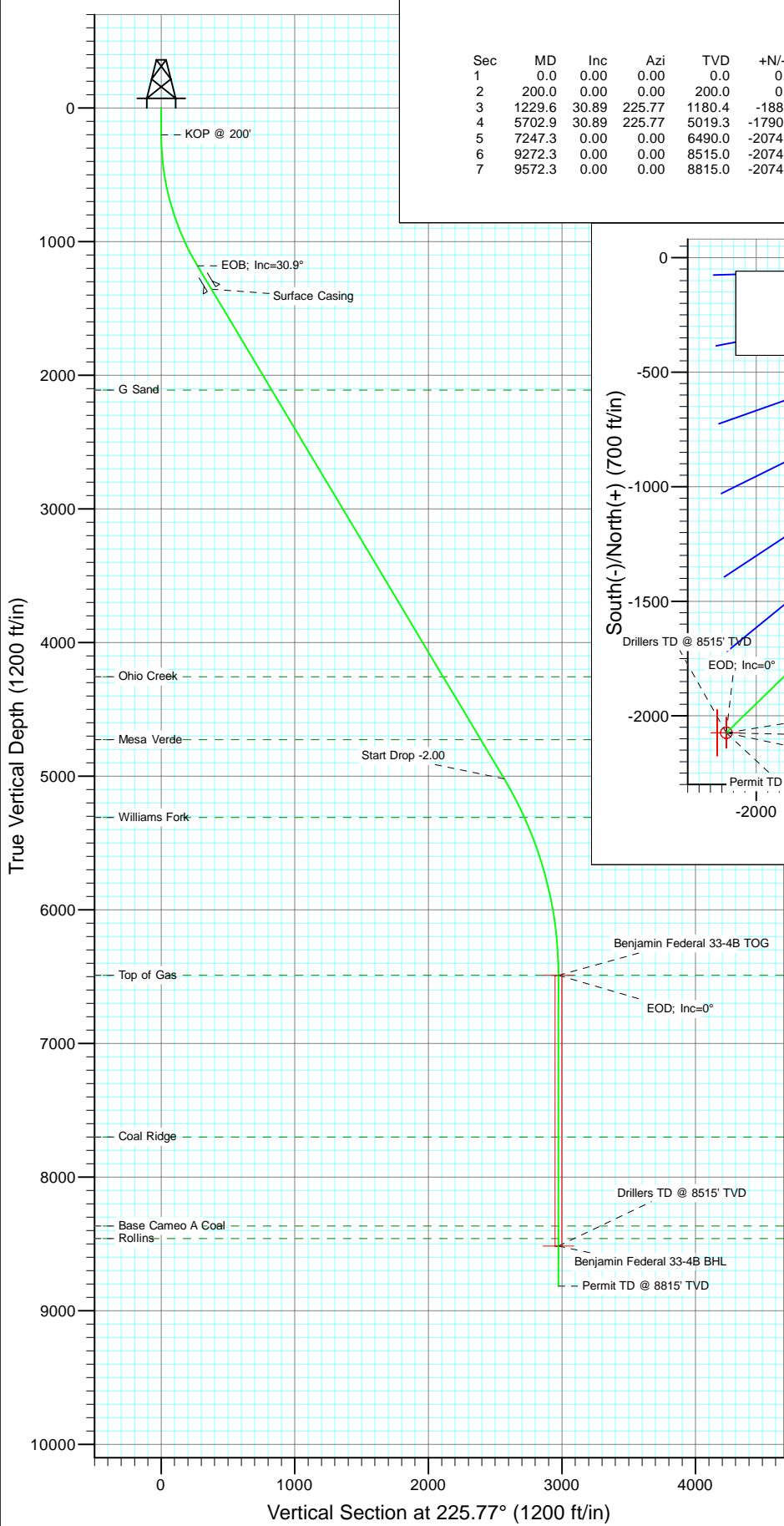
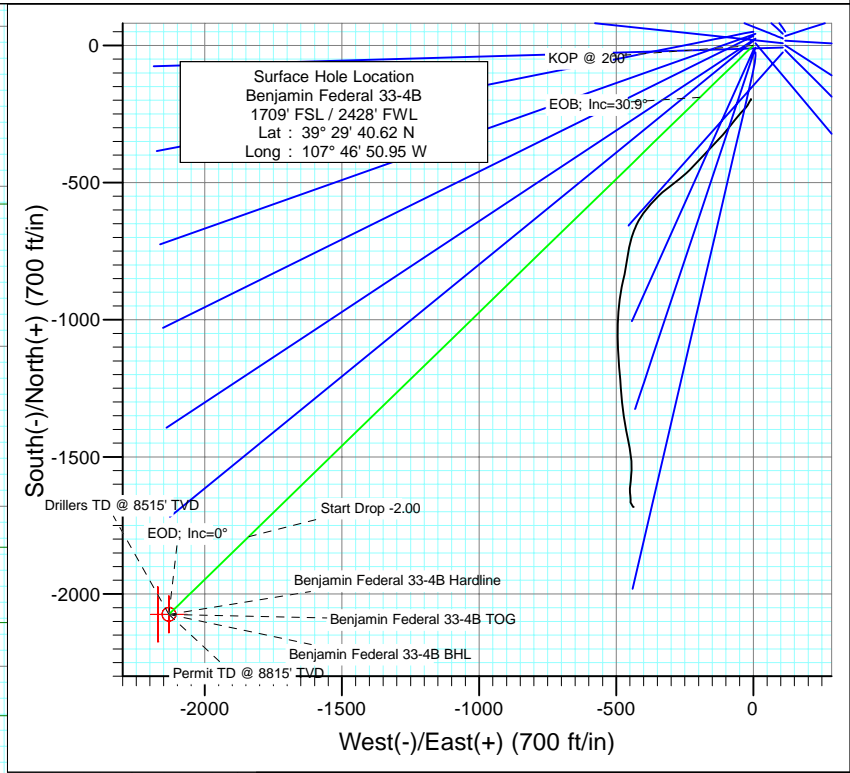




