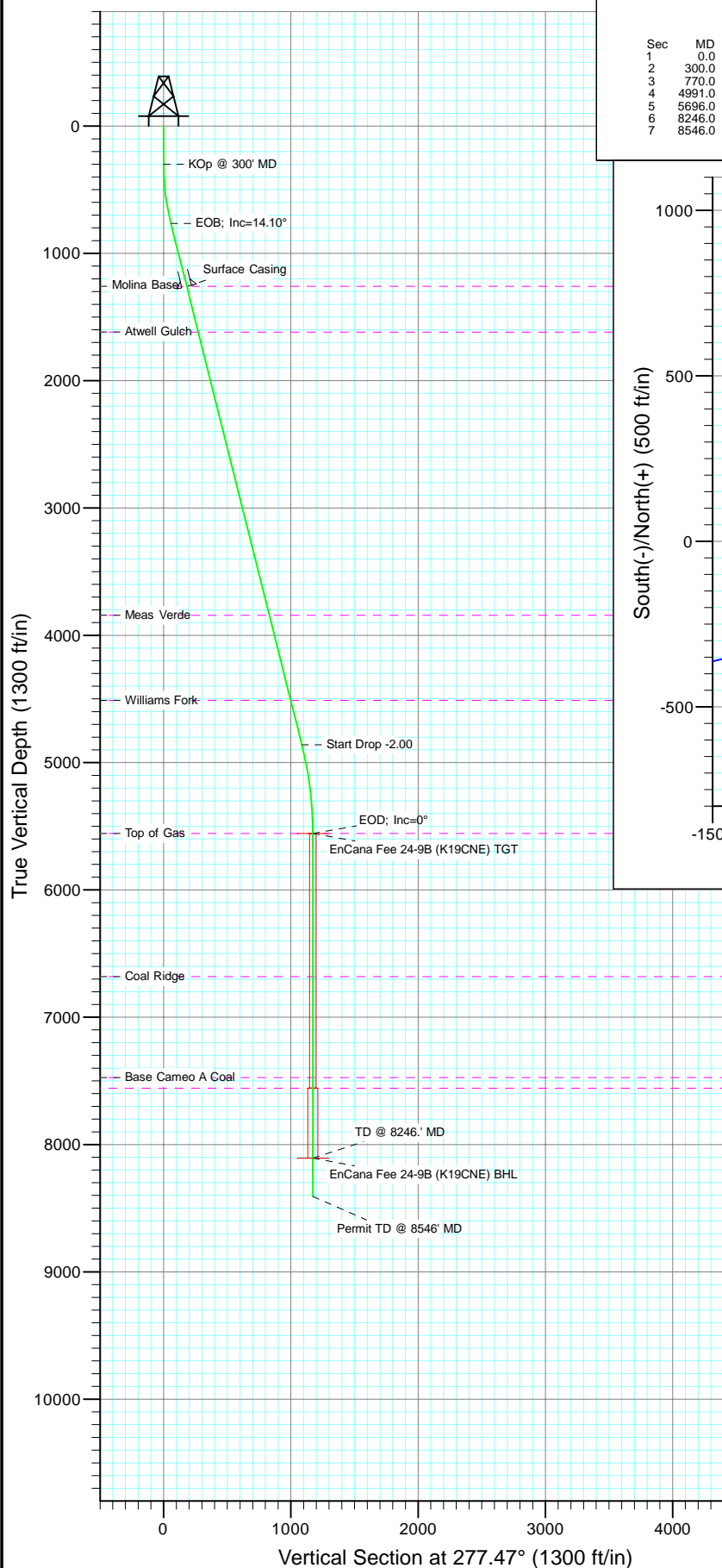
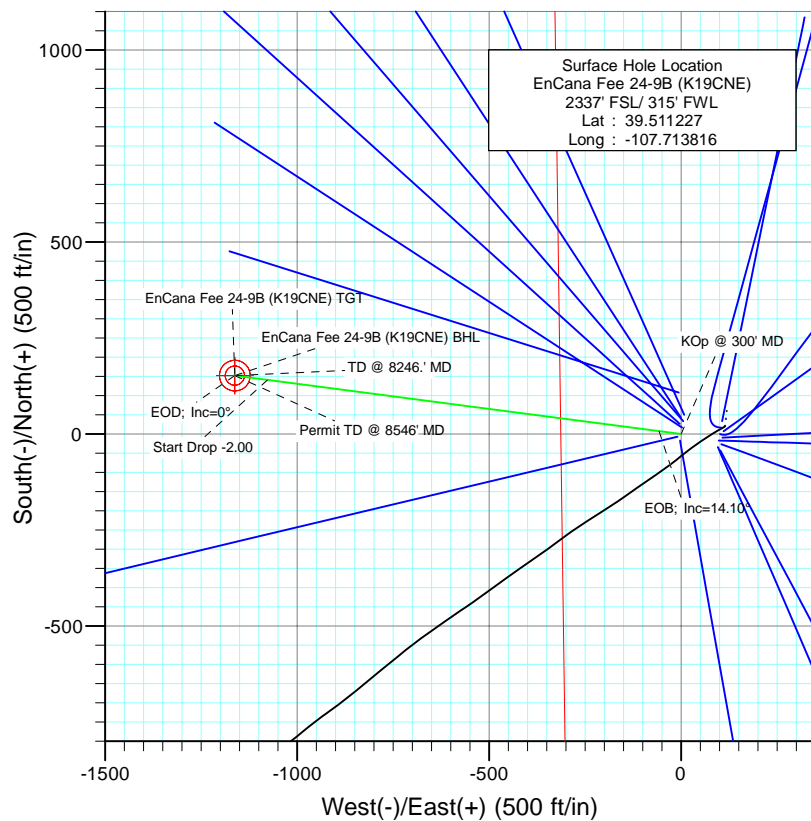




