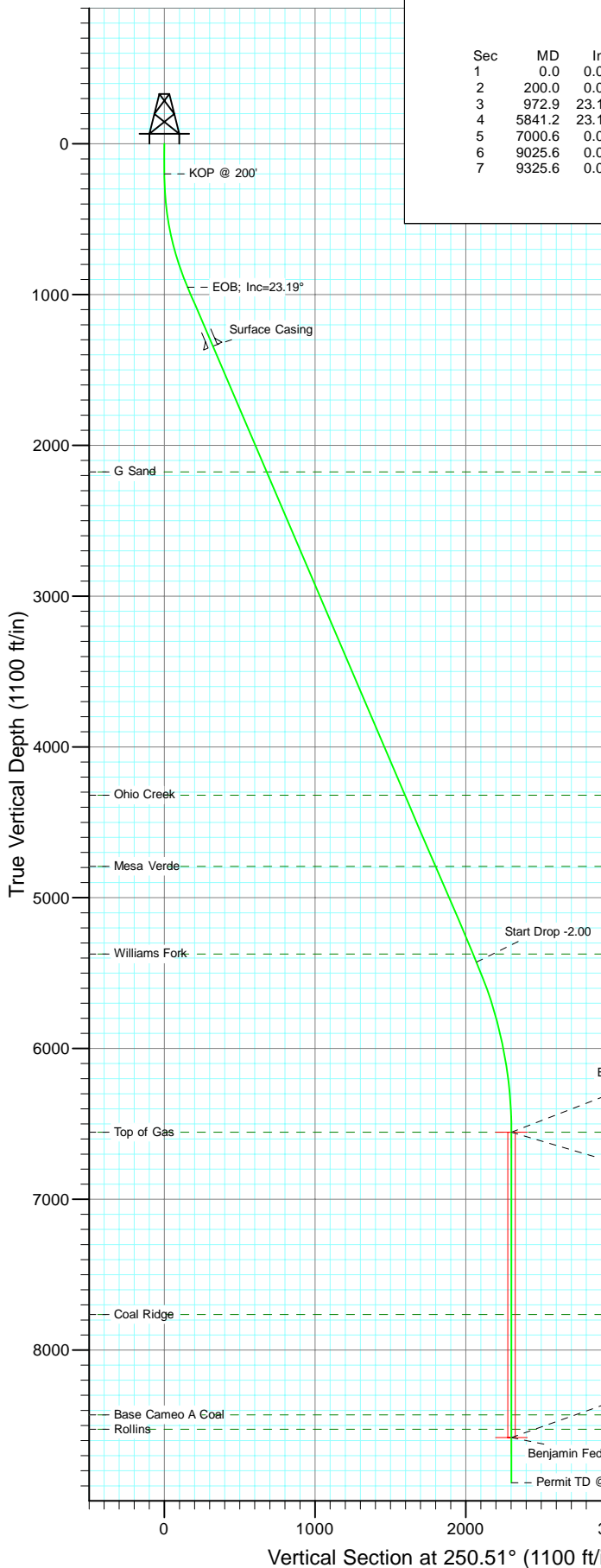


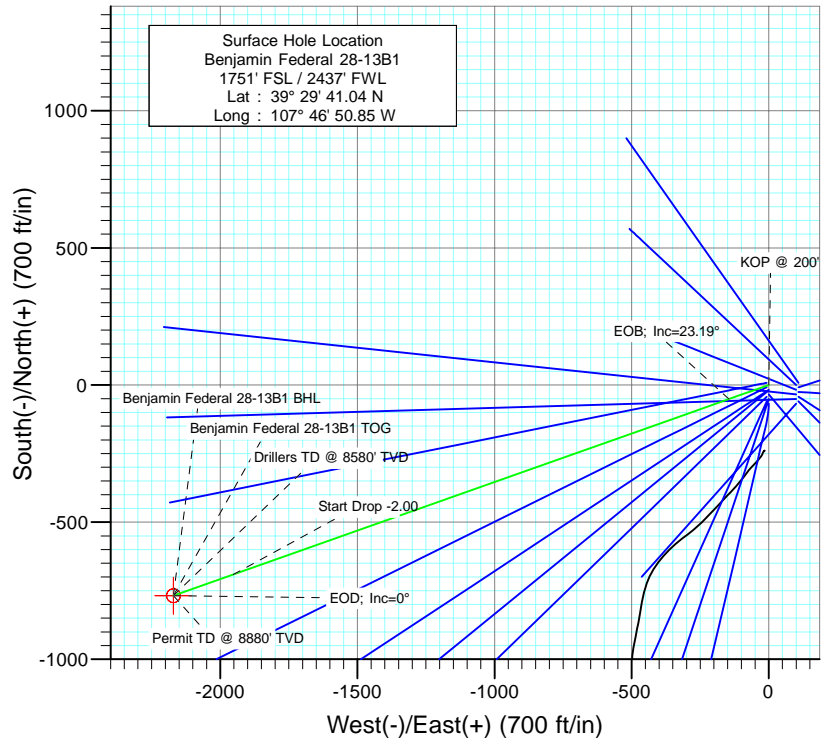


Project: Mamm Creek
Site: K28NW Pad
Well: Benjamin Federal 28-13B1
Wellbore: DD
Design: Plan #1



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	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	972.9	23.19	250.51	952.0	-51.5	-145.4	3.00	250.51	154.3	
4	5841.2	23.19	250.51	5427.0	-690.9	-1952.5	0.00	0.00	2071.1	
5	7000.6	0.00	0.00	6555.0	-768.1	-2170.6	2.00	180.00	2302.5	Benjamin Federal 28-13B1 TOG
6	9025.6	0.00	0.00	8580.0	-768.1	-2170.6	0.00	0.00	2302.5	Benjamin Federal 28-13B1 BHL
7	9325.6	0.00	0.00	8880.0	-768.1	-2170.6	0.00	0.00	2302.5	



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2176.0	2304.5	G Sand
4320.0	4636.9	Ohio Creek
4792.0	5150.4	Mesa Verde
5374.0	5783.5	Williams Fork
6555.0	7000.6	Top of Gas
7764.0	8209.6	Coal Ridge
8430.0	8875.6	Base Cameo A Coal
8525.0	8970.6	Rollins



Azimuths to True North
Magnetic North: 10.36°

Magnetic Field
Strength: 52406.1snT
Dip Angle: 65.82°
Date: 6/23/2010
Model: IGRF200510

Plan #1 Benjamin Federal 28-13B1 BHL = (1020 FSL - 240 FWL) Job #10xxx: KR					
WELL @ 5965.0ft (Original Well Elev) North American Datum 1983 Well Benjamin Federal 28-13B1, True North					
Type	Target	Azimuth	Origin	Type	N/S
Target	Benjamin Federal 28-13B1 BHL	250.51	Slot	0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Benjamin Federal 28-13B1 BHL	8580.0	-768.1	-2170.6	39° 29' 33.45 N	107° 47' 18.54 W

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Benjamin Federal 28-13B1
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 28-13B1	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 28-13B1					
Well Position	+N/-S	0.0 ft	Northing:	1,613,168.29 ft	Latitude:	39.494734
	+E/-W	0.0 ft	Easting:	2,356,420.17 ft	Longitude:	-107.780792
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 (nT)
	IGRF200510	6/23/2010	10.36	65.82	52,406