Project: Mamm Creek
 Site: K28NW Pad
 Well: Benjamin Federal 33-4B
 Wellbore: DD
 Design: Plan #1



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	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	1229.6	30.89	225.77	1180.4	-188.9	-194.1	3.00	225.77	270.9	
4	5702.9	30.89	225.77	5019.3	-1790.7	-1839.7	0.00	0.00	2567.3	
5	7247.3	0.00	0.00	6490.0	-2074.0	-2130.8	2.00	180.00	2973.6	Benjamin Federal 33-4B TOG
6	9272.3	0.00	0.00	8515.0	-2074.0	-2130.8	0.00	0.00	2973.6	Benjamin Federal 33-4B BHL
7	9572.3	0.00	0.00	8815.0	-2074.0	-2130.8	0.00	0.00	2973.6	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
2111.0	2313.9	G Sand
4255.0	4812.3	Ohio Creek
4727.0	5362.3	Mesa Verde
5309.0	6030.0	Williams Fork
6490.0	7247.3	Top of Gas
7699.0	8456.3	Coal Ridge
8365.0	9122.3	Base Cameo A Coal
8460.0	9217.3	Rollins

Azimuths to True North
Magnetic North: 10.36°

Magnetic Field
Strength: 52406.0snT
Dip Angle: 65.82°
Date: 6/23/2010
Model: IGRF200510

Plan #1 Benjamin Federal 33-4B BHL = (330 FNL - 240 FWL) Job #10xxx: KR						
WELL @ 5965.0ft (Original Well Elev) North American Datum 1983 Well Benjamin Federal 33-4B, True North						
Type	Target	Target	Target	Target	Target	Target
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
Benjamin Federal 33-4B BHL	8515.0	-2074.0	-2130.8	39° 29' 20.12 N	107° 47' 18.13 W	