Project: Mamm Creek
Site: SW S19-T6S-R29W (K19CNE Pad)
Well: EnCana Fee 24-9B (K19CNE)
Wellbore: DD
Design: Plan #1



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	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	770.0	14.10	277.47	765.2	7.5	-57.0	3.00	277.47	57.5	
4	4991.0	14.10	277.47	4859.1	141.1	-1076.6	0.00	0.00	1085.8	
5	5696.0	0.00	0.00	5557.0	152.3	-1162.1	2.00	180.00	1172.1	EnCana Fee 24-9B (K19CNE) TGT
6	8246.0	0.00	0.00	8107.0	152.3	-1162.1	0.00	0.00	1172.1	EnCana Fee 24-9B (K19CNE) BHL
7	8546.0	0.00	0.00	8407.0	152.3	-1162.1	0.00	0.00	1172.1	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1258.0	1278.0	Molina Base
1619.0	1650.2	Atwell Gulch
3843.0	3943.3	Meas Verde
4511.0	4632.1	Williams Fork
5557.0	5696.0	Top of Gas
6681.0	6820.0	Coal Ridge
7474.0	7613.0	Base Cameo A Coal
7557.0	7696.0	Rollins



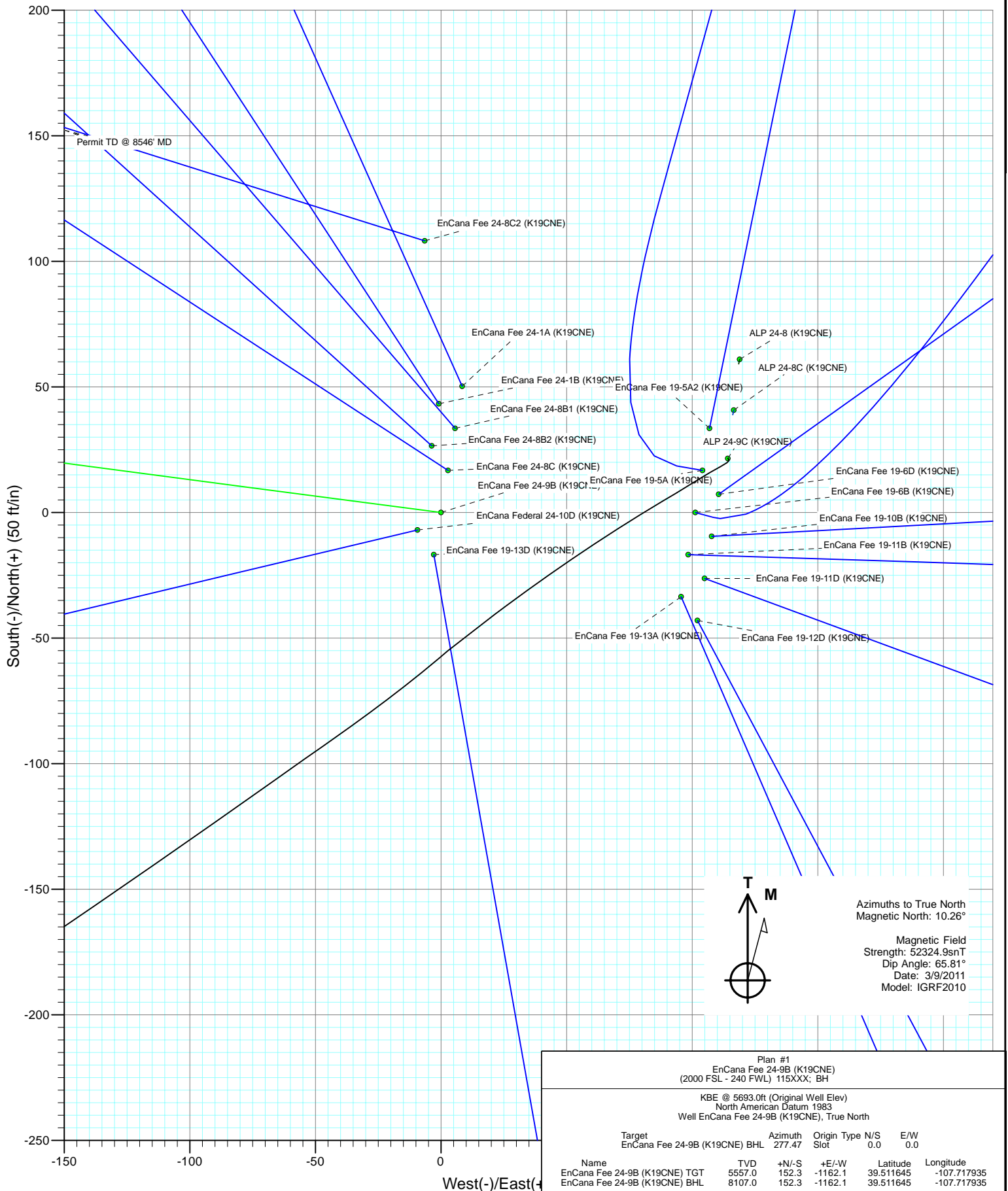
Azimuths to True North
Magnetic North: 10.26°

Magnetic Field
Strength: 52324.9nT
Dip Angle: 65.81°
Date: 3/9/2011
Model: IGRF2010

Plan #1 EnCana Fee 24-9B (K19CNE) (2000 FSL - 240 FWL) 115XXX; BH					
KBE @ 5693.0ft (Original Well Elev) North American Datum 1983 Well EnCana Fee 24-9B (K19CNE), True North					
Target	Azimuth	Origin	Type	N/S	E/W
EnCana Fee 24-9B (K19CNE) BHL	277.47	Slot		0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
EnCana Fee 24-9B (K19CNE) TGT	5557.0	152.3	-1162.1	39.511645	-107.717935
EnCana Fee 24-9B (K19CNE) BHL	8107.0	152.3	-1162.1	39.511645	-107.717935

