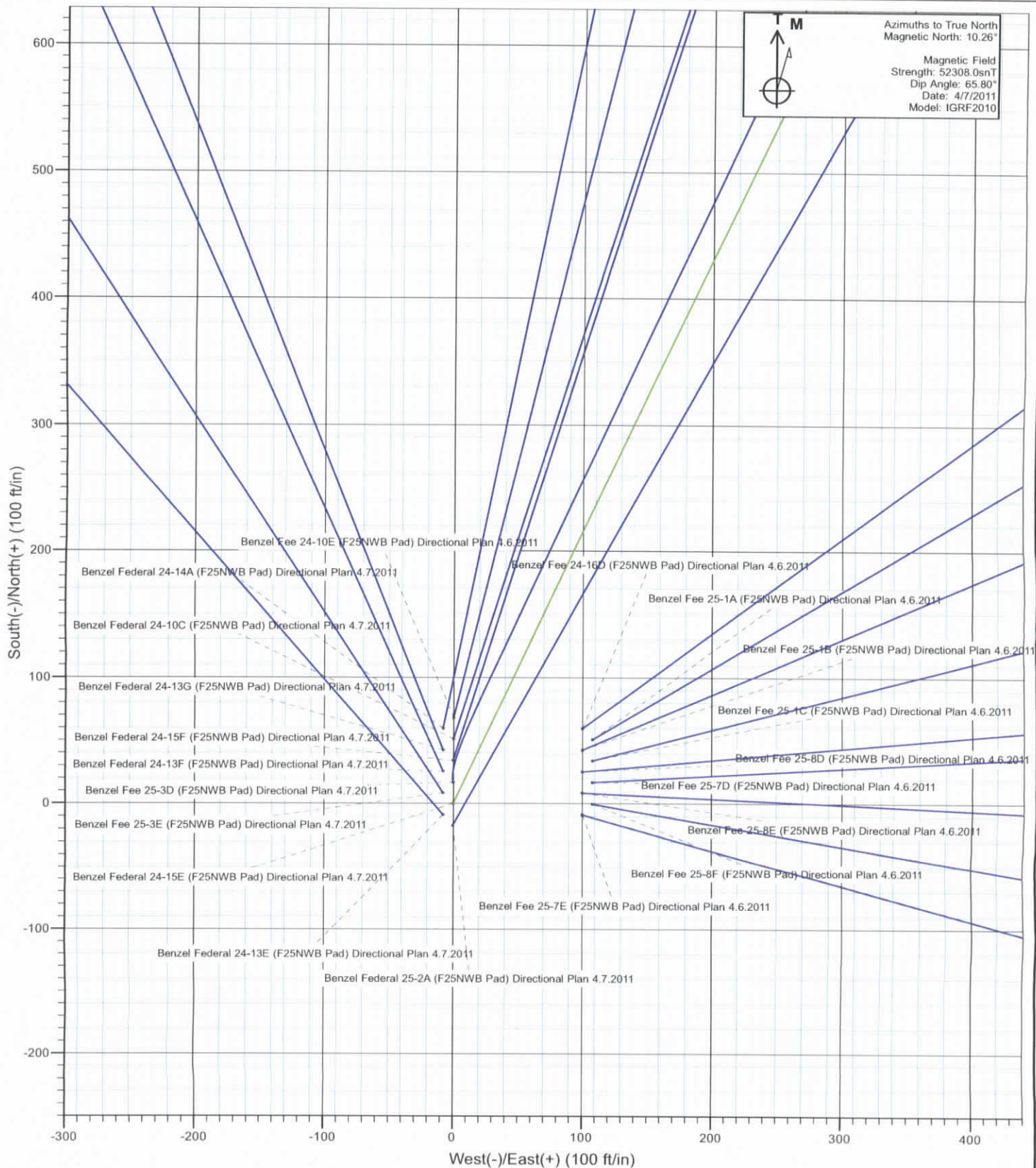


Azimuths to True North  
 Magnetic North: 10.26°  
 Magnetic Field  
 Strength: 52308.0snT  
 Dip Angle: 65.80°  
 Date: 4/7/2011  
 Model: IGRF2010