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference: Well Benjamin Federal 33-4B
Company: EnCana Oil & Gas (USA) Inc	TVD Reference: WELL @ 5965.0ft (Original Well Elev)
Project: Mamm Creek	MD Reference: WELL @ 5965.0ft (Original Well Elev)
Site: K28NW Pad	North Reference: True
Well: Benjamin Federal 33-4B	Survey Calculation Method: Minimum Curvature
Wellbore: DD	
Design: 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 K28NW Pad					
Site Position:		Northing:	1,613,160.16 ft	Latitude:	39.494711
From:	Lat/Long	Easting:	2,356,412.22 ft	Longitude:	-107.780819
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.44 °

Well Benjamin Federal 33-4B						
Well Position	+N/-S	0.0 ft	Northing:	1,613,125.76 ft	Latitude:	39.494617
	+E/-W	0.0 ft	Easting:	2,356,411.36 ft	Longitude:	-107.780819
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,943.0 ft

Wellbore DD					
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF200510	6/23/2010	(°)	(°)	(nT)
			10.36	65.82	52,406

Design Plan #1					
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	225.77	

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	
1,229.6	30.89	225.77	1,180.4	-188.9	-194.1	3.00	3.00	0.00	225.77	
5,702.9	30.89	225.77	5,019.3	-1,790.7	-1,839.7	0.00	0.00	0.00	0.00	
7,247.3	0.00	0.00	6,490.0	-2,074.0	-2,130.8	2.00	-2.00	0.00	180.00	Benjamin Federal 33-
9,272.3	0.00	0.00	8,515.0	-2,074.0	-2,130.8	0.00	0.00	0.00	0.00	Benjamin Federal 33-
9,572.3	0.00	0.00	8,815.0	-2,074.0	-2,130.8	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Benjamin Federal 33-4B
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5965.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	WELL @ 5965.0ft (Original Well Elev)
Site:	K28NW Pad	North Reference:	True
Well:	Benjamin Federal 33-4B	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	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	Benjamin Federal 33-4B Hardline
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	225.77	300.0	-1.8	-1.9	2.6	3.00	3.00	
400.0	6.00	225.77	399.6	-7.3	-7.5	10.5	3.00	3.00	
500.0	9.00	225.77	498.8	-16.4	-16.8	23.5	3.00	3.00	
600.0	12.00	225.77	597.1	-29.1	-29.9	41.7	3.00	3.00	
700.0	15.00	225.77	694.3	-45.4	-46.6	65.1	3.00	3.00	
800.0	18.00	225.77	790.2	-65.2	-67.0	93.5	3.00	3.00	
900.0	21.00	225.77	884.4	-88.5	-90.9	126.9	3.00	3.00	
1,000.0	24.00	225.77	976.8	-115.2	-118.3	165.1	3.00	3.00	
1,100.0	27.00	225.77	1,067.1	-145.2	-149.2	208.2	3.00	3.00	
1,200.0	30.00	225.77	1,154.9	-178.5	-183.4	255.9	3.00	3.00	
1,229.6	30.89	225.77	1,180.4	-188.9	-194.1	270.9	3.00	3.00	EOB; Inc=30.9°
1,300.0	30.89	225.77	1,240.9	-214.1	-220.0	307.0	0.00	0.00	
1,400.0	30.89	225.77	1,326.7	-249.9	-256.8	358.3	0.00	0.00	
1,435.0	30.89	225.77	1,356.7	-262.5	-269.7	376.3	0.00	0.00	Surface Casing
1,500.0	30.89	225.77	1,412.5	-285.8	-293.6	409.7	0.00	0.00	
1,600.0	30.89	225.77	1,498.3	-321.6	-330.4	461.0	0.00	0.00	
1,700.0	30.89	225.77	1,584.1	-357.4	-367.1	512.4	0.00	0.00	
1,800.0	30.89	225.77	1,670.0	-393.2	-403.9	563.7	0.00	0.00	
1,900.0	30.89	225.77	1,755.8	-429.0	-440.7	615.0	0.00	0.00	