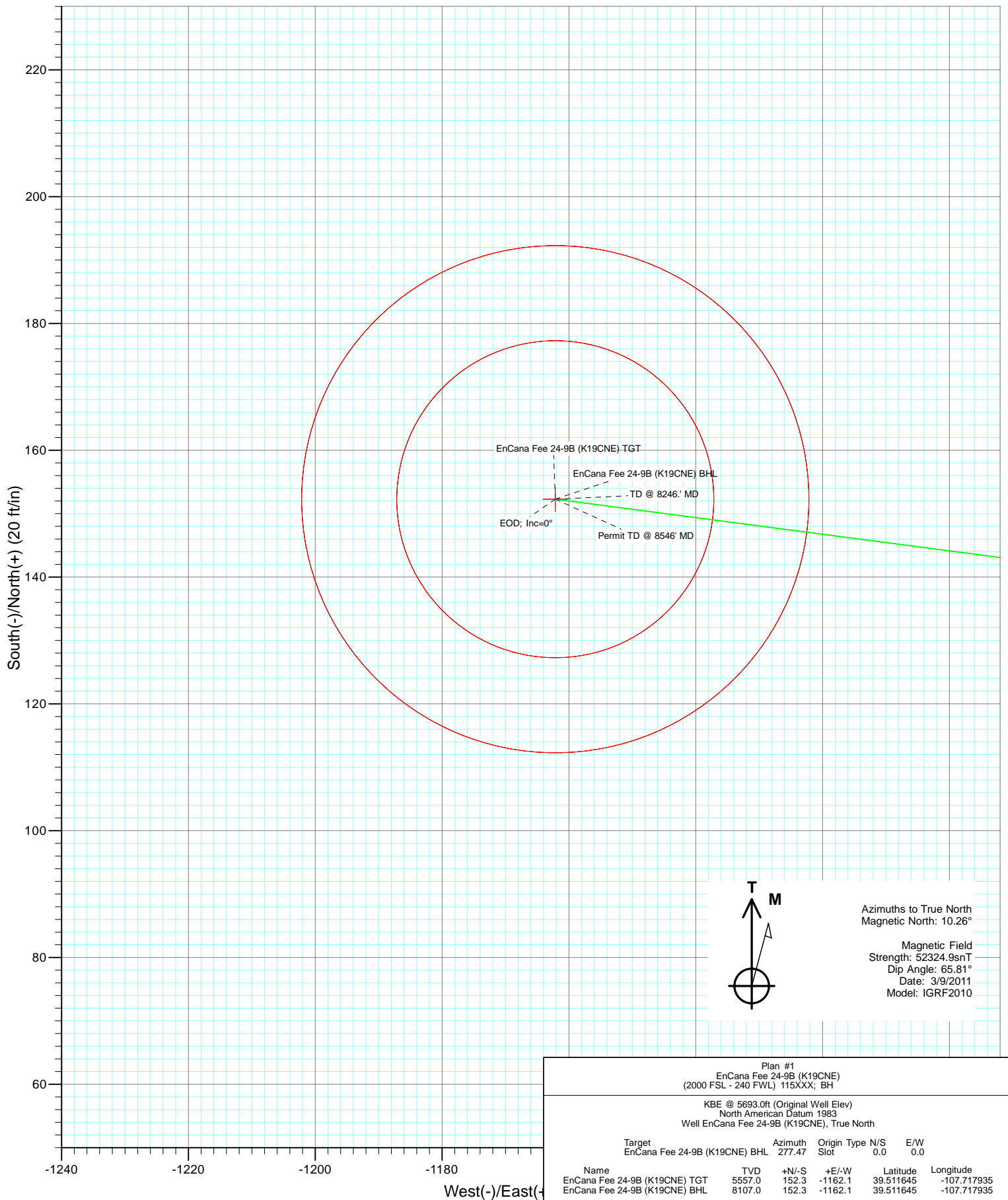


Project: Mamm Creek
Site: SW S19-T6S-R29W (K19CNE Pad)
Well: EnCana Fee 24-9B (K19CNE)
Wellbore: DD
Design: Plan #1





Project: Mamm Creek
 Site: SW S19-T6S-R29W (K19CNE Pad)
 Well: EnCana Fee 24-9B (K19CNE)
 Wellbore: DD
 Design: Plan #1



Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well EnCana Fee 24-9B (K19CNE)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 5693.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 5693.0ft (Original Well Elev)
Site:	SW S19-T6S-R29W (K19CNE Pad)	North Reference:	True
Well:	EnCana Fee 24-9B (K19CNE)	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		SW S19-T6S-R29W (K19CNE Pad)			
Site Position:		Northing:	1,618,725.17 ft	Latitude:	39.511286
From:	Lat/Long	Easting:	2,375,576.53 ft	Longitude:	-107.713411
Position Uncertainty:	0.0 ft	Slot Radius:	0.000 in	Grid Convergence:	-1.40 °

Well	EnCana Fee 24-9B (K19CNE)					
Well Position	+N/-S	0.0 ft	Northing:	1,618,706.42 ft	Latitude:	39.511227
	+E/-W	0.0 ft	Easting:	2,375,461.81 ft	Longitude:	-107.713816
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,671.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/9/2011	10.26	65.81	52,325