Plan #1 Benzel Federal 24-15E (F25NWB Pad) Directional Plan 4.7.2011 115XXX; BH						
KBE @ 5847.8ft (Original Well Elev) North American Datum 1983 Well Benzel Federal 24-15E (F25NWB Pad) Directional Plan 4.7.2011, True North						
Type	Target	Azimuth	Origin	Type	N/S	E/W From: TVD
	Benzel Federal 24-15E (F25NWB) BHL	24.93	Slot		0.0	0.0
Name	Target	TVD	+N/-S	+E/-W	Latitude	Longitude
	Benzel Federal 24-15E (F25NWB) TGT	5701.8	1711.6	795.7	39.504864	-107.723471
	Benzel Federal 24-15E (F25NWB) BHL	7802.8	1711.6	795.7	39.504864	-107.723471

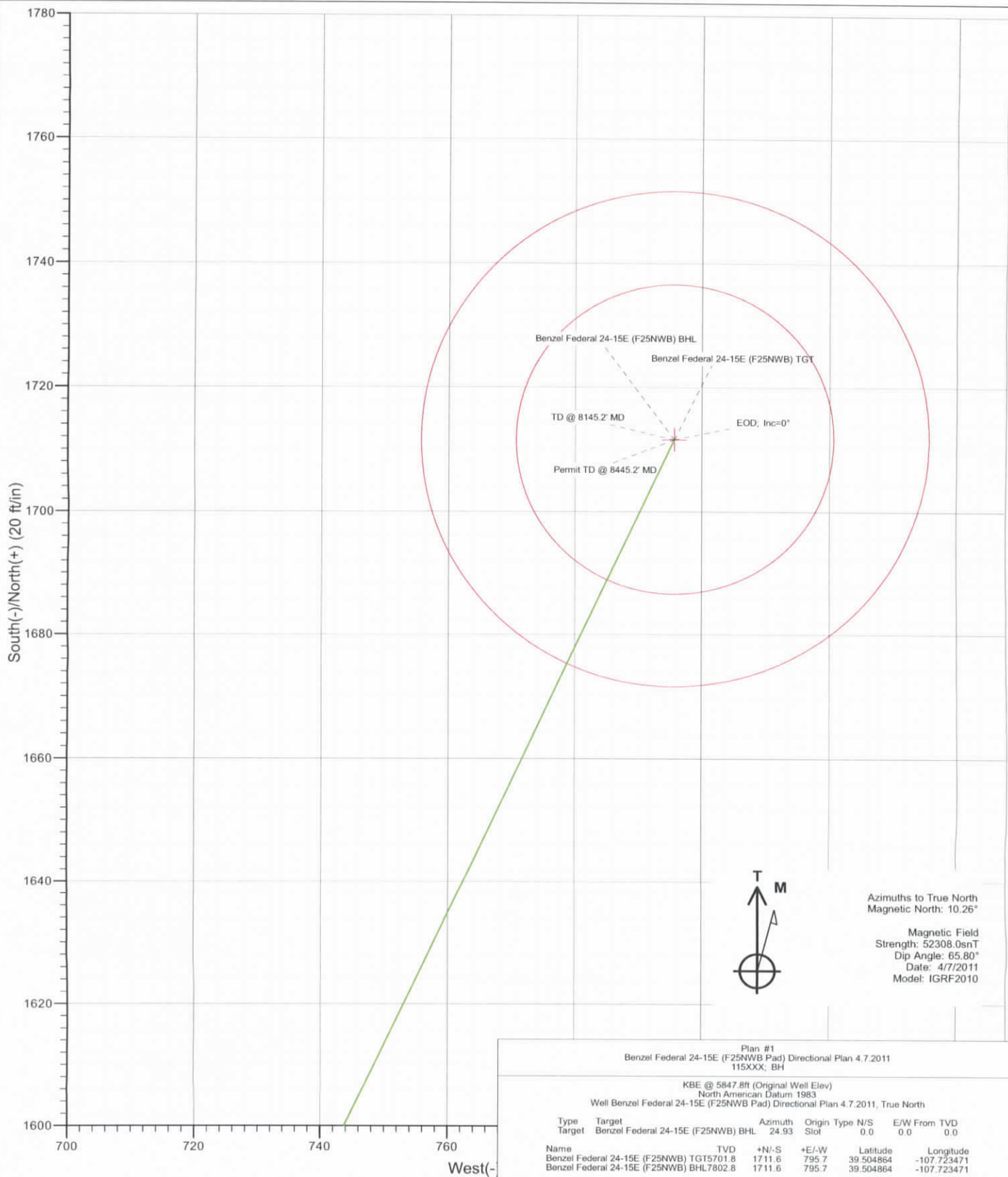


Project: Mamm Creek  
Site: F25NWB Pad  
Well: Benzel Federal 24-15E (F25NWB Pad) Directional Plan 4.7.2011  
Wellbore: DD  
Design: Plan #1





Project: Mamm Creek  
 Site: F25NWB Pad  
 Well: Benzel Federal 24-15E (F25NWB Pad) Directional Plan 4.7.2011  
 Wellbore: DD  
 Design: Plan #1



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Benzel Federal 24-15E (F25NWB Pad) Dire
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KBE @ 5847.8ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KBE @ 5847.8ft (Original Well Elev)
<b>Site:</b>	F25NWB Pad	<b>North Reference:</b>	True
<b>Well:</b>	Benzel Federal 24-15E (F25NWB Pad) Directional Plar	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

Project	Mamm Creek		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	F25NWB Pad				
Site Position:		Northing:	1,614,821.30 ft	Latitude:	39.500328
From:	Lat/Long	Easting:	2,371,946.03 ft	Longitude:	-107.725936
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.40 °

Well	Benzel Federal 24-15E (F25NWB Pad) Directional Plan 4.7.2011					
Well Position	+N/-S	0.0 ft	Northing:	1,614,764.39 ft	Latitude:	39.500165
	+E/-W	0.0 ft	Easting:	2,371,844.43 ft	Longitude:	-107.726291
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,825.8 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/7/2011	10.26	65.80	52,308

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	24.93

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
0.0	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	
919.1	21.57	24.93	902.2	121.3	56.4	3.00	3.00	0.00	24.93	
5,325.1	21.57	24.93	4,999.6	1,590.3	739.3	0.00	0.00	0.00	0.00	
6,044.2	0.00	0.00	5,701.8	1,711.6	795.7	3.00	-3.00	0.00	180.00	Benzel Federal 24-15
8,145.2	0.00	0.00	7,802.8	1,711.6	795.7	0.00	0.00	0.00	0.00	Benzel Federal 24-15
8,445.2	0.00	0.00	8,102.8	1,711.6	795.7	0.00	0.00	0.00	0.00	