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	250.51

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	
972.9	23.19	250.51	952.0	-51.5	-145.4	3.00	3.00	0.00	250.51	
5,841.2	23.19	250.51	5,427.0	-690.9	-1,952.5	0.00	0.00	0.00	0.00	
7,000.6	0.00	0.00	6,555.0	-768.1	-2,170.6	2.00	-2.00	0.00	180.00	Benjamin Federal 28-
9,025.6	0.00	0.00	8,580.0	-768.1	-2,170.6	0.00	0.00	0.00	0.00	Benjamin Federal 28-
9,325.6	0.00	0.00	8,880.0	-768.1	-2,170.6	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 28-13B1
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 28-13B1	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	
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	250.51	300.0	-0.9	-2.5	2.6	3.00	3.00	
400.0	6.00	250.51	399.6	-3.5	-9.9	10.5	3.00	3.00	
500.0	9.00	250.51	498.8	-7.8	-22.2	23.5	3.00	3.00	
600.0	12.00	250.51	597.1	-13.9	-39.3	41.7	3.00	3.00	
700.0	15.00	250.51	694.3	-21.7	-61.3	65.1	3.00	3.00	
800.0	18.00	250.51	790.2	-31.2	-88.1	93.5	3.00	3.00	
900.0	21.00	250.51	884.4	-42.3	-119.6	126.9	3.00	3.00	
972.9	23.19	250.51	952.0	-51.5	-145.4	154.3	3.00	3.00	EOB; Inc=23.19°
1,000.0	23.19	250.51	976.9	-55.0	-155.5	164.9	0.00	0.00	
1,100.0	23.19	250.51	1,068.8	-68.2	-192.6	204.3	0.00	0.00	
1,200.0	23.19	250.51	1,160.7	-81.3	-229.7	243.7	0.00	0.00	
1,300.0	23.19	250.51	1,252.7	-94.4	-266.8	283.1	0.00	0.00	
1,398.0	23.19	250.51	1,342.7	-107.3	-303.2	321.6	0.00	0.00	Surface Casing
1,400.0	23.19	250.51	1,344.6	-107.6	-304.0	322.4	0.00	0.00	
1,500.0	23.19	250.51	1,436.5	-120.7	-341.1	361.8	0.00	0.00	
1,600.0	23.19	250.51	1,528.4	-133.8	-378.2	401.2	0.00	0.00	
1,700.0	23.19	250.51	1,620.3	-147.0	-415.3	440.6	0.00	0.00	
1,800.0	23.19	250.51	1,712.3	-160.1	-452.4	479.9	0.00	0.00	
1,900.0	23.19	250.51	1,804.2	-173.2	-489.6	519.3	0.00	0.00	
2,000.0	23.19	250.51	1,896.1	-186.4	-526.7	558.7	0.00	0.00	
2,100.0	23.19	250.51	1,988.0	-199.5	-563.8	598.0	0.00	0.00	
2,200.0	23.19	250.51	2,080.0	-212.6	-600.9	637.4	0.00	0.00	
2,300.0	23.19	250.51	2,171.9	-225.8	-638.0	676.8	0.00	0.00	
2,304.5	23.19	250.51	2,176.0	-226.4	-639.7	678.6	0.00	0.00	G Sand
2,400.0	23.19	250.51	2,263.8	-238.9	-675.1	716.2	0.00	0.00	
2,500.0	23.19	250.51	2,355.7	-252.0	-712.3	755.5	0.00	0.00	
2,600.0	23.19	250.51	2,447.6	-265.2	-749.4	794.9	0.00	0.00	
2,700.0	23.19	250.51	2,539.6	-278.3	-786.5	834.3	0.00	0.00	
2,800.0	23.19	250.51	2,631.5	-291.4	-823.6	873.7	0.00	0.00	
2,900.0	23.19	250.51	2,723.4	-304.6	-860.7	913.0	0.00	0.00	
3,000.0	23.19	250.51	2,815.3	-317.7	-897.9	952.4	0.00	0.00	
3,100.0	23.19	250.51	2,907.3	-330.8	-935.0	991.8	0.00	0.00	
3,200.0	23.19	250.51	2,999.2	-344.0	-972.1	1,031.2	0.00	0.00	
3,300.0	23.19	250.51	3,091.1	-357.1	-1,009.2	1,070.5	0.00	0.00	
3,400.0	23.19	250.51	3,183.0	-370.2	-1,046.3	1,109.9	0.00	0.00	
3,500.0	23.19	250.51	3,274.9	-383.4	-1,083.4	1,149.3	0.00	0.00	
3,600.0	23.19	250.51	3,366.9	-396.5	-1,120.6	1,188.6	0.00	0.00	
3,700.0	23.19	250.51	3,458.8	-409.7	-1,157.7	1,228.0	0.00	0.00	
3,800.0	23.19	250.51	3,550.7	-422.8	-1,194.8	1,267.4	0.00	0.00	