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	277.47

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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
770.0	14.10	277.47	765.2	7.5	-57.0	3.00	3.00	0.00	277.47	
4,991.0	14.10	277.47	4,859.1	141.1	-1,076.6	0.00	0.00	0.00	0.00	
5,696.0	0.00	0.00	5,557.0	152.3	-1,162.1	2.00	-2.00	0.00	180.00	EnCana Fee 24-9B (K19CNE)
8,246.0	0.00	0.00	8,107.0	152.3	-1,162.1	0.00	0.00	0.00	0.00	EnCana Fee 24-9B (K19CNE)
8,546.0	0.00	0.00	8,407.0	152.3	-1,162.1	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 EnCana Fee 24-9B (K19CNE)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 5693.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 5693.0ft (Original Well Elev)
Site:	SW S19-T6S-R29W (K19CNE Pad)	North Reference:	True
Well:	EnCana Fee 24-9B (K19CNE)	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	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	KOp @ 300' MD
400.0	3.00	277.47	400.0	0.3	-2.6	2.6	3.00	3.00	
500.0	6.00	277.47	499.6	1.4	-10.4	10.5	3.00	3.00	
600.0	9.00	277.47	598.8	3.1	-23.3	23.5	3.00	3.00	
700.0	12.00	277.47	697.1	5.4	-41.4	41.7	3.00	3.00	
770.0	14.10	277.47	765.2	7.5	-57.0	57.5	3.00	3.00	EOB; Inc=14.10°
800.0	14.10	277.47	794.4	8.4	-64.3	64.8	0.00	0.00	
900.0	14.10	277.47	891.4	11.6	-88.5	89.2	0.00	0.00	
1,000.0	14.10	277.47	988.3	14.8	-112.6	113.6	0.00	0.00	
1,100.0	14.10	277.47	1,085.3	17.9	-136.8	137.9	0.00	0.00	
1,200.0	14.10	277.47	1,182.3	21.1	-160.9	162.3	0.00	0.00	
1,278.0	14.10	277.47	1,258.0	23.6	-179.8	181.3	0.00	0.00	Molina Base
1,281.4	14.10	277.47	1,261.3	23.7	-180.6	182.1	0.00	0.00	Surface Casing
1,300.0	14.10	277.47	1,279.3	24.3	-185.1	186.6	0.00	0.00	
1,400.0	14.10	277.47	1,376.3	27.4	-209.2	211.0	0.00	0.00	
1,500.0	14.10	277.47	1,473.3	30.6	-233.4	235.4	0.00	0.00	
1,600.0	14.10	277.47	1,570.3	33.7	-257.5	259.7	0.00	0.00	
1,650.2	14.10	277.47	1,619.0	35.3	-269.7	272.0	0.00	0.00	Atwell Gulch
1,700.0	14.10	277.47	1,667.3	36.9	-281.7	284.1	0.00	0.00	
1,800.0	14.10	277.47	1,764.2	40.1	-305.8	308.4	0.00	0.00	
1,900.0	14.10	277.47	1,861.2	43.2	-330.0	332.8	0.00	0.00	
2,000.0	14.10	277.47	1,958.2	46.4	-354.1	357.2	0.00	0.00	
2,100.0	14.10	277.47	2,055.2	49.6	-378.3	381.5	0.00	0.00	
2,200.0	14.10	277.47	2,152.2	52.7	-402.4	405.9	0.00	0.00	
2,300.0	14.10	277.47	2,249.2	55.9	-426.6	430.2	0.00	0.00	
2,400.0	14.10	277.47	2,346.2	59.1	-450.7	454.6	0.00	0.00	