2,000.0	30.89	225.77	1,841.6	-464.8	-477.5	666.4	0.00	0.00	
2,100.0	30.89	225.77	1,927.4	-500.6	-514.3	717.7	0.00	0.00	
2,200.0	30.89	225.77	2,013.2	-536.4	-551.1	769.0	0.00	0.00	
2,300.0	30.89	225.77	2,099.0	-572.2	-587.9	820.4	0.00	0.00	
2,313.9	30.89	225.77	2,111.0	-577.2	-593.0	827.5	0.00	0.00	G Sand
2,400.0	30.89	225.77	2,184.9	-608.0	-624.7	871.7	0.00	0.00	
2,500.0	30.89	225.77	2,270.7	-643.8	-661.4	923.0	0.00	0.00	
2,600.0	30.89	225.77	2,356.5	-679.6	-698.2	974.4	0.00	0.00	
2,700.0	30.89	225.77	2,442.3	-715.4	-735.0	1,025.7	0.00	0.00	
2,800.0	30.89	225.77	2,528.1	-751.2	-771.8	1,077.0	0.00	0.00	
2,900.0	30.89	225.77	2,613.9	-787.0	-808.6	1,128.4	0.00	0.00	
3,000.0	30.89	225.77	2,699.8	-822.8	-845.4	1,179.7	0.00	0.00	
3,100.0	30.89	225.77	2,785.6	-858.7	-882.2	1,231.1	0.00	0.00	
3,200.0	30.89	225.77	2,871.4	-894.5	-918.9	1,282.4	0.00	0.00	
3,300.0	30.89	225.77	2,957.2	-930.3	-955.7	1,333.7	0.00	0.00	
3,400.0	30.89	225.77	3,043.0	-966.1	-992.5	1,385.1	0.00	0.00	
3,500.0	30.89	225.77	3,128.9	-1,001.9	-1,029.3	1,436.4	0.00	0.00	
3,600.0	30.89	225.77	3,214.7	-1,037.7	-1,066.1	1,487.7	0.00	0.00	
3,700.0	30.89	225.77	3,300.5	-1,073.5	-1,102.9	1,539.1	0.00	0.00	
3,800.0	30.89	225.77	3,386.3	-1,109.3	-1,139.7	1,590.4	0.00	0.00	
3,900.0	30.89	225.77	3,472.1	-1,145.1	-1,176.5	1,641.7	0.00	0.00	
4,000.0	30.89	225.77	3,557.9	-1,180.9	-1,213.2	1,693.1	0.00	0.00	
4,100.0	30.89	225.77	3,643.8	-1,216.7	-1,250.0	1,744.4	0.00	0.00	
4,200.0	30.89	225.77	3,729.6	-1,252.5	-1,286.8	1,795.7	0.00	0.00	
4,300.0	30.89	225.77	3,815.4	-1,288.3	-1,323.6	1,847.1	0.00	0.00	
4,400.0	30.89	225.77	3,901.2	-1,324.1	-1,360.4	1,898.4	0.00	0.00	
4,500.0	30.89	225.77	3,987.0	-1,359.9	-1,397.2	1,949.7	0.00	0.00	
4,600.0	30.89	225.77	4,072.8	-1,395.7	-1,434.0	2,001.1	0.00	0.00	
4,700.0	30.89	225.77	4,158.7	-1,431.6	-1,470.7	2,052.4	0.00	0.00	
4,800.0	30.89	225.77	4,244.5	-1,467.4	-1,507.5	2,103.8	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Benjamin Federal 33-4B
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5965.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	WELL @ 5965.0ft (Original Well Elev)
Site:	K28NW Pad	North Reference:	True
Well:	Benjamin Federal 33-4B	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	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
4,812.3	30.89	225.77	4,255.0	-1,471.7	-1,512.0	2,110.0	0.00	0.00	Ohio Creek
4,900.0	30.89	225.77	4,330.3	-1,503.2	-1,544.3	2,155.1	0.00	0.00	
5,000.0	30.89	225.77	4,416.1	-1,539.0	-1,581.1	2,206.4	0.00	0.00	
5,100.0	30.89	225.77	4,501.9	-1,574.8	-1,617.9	2,257.8	0.00	0.00	
5,200.0	30.89	225.77	4,587.8	-1,610.6	-1,654.7	2,309.1	0.00	0.00	
5,300.0	30.89	225.77	4,673.6	-1,646.4	-1,691.5	2,360.4	0.00	0.00	
5,362.3	30.89	225.77	4,727.0	-1,668.7	-1,714.4	2,392.4	0.00	0.00	Mesa Verde
5,400.0	30.89	225.77	4,759.4	-1,682.2	-1,728.3	2,411.8	0.00	0.00	
5,500.0	30.89	225.77	4,845.2	-1,718.0	-1,765.0	2,463.1	0.00	0.00	
5,600.0	30.89	225.77	4,931.0	-1,753.8	-1,801.8	2,514.4	0.00	0.00	
5,700.0	30.89	225.77	5,016.8	-1,789.6	-1,838.6	2,565.8	0.00	0.00	