3,900.0	23.19	250.51	3,642.6	-435.9	-1,231.9	1,306.8	0.00	0.00	
4,000.0	23.19	250.51	3,734.6	-449.1	-1,269.0	1,346.1	0.00	0.00	
4,100.0	23.19	250.51	3,826.5	-462.2	-1,306.2	1,385.5	0.00	0.00	
4,200.0	23.19	250.51	3,918.4	-475.3	-1,343.3	1,424.9	0.00	0.00	
4,300.0	23.19	250.51	4,010.3	-488.5	-1,380.4	1,464.3	0.00	0.00	
4,400.0	23.19	250.51	4,102.2	-501.6	-1,417.5	1,503.6	0.00	0.00	
4,500.0	23.19	250.51	4,194.2	-514.7	-1,454.6	1,543.0	0.00	0.00	
4,600.0	23.19	250.51	4,286.1	-527.9	-1,491.7	1,582.4	0.00	0.00	
4,636.9	23.19	250.51	4,320.0	-532.7	-1,505.4	1,596.9	0.00	0.00	Ohio Creek
4,700.0	23.19	250.51	4,378.0	-541.0	-1,528.9	1,621.8	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Benjamin Federal 28-13B1
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 28-13B1	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
4,800.0	23.19	250.51	4,469.9	-554.1	-1,566.0	1,661.1	0.00	0.00	
4,900.0	23.19	250.51	4,561.9	-567.3	-1,603.1	1,700.5	0.00	0.00	
5,000.0	23.19	250.51	4,653.8	-580.4	-1,640.2	1,739.9	0.00	0.00	
5,100.0	23.19	250.51	4,745.7	-593.5	-1,677.3	1,779.3	0.00	0.00	
5,150.4	23.19	250.51	4,792.0	-600.1	-1,696.0	1,799.1	0.00	0.00	Mesa Verde
5,200.0	23.19	250.51	4,837.6	-606.7	-1,714.5	1,818.6	0.00	0.00	
5,300.0	23.19	250.51	4,929.6	-619.8	-1,751.6	1,858.0	0.00	0.00	
5,400.0	23.19	250.51	5,021.5	-632.9	-1,788.7	1,897.4	0.00	0.00	
5,500.0	23.19	250.51	5,113.4	-646.1	-1,825.8	1,936.7	0.00	0.00	
5,600.0	23.19	250.51	5,205.3	-659.2	-1,862.9	1,976.1	0.00	0.00	
5,700.0	23.19	250.51	5,297.2	-672.3	-1,900.0	2,015.5	0.00	0.00	
5,783.5	23.19	250.51	5,374.0	-683.3	-1,931.0	2,048.4	0.00	0.00	Williams Fork
5,800.0	23.19	250.51	5,389.2	-685.5	-1,937.2	2,054.9	0.00	0.00	
5,841.2	23.19	250.51	5,427.0	-690.9	-1,952.5	2,071.1	0.00	0.00	Start Drop -2.00
5,900.0	22.01	250.51	5,481.3	-698.4	-1,973.8	2,093.7	2.00	-2.00	
6,000.0	20.01	250.51	5,574.7	-710.4	-2,007.6	2,129.5	2.00	-2.00	
6,100.0	18.01	250.51	5,669.2	-721.2	-2,038.3	2,162.1	2.00	-2.00	
6,200.0	16.01	250.51	5,764.8	-731.0	-2,065.8	2,191.4	2.00	-2.00	
6,300.0	14.01	250.51	5,861.4	-739.6	-2,090.3	2,217.3	2.00	-2.00	
6,400.0	12.01	250.51	5,958.8	-747.2	-2,111.5	2,239.8	2.00	-2.00	
6,500.0	10.01	250.51	6,057.0	-753.5	-2,129.5	2,258.9	2.00	-2.00	
6,600.0	8.01	250.51	6,155.8	-758.8	-2,144.3	2,274.5	2.00	-2.00	
6,700.0	6.01	250.51	6,255.0	-762.8	-2,155.8	2,286.7	2.00	-2.00	
6,800.0	4.01	250.51	6,354.6	-765.7	-2,164.0	2,295.5	2.00	-2.00	
6,900.0	2.01	250.51	6,454.5	-767.5	-2,168.9	2,300.7	2.00	-2.00	
7,000.0	0.01	250.51	6,554.4	-768.1	-2,170.6	2,302.5	2.00	-2.00	
7,000.6	0.00	0.00	6,555.0	-768.1	-2,170.6	2,302.5	2.00	-2.00	EOD; Inc=0° - Top of Gas - Benjamin Federal 2
7,100.0	0.00	0.00	6,654.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
7,200.0	0.00	0.00	6,754.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
7,300.0	0.00	0.00	6,854.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
7,400.0	0.00	0.00	6,954.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
7,500.0	0.00	0.00	7,054.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