2,500.0	14.10	277.47	2,443.2	62.2	-474.9	479.0	0.00	0.00	
2,600.0	14.10	277.47	2,540.1	65.4	-499.1	503.3	0.00	0.00	
2,700.0	14.10	277.47	2,637.1	68.6	-523.2	527.7	0.00	0.00	
2,800.0	14.10	277.47	2,734.1	71.7	-547.4	552.0	0.00	0.00	
2,900.0	14.10	277.47	2,831.1	74.9	-571.5	576.4	0.00	0.00	
3,000.0	14.10	277.47	2,928.1	78.1	-595.7	600.8	0.00	0.00	
3,100.0	14.10	277.47	3,025.1	81.2	-619.8	625.1	0.00	0.00	
3,200.0	14.10	277.47	3,122.1	84.4	-644.0	649.5	0.00	0.00	
3,300.0	14.10	277.47	3,219.1	87.6	-668.1	673.8	0.00	0.00	
3,400.0	14.10	277.47	3,316.0	90.7	-692.3	698.2	0.00	0.00	
3,500.0	14.10	277.47	3,413.0	93.9	-716.4	722.6	0.00	0.00	
3,600.0	14.10	277.47	3,510.0	97.0	-740.6	746.9	0.00	0.00	
3,700.0	14.10	277.47	3,607.0	100.2	-764.7	771.3	0.00	0.00	
3,800.0	14.10	277.47	3,704.0	103.4	-788.9	795.6	0.00	0.00	
3,900.0	14.10	277.47	3,801.0	106.5	-813.0	820.0	0.00	0.00	
3,943.3	14.10	277.47	3,843.0	107.9	-823.5	830.5	0.00	0.00	Meas Verde
4,000.0	14.10	277.47	3,898.0	109.7	-837.2	844.4	0.00	0.00	
4,100.0	14.10	277.47	3,995.0	112.9	-861.4	868.7	0.00	0.00	
4,200.0	14.10	277.47	4,091.9	116.0	-885.5	893.1	0.00	0.00	
4,300.0	14.10	277.47	4,188.9	119.2	-909.7	917.4	0.00	0.00	
4,400.0	14.10	277.47	4,285.9	122.4	-933.8	941.8	0.00	0.00	
4,500.0	14.10	277.47	4,382.9	125.5	-958.0	966.2	0.00	0.00	
4,600.0	14.10	277.47	4,479.9	128.7	-982.1	990.5	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well EnCana Fee 24-9B (K19CNE)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 5693.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 5693.0ft (Original Well Elev)
Site:	SW S19-T6S-R29W (K19CNE Pad)	North Reference:	True
Well:	EnCana Fee 24-9B (K19CNE)	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
4,632.1	14.10	277.47	4,511.0	129.7	-989.9	998.3	0.00	0.00	Williams Fork
4,700.0	14.10	277.47	4,576.9	131.9	-1,006.3	1,014.9	0.00	0.00	
4,800.0	14.10	277.47	4,673.9	135.0	-1,030.4	1,039.2	0.00	0.00	
4,900.0	14.10	277.47	4,770.9	138.2	-1,054.6	1,063.6	0.00	0.00	
4,991.0	14.10	277.47	4,859.1	141.1	-1,076.6	1,085.8	0.00	0.00	Start Drop -2.00
5,000.0	13.92	277.47	4,867.9	141.4	-1,078.7	1,087.9	2.00	-2.00	
5,100.0	11.92	277.47	4,965.3	144.3	-1,100.9	1,110.3	2.00	-2.00	
5,200.0	9.92	277.47	5,063.5	146.7	-1,119.7	1,129.2	2.00	-2.00	
5,300.0	7.92	277.47	5,162.3	148.7	-1,135.0	1,144.7	2.00	-2.00	
5,400.0	5.92	277.47	5,261.6	150.3	-1,147.0	1,156.8	2.00	-2.00	