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Benzel Federal 24-15E (F25NWB Pad) Dire
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KBE @ 5847.8ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KBE @ 5847.8ft (Original Well Elev)
<b>Site:</b>	F25NWB Pad	<b>North Reference:</b>	True
<b>Well:</b>	Benzel Federal 24-15E (F25NWB Pad) Directional Plan	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<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)	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' MD
300.0	3.00	24.93	300.0	2.4	1.1	2.6	3.00	3.00	
400.0	6.00	24.93	399.6	9.5	4.4	10.5	3.00	3.00	
500.0	9.00	24.93	498.8	21.3	9.9	23.5	3.00	3.00	
600.0	12.00	24.93	597.1	37.8	17.6	41.7	3.00	3.00	
700.0	15.00	24.93	694.3	59.0	27.4	65.1	3.00	3.00	
800.0	18.00	24.93	790.2	84.8	39.4	93.5	3.00	3.00	
900.0	21.00	24.93	884.4	115.0	53.5	126.9	3.00	3.00	
919.1	21.57	24.93	902.2	121.3	56.4	133.8	3.00	3.00	EOB; Inc=21.57°
1,000.0	21.57	24.93	977.5	148.3	68.9	163.5	0.00	0.00	
1,100.0	21.57	24.93	1,070.5	181.6	84.4	200.3	0.00	0.00	
1,200.0	21.57	24.93	1,163.5	215.0	99.9	237.1	0.00	0.00	
1,233.7	21.57	24.93	1,194.8	226.2	105.2	249.5	0.00	0.00	Molina
1,270.0	21.57	24.93	1,228.6	238.3	110.8	262.8	0.00	0.00	Surface Casing
1,300.0	21.57	24.93	1,256.4	248.3	115.4	273.8	0.00	0.00	
1,400.0	21.57	24.93	1,349.4	281.7	130.9	310.6	0.00	0.00	
1,500.0	21.57	24.93	1,442.4	315.0	146.4	347.4	0.00	0.00	
1,600.0	21.57	24.93	1,535.4	348.3	161.9	384.1	0.00	0.00	
1,700.0	21.57	24.93	1,628.4	381.7	177.4	420.9	0.00	0.00	
1,756.3	21.57	24.93	1,680.8	400.4	186.2	441.6	0.00	0.00	Atwell Gulch
1,800.0	21.57	24.93	1,721.4	415.0	192.9	457.7	0.00	0.00	
1,900.0	21.57	24.93	1,814.4	448.4	208.4	494.4	0.00	0.00	
2,000.0	21.57	24.93	1,907.4	481.7	223.9	531.2	0.00	0.00	
2,100.0	21.57	24.93	2,000.4	515.0	239.4	568.0	0.00	0.00	
2,200.0	21.57	24.93	2,093.4	548.4	254.9	604.7	0.00	0.00	
2,300.0	21.57	24.93	2,186.4	581.7	270.4	641.5	0.00	0.00	
2,400.0	21.57	24.93	2,279.4	615.1	285.9	678.3	0.00	0.00	
2,500.0	21.57	24.93	2,372.4	648.4	301.4	715.0	0.00	0.00	
2,600.0	21.57	24.93	2,465.4	681.7	316.9	751.8	0.00	0.00	
2,700.0	21.57	24.93	2,558.4	715.1	332.4	788.6	0.00	0.00	
2,800.0	21.57	24.93	2,651.4	748.4	347.9	825.3	0.00	0.00	
2,900.0	21.57	24.93	2,744.4	781.8	363.4	862.1	0.00	0.00	