7,600.0	0.00	0.00	7,154.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
7,700.0	0.00	0.00	7,254.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
7,800.0	0.00	0.00	7,354.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
7,900.0	0.00	0.00	7,454.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
8,000.0	0.00	0.00	7,554.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
8,100.0	0.00	0.00	7,654.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
8,200.0	0.00	0.00	7,754.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
8,209.6	0.00	0.00	7,764.0	-768.1	-2,170.6	2,302.5	0.00	0.00	Coal Ridge
8,300.0	0.00	0.00	7,854.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
8,400.0	0.00	0.00	7,954.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
8,500.0	0.00	0.00	8,054.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
8,600.0	0.00	0.00	8,154.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
8,700.0	0.00	0.00	8,254.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
8,800.0	0.00	0.00	8,354.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
8,875.6	0.00	0.00	8,430.0	-768.1	-2,170.6	2,302.5	0.00	0.00	Base Cameo A Coal
8,900.0	0.00	0.00	8,454.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
8,970.6	0.00	0.00	8,525.0	-768.1	-2,170.6	2,302.5	0.00	0.00	Rollins
9,000.0	0.00	0.00	8,554.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
9,025.6	0.00	0.00	8,580.0	-768.1	-2,170.6	2,302.5	0.00	0.00	Drillers TD @ 8580' TVD - Benjamin Federal 28
9,100.0	0.00	0.00	8,654.4	-768.1	-2,170.6	2,302.5	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Benjamin Federal 28-13B1
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 28-13B1	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
9,200.0	0.00	0.00	8,754.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
9,300.0	0.00	0.00	8,854.4	-768.1	-2,170.6	2,302.5	0.00	0.00	
9,325.6	0.00	0.00	8,880.0	-768.1	-2,170.6	2,302.5	0.00	0.00	Permit TD @ 8880' 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 28-13 - plan hits target center - Point	0.00	0.00	6,555.0	-768.1	-2,170.6	1,612,454.94	2,354,230.97	39.492625	-107.788483
Benjamin Federal 28-13 - plan hits target center - Circle (radius 25.0)	0.00	0.00	8,580.0	-768.1	-2,170.6	1,612,454.94	2,354,230.97	39.492625	-107.788483

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,398.0	1,342.7	Surface Casing	5.500	6.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,304.5	2,176.0	G Sand			
4,636.9	4,320.0	Ohio Creek			
5,150.4	4,792.0	Mesa Verde			
5,783.5	5,374.0	Williams Fork			
7,000.6	6,555.0	Top of Gas			
8,209.6	7,764.0	Coal Ridge			
8,875.6	8,430.0	Base Cameo A Coal			
8,970.6	8,525.0	Rollins			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
200.0	200.0	0.0	0.0	KOP @ 200'
972.9	952.0	-51.5	-145.4	EOB; Inc=23.19°
5,841.2	5,427.0	-690.9	-1,952.5	Start Drop -2.00
7,000.6	6,555.0	-768.1	-2,170.6	EOD; Inc=0°
9,025.6	8,580.0	-768.1	-2,170.6	Drillers TD @ 8580' TVD
9,325.6	8,880.0	-768.1	-2,170.6	Permit TD @ 8880' TVD