5,702.9	30.89	225.77	5,019.3	-1,790.7	-1,839.7	2,567.3	0.00	0.00	Start Drop -2.00
5,800.0	28.95	225.77	5,103.5	-1,824.4	-1,874.4	2,615.7	2.00	-2.00	
5,900.0	26.95	225.77	5,191.8	-1,857.1	-1,908.0	2,662.6	2.00	-2.00	
6,000.0	24.95	225.77	5,281.7	-1,887.6	-1,939.3	2,706.3	2.00	-2.00	
6,030.0	24.35	225.77	5,309.0	-1,896.4	-1,948.3	2,718.8	2.00	-2.00	Williams Fork
6,100.0	22.95	225.77	5,373.1	-1,915.9	-1,968.4	2,746.9	2.00	-2.00	
6,200.0	20.95	225.77	5,465.9	-1,942.0	-1,995.2	2,784.3	2.00	-2.00	
6,300.0	18.95	225.77	5,559.9	-1,965.8	-2,019.6	2,818.4	2.00	-2.00	
6,400.0	16.95	225.77	5,655.0	-1,987.3	-2,041.7	2,849.2	2.00	-2.00	
6,500.0	14.95	225.77	5,751.1	-2,006.4	-2,061.4	2,876.7	2.00	-2.00	
6,600.0	12.95	225.77	5,848.2	-2,023.3	-2,078.7	2,900.8	2.00	-2.00	
6,700.0	10.95	225.77	5,946.0	-2,037.7	-2,093.5	2,921.4	2.00	-2.00	
6,800.0	8.95	225.77	6,044.5	-2,049.7	-2,105.9	2,938.7	2.00	-2.00	
6,900.0	6.95	225.77	6,143.5	-2,059.4	-2,115.8	2,952.5	2.00	-2.00	
7,000.0	4.95	225.77	6,243.0	-2,066.6	-2,123.2	2,962.9	2.00	-2.00	
7,100.0	2.95	225.77	6,342.8	-2,071.4	-2,128.1	2,969.8	2.00	-2.00	
7,200.0	0.95	225.77	6,442.7	-2,073.8	-2,130.6	2,973.2	2.00	-2.00	
7,247.3	0.00	0.00	6,490.0	-2,074.0	-2,130.8	2,973.6	2.00	-2.00	EOD; Inc=0° - Top of Gas - Benjamin Federal 3
7,300.0	0.00	0.00	6,542.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
7,400.0	0.00	0.00	6,642.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
7,500.0	0.00	0.00	6,742.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
7,600.0	0.00	0.00	6,842.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
7,700.0	0.00	0.00	6,942.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
7,800.0	0.00	0.00	7,042.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
7,900.0	0.00	0.00	7,142.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
8,000.0	0.00	0.00	7,242.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
8,100.0	0.00	0.00	7,342.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
8,200.0	0.00	0.00	7,442.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
8,300.0	0.00	0.00	7,542.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
8,400.0	0.00	0.00	7,642.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
8,456.3	0.00	0.00	7,699.0	-2,074.0	-2,130.8	2,973.6	0.00	0.00	Coal Ridge
8,500.0	0.00	0.00	7,742.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
8,600.0	0.00	0.00	7,842.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
8,700.0	0.00	0.00	7,942.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
8,800.0	0.00	0.00	8,042.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
8,900.0	0.00	0.00	8,142.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
9,000.0	0.00	0.00	8,242.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
9,100.0	0.00	0.00	8,342.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
9,122.3	0.00	0.00	8,365.0	-2,074.0	-2,130.8	2,973.6	0.00	0.00	Base Cameo A Coal
9,200.0	0.00	0.00	8,442.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
9,217.3	0.00	0.00	8,460.0	-2,074.0	-2,130.8	2,973.6	0.00	0.00	Rollins