5,500.0	3.92	277.47	5,361.2	151.4	-1,155.5	1,165.4	2.00	-2.00	
5,600.0	1.92	277.47	5,461.0	152.1	-1,160.5	1,170.5	2.00	-2.00	
5,696.0	0.00	0.00	5,557.0	152.3	-1,162.1	1,172.1	2.00	-2.00	EOD; Inc=0° - Top of Gas - EnCana Fee 24-9B
5,700.0	0.00	0.00	5,561.0	152.3	-1,162.1	1,172.1	0.00	0.00	
5,800.0	0.00	0.00	5,661.0	152.3	-1,162.1	1,172.1	0.00	0.00	
5,900.0	0.00	0.00	5,761.0	152.3	-1,162.1	1,172.1	0.00	0.00	
6,000.0	0.00	0.00	5,861.0	152.3	-1,162.1	1,172.1	0.00	0.00	
6,100.0	0.00	0.00	5,961.0	152.3	-1,162.1	1,172.1	0.00	0.00	
6,200.0	0.00	0.00	6,061.0	152.3	-1,162.1	1,172.1	0.00	0.00	
6,300.0	0.00	0.00	6,161.0	152.3	-1,162.1	1,172.1	0.00	0.00	
6,400.0	0.00	0.00	6,261.0	152.3	-1,162.1	1,172.1	0.00	0.00	
6,500.0	0.00	0.00	6,361.0	152.3	-1,162.1	1,172.1	0.00	0.00	
6,600.0	0.00	0.00	6,461.0	152.3	-1,162.1	1,172.1	0.00	0.00	
6,700.0	0.00	0.00	6,561.0	152.3	-1,162.1	1,172.1	0.00	0.00	
6,800.0	0.00	0.00	6,661.0	152.3	-1,162.1	1,172.1	0.00	0.00	
6,820.0	0.00	0.00	6,681.0	152.3	-1,162.1	1,172.1	0.00	0.00	Coal Ridge
6,900.0	0.00	0.00	6,761.0	152.3	-1,162.1	1,172.1	0.00	0.00	
7,000.0	0.00	0.00	6,861.0	152.3	-1,162.1	1,172.1	0.00	0.00	
7,100.0	0.00	0.00	6,961.0	152.3	-1,162.1	1,172.1	0.00	0.00	
7,200.0	0.00	0.00	7,061.0	152.3	-1,162.1	1,172.1	0.00	0.00	
7,300.0	0.00	0.00	7,161.0	152.3	-1,162.1	1,172.1	0.00	0.00	
7,400.0	0.00	0.00	7,261.0	152.3	-1,162.1	1,172.1	0.00	0.00	
7,500.0	0.00	0.00	7,361.0	152.3	-1,162.1	1,172.1	0.00	0.00	
7,600.0	0.00	0.00	7,461.0	152.3	-1,162.1	1,172.1	0.00	0.00	
7,613.0	0.00	0.00	7,474.0	152.3	-1,162.1	1,172.1	0.00	0.00	Base Cameo A Coal
7,696.0	0.00	0.00	7,557.0	152.3	-1,162.1	1,172.1	0.00	0.00	Rollins
7,700.0	0.00	0.00	7,561.0	152.3	-1,162.1	1,172.1	0.00	0.00	
7,800.0	0.00	0.00	7,661.0	152.3	-1,162.1	1,172.1	0.00	0.00	
7,900.0	0.00	0.00	7,761.0	152.3	-1,162.1	1,172.1	0.00	0.00	
8,000.0	0.00	0.00	7,861.0	152.3	-1,162.1	1,172.1	0.00	0.00	
8,100.0	0.00	0.00	7,961.0	152.3	-1,162.1	1,172.1	0.00	0.00	
8,200.0	0.00	0.00	8,061.0	152.3	-1,162.1	1,172.1	0.00	0.00	
8,246.0	0.00	0.00	8,107.0	152.3	-1,162.1	1,172.1	0.00	0.00	TD @ 8246' MD - EnCana Fee 24-9B (K19CNE)
8,300.0	0.00	0.00	8,161.0	152.3	-1,162.1	1,172.1	0.00	0.00	
8,400.0	0.00	0.00	8,261.0	152.3	-1,162.1	1,172.1	0.00	0.00	
8,500.0	0.00	0.00	8,361.0	152.3	-1,162.1	1,172.1	0.00	0.00	
8,546.0	0.00	0.00	8,407.0	152.3	-1,162.1	1,172.1	0.00	0.00	Permit TD @ 8546' MD