3,000.0	21.57	24.93	2,837.4	815.1	378.9	898.9	0.00	0.00	
3,100.0	21.57	24.93	2,930.4	848.4	394.4	935.6	0.00	0.00	
3,200.0	21.57	24.93	3,023.4	881.8	409.9	972.4	0.00	0.00	
3,300.0	21.57	24.93	3,116.4	915.1	425.4	1,009.2	0.00	0.00	
3,400.0	21.57	24.93	3,209.4	948.5	440.9	1,045.9	0.00	0.00	
3,500.0	21.57	24.93	3,302.4	981.8	456.4	1,082.7	0.00	0.00	
3,600.0	21.57	24.93	3,395.3	1,015.1	471.9	1,119.5	0.00	0.00	
3,700.0	21.57	24.93	3,488.3	1,048.5	487.4	1,156.2	0.00	0.00	
3,800.0	21.57	24.93	3,581.3	1,081.8	502.9	1,193.0	0.00	0.00	
3,900.0	21.57	24.93	3,674.3	1,115.2	518.4	1,229.8	0.00	0.00	
4,000.0	21.57	24.93	3,767.3	1,148.5	533.9	1,266.5	0.00	0.00	
4,100.0	21.57	24.93	3,860.3	1,181.8	549.4	1,303.3	0.00	0.00	
4,116.6	21.57	24.93	3,875.8	1,187.4	552.0	1,309.4	0.00	0.00	Mesa Verde
4,200.0	21.57	24.93	3,953.3	1,215.2	564.9	1,340.1	0.00	0.00	
4,300.0	21.57	24.93	4,046.3	1,248.5	580.4	1,376.8	0.00	0.00	
4,400.0	21.57	24.93	4,139.3	1,281.9	595.9	1,413.6	0.00	0.00	
4,500.0	21.57	24.93	4,232.3	1,315.2	611.4	1,450.4	0.00	0.00	
4,600.0	21.57	24.93	4,325.3	1,348.5	626.9	1,487.1	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Benzel Federal 24-15E (F25NWB Pad) Dire
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KBE @ 5847.8ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KBE @ 5847.8ft (Original Well Elev)
<b>Site:</b>	F25NWB Pad	<b>North Reference:</b>	True
<b>Well:</b>	Benzel Federal 24-15E (F25NWB Pad) Directional Plan	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<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)	Comments / Formations
4,700.0	21.57	24.93	4,418.3	1,381.9	642.4	1,523.9	0.00	0.00	
4,800.0	21.57	24.93	4,511.3	1,415.2	657.9	1,560.7	0.00	0.00	
4,830.7	21.57	24.93	4,539.8	1,425.4	662.7	1,571.9	0.00	0.00	Williams Fork
4,900.0	21.57	24.93	4,604.3	1,448.6	673.4	1,597.4	0.00	0.00	
5,000.0	21.57	24.93	4,697.3	1,481.9	688.9	1,634.2	0.00	0.00	
5,100.0	21.57	24.93	4,790.3	1,515.2	704.4	1,671.0	0.00	0.00	
5,200.0	21.57	24.93	4,883.3	1,548.6	719.9	1,707.7	0.00	0.00	
5,300.0	21.57	24.93	4,976.3	1,581.9	735.4	1,744.5	0.00	0.00	
5,325.1	21.57	24.93	4,999.6	1,590.3	739.3	1,753.7	0.00	0.00	Start Drop -3.00
5,400.0	19.32	24.93	5,069.8	1,614.0	750.3	1,779.9	3.00	-3.00	
5,500.0	16.32	24.93	5,165.0	1,641.8	763.2	1,810.5	3.00	-3.00	