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference: Well Benjamin Federal 33-4B
Company: EnCana Oil & Gas (USA) Inc	TVD Reference: WELL @ 5965.0ft (Original Well Elev)
Project: Mamm Creek	MD Reference: WELL @ 5965.0ft (Original Well Elev)
Site: K28NW Pad	North Reference: True
Well: Benjamin Federal 33-4B	Survey Calculation Method: Minimum Curvature
Wellbore: DD	
Design: 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
9,272.3	0.00	0.00	8,515.0	-2,074.0	-2,130.8	2,973.6	0.00	0.00	Drillers TD @ 8515' TVD - Benjamin Federal 33
9,300.0	0.00	0.00	8,542.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
9,400.0	0.00	0.00	8,642.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
9,500.0	0.00	0.00	8,742.7	-2,074.0	-2,130.8	2,973.6	0.00	0.00	
9,572.3	0.00	0.00	8,815.0	-2,074.0	-2,130.8	2,973.6	0.00	0.00	Permit TD @ 8815' TVD

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
Benjamin Federal 33-4B - plan hits target center - Circle (radius 25.0)	0.00	0.00	8,515.0	-2,074.0	-2,130.8	1,611,105.86	2,354,229.13	39.488922	-107.788369
Benjamin Federal 33-4B - plan hits target center - Point	0.00	0.00	6,490.0	-2,074.0	-2,130.8	1,611,105.86	2,354,229.13	39.488922	-107.788369
Benjamin Federal 33-4B - plan misses target center by 9019.3ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E) - Polygon	0.00	0.00	-8,515.0	-2,074.0	-2,130.8	1,611,105.86	2,354,229.13	39.488922	-107.788369
Point 1			-8,515.0	100.0	-40.0	1,611,206.83	2,354,191.65		
Point 2			-8,515.0	-100.0	-40.0	1,611,006.89	2,354,186.63		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,435.0	1,356.7	Surface Casing	5.500	6.000	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,313.9	2,111.0	G Sand				
4,812.3	4,255.0	Ohio Creek				
5,362.3	4,727.0	Mesa Verde				
6,030.0	5,309.0	Williams Fork				
7,247.3	6,490.0	Top of Gas				
8,456.3	7,699.0	Coal Ridge				
9,122.3	8,365.0	Base Cameo A Coal				
9,217.3	8,460.0	Rollins				

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Benjamin Federal 33-4B
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5965.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	WELL @ 5965.0ft (Original Well Elev)
Site:	K28NW Pad	North Reference:	True
Well:	Benjamin Federal 33-4B	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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'
1,229.6	1,180.4	-188.9	-194.1	EOB; Inc=30.9°
5,702.9	5,019.3	-1,790.7	-1,839.7	Start Drop -2.00
7,247.3	6,490.0	-2,074.0	-2,130.8	EOD; Inc=0°
9,272.3	8,515.0	-2,074.0	-2,130.8	Drillers TD @ 8515' TVD
9,572.3	8,815.0	-2,074.0	-2,130.8	Permit TD @ 8815' TVD