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well EnCana Fee 24-9B (K19CNE)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 5693.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 5693.0ft (Original Well Elev)
Site:	SW S19-T6S-R29W (K19CNE Pad)	North Reference:	True
Well:	EnCana Fee 24-9B (K19CNE)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
EnCana Fee 24-9B (K19CNE) - plan hits target center - Circle (radius 40.0)	0.00	0.00	8,107.0	152.3	-1,162.1	1,618,886.98	2,374,303.73	39.511645	-107.717935
EnCana Fee 24-9B (K19CNE) - plan hits target center - Circle (radius 25.0)	0.00	0.00	5,557.0	152.3	-1,162.1	1,618,886.98	2,374,303.73	39.511645	-107.717935

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,281.4	1,261.3	Surface Casing	0.000	0.000	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,278.0	1,258.0	Molina Base		0.00		
1,650.2	1,619.0	Atwell Gulch		0.00		
3,943.3	3,843.0	Meas Verde		0.00		
4,632.1	4,511.0	Williams Fork		0.00		
5,696.0	5,557.0	Top of Gas		0.00		
6,820.0	6,681.0	Coal Ridge		0.00		
7,613.0	7,474.0	Base Cameo A Coal		0.00		
7,696.0	7,557.0	Rollins		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
300.0	300.0	0.0	0.0	KOp @ 300' MD	
770.0	765.2	7.5	-57.0	EOB; Inc=14.10°	
4,991.0	4,859.1	141.1	-1,076.6	Start Drop -2.00	
5,696.0	5,557.0	152.3	-1,162.1	EOD; Inc=0°	
8,246.0	8,107.0	152.3	-1,162.1	TD @ 8246.' MD	
8,546.0	8,407.0	152.3	-1,162.1	Permit TD @ 8546' MD	