5,600.0	13.32	24.93	5,261.6	1,665.0	774.0	1,836.1	3.00	-3.00	
5,700.0	10.32	24.93	5,359.5	1,683.5	782.7	1,856.6	3.00	-3.00	
5,717.6	9.80	24.93	5,376.8	1,686.3	784.0	1,859.7	3.00	-3.00	Top of Gas; Inc=9.8°
5,800.0	7.32	24.93	5,458.3	1,697.5	789.1	1,871.9	3.00	-3.00	
5,900.0	4.32	24.93	5,557.8	1,706.7	793.4	1,882.1	3.00	-3.00	
6,000.0	1.32	24.93	5,657.7	1,711.1	795.5	1,887.0	3.00	-3.00	
6,044.2	0.00	0.00	5,701.8	1,711.6	795.7	1,887.5	3.00	-3.00	EOD; Inc=0° - Benzel Federal 24-15E (F25NWB)
6,100.0	0.00	0.00	5,757.6	1,711.6	795.7	1,887.5	0.00	0.00	
6,200.0	0.00	0.00	5,857.6	1,711.6	795.7	1,887.5	0.00	0.00	
6,300.0	0.00	0.00	5,957.6	1,711.6	795.7	1,887.5	0.00	0.00	
6,400.0	0.00	0.00	6,057.6	1,711.6	795.7	1,887.5	0.00	0.00	
6,500.0	0.00	0.00	6,157.6	1,711.6	795.7	1,887.5	0.00	0.00	
6,600.0	0.00	0.00	6,257.6	1,711.6	795.7	1,887.5	0.00	0.00	
6,700.0	0.00	0.00	6,357.6	1,711.6	795.7	1,887.5	0.00	0.00	
6,800.0	0.00	0.00	6,457.6	1,711.6	795.7	1,887.5	0.00	0.00	
6,900.0	0.00	0.00	6,557.6	1,711.6	795.7	1,887.5	0.00	0.00	
7,000.0	0.00	0.00	6,657.6	1,711.6	795.7	1,887.5	0.00	0.00	
7,100.0	0.00	0.00	6,757.6	1,711.6	795.7	1,887.5	0.00	0.00	
7,200.0	0.00	0.00	6,857.6	1,711.6	795.7	1,887.5	0.00	0.00	
7,222.2	0.00	0.00	6,879.8	1,711.6	795.7	1,887.5	0.00	0.00	Coal Ridge
7,300.0	0.00	0.00	6,957.6	1,711.6	795.7	1,887.5	0.00	0.00	
7,400.0	0.00	0.00	7,057.6	1,711.6	795.7	1,887.5	0.00	0.00	
7,500.0	0.00	0.00	7,157.6	1,711.6	795.7	1,887.5	0.00	0.00	
7,600.0	0.00	0.00	7,257.6	1,711.6	795.7	1,887.5	0.00	0.00	
7,700.0	0.00	0.00	7,357.6	1,711.6	795.7	1,887.5	0.00	0.00	
7,800.0	0.00	0.00	7,457.6	1,711.6	795.7	1,887.5	0.00	0.00	
7,900.0	0.00	0.00	7,557.6	1,711.6	795.7	1,887.5	0.00	0.00	
7,963.2	0.00	0.00	7,620.8	1,711.6	795.7	1,887.5	0.00	0.00	Base Cameo A Coal
8,000.0	0.00	0.00	7,657.6	1,711.6	795.7	1,887.5	0.00	0.00	
8,045.2	0.00	0.00	7,702.8	1,711.6	795.7	1,887.5	0.00	0.00	Rollins
8,100.0	0.00	0.00	7,757.6	1,711.6	795.7	1,887.5	0.00	0.00	
8,145.2	0.00	0.00	7,802.8	1,711.6	795.7	1,887.5	0.00	0.00	TD @ 8145.2' MD - Benzel Federal 24-15E (F25NWB)
8,200.0	0.00	0.00	7,857.6	1,711.6	795.7	1,887.5	0.00	0.00	
8,300.0	0.00	0.00	7,957.6	1,711.6	795.7	1,887.5	0.00	0.00	
8,400.0	0.00	0.00	8,057.6	1,711.6	795.7	1,887.5	0.00	0.00	
8,445.2	0.00	0.00	8,102.8	1,711.6	795.7	1,887.5	0.00	0.00	Permit TD @ 8445.2' MD

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Benzel Federal 24-15E (F25NWB Pad) Dire
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KBE @ 5847.8ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KBE @ 5847.8ft (Original Well Elev)
<b>Site:</b>	F25NWB Pad	<b>North Reference:</b>	True
<b>Well:</b>	Benzel Federal 24-15E (F25NWB Pad) Directional Plan	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

### Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Benzel Federal 24-15E ( - plan hits target center - Circle (radius 40.0)	0.00	0.00	7,802.8	1,711.6	795.7	1,616,455.97	2,372,681.84	39.504864	-107.723471
Benzel Federal 24-15E ( - plan hits target center - Circle (radius 25.0)	0.00	0.00	5,701.8	1,711.6	795.7	1,616,455.97	2,372,681.84	39.504864	-107.723471

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,270.0	1,228.6	Surface Casing	0.000	0.000

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,233.7	1,194.8	Molina		0.00	
1,756.3	1,680.8	Atwell Gulch		0.00	
4,116.6	3,875.8	Mesa Verde		0.00	
4,830.7	4,539.8	Williams Fork		0.00	
5,717.6	5,376.8	Top of Gas; Inc=9.8°		0.00	
7,222.2	6,879.8	Coal Ridge		0.00	
7,963.2	7,620.8	Base Cameo A Coal		0.00	
8,045.2	7,702.8	Rollins		0.00	

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200' MD
919.1	902.2	121.3	56.4	EOB; Inc=21.57°
5,325.1	4,999.6	1,590.3	739.3	Start Drop -3.00
6,044.2	5,701.8	1,711.6	795.7	EOD; Inc=0°
8,145.2	7,802.8	1,711.6	795.7	TD @ 8145.2' MD
8,445.2	8,102.8	1,711.6	795.7	Permit TD @ 8445.2' MD